NETWORK PROJECT ON BUFFALO IMPROVEMENT

ANNUAL REPORT 2023 – 2024

AND

PROJECT CO-ORDINATOR'S OBSERVATIONS

ICAR- CENTRAL INSTITUTE FOR RESEARCH ON BUFFALOES
HISAR – 125 001 (HARYANA)

NETWORK PROJECT ON BUFFALO IMPROVEMENT

ANNUAL REPORT 2023- 2024

AND

PROJECT CO-ORDINATOR'S OBSERVATIONS

Published by
Director & PC(B)
ICAR-CIRB Hisar-125 001

Compiled & Edited by
Dr. T K Datta, PC(B) & Director, ICAR-CIRB
Dr. R K Sharma, Incharge NPBI
Dr. Sanjay Kumar, Sr. Scientist
Dr. Supriya Chhotaray, Scientist
Sh. Ramchander, Sr. Tech. Officer

Phone: +91-1662-281630/281602
E mail: director.cirb@icar.gov.in
Website: www.cirb.icar.org.in

COORDINATING UNIT

ICAR- CENTRAL INSTITUTE FOR RESEARCH ON BUFFALOES
HISAR – 125 001 (HARYANA)

CONTENTS

NETWORK PROJECT ON BUFFALO IMPROVEMENT

ANNUAL REPORT 2023-24

All India Coordinated Research Project on buffaloes was initiated in the year 1970-71 for genetic evaluation of large and medium size buffaloes which was later on made specific on two important breeds viz. Murrah and Surti in the coordinated program. The main thrust was to test the sires with a view to produce proven bulls for enhancing milk production. The efforts made by scientific manpower through this venture are able to standardize the testing methodology and germplasm evaluation for superior bull production of important breeds of buffaloes. The infrastructure has been created which is capable to generate germplasm in the form of bulls and frozen semen at some of the testing centers.

Network Project on Buffalo Improvement and running at ICAR-Central Institute for Research on Buffalo, Hisar since 1993. This has ensured sustained maintenance and production of improved germplasm on large scale for use in buffalo improvement program and for establishing linkages with institutions. This is the only centre in India where semen from progeny tested proven bulls are available. Progeny testing in Murrah Breed is carried out at six participating institutional /SVU centres viz. CIRB Hisar, NDRI Karnal, IVRI Izatnagar, GADVASU Ludhiana, LUVAS Hisar and ICAR Research Complex for Eastren Region Patna.Three funded field centers of Murrah were also initiated in 2001 at CIRB Hisar, NDRI Karnal and GADVASU Ludhiana to produce more number of daughters per bull for accurately evaluating the breeding bulls. 20106 artificial inseminations were carried out in 2023-24 at farmer's door in the village to produce daughters. The milk yields of daughters are being recorded for use in sire evaluation.

Around 1060 breedable buffaloes are being maintained at institutional Murrah centres for production of high genetic merit male and female calves to be used for production of future sires. As per technical program for Murrah breed, a set of upto 18 pedigreed bulls is selected in each set and it is used for AI in the associated herds (1600 AIs per annum) and field buffaloes (approximately 20000 AIs per annum) for test mating over 18 months duration. From 1st July 2023 to 31st Dec., 2024 semen of XXI set was used at all Murrah centres. There were 14 superior bulls in the XXI set (5 bulls from CIRB Hisar, 3 bulls from GADVASU Ludhiana, 2 bull from LUVAS, Hisar and 3 bull from NDRI Karnal 1 bull from IVRI, Izatnagar). So far, 289 superior bulls have been testmated in 21 sets.

Data of 762 daughters born from the 16th set of bulls which completed 1st lactation was compiled and bulls were evaluated. Bull no. M-29 from CIRB Hisar, 1053 from LUVAS Hisar and 2383 from GADVASU Ludhiana ranked 1st, 2nd and 3rd with breeding value 2579 kg, 2567 kg and 2547 kg, respectively. The percent superiority by BLUP Model was 3.82, 3.35 and 2.53, respectively.

Elite herds of Jaffarabadi, Surti, Bhadawari and Nili-Ravi breeds of buffaloes have been established in their respective breeding tracts. Semen freezing laboratories have been established at all the centres. Nili-Ravi and Bhadawari breed centres are functioning as conservation and improvement units and Jaffarabadi and Surti breed centre are concentrating on field progeny testing along with maintaining the elite herd for bull production and testing. A breedable herd of 661 (Nili-Ravi-318, Jaffarabadi-201, Surti-79 and Bhadawari-63) is being maintained at the above four breeds.

During the year 3,88,415 semen doses produced and 2,92,817 semen doses were used for AI's//Exp. or sold. Production and dissemination of Murrah breeing bulls' semen doses was 3,46,388 and 2,64,362 respectively, in other breed 42,077 semen doses produced and 28,455 disseminated i.e sale/used in farm herd/ field under field progeny testing program.

HEAD-WISE/YEAR-WISE PHASING OF BUDGET OUTLAY FOR NPBI

Centre wise and Headwise allocation and release of funds for Network Project on Buffalo Improvement as per R E for the FY 2023-24

(Rs. In lakh)

Name of the centre	SALARY		General					Capital									Total			Released ICAR Share
	Total Pay	ICAR share	Rec Cont.	ICAR share	**ICAR share SCSP**	TA	ICAR share	Equi pment	ICAR share	**ICAR share SCSP**	Works	ICAR share	Live-stock	ICAR share	Fur. Fixt.	ICAR Share	Net Requir ement	ICAR Share	State Share	
ICAR Based centres																				
Coordinating Unit, Hisar	0.00	0.00	22.50	22.50	3.00	0.00	0.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	27.50	**27.50**	0.00	**27.50**
CIRB, Hisar, Main Unit	0.00	0.00	31.50	31.50	4.00	0.00	0.00	4.50	4.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	40.50	**40.50**	0.00	**40.50**
NDRI Karnal, Main Unit	0.00	0.00	19.50	19.50	1.00	0.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.50	**25.50**	0.00	**25.50**
IVRI, Izatnagar Main Unit	0.00	0.00	15.00	15.00	1.00	0.00	0.00	2.25	2.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.25	**18.25**	0.00	**18.25**
IGFRI Jhansi	0.00	0.00	36.50	36.50	1.00	0.00	0.00	1.50	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.00	**39.00**	0.00	**39.00**
ICAR Res. Comp. ER Patna	0.00	0.00	21.00	21.00	1.00	0.00	0.00	6.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.00	**28.00**	0.00	**28.00**
CIRB Sub Campus, Nabha	0.00	0.00	32.00	32.00	4.00	0.00	0.00	9.00	9.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.00	**45.00**	0.00	**45.00**
CIRB, Hisar FPT	0.00	0.00	12.50	12.50	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.50	**13.50**	0.00	**13.50**
NDRI, Karnal, FPT	0.00	0.00	19.00	19.00	0.00	0.00	0.00	1.50	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.50	**20.50**	0.00	**20.50**
SAU's Based centres																				
GADVASU, Ludhiana (Murrah)	0.00	0.00	62.00	46.50	2.50	0.00	0.00	2.00	1.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	67.00	**51.00**	16.00	**51.00**
GADVASU, Ludhiana (FPT)	0.00	0.00	24.00	18.00	0.00	0.00	0.00	2.00	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.00	**19.50**	6.50	**19.50**
LUVAS, Hisar	0.00	0.00	62.00	46.50	2.50	0.00	0.00	6.00	4.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	71.00	**54.00**	17.00	**54.00**
KU, Junagadh	0.00	0.00	54.00	40.50	2.50	0.00	0.00	6.00	4.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	63.00	**48.00**	15.00	**48.00**
RAJVASU, Bikaner	0.00	0.00	64.00	48.00	2.50	0.00	0.00	5.00	3.75	0.50	0.00	0.00	0.00	0.00	0.00	0.00	72.00	**54.75**	17.25	**54.75**
MPKV, Kolhapur	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**	0.00	**0.00**
GADVASU, Ludhiana (Nili-Ravi)	0.00	0.00	28.00	21.00	0.00	0.00	0.00	2.00	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00	**22.50**	7.50	**22.50**
Total (ICAR+State)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**	0.00	**0.00**
ICAR Share	**0.00**	**0.00**	**503.50**	**430.00**	**25.00**	**0.00**	**0.00**	**55.75**	**50.00**	**2.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**586.75**	**507.50**	**79.25**	
State Share	**0.00**		**430.00**		**25.00**	**0.00**		**50.00**		**2.50**	**0.00**		**0.00**		**0.00**		**507.50**			
	0.00		73.50			0.00		5.75			0.00		0.00		0.00		79.25			

PARTICIPATING CENTRES (As on 31.03.2024)

Coordinating Unit, CIRB, Hisar

Sr No	Name of centre	Breed	Year of start
Agricultural University based centers			
I	GADVASU, Ludhiana	Murrah	1993
II	LUVAS, Hisar	Murrah	1993
III	KU, Junagarh	Jaffarabadi	2001
IV	RAJUVAS, Vallabhnagar	Surti	2001
V	Field Unit GADVASU, Ludhiana	Murrah	2001
VI	GADVASU, Ludhiana	Nili-Ravi	2018
ICAR Institute based Centres			
I	ICAR-CIRB, Hisar (Main Unit)	Murrah	1993
II	ICAR-NDRI, Karnal (Main Unit)	Murrah	1993
III	ICAR-IVRI, Izatnagar (Main Unit)	Murrah	1993
IV	ICAR- IGFRI, Jhansi	Bhadawari	2001
V	ICAR-CIRB, Sub - Campus Nabha	Nili-Ravi	2001
VI	Field Unit NDRI, Karnal	Murrah	2001
VII	Field Unit CIRB, Hisar	Murrah	2001
VIII	ICAR Res. Comp. ER Patna (Main Unit)	Murrah	2014

*LRS Mamnoor (PVNRTVU, Hyderabad) reinducted as Murrah data recording Unit from 1st April, 2024.

Scientist Meets:	Place	Duration
1st Scientist meet	GAU, Junagarh,	February 10 - 11, 1993
2ndScientist meet	PAU Ludhiana	April 28 - 29, 1994
3rdScientist meet	RAU, Udaipur	November 2 - 3, 1995
4thScientist meet	PAU, Ludhiana	July 28 - 29, 2000
5thScientist meet	AAU, Khanapara	January 3- 4, 2002
6thScientist meet	MPKV, Kolhapur	April 5 - 6, 2005
7thScientist meet	CIRB, Hisar	April 4 - 5, 2007
8thScientist meet	JAU, Junagadh	March 5 - 6, 2009
Midterm Review meet	CIRB, Hisar	December 05, 2009
9th Scientist meet	CIRB, Hisar	November 27 - 28, 2010
10thAnnual Review Meet	Bhuj, Gujarat	September 2 - 3, 2011
11thAnnual Review Meet	NDRI, Karnal	August 24, 2012
12thAnnual Review Meet	LRS Vallabhnagar	September 9-10, 2014
13th Annual Review Meet	CIRB, Hisar	September 23-24, 2015
14th Annual Review Meet	GADVASU, Ludhiana	July 04 - 05, 2016
15th Annual Review Meet	ICAR RCER, Patna	July 21 - 22, 2017
16th Annual Review Meet	ICAR-NDRI, Karnal	November 19 - 20, 2018
17th Annual Review Meet	ICAR-NASC Complex, New Delhi	August 27 - 28, 2019
18th Annual Review Meet	Virtual mode by ICAR-CIRB, Hisar	March 19, 2021
19th Annual Review Meet	Virtual mode by ICAR-CIRB, Hisar	July 28, 2022
20th Annual Review Meet	ICAR-CIRB, Hisar	December 8, 2023

CENTRE WISE PERFORMANCE, RESEARCH ACHIEVEMENTS AND PROJECT COORDINATOR OBSERVATIONS

Mandate of Network Project

To undertake genetic improvement and conservation of important breeds of buffaloes

Objectives:

1. To establish elite nucleus herds of important buffalo breeds for the production of genetically superior young bulls.
2. To evaluate sires through institutional / associated herd/field progeny testing.
3. To produce, test, propagate and conserve high genetic merit male germplasm.

Technical Programme: The technical programme involves establishment of elite herd of 1200 breedable Murrah / 400 Nili-Ravi / 225 Jaffarabadi / 75 Bhadawari /100 Surti buffalo for the production of genetically superior young bulls. For Murrah breed, technical programme includes selection and testing of 12-15 bulls on about 1200 breedable buffaloes at organised farms at GADVASU, Ludhiana; CIRB, Hisar; NDRI, Karnal; IVRI, Izatnagar; LUVAS, Hisar and ICAR Res. Comp. ER Patna in every 18-month's cycle. From each bull 75-80 pregnancies are to be obtained so that 20-25 recorded daughters per bull are available at all the centres for the evaluation of bulls. The bulls will be ranked on the basis of performance of their daughters and 20% of them will be selected as proven bulls from each set. The semen of the proven bulls will be used on elite buffaloes at different centres for the production of future sires and herd replacements.

A. Growth rate targets:

Age group	Target growth rate (g) per day		Expected body weight at terminal age (kg)	
	Female	Male	Female	Male
Birth-6 mths	450	450	112	112
6-18 mths	500	550	294	312
18-24 mths	400	530	367	410
24-30 mths	400	450	440	520
30-36 mths	300	350	495	584

N.B. Average birth weight, 30kg

B. Reproduction and production targets:

i.	Av. age at first service	= 24 months (300 kg B. wt.)
ii.	Av. age at first calving	= 40 months
iii.	AV. age for initiating training of bulls	= 18 months (350 kg B. wt.)
iv.	Av. age at first collection of bulls	= 30 months (400 kg B.wt.)
v.	Av. service period	= 130 days
vi.	Calf mortality (0-3 mths)	= ≤ 5%
vii.	Wet average	= ≥ 8.5 kg
viii.	Herd average	= ≥5.5 kg

<u>Participating Institutional herds of Murrah Breeds</u>

1.	**ICAR-CIRB Hisar**	ICAR based
2.	**ICAR-NDRI Karnal**	ICAR based
3.	**ICAR-IVRI Izatnagar**	ICAR based
4.	**ICAR Res. Complex for ER Patna**	ICAR Based
5.	**GADVASU Ludhiana**	SAU based
6.	**LUVAS, Hisar**	SAU based

ICAR-CENTRAL INSTITUTE FOR RESEARCH ON BUFFALOES, HISAR (MAIN UNIT)

Report Period : 2023-24

1. Name of centre : CIRB, Hisar
2. Project Code :
3. Project Title : Network Project on Buffalo Improvement (Murrah)
4. Date of Start : 1993

5. **Objective:**
   - i. To establish elite herd of 50 to 100 Murrah (at each center) for the production of genetically superior young bulls.
   - ii. To evaluate sires through institutional / associated herd/field progeny testing
   - III. To produce, test, propagate and conserve high genetic merit male germplasm

6. Technical Programme:

- I. Establishment and maintenance of an elite herd of Murrah buffalo with a herd strength of 500 and 300 breedable females.
- II. Selection and testing of minimum 15 bulls of Murrah in every 18 months cycle.
- III. Production of minimum 10,000 frozen semen doses from each test bull.
- IV. Maintain a minimum number of 8000 frozen semen doses until the particular SET gets evaluated.
- V. Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
- VI. Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
- VII. Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield.
- VIII. Life time productivity traits viz: herd life, productive life, lifetime milk yield, milk yield per day of herd life for buffaloes completed 4th or more lactation.
- IX. Monthly testing of milk constituents (Fat %, SNF % and Protein %) and Somatic Cell Count, wherever feasible, at institutional herds.
- X. Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
- XI. Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. Financial Statement for year: 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR Share as per R E	Expenditure		Balance
Total	ICAR Share		ICAR Share	State Share	
40.50*	40.50*	40.50*	40.50*	0.00	0.00

* Include Rs. 4.50 lakhs under SCSP

8. Staff Position : Redeployment

9. Herd Performance from Table 9.1 to 9.21

9.1 Herd Strength during the Period 1st April 2023 to 31st March, 2024

Sr. No.	Category	Addition			Disposal				CB
		OB	B / P	T	D	T	S	E	CB
	Female								
1.	Below 3 months	12	75		5		2		8
2.	3-12 months	77			11		12		58
3.	1-2 years	85			4		1		57
	Above 2 years	83			2		20		95
4.	Buffaloes in Milk	136			2		27		130
5.	Buffaloes Dry P /NP	31			2		20		43
	Sub Total	**424**	**75**		**26**		**82**		**391**
	Males								
1.	Below 3 months	13	81		4		3		19
2.	3-12 months	53			10		22		50
3.	1-2 years	25					13		14
	Above 2 years	30			1		31		25
4.	Breeding bulls	14					8		16
5.	Bullocks/Teasers/others	0							0
	Sub Total	**135**	**81**		**15**		**77**		**124**
	Grand Total	**559**	**156**		**41**		**159**		**515**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics during the period April 2023 – March 2024

Month	Male	Female	Still Birth	Abortion	Overall
April-2023	1	1	--	--	2
May	4	3	--	--	7
June	1	3	1	--	5
July	11	7	1	--	19
August	12	10	--	--	22
September	11	10	--	--	21
October	14	14	--	--	28
November	6	15	--	--	21
December	2	4	--	--	6
January-2024	5	3	--	--	8
February	6	1	--	--	7
March	8	4	--	--	12
Overall	**81**	**75**	**2**	--	**158**

Sex ratio Male: Female = 1.0 : 0.93

9.3. Disposal of Animals (1st April 2023 to 31st March 2024)

Female	Primary cause of disposal							
Category	Surplus	Low Producers	Reprod. Problem	Weak & Old	Udder Health	Death	Exptl.	**Total**
Calves								
0 to 3 months	2	--	--	--	--	5	--	7
3-12 months	--	--	--	12	--	11	--	23
Heifers								
1-2 years	--	--	--	1		4	--	5
> 2 years	1	--	14	5		2	--	22
Buffaloes								
Milch	7	5	5	6	4	2	--	29
Dry	4	1	6	3	6	2	--	22
Sub Total	**14**	**6**	**25**	**27**	**10**	**26**		**108**
Males	Primary cause of disposal							
Calves								
0 to 3 months	3	--	--	--	--	4	--	7
3-12 months	6	--	1	15	--	10	--	32
Young bull								
1-2 years	9	--	--	4		--	--	13
>2 years	24	--	6	1		1	--	32
Breeding bulls	6	--	1	1	--	--	--	8
Bullock+Teaser etc	--	--	--	--	--	--	--	--
Sub Total	**48**	**--**	**8**	**21**		**15**	**--**	**92**
Grand Total	**62**	**6**	**33**	**48**	**10**	**41**	**--**	**200**

9.4 Mortality during the Period 1st April 2023 to 31st March, 2024

Month	**Details**	**Female**						**Male**					**Total (Male + female)**
		0-3 (Month)	**3-6**	**6-12**	**>1yrs**	**>2yrs**	**Overall**	**0-3 (Month)**	**3-6**	**6-12**	**>1yrs**	**Overall**	
April	No	12	25	54	80	253	424	13	23	29	81	146	570
	Died	--	--	2	--	--	2	1	--	2	--	3	5
	%	--	--	3.70	--	--	0.47	7.69	--	6.90	--	2.05	0.88
May	No	7	23	52	82	258	422	10	19	31	84	144	566
	Died	--	2	4	--	1	7	--	--	4	--	4	11
	%	--	8.70	7.69	--	0.39	1.66	--	--	12.90	--	2.78	1.94
June	No	8	12	54	82	261	417	12	11	35	85	143	560
	Died	--	--	1	1	--	2	--	--	1	1	2	4
	%	--	--	1.85	1.22	--	0.48	--	--	2.86	1.18	1.40	0.71
July	No	7	10	43	79	254	383	6	12	22	58	98	481
	Died	--	--	--	2	--	2	--	--	1	--	1	3
	%	--	--	--	2.53	--	0.52	--	--	4.55	--	1.02	0.63
August	No	13	7	41	73	253	387	16	10	24	60	110	497
	Died	1	--	--	1	--	2	--	--	--	--	--	2
	%	7.69	--	--	1.39	--	0.52	--	--	--	--	--	0.40
September	No	20	8	36	70	263	394	24	12	23	62	121	515
	Died	1	--	--	1	3	5	--	--	--	--	--	5
	%	0.05	--	--	1.43	1.14	1.27	--	--	--	--	--	0.97
October	No	24	7	29	57	259	376	31	6	23	60	120	496
	Died	1	--	--	--	--	1	--	--	--	--	--	1
	%	4.17	--	--	--	--	0.27	--	--	--	--	--	0.20
November	No	33	11	24	68	251	391	35	15	19	57	131	522
	Died	1	--	--	--	--	1	2	--	--	--	2	3
	%	3.03	--	--	--	--	0.26	5.71	--	--	--	1.53	0.57

December	No	32	10	34	71	264	411	16	20	27	54	117	528
	Died	--	--	--	1	--	1	--	--	--	--	--	1
	%	--	--	--	1.41	--	0.24	--	--	--	--	--	0.19
January	No	32	24	17	63	247	409	20	31	17	46	114	523
	Died	--	--	--	--	--	--	1	--	1	--	2	2
	%	--	--	--	--	--	--	5.00	--	5.88	--	1.75	0.38
February	No	22	32	18	64	268	404	13	32	23	50	118	522
	Died	1	2	--	--	--	3	--	1	--	--	--	4
	%	4.55	6.25	--	--	--	0.74	--	3.12	--	--	--	0.77
March	No	8	34	24	57	268	391	19	23	27	41	124	515
	Died	--	--	--	--	--	--	--	--	--	--	--	--
	%	--	--	--	--	--	--	--	--	--	--	--	--

Overall Calf mortality (0-3 months): 4.95 % (9/182)

9.5. Causes of Mortality (qtr. wise) during the period 1st April 2023 to 31st March, 24

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	Total
Enteritis	0	1	0	1	2
Pheumonities	0	1	3	3	7
Peritonitis	0	1	0	0	1
TRP / TP	0	1	0	0	1
Miscellaneous	21	5	2	2	30
Total	**21**	**9**	**5**	**6**	**41**

9.6 Prophylactic Measures undertaken during 2023-24

Disease	**Vaccination: Month / No. of animals**	**No. of animals** Tested / Positive		**Month and No. of animals treated for Parasitism**
FMD	Aprii/155, July/535, Dec/550	----	----	Apr/76, May/190, Jun/110, Jul/79, Aug/125, Sept/63, Oct/102, Nov/150, Dec/142, Jan/80, Feb/85 and Mar/132
HS	April/155, July/535, Dec/550	----	----	
BQ	April/155	----	----	
Brucellosis	May/38, Oct. /25			
Mastitis		151	69	

9.7 Female Conception Rate during the Period January to December 2023

Category →	**Heifers**			**Adult**			**Overall**		
AI ↓	**I**	**C**	**CR%**	**I**	**C**	**CR%**	**I**	**C**	**CR%**
1st	49	24	48.98	134	68	50.75	183	92	**50.27**
2nd	24	11	45.83	87	45	51.72	111	56	**50.45**
3rd	17	9	52.94	33	14	42.42	50	23	**46.00**
4th & above	29	10	34.48	53	22	41.51	82	32	**39.02**
Overall	119	54	45.38	307	149	48.53	426	203	**47.65**

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8 Quarter-wise conception rate

Quarter	**No. of A I**	**Pregnancy**	**CR %**
January – March, 2023 ~~Previous year~~	121	58	47.93
April – June, 2023	51	18	35.29
July – September, 2023	87	39	44.83
October- December, 2023	167	88	52.69
Overall	426	203	47.65

9.9. Bull-wise Conception Rate During the period January to December, 2023

Sr. No.	Bull No.	SET No.	Total AI	Conceived	CR%
1.	5500	20th	15	10	66.67
2.	4592	16th	2	2	100
3.	4889	16th	14	6	42.86
4.	6044	14th	13	3	23.08
5.	2850	20th	41	23	56.10
6.	M29	16th	14	4	28.57
7.	3004	20th	18	3	16.67
8.	5481	20th	22	11	50
9.	5505	20th	8	4	50
10.	1454	20th	23	11	47.83
11.	2467	16th	6	3	50
12.	4705	16th	10	2	20
13.	2459	15th	4	2	50
14.	7584	20th	1	0	0
15.	2930	21st	6	0	0
16.	7768	21st	30	19	63.33
17.	5629	21st	25	13	52
18.	1053	16th	10	7	70
19.	3014	21st	16	7	43.75
20.	5647	N S	8	5	62.5
21.	5514	21st	36	17	47.22
22.	297	21st	30	11	36.67
23.	2383	16th	21	14	66.67
24.	5638	21st	17	10	58.82
25.	5690	21st	20	8	40.00
26.	2979	21st	12	7	58.33
27.	4354	15th	4	1	25.00
Overall			**426**	**203**	**47.65**

9.10 Bull Wise Semen Stock

Sr. No.	Bull No	Centre	SET	Dam's Best SLMY/ Peak Yield	Opening balance	Received	Sold	Supp.	Exp.	Balance
1	392	CIRB	I PT	2594	113	0	0	0	0	113
2	3567	NDRI	I PT	2877	250	0	0	0	0	250
3	896	CIRB	I	3003	142	0	0	0	0	142
4	3098	NDRI	I	3164	250	0	0	0	0	250
5	761	CIRB	II PT	2578	276	0	0	0	0	276
6	93	CIRB	II PT	22kg	88	0	0	0	0	88
7	829	CIRB	II PT	2626	250	0	0	0	0	250
8	759	CIRB	II	2650	198	0	0	0	0	198
9	3638	NDRI	II	3278	250	0	0	0	0	250
10	3551	NDRI	II	3898	136	0	0	0	0	136
11	1253	GAD	II	3348	36	0	0	0	0	36
12	1268	GAD	II	2802	265	0	0	0	0	265
13	1290	GAD	II	2628	250	0	0	0	0	250
14	1153	CIRB	III PT	2540	250	0	0	0	0	250
15	1061	CIRB	III	2846	209	0	0	0	0	209
16	1354	GAD	III PT	3088	108	0	0	0	0	108
17	1165	CIRB	III	2627	250	0	0	0	0	250
18	3930	NDRI	III	2912	250	0	0	0	0	250
19	1131	CIRB	III	2827	98	0	0	0	0	98
20	3966	NDRI	III	3700	258	0	0	0	0	258

21	1023	CIRB	III	2710	252	0	0	0	0	252
22	1171	CIRB	III	3007	256	0	0	0	0	256
23	993	CIRB	III	2976	100	0	0	0	0	100
24	1315	GAD	III	2808	266	0	0	0	0	266
25	1084	CIRB	III	3007	98	0	0	0	0	98
26	1506	GAD	IV PT	3018	250	0	0	0	0	250
27	1451	GAD	IV PT	3401	250	0	0	0	0	250
28	1437	GAD	IV	3127	250	0	0	0	0	250
29	1319	CIRB	IV	2538	250	0	0	0	0	250
30	1341	CIRB	IV	2878	83	0	0	0	0	83
31	1538	CIRB	IV	2786	98	0	0	0	0	98
32	1363	CIRB	IV	3031	98	0	0	0	0	98
33	1434	CIRB	IV	2640	6	0	0	0	0	6
34	1360	CIRB	IV	2537	250	0	0	0	0	250
35	1485	CIRB	V	2523	246	0	0	0	0	246
36	4371	NDRI	V PT	3258	253	0	0	0	0	253
37	4245	NDRI	V	3215	250	0	0	0	0	250
38	4395	NDRI	V	3344	116	0	0	0	0	116
39	1798	CIRB	V	2753	250	0	0	0	0	250
40	1641	CIRB	V	2753	34	0	0	0	0	34
41	1536	GAD	V	3786	259	0	0	0	0	259
42	1491	CIRB	V	3148	250	0	0	0	0	250
43	1555	GAD	V	2948	175	0	0	0	0	175
44	1749	CIRB	V	2796	173	0	0	0	0	173
45	1573	GAD	V	2866	279	0	0	0	0	279
46	1717	GAD	VI	2775	68	0	0	0	0	68
47	1153	HAU	VI PT	2675	250	0	0	0	0	250
48	4506	NDRI	VI PT	3512	123	0	0	0	0	123
49	1933	CIRB	VI	2650	250	0	0	0	0	250
50	1944	CIRB	VI	2752	148	0	0	0	0	148
51	1135	CIRB	VI	3250	132	0	0	0	0	132
52	1667	GAD	VI	2988	58	0	0	0	0	58
53	1836	CIRB	VI	2744	133	0	0	0	0	133
54	1922	CIRB	VI	2684	83	0	0	0	0	83
55	2028	CIRB	VI	2689	142	0	0	0	0	142
56	1796	GAD	VII PT	3170	9	0	0	0	0	9
57	2331	CIRB	VII	2664	250	0	0	0	0	250
58	4807	NDRI	VII	3437	68	0	0	0	0	68
59	1749	GAD	VII	3182	68	0	0	0	0	68
60	1727	GAD	VII	3098	47	0	0	0	0	47
61	1419	CIRB	VII	3042	267	0	0	0	0	267
62	2363	CIRB	VII	2654	153	0	0	0	0	153
63	1746	GAD	VII	2718	40	0	20	0	0	20
64	2184	CIRB	VII	2574	188	0	0	0	0	188
65	1875	GAD	VIII PT	2714	42	0	0	0	0	42
66	4813	NDRI	VIII PT	3016(1)	18	0	0	0	0	18
67	2422	CIRB	VIII	3369	250	0	0	0	0	250
68	2522	CIRB	VIII	2567	98	0	0	0	0	98
69	1868	GAD	VIII	2591	160	0	0	0	0	160
70	2308	CIRB	VIII	2655	250	0	0	0	0	250
71	2250	CIRB	VIII	2748	100	0	0	0	0	100
72	5049	NDRI	VIII	2912	68	0	0	0	0	68
73	1867	GAD	VIII	2709(1)	250	0	0	0	0	250
74	1509	CIRB	VIII	3690	112	0	0	0	0	112
75	4865	NDRI	VIII	3392	38	0	0	0	0	38
76	1893	GAD	VIII	2753	150	0	0	0	0	150
77	2479	CIRB	VIII	2519	100	0	0	0	0	100
78	1994	GAD	IX PT	2938	253	0	0	0	0	253
79	5197	NDRI	IX	2831	250	0	0	0	0	250
80	2582	CIRB	IX	2836	111	0	0	0	0	111
81	5112	NDRI	IX	2831	250	0	0	0	0	250
82	2720	CIRB	IX	2664	162	0	0	0	0	162

83	1903	GAD	IX	2718	136	0	0	0	0	136
84	1575	CIRB	IX	3194	100	0	0	0	0	100
85	2592	CIRB	IX	3336	173	0	0	0	0	173
86	5218	NDRI	IX	3333	170	0	0	0	0	170
87	2910	CIRB	IX	3062	147	0	0	0	0	147
88	1940	GAD	IX	2775	250	0	0	0	0	250
89	1913	GAD	IX	2740	251	0	0	0	0	251
90	1964	GAD	IX	2672	13	0	0	0	0	13
91	333 Golu	Didwadi	IX	22 kg PY	48	0	0	0	0	48
92	2990	CIRB	X	2655	250	0	0	0	0	250
93	3103	CIRB	X	2942	250	0	0	0	0	250
94	1693	CIRB	X PT	3194	230	0	0	0	0	230
95	2045	GAD	X PT	3369	447	0	20	0	0	427
96	507	CIRB	X	2572	250	0	0	0	0	250
97	2062	GAD	X	2672	250	0	0	0	0	250
98	2073	GAD	X	2717	250	0	0	0	0	250
99	2074	GAD	X	3050	250	0	0	0	0	250
100	2083	GAD	X	3063	250	0	0	0	0	250
101	3631	CIRB	X	18 kg PY	250	0	0	0	0	250
102	ND2	NDAUT	X	2583	135	0	0	0	0	135
103	3267	CIRB	XI PT	2489	230	0	0	0	0	230
104	3591	CIRB	XI PT	2598	570	0	0	0	0	570
105	2133	GAD	XI	2844	250	0	0	0	0	250
106	2148	GAD	XI	3008	102	0	0	0	0	102
107	2154	GAD	XI	2593	98	0	0	0	0	98
108	3226	CIRB	XI	2655	250	0	0	0	0	250
109	3255	CIRB	XI	3051	250	0	0	0	0	250
110	12-HAU	CIRB	XI	2858	230	0	0	0	0	230
111	5489	NDRI	XI	3031	250	0	0	0	0	250
112	5496	NDRI	XI	2780	250	0	0	0	0	250
113	5516	NDRI	XI	2765	250	0	0	0	0	250
114	ND6	NDAUT	XI	2702	250	0	0	0	0	250
115	ND8	NDAUT	XI	2702	250	0	0	0	0	250
116	2185	GAD	XII PT	3423	241	0	0	0	0	241
117	183	HAU	XII PT	2824	1283	0	20	0	0	1263
118	2176	GAD	XII	2754	208	0	0	0	0	208
119	2177	GAD	XII	3024	275	0	0	0	0	275
120	3598	CIRB	XII	2655	250	0	0	0	0	250
121	R-10	CIRB	XII	5192	382	0	0	0	0	382
122	R-11	CIRB	XII	4000	614	0	0	0	0	614
123	220	HAU	XII	2631	266	0	0	0	0	266
124	4059	CIRB	XIII	2510	250	0	0	0	0	250
125	3964	CIRB	XIII	3369	250	0	0	0	0	250
126	4440	CIRB	XIII	2850	250	0	0	0	0	250
127	4441	CIRB	XIII	3805	250	0	0	0	0	250
128	4442	CIRB	XIII	2882	250	0	0	0	0	250
129	5943	NDRI	XIII	3232	83	0	0	0	0	83
130	2234	GAD	XIII PT	3114	20	0	0	0	0	20
131	2269	GAD	XIII PT	3617	230	0	0	0	0	230
132	2304	GAD	XIII	3114	96	0	0	0	0	96
133	4439	CIRB	XIV	22 kg PY	951	277	20	0	0	1208
134	4093	CIRB	XIV	3040	250	0	0	0	0	250
135	4196	CIRB	XIV PT	3304	843	0	0	0	0	843
136	4100	CIRB	XIV	2971	250	0	0	0	0	250
137	6014	NDRI	XIV	3072	250	0	0	0	0	250
138	6044	NDRI	XIVPT	3567	634	0	0	10	0	624
139	6136	NDRI	XIV	4341	1138	0	20	0	0	1118
140	2369	GAD	XIV	3114	250	0	0	0	0	250
141	2357	GAD	XIVPT	3559	794	0	0	0	0	794
142	4354	CIRB	XV	3605	5862	0	1576	40	0	4246
143	4324	CIRB	XV	3528	500	0	0	0	0	500
144	4438	CIRB	XV	3222	500	0	0	0	0	500

145	4363	CIRB	XV	3068	500	0	20	0	0	480
146	4403	CIRB	XV	3059	460	0	0	0	0	460
147	4328	CIRB	XV	3228	542	0	0	0	0	542
148	2371	GAD	XV	3053	495	0	0	0	0	495
149	2412	GAD	XV	2998	566	0	0	0	0	566
150	2417	GAD	XV	3565	558	0	20	0	0	538
151	2429	GAD	XV	3435	540	0	0	0	0	540
152	2459	GAD	XV	4636	1862	0	1053	20	0	789
153	6007	NDRI	XV	3260	1301	0	0	10	0	1291
154	6139	NDRI	XV	2828	500	0	0	0	0	500
155	6290	NDRI	XV	4341	500	0	0	0	0	500
156	6405	NDRI	XV	2743(1)	520	0	0	0	0	520
100	4889	CIRB	XVI	4120	7860	0	1600	20	0	6240
158	4705	CIRB	XVI	3990	6199	0	0	20	0	6179
159	4592	CIRB	XVI	3528	5875	0	20	0	0	5855
160	M-29	CIRB	XVI	4600	7250	0	651	233	0	6346
161	1027	LUVAS	XVI	3763	6926	0	0	0	0	6926
162	1053	LUVAS	XVI	3559	6622	0	20	190	0	6412
163	1064	LUVAS	XVI	3579	5816	0	0	0	0	5816
164	2467	GAD	XVI	3574	2026	0	20	20	0	1986
165	2501	GAD	XVI	3053	2638	0	20	0	0	2618
166	2383	GAD	XVI	4636	1981	0	20	130	0	1831
167	6379	NDRI	XVI	3505	2257	0	20	0	0	2237
168	6409	NDRI	XVI	4090	2207	0	20	0	0	2187
169	6646	NDRI	XVI	3533	2023	0	20	0	0	2003
170	6753	NDRI	XVI	3389	2508	0	0	0	0	2508
171	M-51	CIRB	XVII	4668	8380	0	31	0	0	8349
172	4715	CIRB	XVII	3059	6003	0	20	0	0	5983
173	4733	CIRB	XVII	2851	6330	0	20	0	0	6310
174	4687	CIRB	XVII	3309	3942	0	0	0	0	3942
175	M-53	CIRB	XVII	4100	7950	0	30	0	0	7920
176	Sikander	PVT	XVII	28.9 kg	3823	0	0	0	0	3823
177	Daara	PVT	XVII	28.9 kg	1635	0	0	0	0	1635
178	2565	GAD	XVII	3287	439	0	0	0	0	439
179	2594	GAD	XVII	3557	849	0	0	0	0	849
180	7010	NDRI	XVII	3068	2200	0	20	0	0	2180
181	4837	CIRB	XVII	3076	7378	0	0	0	0	7378
182	2558	GAD	XVII	3574	1194	0	0	0	0	1194
183	B1-330	CIRB	XVII	4595	7853	0	0	0	0	7853
184	2607	GAD	XVII	3899	370	0	0	0	0	370
185	1148	LUVAS	XVII	3124	7989	0	0	0	0	7989
186	6942	NDRI	XVII	3188	2625	0	0	0	0	2625
187	4905	CIRB	XVIII	3371/14.0	8000	0	0	0	0	8000
188	5147	CIRB	XVIII	3057/14.8	8000	0	0	0	0	8000
189	1209	LUVAS	XVIII	3593/17.2	7485	0	0	0	0	7485
190	4995	CIRB	XVIII	3064/15.5	8000	0	0	0	0	8000
191	7094	NDRI	XVIII	3465/17.0	1948	0	0	0	0	1948
192	7227	NDRI	XVIII	3099/16.5	498	0	0	0	0	498
193	7147	NDRI	XVIII	3108/15.5	2248	0	0	0	0	2248
194	2676	GAD	XVIII	3023/15.5	2370	0	0	0	0	2370
195	2677	GAD	XVIII	3135/16.5	2375	0	0	0	0	2375
196	1219	LUVAS	XVIII	3837/17.8	4230	0	0	0	0	4230
197	2689	GAD	XVIII	3151/18.8	737	0	0	0	0	737
198	7263	NDRI	XVIII	3465/17.0	2080	0	0	0	0	2080
199	1208	CIRB	XVIII	3437/15.1	8000	0	0	0	0	8000
200	1150	CIRB	XVIII	3127/15.9	8000	0	0	0	0	8000
201	2645	GAD	XVIII	3394/19.0	1794	0	0	0	0	1794
202	2674	GAD	XIX	3583/23.0	2612	0	0	0	0	2612
203	2737	GAD	XIX	3241/22.8	1060	0	0	0	0	1060
204	2759	GAD	XIX	3340/20.7	2605	0	0	0	0	2605
205	7604	NDRI	XIX	3158/16.0	1345	0	0	0	0	1345
206	1315	LUVAS	XIX	3824/18.4	6467	0	0	0	0	6467

207	5181	CIRB	XIX	3428/17.9	8835	0	0	0	0	8835
208	5246	CIRB	XIX	3124/15.7	9240	0	0	0	0	9240
209	5232	CIRB	XIX	3513/16.3	9635	0	0	0	0	9635
210	5310	CIRB	XIX	4069/20.0	8620	0	0	0	0	8620
211	5320	CIRB	XIX	3340/15.2	7961	0	0	0	0	7961
212	5333	CIRB	XIX	3304/17.6	8213	0	0	0	0	8213
213	5374	CIRB	XIX	3244/17.4	8203	0	0	0	0	8203
214	7584	NDRI	XX	3600/16.5	1960	200	0	70	0	2090
215	7649	NDRI	XX	3203/13.5	2330	600	0	0	0	2930
216	2793	GAD	XX	3339/21.5	545	0	0	100	0	445
217	2831	GAD	XX	4814/28.7	1830	0	0	0	0	1830
218	2838	GAD	XX	3340/22.7	1060	0	0	0	0	1060
219	2848	GAD	XX	3304/20.5	475	0	475	0	0	0
220	2850	GAD	XX	3683/20.6	1080	0	0	0	0	1080
221	3004	GAD	XX	4716/26.2	970	0	0	20	0	950
222	19	LUVAS	XX	3695/21.6	3110	5000	0	100	0	8010
223	1454	LUVAS	XX	3355/17.4	6585	1500	0	20	0	8065
224	5427	CIRB	XX	3371/15.3	7940	300	0	150	0	8090
225	5481	CIRB	XX	3332/16.6	0	9000	0	677	0	8323
226	5500	CIRB	XX	3171/16.5	3350	5000	0	0	0	8350
227	5505	CIRB	XX	4138/22.0	1795	413	0	520	0	1688
228	5511	CIRB	XX	3356/17.4	30	6706	0	360	0	6376
229	5588	CIRB	XX	4216/20.0	0	0	0	0	0	0
230	5592	CIRB	XX	3242/17.0	0	0	0	0	0	0
231	5414	CIRB	XXI	3321/21.0	0	12000	9501	3746	0	8254
232	5629	CIRB	XXI	4180/20.2	0	12000	4107	3364	0	8636
233	5638	CIRB	XXI	3364/19.5	0	9752	0	3630	0	6122
234	5647	CIRB	XXI	4045/23.4	0	1174	0	27	0	1147
235	5690	CIRB	XXI	4029/21.0	0	10377	0	2000	0	8377
236	5723	CIRB	XXI	5170	0	954	0	720	0	234
237	5764	CIRB	XXI	3616/17.5	0	1646	0	1500	0	146
238	2930	GAD	XXI	3590/20.7	0	475	0	475	0	0
239	2979	GAD	XXI	3440/21.6	0	5040	0	2020	0	3020
240	2990	GAD	XXI		0	2505	0	1550	0	955
241	3014	GAD	XXI	4420/24.56	0	4015	0	1990	0	2025
242	7630	NDRI	XXI	3343/15.5	0	2750	0	1460	0	1290
243	7768	NDRI	XXI	3251/16.5	0	4300	0	2420	0	1880
244	7990	NDRI	XXI		0	1700	0	1240	0	460
245	297	IVRI	XXI	3407/17.5	0	7215	0	3160	0	4055
246	109	LUVAS	XXI	3660/16.3	0	4283	0	2540	0	1743
247	112	LUVAS	XXI	4290/17.2	0	7021	0	3060	0	3961
			Total		**351721**	**40996**	**19384**	**37612**	**0**	**424516**
	Non-set/Field bulls				Opening B.	Received	Sold	Supply	Exp.	Balance
1	M-188	CIRB	NS	4100	620	0	0	0	0	620
2	5405	CIRB	NS	3179/16.1	680	0	0	0	0	680
3	Yuvraj	PVT	Field		17	0	0	0	0	17
4	Heera	PVT	Field		50	0	0	0	0	50
5	Dhanna	PVT	Field		95	0	0	0	0	95
6	Ramu Hariana	Sirsa	cow bull		221	0	0	0	0	221
	Total				**1683**	**0**	**0**	**0**	**0**	1683
				Overall Total	**353404**	**40996**	**19384**	**37612**	**0**	**426199**

Summary Report (2023-24)

Sr. No.	Brief Information	2023-24	2022-23	2021-22
1	Opening balance on 1st April	353404	325318	394070
2	Semen Production up to March	256978	234133	178673
3	Semen doses received	21585	65698	22855
4	Semen doses supplied NPBI	37612	30906	31113
5	Semen doses sold up to March	162070	101787	131968
6	Semen doses used for Experiment	-	18	85
7	**Closing Balance**	**426199**	**353844**	**432432**

9.11 Average Body weight (kg) since inception (Indicate number of animals in parenthesis)

Year	At birth	3 Months	6 Months	12 Months	18 Months	24 Months	At AFC (After 1st calving)	Adult
Female								
2023-24	36.22 (72)	65.98 (59)	104.85 (34)	190.11 (45)	253.63 (41)	355.04 (53)	547.66 (26)	575.60 (171)
Male								
2023-24	38.94 (78)	66.04 (55)	104.33 (40)	208.83 (29)	295.00 (12)	433.43 (14)	-	-

9.12 Production Performance during 1st April 2023 to 31st March 2024

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	48	2593.90±71.59	306.00±5.87	2510.73±59.38	12.65±0.24
2nd	38	3177.03±150.00	304.71±10.09	3055.39±110.60	15.88±0.50
3rd	26	3328.73±126.23	313.04±9.20	3209.81±106.84	17.17±0.50
4th	18	3234.89±131.34	302.06±10.64	3155.56±115.11	16.41±0.44
5th & above	16	3515.13±218.36	307.44±15.64	3359.13±181.78	17.64±0.66
Overall	**146**	**3056.51±64.09**	**306.59±4.19**	**2949.46±52.99**	**15.30±0.25**

9.12.1 Production Performance of Buffaloes since Inception of Network

Year	Av. Lact. Yield (Kg)	Av. Lact. Length (days)	305-day Lact. Milk Yield (Kg)	Av. Peak yield (Kg)
1991-92	1761±77 (154)	374±9 (154)	1552±60 (154)	-
1992-93	1804±48 (137)	395±8 (137)	1508±34 (137)	7.46
1993-94	1980±58 (148)	419±7 (148)	1686±46 (148)	8.20
1994-95	1930±37 (206)	334±5 (206)	1787±0 (206)	8.89
1995-96	1936±47 (147)	313±7 (147)	1855±42 (147)	9.40
1996-97	1879±51 (173)	313±7 (173)	1775±45 (173)	-
1997-98	1784±44 (123)	304±6 (123)	1688±37 (123)	-
1998-99	1762±36 (153)	284±16 (153)	1702±33 (153)	-
1999-00	2138±38 (141)	313±4 (141)	2042±31 (141)	-
2000-01	1997±41 (173)	306±9 (173)	1914±36 (173)	9.68
2001-02	1954±40 (152)	290±4 (152)	1898±35 (152)	9.71
2002-03	1987±39 (148)	303 ±5 (148)	1902±32 (148)	9.20
2003-04	1910±37 (148)	299±5 (148)	1837±31 (148)	9.18
2004-05	2017±40 (167)	319±5 (167)	1886±33 (167)	9.33±0.16
2005-06	2047±45 (149)	321±5 (149)	1921± 38 (149)	8.76±0.19
2006-07	1995±37 (170)	322±4 (170)	1882± 32 (170)	9.23±0.15
2007-08	1954±38.02 (127)	299±4.66 (127)	1891± 34.12 (127)	9.72±0.19 (127)
2008-09	2076 (138)	325 (138)	1926 (138)	9.50 (138)
2009-10	2285 (102)	361 (102)	1995 (102)	9.54 (102)
2010-11	2471 (113)	337 (113)	2247 (113)	10.48 (113)
2011-12	2598 (116)	338 (116)	2374 (116)	12.29 (116)
2012-13	2478±54.36 (110)	318±6.14 (110)	2335±45.71 (110)	11.23±0.23 (110)
2013-14	2394±44.16 (98)	333±6.92 (98)	2291±58.25 (98)	11.03±0.19 (98)
2014-15	2501.72±60.17 (110)	313.05±5.57 (110)	2354.65±47.55 (110)	11.26±0.17 (110)
2015-16	2483.11±43.68 (152)	322.19±4.91 (152)	2336.06±33.36 (152)	11.17±0.15 (152)
2016-17	2567.15±49.75 (133)	312.04±4.44 (133)	2457.17±39.61 (133)	12.22±0.15 (133)
2017-18	2480.38±55.06 (140)	294.98±3.62 (140)	2423.79±48.86 (140)	12.74±0.23 (140)
2018-19	2640.56±56.76 (123)	304.63±3.83 (123)	2566.96±49.21 (123)	13.36±0.24 (123)
2019-20	2732.47±59.27 (128)	300.02±4.46 (128)	2648.39±52.53 (128)	13.90±0.21 (128)
2020-21	2843.04±50.25 (148)	307.78±4.27 (148)	2730.30±41.52 (148)	13.32±0.19 (148)
2021-22	2950.29±59.66 (153)	301.40±4.29 (153)	2852.06±48.96 (153)	14.37±0.23 (153)

2022-23	2950.00±59.62 (146)	300.74±4.18 (146)	2861.36±52.78 (146)	15.19±0.26 (146)
2023-24	**3056.51±64.09 (146)**	**306.59±4.19 (146)**	**2949.46±52.99 (146)**	**15.30±0.25 (146)**

9.13 Average Milk Composition from April 2023 to March 2024

Month	No. of Animals (N)	Fat %	Protein %	SNF %	Lactose %	Total Solid%
April, 23	55	7.88	3.66	10	5.49	17.88
May	0	-	-	-	-	-
June	66	8.6	3.7	10.2	5.6	18.8
July	177	8.4	3.6	9.8	5.4	18.2
August	225	8.2	3.67	10	5.47	18.2
September	130	8.2	3.68	10.1	5.5	18.3
October	158	7.9	3.6	10	5.4	17.9
November	134	7.2	3.3	9.1	5	16.3
December	101	6.9	3.2	8.31	4.63	15.21
January, 24	0	-	-	-	-	-
February	98	7.5	3.6	9.9	5.4	17.4
March	143	7.9	3.6	9.9	5.5	17.8
Overall	**1287**	**7.87**	**3.56**	**9.73**	**5.34**	**17.56**

9.14: Reproductive Performance 2023-24

Lactation / Parity	N	AFC (Months)	SP (Days)	DP (Days)	CI (Days)
1st	55	38.07±0.59	--	--	--
2nd	32	--	149.81±12.53	152.00±11.27	459.41±12.92
3rd	28	--	129.96±11.39	125.89±7.39	439.82±11.42
4th	19	--	110.42±14.93	123.68±8.97	422.37±14.81
≥5th	20	--	142.05±15.16	137.30±11.55	451.40±15.04
Over all	**154**	**38.07±0.59 (55)**	**135.07±6.72 (99)**	**136.21±5.17 (99)**	**445.14±6.76 (99)**

9.14.1 Reproduction Performance of Buffaloes Since inception of Network

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
1991-92	51.0±0.8 (26)	236±11 (108)	138±6 (74)	502±12 (74)
1992-93	50.7±1.5 (27)	304±15 (96)	132±7 (42)	489±16 (42)
1993-94	59.1±1.6 (48)	312±12 (158)	230±14 (161)	625±1 (161)
1994-95	55.3±1.3 (48)	202±15 (105)	180±12(113)	527 ±10 (116)
1995-96	51.5±1.5 (22)	193±10 (149)	186±7 (149)	501±9 (152)
1996-97	47.6±1.0 (23)	182±10 (149)	204±7 (173)	473±9 (152)
1997-98	45.5±0.5 (49)	175±14 (106)	203±11 (118)	491±10 (118)
1998-99	50.0±0.1 (57)	137±9 (121)	159±14 (126)	455±10 (126)
1999-00	46.2±1.0 (54)	138±9 (104)	142±7 (120)	451±8 (120)
2000-01	46.2±1.2 (45)	146±9 (151)	153±7 (154)	454±9 (154)
2001-02	49.8±0.8 (51)	146±11 (125)	158±8 (135)	456±11 (135)
2002-03	47.83±0.51 (61)	133±9 (126)	143±6 (128)	440±9 (130)
2003-04	50.52±0.84 (77)	151±10 (142)	147±7 (149)	458±10 (151)
2004-05	48.18±0.82 (76)	111±7 (100)	134±6 (100)	426±7 (101)
2005-06	47.89±0.73 (76)	184±12 (112)	168±8 (117)	499±12 (117)
2006-07	46.90±1.06 (43)	183±10.11 (113)	178±8 (116)	495±10 (116)
2007-08	48.27±0.64 (77)	159±11.55 (113)	177±9.26 (117)	482±12.06 (117)
2008-09	47.66±0.97 (44)	171±12.31 (80)	160±10.50 (85)	469±12.20 (85)
2009-10	49.22±0.75 (51)	212±16.64 (77)	170±12.99 (77)	520±16.21 (77)

2010-11	49.92±1.04 (35)	186±13.74 (80)	157±10.47 (83)	492±13.96 (83)
2011-12	51.91±0.98 (37)	181±13.24 (80)	155±8.63 (81)	485±12.65 (81)
2012-13	44.48±1.42 (37)	174±11.53 (72)	153±8.19 (72)	481±11.87 (73)
2013-14	45.62±10.78 (37)	190±11.27 (86)	170±9.77 (85)	495±11.64 (87)
2014-15	42.84±0.79 (61)	168.43±8.31 (88)	149.33±6.46 (88)	472.92±8.45 (88)
2015-16	44.96±1.23 (24)	138.39±7.39 (111)	140.78±5.52 (111)	449.26±7.43 (111)
2016-17	44.91±0.81 (38)	148.75±9.01 (93)	142.52±6.44 (93)	457.83±8.82 (93)
2017-18	43.58±0.67 (67)	167.32±9.82 (101)	162.42±7.54 (101)	477.75±9.87 (101)
2018-19	45.76±0.80 (31)	136.35±6.98 (97)	151.39±6.41 (97)	446.25±7.08 (97)
2019-20	43.62±0.80 (71)	143.19±8.29 (90)	145.73±7.24 (90)	450.71±8.49 (90)
2020-21	42.48±0.73 (71)	126.95±7.29 (100)	126.79±5.61 (100)	436.78±7.43 (100)
2021-22	38.61±0.82 (67)	130.82±8.36 (99)	126.29±5.72 (99)	438.20±8.35 (99)
2022-23	37.72±0.70 (60)	125.89±6.23 (122)	129.84±4.82 (122)	435.11±6.36 (122)
2023-24	**38.07±0.59 (55)**	**135.07±6.72 (99)**	**136.21±5.17 (99)**	**445.14±6.76 (99)**

9.15 Month wise Milk Production and Disposal during the Period 01/04/2023 to 31/03/2024

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk Sold	Calf feeding	Expt.
April, 2023	36757.00	28895.00	7862.00	--
May	33299.50	27706.50	5593.00	--
June	30315.50	25180.50	5135.00	--
July	28687.50	23087.50	5600.00	--
August	31356.50	25092.50	6264.00	--
September	33258.50	26340.00	6918.50	--
October	37962.50	29335.50	8627.00	--
November	41874.50	32202.50	9672.00	--
December	48336.50	37300.00	11036.50	--
January, 2024	45621.00	35596.00	10025.00	--
February	39525.50	31588.00	7937.50	
March	39055.00	32025.50	7029.50	
Total	**446049.50**	**354349.50**	**91700.00**	**--**

9.16 Feed and Fodder purchased and offered to animals (April 2023 to March 2024)

Quarter	Type of Fodder	OB	Produced at CIRB	Qty. Purchased	Actually Fed.	Balance
I	Green	-	9198.10	-	9198.10	Nil
	Dry	1537	857.95	4389.2	1670.1	5114.0
	Silage	-	-	-	-	-
	Sugar beet pulp	-	-	-	-	-
	Concentrate	-	-	-	-	-
II	Green	-	12549.0	-	12549.0	Nil
	Dry	5114.0	-	-	1225.0	3889.0
	Silage	-	-	-	-	-
	Sugar beet pulp	-	-	590.65	260.65	330.0
	Concentrate	-	-	-		-
III	Green	-	8665.10	-	8665.10	Nil
	Dry	3889.0	-	-	1335.0	2554.0
	Silage	-	-	-	-	-
	Sugar beet pulp	330.0	-	-	310.0	20.0
	Concentrate	-	-	-	-	-

IV	Green	-	10881.8	-	10881.8	Nil
	Dry	2554.0	-	-	-	2014.0
	Silage	-	-	-	-	-
	Sugar beet pulp	20.0	-	659.45	65.45	614.0
	Concentrate	-	-	-	-	-
Total	Green	-	41294.0	-	41294.0	Nil
	Dry	13094.0	857.95	4389.2	4230.1	13571.0
	Silage	-	-	-	-	-
	Sugar beet pulp	-	-	1250.1	636.1	614.0
	Concentrate	-	-	-	-	-

9.17 Milking performance 1st April 2023 to 31st March 2024

Month	Buffaloes in Milk	Dry Buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April 2023	130	37	167	78	9.44	7.33
May 2023	119	49	168	71	9.02	6.39
June 2023	108	52	160	68	9.32	6.31
July 2023	97	60	157	62	9.51	5.90
August 2023	103	66	169	61	9.80	6.00
September 2023	109	62	171	64	10.18	6.47
October 2023	110	60	170	65	11.14	7.21
November 2023	125	51	176	71	11.13	7.93
December 2023	136	48	184	74	11.50	8.47
January 2024	134	50	184	73	10.98	8.00
February 2024	132	46	178	74	10.30	7.67
March 2024	130	43	173	75	9.70	7.29
Overall	**120**	**52**	**172**	**70**	**10.20**	**7.11**

9.17.1 Milking performance since inception

Year	Animal in Milk	No. of Animal dry	Total Animal	% in Milk	Wet Av. (kg)	Herd Av. (kg)
1991-92	182	147	329	55.3	4.70	2.61
1992-93	165	111	276	60.60	4.80	2.83
1993-94	153	125	178	55.00	5.65	3.10
1994-95	181	85	266	68.10	6.09	4.15
1995-96	153	82	235	65.19	6.43	4.19
1996-97	122	83	205	59.56	5.62	3.35
1997-98	121	76	197	61.38	6.12	3.75
1998-99	133	73	206	64.52	6.77	4.37
1999-00	137	72	209	65.48	6.85	4.49
2000-01	148	78	226	65.39	6.68	4.37
2001-02	147	70	217	67.70	6.59	4.46
2002-03	143	71	214	67.00	6.27	4.20
2003-04	151	72	223	67.69	6.49	4.39
2004-05	154	69	224	68.97	6.39	4.40
2005-06	151	77	238	66.37	6.57	4.36
2006-07	137	92	229	59.81	6.45	3.86
2007-08	146	71	217	67.32	6.64	4.47
2008-09	133	66	199	66.00	6.50	4.35
2009-10	106	65	171	62.00	7.01	4.35
2010-11	109	64	173	62.97	7.45	4.69

2011-12	110	58	168	65.38	7.83	5.12
2012-13	109	69	178	62.24	7.74	4.76
2013-14	105	65	170	61.78	8.01	4.95
2014-15	116	50	166	69.97	8.25	5.77
2015-16	114	62	176	65.00	8.04	5.21
2016-17	110	57	167	66.08	8.08	5.32
2017-18	115	54	169	67.78	8.71	5.90
2018-19	101	54	155	65.08	8.92	5.80
2019-20	124	48	172	71.86	9.66	6.94
2020-21	130	50	180	72.20	9.91	7.15
2021-22	132	50	182	72.42	10.07	7.29
2022-23	129	51	180	71.60	10.20	7.30
2023-24	**120**	**52**	**172**	**69.69**	**10.20**	**7.11**

9.18: Bull wise daughters born during 2023-24

Sr. No.	Bull No.	Set No.	Daughter born
1	19	20	5
2	1454	20	5
3	2793	20	5
4	2831	20	3
5	2838	20	4
6	2850	20	8
7	3004	20	1
8	5481	20	7
9	5500	20	5
10	5505	20	4
11	5511	20	6
12	7584	20	1
13	7649	20	1
14	4592	16	7
15	4889	16	4
16	2459 PT	15	2
17	3591 PT	11	4
18	6007 PT	15	2
19	6044 PT	14	1
Total			**75**

9.19 Bull wise daughters completing 1st lactation in 2023-24

Sr No	Daughter No	Sire No	Set No	D.O.B.	D.O.C.	AFC (Month	Lact. Length (Days)	SLMY (kg)	TLMY (kg)
1.	5639	2185 PT	12	02-03-2020	21-10-2022	31.66	294	2531	2531
2.	5632	2234 PT	13	14-02-2020	08-07-2023	40.77	265	2364	2364
3.	5687	2269 PT	13	31-07-2020	28-07-2023	35.90	245	2037	2037
4.	5576	220	12	02-10-2019	13-04-2023	42.38	232	2001	2001
5.	5502	1148	17	16-07-2019	22-06-2022	35.24	296	2240	2240
6.	5503	1148	17	17-07-2019	01-11-2022	39.55	283	2297	2297
7.	5510	1148	17	27-07-2019	20-12-2022	40.83	318	2473	2525
8.	5621	1150	18	14-01-2020	13-11-2022	33.99	257	2054	2054
9.	5619	1150	18	11-01-2020	14-12-2022	35.11	338	3275	3404

10.	5302	2467	16	16-12-2017	21-07-2022	55.17	309	2869	2893
11.	5532	2558	17	22-08-2019	19-11-2022	38.96	286	1982	1982
12.	5523	2565	17	16-08-2019	04-08-2022	35.64	281	3145	3145
13.	5615	2565	17	10-12-2019	06-10-2022	33.90	267	2573	2573
14.	5454	2565	17	03-02-2019	07-11-2022	45.14	403	3201	3806
15.	5517	2565	17	07-08-2019	25-12-2022	40.64	376	3070	3544
16.	5531	2594	17	22-08-2019	28-08-2022	36.23	306	2845	2846
17.	5509	2594	17	27-07-2019	31-10-2022	39.19	291	3016	3016
18.	5529	2594	17	20-08-2019	14-11-2022	38.86	312	2746	2781
19.	5525	2594	17	17-08-2019	26-09-2022	37.35	375	2482	2800
20.	5604	2594	17	16-11-2019	02-12-2022	36.56	329	2333	2398
21.	5614	2594	17	30-11-2019	10-12-2022	36.36	391	2895	3294
22.	5605	2607	17	17-11-2019	09-08-2022	32.75	339	2239	2410
23.	5652	2645	18	11-04-2020	03-06-2023	37.74	293	3218	3218
24.	5630	2645	18	10-02-2020	03-08-2023	41.75	239	1792	1792
25.	5633	2676	18	16-02-2020	22-11-2022	33.21	318	2323	2411
26.	5550	4687	17	11-09-2019	21-08-2022	35.34	271	2674	2674
27.	5565	4687	17	26-09-2019	31-08-2022	35.18	282	2201	2201
28.	5573	4687	17	30-09-2019	12-07-2022	33.40	339	2235	2432
29.	5596	4687	17	05-11-2019	23-05-2023	42.58	283	2779	2779
30.	5475	4715	17	23-03-2019	08-09-2022	41.59	351	2570	2723
31.	5380	4715	17	20-07-2018	11-10-2022	50.76	332	2330	2431
32.	5482	4715	17	30-03-2019	14-10-2022	42.54	343	2664	2855
33.	5389	4733	17	13-08-2018	22-06-2022	46.32	289	2445	2445
34.	5580	4837	17	03-10-2019	28-08-2022	34.85	243	1785	1785
35.	5685	4995	18	30-07-2020	13-07-2023	35.44	260	2079	2079
36.	E261	6942	17	28-07-2019	27-08-2022	37.02	307	2508	2513
37.	5506	6942	17	23-07-2019	28-09-2022	38.24	324	2559	2614
38.	5590	7010	17	20-10-2019	06-11-2022	36.59	264	2358	2358
39.	5578	7010	17	02-10-2019	01-07-2023	44.98	272	2067	2067
40.	5673	7263	18	30-06-2020	26-02-2023	31.92	348	3043	3271
41.	5554	B1/330	17	15-09-2019	14-07-2022	33.96	302	2138	2138
42.	5566	B1/330	17	27-09-2019	24-11-2022	37.94	309	2735	2743
43.	5597	Dara	17	06-11-2019	02-07-2022	31.86	286	2227	2227
44.	5547	Dara	17	07-09-2019	06-09-2022	36.00	297	2332	2332
45.	5587	Dara	17	09-10-2019	19-10-2022	36.36	282	1814	1814
46.	5568	Dhanna	Field	28-09-2019	14-05-2022	31.53	349	2951	3113
47.	5591	Heera	Field	20-10-2019	20-12-2022	38.04	346	2718	2904
48.	5366	Sikander	17	02-07-2018	14-09-2022	50.47	366	3302	3647

9.20: Bulls for test mating in 20th Set

Sr. No	Bull no.	D.O.B.	Dam No.	Sire No.	Dam's Best Yield / PY (kg)	Parity
1	19(LUVAS)	29/10/18	777	2594 (XVII)	3695/21.6	3
2	1454(LUVAS)	19/06/18	976	183PT (XII)	3355/17.4	4
3	2793(GADVASU)	06/07/18	2788	2467 (XVI)	3339/21.5	2
4	2831(GADVASU)	11/10/18	2897	Virat (Field)	4814/28.7	4
5	2838(GADVASU)	02/11/18	2502	1354PT (Set 3)	3340/22.7	3
6	2850(GADVASU)	25/01/19	2973	2594 (XVII)	3683/20.6	2
7	3004(GADVASU)	13/10/16	Laado	Rustam (Field)	4716/26.2	
8	5427(CIRB)	10/11/18	3633	R-24 (Field)	3371/15.3	4
9	5481(CIRB)	29/03/19	4621	4733 (XVII)	3332/16.6	3
10	5500(CIRB)	15/07/19	4934	1148 (XVII)	3271/16.5	3

11	5505(CIRB)	22/07/19	4251	1148 (XVII)	4138/22.0	3
12	5511(CIRB)	27/07/19	4800	6942 (XVII)	3356/17.4	2
13	7584(NDRI)	30/03/18	6147	6253(Non-Set)	3600/16.5	2
14	7649(NDRI)	15/10/18	6735	2558 (XVII)	3203/13.5	1

9.20.1: P T Bulls for nominated mating January 2023 to December 2023

Sr. No	Bull No.	Set No.	D.O.B.	Dam No.	Sire No./ Set No.	Dams' Best yield	Sire Index	Superiority (%)
1	6044 (NDRI)	14	15/01/09	430	4371PT Set V	3567	2479	+2.43*
2	2459 (GADVASU)	15	22/12/11	2489	1796PT Set VII	4636	2587	+1.58*
3	4354 (CIRB)	15	05/09/11	4353 P	Not Known	3528	2589	+1.67*
4	M29 (CIRB)	16	16/10/05	4 P	P274	4600	2579	+3.82*
5	1053 (LUVAS)	16	17/12/13	683	M-29	3559	2567	+3.35*
	2383 (GADVASU)	16	13/10/10	2489 P	3267PT Set XI	4636	2547	+2.53*

***** BLUP Method

9.20.2: Bulls for test mating in 21st Set

Sr. no.	Bull no.	D.O.B.	Dam No.	Sire No.	Dam's All Lact 305 or less days Milk Yield (kg)	Highest Yield/ Best Peak
1	109 (LUVAS)	17/09/19	1068	53M XVII	3128/**3660**/3432/3206	**3660/16.3**
2	112 (LUVAS)	29/09/19	943	6942 XVII	2735/3276/2919/**4390**/3720/ 2619	**4390/17.2**
3	297 (IVRI)	08/08/17	869	4705 XVI	2385/2922/2806/3234/**3407**	**3407/17.5**
4	2979 (GADVASU)	26/11/20	3083	2689 XVIII	2411/**3440**	**3440/21.6**
5	2990 (GADVASU)	24/12/20	2741 Pur	1219 XVIII	2104/3416/**3723**/2180 (Auct)	**3723/21.2**
6	3014 (GADVASU)	06/10/20	Dhano	Birla Field	4420 (Estimated on PY)	**PY: 24.56**
7	5414 (CIRB)	03/10/18	4593	4998 Non-Set	2708/**3321**/3025/3177/3183	**3321/19.0**
8	5629 (CIRB)	29/01/20	4613	2645 XVIII	2475/3501/4043/**4180**/3767	**4180/20.2**
9	5638 (CIRB)	24/02/20	5223	2234PT XIII	3364/**3691**	**3691/19.5**
10	5690 (CIRB)	02/08/20	5021	4905 XVIII	3573/**4029**/3416	**4029/21.0**
11	5764 (CIRB)	22/11/20	4989	4905 XVIII	2708/3616/2675/**3644**	**3644/17.5**
12	7630 (NDRI)	05/09/18	6852	M-51 XVII	**3343**/2147/2217/2341	**3343/15.5**
13	7768 (NDRI)	04/02/19	6922	2607 XVII	2862/3251/**3323**/2125	**3323/16.5**
14	7990 (NDRI)	19/08/20	6626	183 PT XII	3394/**3991**/3090/3109/3033	**3991/18.0**

9.20.3 Future Breeding bulls (CIRB Unit)

Sr. no.	Bull no.	D.O.B.	Dam no.	Sire no./ Set no.	Dam's All Lact Milk Yield (305 or less days) kg	Highest Yield/ Best Peak Yield
1.	5791	15/01/21	4817	183 PT XII	2606,4250,4201,4180, 4507, In 6th lact	4507/23.5
2.	5800	11/02/21	4605	183 PT XII	3175,4168,3375,4177, 3561,1890/173d (Died)	4177/20.4
3.	5814	19/03/21	4251	183 PT XII	2407,3184,4138,3784, 2913, 3904, Dry	4138/22.0
4.	5864	29/07/21	4709	6044 PT XIV	2673,3259,2921, 3590, 3258, Died	3590/21.2
5.	5872	09/08/21	4235	6044 PT XIV	2874,3169,3533,3009, 2940, Auct	3533/16.9
6.	5875	14/08/21	5021	2759 XIX	3573,4029,3416, Dry	4029/21.0
7.	5897	20/09/21	4692	6044 PT XIV	2795,3261,3578,3637, 4431, Dry	4431/20.0
8.	5912	16/10/21	4899	6044 PT XIV	3505,4216,4350, 3765, In 5th lact	4350/20.0
9.	5917	23/10/21	5175	5246 XIX	2746,3534,4553, Dry	4553/23.0
10.	5935	03/12/21	4767	4196 PT XIV	2468,3697,4268,4308, 4261, Dry	4308/20.6
11.	5941	23/12/21	4517	4196 PT XIV	2416,2723,3077,3511, 3725, 3259, Dry	3725/21.5
12.	5950	11/01/22	5225	7604 XIX	2876,3044,3356, In 4th lact	3356/20.6
13.	5969	24/02/22	4776	5310 XIX	2535,2626,3354,3249, In 5th lact	3354/15.8
14.	5980	08/04/22	4633	2269 PT XIII	1898,3298,2901,2632, 2167, Auct	3298/16.3
15.	5987	08/05/22	5354	5374 XIX	3256,3197,4065	4065/17.5
16.	6000	13/06/22	5080	4196 PT XIV	3127,3655,2944, In 4th lact	3655/19.0
17.	6009	02/07/22	4458	1315 XIX	3044, 3631, 3571, 4028, 3620, Auct	4028/17.0
18.	6030	04/08/22	5523	5320 XIX	3145, In 2nd lact	3145/18.0
19.	6035	19/08/22	5021	3591 PT XI	3573,4029, 3416, Dry	4029/21.0
20.	6049	03/09/22	5421	2759 XIX	2331, 3390, 1132 Auct	3390/17.8
21.	6054	08/09/22	5096	5232 XIX	2928, 3505, 3824, In 4th lact	3824/19.0
22.	6060	15/09/22	4692	4354 PT XV	2795,3261,3578,3637, 4431, Dry	4431/20.0
23.	6071	30/09/22	E188	2674 XIX	2567,3673, In 3rd lact	3673/17.5
24.	6100	15/11/22	5162	5427 XX	3002,3004,3632, In 4th lact	3632/21.0
25.	6104	21/11/22	5140	6007 PT XV	3217,3859, Auct	3859/17.0
26.	6106	23/11/22	4251	6007 PT XV	2407,3184,4138,3784, 2913,3904, Dry	4138/22.0
27.	6115	09/12/22	4989	4354 PT XV	2708,3616,2675,3644, Dry	3644/17.5
28.	6117	12/12/22	5175	7584 XX	2746,3534,4553	4553/23.0
29.	6118	14/12/22	5619	7584 XX	3275, Dry	3275/15.0
30.	6135	27/01/23	4933	6007 PT XV	2341,3006,3764,3608, 3296, In 6th lact	3764/20.0
31.	6136	28/01/23	4593	6007 PT XV	2708,3321,3025,3177, 3183, 3294, Dry	3321/19.0
32.	6140	23/02/23	4893	3004 XX	2323, 2673,3009,3479, Dry	3479/16.8
33.	6141	26/02/23	E194	3004 XX	2857, 3028, 3415, Dry	3415/16.5
34.	6144	14/03/23	4767	6007 PT XV	2468,3697,4268,4308, 4261, Dry	4308/20.6
35.	6145	15/03/23	5125	5500 XX	3087,3714,3360, Dry	3714/16.8
36.	6146	15/03/23	5049	6007 PT XV	2817,3414,2842, 2374, Dry	3414/17.5
37.	6151	24/03/23	5335	5588 XX	3092,3307, Dry	3307/15.0
38.	6156	06/05/23	5303	7584 XX	2689,3578, Dry	3578/18.0
39.	6159	23/05/23	4978	5505 XX	3874, 4366, 3685	4366/18.9
40.	6179	20/07/23	4372	4592 XVI	2413, 2598, 2766, 2714, 3124, 3282, 3595, 3002, Auct	3595/18.5
41.	6181	22/07/23	5203	5500 XX	2734,3181,2845, In 4th lact	3181/20.0
42.	6182	27/07/23	5431	5511 XX	3082, In 2nd lact	3082/15.2
43.	6186	01/08/23	5103	2831 XX	3267,3513,3797, In 4th lact	3797/18.0
44.	6189	04/08/23	5106	2459 PT XV	2193,3040,3002, In 4th lact	3040/16.0
45.	6196	14/08/23	5223	4592 XVI	3364,3691, In 3rd lact	3691/19.5

46.	6203	26/08/23	5048	3591 PT XI	3540, 3209, 2446, In 4th lact	3540/18.2
47.	6208	03/09/23	4904	6044 PT XIV	2590,2735,3219,2814, In 5th lact	3219/18.6
48.	6210	03/09/23	E182	4592 XVI	3783, 4149, In 3rd lact	4149/20.5
49.	6217	13/09/23	4945	NK	3028, 3090, 3001, In 4th lact	3090/15.7
50.	6220	17/09/23	5437	19 XX	3026, In 2nd lact	3026/21.6
51.	6226	25/09/23	5080	3591 PT XI	3127,3655,2944, In 4th lact	3655/19.0
52.	6234	11/10/23	5523	5511 XX	3145, In 2nd lact	3145/18.0
53.	6236	12/10/23	5361	5511 XX	2509,3359, In 3rd lact	3359/24.4
54.	6241	19/10/23	4941	3591 PT XI	1843, 3053, 3273, 3537, In 5th lact	3537/19.4
55.	6261	14/11/23	5347	5500 XX	2347,3076, In 3rd lact	3076/16.4
56.	6277	01/12/23	5509	2850 XX	3016, In 2nd lact	3016/14.5
57.	6279	06/12/23	5162	2850 XX	3002,3004,3632, In 4th lact	3632/21.0
58.	6284	08/01/24	4748	5481 XX	2082, 2885,2877, 3088, 3121, In 6th lact	3121/17.3
59.	6285	15/01/24	5165	5481 XX	2599, 3059, In 3rd lact	3059/16.0
60.	6288	26/01/24	5225	5481 XX	2876,3044,3356, In 4th lact	3356/20.6
61.	6289	30/01/24	4919	5505 XX	2332,3246,2665, 3372, In 5th lact	3372/15.0
62.	6291	02/02/24	4933	6044 PT XIV	2341,3006,3764,3608, 3296, In 6th lact	3764/20.0
63.	6294	18/02/24	5259	1454 XX	3005,3865, In 3rd lact	3865/20.0
64.	6295	19/02/24	5241	1454 XX	2472,3217,3105	3217/17.0
65.	6303	12/03/24	5096	2467 XVI	2928, 3505, 3824, In 4th lact	3824/19.0
66.	6304	14/03/24	5426	1454 XX	2047,3311, In 3rd lact	3311/16.2
67.	6305	16/03/24	4817	2467 XVI	2606,4250,4201,4180,4507, In 6th lact	4507/23.5
68.	6306	23/03/24	4899	2467 XVI	3505,4216,4350,3765, In 5th lact	4350/20.0
69.	6308	24/03/24	5101	4705 XVI	2087,2865,3011,3631, In 5th lact	3631/19.1
70.	6309	27/03/24	5151	2459 PT XV	3430,4444, In 3rd lact	4444/21.0

9.21 A: No. of Elite animals having 305 DLMY ≥ 3000 kg

Sr. No.	305 DLMY groups	No. of elite buffalo		
		2021-22	2022-23	2023-24
1	3000 to 3500 kg	52	49	52
2	3500 to 4000 kg	19	25	23
3	≥ 4000 kg	12	15	18
Total		**83**	**89**	**93**

9.21: Accomplishment and Targets Achieved

Sr. No.	Trait	Target	2019-20	2020-21	2021-22	2022-23	2023-24
1	Av. age at first calving (Months)	40.0 months	43.62±0.80 (71)	42.48±0.73 (71)	38.61±0.82 (67)	37.72±0.70 (60)	38.07±0.59 (55)
2	Av. service period (Days)	130 days	143.19±8.29 (90)	126.95±5.61 (100)	130.82±8.36 (99)	125.89±6.23 (122)	135.07±6.72 (99)
3	Calf mortality (0-3 months)	≤ 5 %	6.34 %	2.63 %	3.23 %	3.40 %	4.95 %
4	Wet average (Kg)	≥ 8.50 kg	9.66 kg	9.91 kg	10.07 kg	10.20 kg	10.20 Kg
5	Herd average (Kg)	≥ 5.50 kg	6.94 kg	7.15 kg	7.29 kg	7.30 kg	7.11 Kg

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR Share as per R E	Expenditure as per AUC		Balance
Total	ICAR Share		ICAR Share	State Share	
40.50*	40.50*	40.50	40.50*	0.00	0.00

* Include Rs. 4.50 Lakhs for SCSP

Herd Performance

Herd Strength: The overall herd strength of Murrah buffalo in March 2024 was 515, which included 268 breedable buffaloes, 135 suckling calves (< 1 year), 14 young males (1-2 years), 57 young females (1-2 years) and 41 breeding males (>2 years).

Mortality: During the period April 2023 to March 2024 calf mortality (0-3 month) was reported 4.95 percent.

Milk Production Performance: The overall wet average and herd average were reported 10.20 and 7.11 kg, respectively. The overall 305 days lactation milk yield and total lactation milk yield during April 2023 to March 2024 was reported 2949 and 3057 kg, respectively. During the period under report 146 buffaloes completed their lactation. Av. highest ever Peak yield of 15.30 Kg was recorded during reporting period.

Reproductive Performance: The overall conception rate during January to December 2023 was reported 47.65 %. The other reproductive traits viz. Age at first calving, service period and calving interval were observed 38.07 months, 135 days and 445 days, respectively, for buffaloes calved during April 2023 to March 2024.

Semen Production and Dissemination: A total 2,56,978 semen doses frozen at CIRB Lab during April 2023 to March 2024. A total of 37,612 doses of frozen semen were supply in NPBI and 1,62,070 frozen semen doses sold during the period under report.

Accomplishment and Targets Achieved:

Sr. No.	Trait	Target	2019-20	2020-21	2021-22	2022-23	2023-24
1	Av. age at first calving (Months)	40.0 months	43.62±0.80 (71)	42.48±0.73 (71)	38.61±0.82 (67)	37.72±0.70 (60)	38.07±0.59 (55)
2	Av. service period (Days)	130 days	143.19±8.29 (90)	126.95±5.61 (100)	130.82±8.36 (99)	125.89±6.23 (122)	135.07±6.72 (99)
3	Calf mortality (0-3 months)	≤ 5 %	6.34 %	2.63 %	3.23 %	3.40 %	4.95 %
4	Wet average (Kg)	≥ 8.50 kg	9.66 kg	9.91 kg	10.07 kg	10.20 kg	10.20 Kg
5	Herd average (Kg)	≥ 5.50 kg	6.94 kg	7.15 kg	7.29 kg	7.30 kg	7.11 Kg

Recommendations:

1. Reproductive parameters such as service period and calving intervals need to be improved.
2. Substantial improvement observed in semen production and dissemination during the year 2023-24 as compared to previous year performance.

GURU ANGAD DEV VETERINARY AND ANIMAL SCIENCES UNIVERSITY, LUDHIANA, MAIN UNIT (MURRAH)

Report period : 1st April 2023 to 31st March, 2024

1. **Name of Centre** : Guru Angad Dev Veterinary & Animal Sciences University, Ludhiana
2. **Project Code** : F.No. 18(I)2002- ASR- II
3. **Project Title** : Network Project on Buffalo Improvement
4. **Date of Start** : 01/04/1992
5. **Objectives**
   1. To establish elite herds of buffaloes for the production of genetically superior young bulls.
   2. To evaluate sires through continuous associated herds progeny testing using institutional herds.
   3. To conserve male germplasm for long term storage and dissemination.
   4. To document sire summaries and germplasm resource information.
   5. To exchange information and genetic material in the national and international networks.
6. **Technical Programme**

   The GADVASU Centre of the All India Coordinated Research Project on Buffalo Breeding is one of the participating units of the Network Project on Buffalo Improvement from 1.4.1992. Broadly, the technical program involves testing of 12-15 bulls on about 1200 breedable buffaloes at organized farms at GADVASU, Ludhiana; CIRB, Hisar; NDRI, Karnal; IVRI Izatnagar, LUVAS, Hisar and ICAR-RCER, Patna in every 18-month's cycle. From each bull, 75-80 pregnancies are to be obtained so that 20-25 recorded daughters per bull are available at all the centers for the evaluation of bulls. The bulls will be ranked based on the performance of their daughters and 20% of them will be selected as proven bulls from each set. The semen of the proven bulls will be used on elite buffaloes at different centers for the production of future sires and herd replacements.
7. **Financial Statement**: Statement showing budget sanctioned, amount spent and receipt realized for the period 1st April 2023 to 31st March 2024.

	Budget Sanctioned (Rs.)	**Amount Spent (Rs.)**
Pay & Allowances	--	--
T. A.	---	---
Contingencies		
i) Recurring Cont.	62,00,000	62,00,000
SCSP Recurring General	2,50,000	2,50,000
ii) Non-Recurring Cont.		
Furniture	---	---
Livestock	---	---
Vehicles/Building Works	---	---
Machinery and Equipment	2,00,000	2,00,000
SCSP Equipments	50,000	50,000
Total	**67,00,000**	**67,00,000**

Receipts: The project transferred **1518486.kg** of milk to the College of Dairy Sciences, GADVASU for sale after processing. The department sold **39** surplus/breeding animals and **73976 doses** liquid & frozen semen to the progressive dairy farmers and dairy developed agencies.

8. Staff and Infrastructure Build up during the year: Staff in position :

Name & Designation of the person employed on the sanctioned post with pay scale	Date of joining	Date of leaving	Other project (assignment) in the institution besides the project	Total time spent for the project	Transfer or upgrading of the post if any, give details of sanction from the ICAR	Remarks
Statistical Assistant in Rs. 10300-34800	01/02/12	-	-	Full Time	-	Post withdrawn wef. 31.03.2022

Herd performance: - 9.1 to 9.21

9.1. Herd strength during the period 4/2023 to 3/2024

Sr. No	Category	Addition			Disposal			CB
		OB	B/P	T	D	T	S	
	Female							
1.	Calves 0 – 3 months	**10**	34	-	5	24	-	**15**
2.	Calves >3 – 12 months	**48**	-	24	2	57	-	**13**
3.	Heifers							
	1 – 2 years	**55**	-	57	-	57	-	**55**
	> 2 years	**48**	-	57	1	43	4	**57**
4.	Buffaloes in Milk	**64**	-	43	1	34	9	**63**
5.	Buffaloes Dry P /NP	**31**	-	34	3	7	15	**40**
	Sub Total	**256**	34	215	12	222	28	**243**
	Male							
1.	Calves 0 – 3 months	**9**	51	-	5	47	3	**5**
2.	Calves >3 – 12 months	**15**	-	47	1	9	20	**32**
3.	Male above							
	1 – 2 years	**16**	-	9+17	1	11	21	**9**
	> 2 years	**16**	-	11	-	16	9	**2**
4.	Breeding bulls	**10**	-	16	1	-	11	**14**
5.	Bullocks							
6.	Teasers							
	Sub Total	**66**	51	100	8	83	64	**62**
	Grand Total	**322**	85	315	20	305	92	**305**

OB = Opening Balance D = Deaths S = Sale B/P = Births/Purchase
T = Transfer CB = Closing Balance

9.2. Calving statistics during the period 4/2023 to 3/2024

Month	Male		Female		Dystokia		Prolapses		Still Birth		Abortion		Overall	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
April, 23	2	3.92	1	2.94	1	25.0	0	0.00	0	0.00	0	0.00	3	3.26
May	4	7.84	2	5.88	0	0.00	0	0.00	0	0.00	0	0.00	6	6.52
June	4	7.84	0	0	0	0.00	1	50.0	0	0.00	1	12.5	5	5.43
July	5	9.80	1	2.94	0	0.00	0	0.00	0	0.00	1	12.5	7	7.60
August	8	15.69	2	5.88	0	0.00	0	0.00	0	0.00	1	12.5	11	11.95
September	2	3.92	3	8.82	0	0.00	0	0.00	0	0.00	0	0.00	5	5.43
October	4	7.84	3	8.82	1	25.0	1	50.0	0	0.00	1	37.5	8	8.69
November	7	13.73	3	8.82	0	0.00	0	0.00	0	0.00	0	0.00	10	10.86
December	7	13.73	2	5.88	1	25.0	0	0.00	1	100.0	1	12.5	11	11.95
January,24	3	5.88	7	20.59	0	0.00	0	0.00	0	0.00	1	12.5	11	11.95
February	2	3.92	7	20.59	1	25.0	0	0.00	0	0.00	0	0.00	9	9.78
March	3	5.88	3	8.82	0	0.00	0	0.00	0	0.00	0	0.00	6	6.52
Overall	51	100.0	34	100.0	4	100.0	2	100.0	1	100.0	6	100.0	92	100.0

Sex ratio Male: Female = 1.0:0.66

9. 3 Disposal of animals during the period 4/2023 to 3/2024

Sr. No.		Surplus	Rep. Problem	Weak & Old	Death	Experimental purpose	Total
	Female						
1.	Calves 0 – 3 months				5		5
2.	Calves >3 – 12 months				2		2
3.	Heifers 1 – 2 years > 2 years		 4		- 1		- 5
4.	Buffaloes in Milk		9		1		10
5.	Buffaloes Dry P /NP		15		3		18
	Sub Total		**28**		**12**		**40**
	Male						
1.	Calves 0 – 3 months	3			5		8
2.	Calves >3 – 12 months	20			1		21
3.	Male 1 – 2 years > 2 years	21 9			1 -		22 9
4.	Breeding bulls	11			1		12
5.	Bullocks						
6.	Teasers						
	Sub Total	**64**			**8**		**72**
	Grand Total	**64**	**28**		**20**		**112**

41 Bulls/bull calves sold for breeding purpose.

9.4. Month-wise mortality during the period 4/2023 to 3/2024

		Female						**Male**					
Month		**0-3 (mo)**	**3-6 (mo)**	**6-12 (mo)**	**1-2 yrs**	**Abo. 2 yrs.**	**Overall female**	**0-3 (mo)**	**3-6 (m)**	**6-12 (mo)**	**Above 1 yr.**	**Oveall male**	**Overall Herd**
April	No.	8	12	36	52	144	252	10	11	7	35	63	315
	Died	1	0	0	0	1	2	0	0	0	0	0	2
	%	12.5	0	0	0	0.69	0.79	0	0	0	0	0	0.63
May	No.	8	6	40	50	151	255	8	9	14	35	66	321
	Died	0	0	0	0	0	0	1	0	0	0	1	1
	%	0	0	0	0	0	0	12.5	0	0	0	1.52	0.31
June	No.	4	8	34	53	146	245	10	9	22	40	81	326
	Died	0	0	0	0	0	0	0	0	0	0	0	0
	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
July	No.	3	8	28	59	139	237	11	8	14	34	67	304
	Died	0	0	0	0	2	2	0	0	0	0	0	2
	%	0.00	0.00	0.00	0.00	1.44	0.84	0.00	0.00	0.00	0.00	0.00	0.66
August	No.	3	8	24	64	137	236	18	7	15	35	75	311
	Died	0	0	0	0	0	0	0	0	0	1	1	1
	%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.86	1.33	0.32
Sept.	No.	6	3	25	63	142	239	15	9	16	33	73	312
	Died	0	0	0	0	0	0	1	0	0	1	2	2
	%	0.00	0.00	0.00	0.00	0.00	0.00	6.67	0.00	0.00	3.03	2.74	0.64
October	No.	7	3	20	65	145	240	14	11	16	35	76	316
	Died	1	0	0	0	0	1	0	0	0	0	0	1
	%	14.29	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.32
Nov.	No.	8	2	14	66	142	232	13	14	7	32	66	298
	Died	1	0	0	0	0	1	0	0	0	0	0	1
	%	12.5	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.7
Dec.	No.	7	6	11	59	151	234	16	14	7	32	69	303
	Died	0	0	1	0	0	1	1	0	0	0	1	2

	%	0.0	0.0	9.09	0.00	0.00	0.43	6.25	0.00	0.00	0.00	1.45	0.66
January	No.	12	7	10	52	156	237	16	12	11	29	68	305
	Died	0	0	0	0	1	1	0	1	0	0	1	2
	%	0.0	0.0	0.0	0.0	0.64	0.42	0.00	8.33	0.00	0.00	1.47	0.65
Feb.	No.	15	7	10	53	156	241	10	12	15	26	63	304
	Died	1	0	0	0	0	1	2	0	0	0	2	3
	%	6.67	0.00	0.00	0.00	0.00	0.41	20.0	0.00	0.00	0.00	3.17	0.99
March	No.	15	6	7	55	158	241	5	15	17	25	62	303
	Died	1	1	0	0	1	3	0	0	0	0	0	3
	%	6.67	16.67	0.00	0.00	0.63	1.24	0.00	0.00	0.00	0.00	0.00	0.99
Total	No.	5	1	1	0	5	12	5	1	0	2	8	20

Note: Calf mortality (0 – 3 months) = 9.62 % (10/104)

9.5. Causes of Mortality (quarter-wise) during the period 4/2023 to 3/2024

Particulars	**1st quarter**	**2ndquarter**	**3rd quarter**	**4th quarter**
A. Respiratory System :				
1. Pheumo-Enteritis		1	2	
2. Broncho-Pheumonia	2			2
B. Digestive System :				
1. Enteritis		1	1	3
2. Septicemia & Toxaemia				
3. Peritonitis		1		
4. Gastroenteritis			1	1
5. Heoatutus				
6. Haem. Enteritis			1	1
7. Torsion of Intestine volvulus				
8. Gastritis				
C. Circulatory				
D. Others				
1. Chronic debility	1			
2. Arthritis				
3. Umbilical Hernia				
4. Accidents				
5. Ectoparasitism				
6. Miscellaneous		1		1
7.Diarrhoea				
Total	**3**	**4**	**5**	**8**

9.6. Prophylactic measures taken during the period 4/2023 to 3/2024

Vaccination	No. of animals		Screening for disease	No. of animals		No. of animals treated for Parasitism etc.
	Available	Inoculated		Tested	Results	
FMD (Thrice) Biovac combined		889	TB		All Negative	No clinical case of parasitic infestation was observed during the year. All the animals were dewormed as per normal schedule.
HS (Twice)			JD		All Negative	
BQ (Once)		308	Brucellosis		All Negative	
Brucellosis Calfhood Adult Vaccine		31 159	-	-	-	

9.7. Female conception rate during the period 4/2023 to 3/2024

Month	Heifer									First Calver									Multiparous									Overall		
	1st AI			2nd AI			≥ 3 AI			1st AI			2nd AI			≥ 3 AI			1st AI			2nd AI			≥ 3 AI					
	I	C	CR %	I	C	CR	I	C	CR %	I	C	CR %	I	C	CR	I	C	CR %	I	C	CR %	I	C	CR %	I	C	CR %	I	C	CR %
Jan. 23	1	0	0	1	1	100	0	0	0	7	4	57.14	1	0	0	4	3	75	6	4	66.66	5	3	60	3	1	33.33	**28**	**16**	57.14
Feb.	2	1	50	2	1	50	0	0	0	0	0	0	1	1	100	0	0	0	1	1	100	1	1	100	2	0	0	**9**	**5**	55.55
March	0	0	0	0	0	0	0	0	0	4	2	50	2	0	0	4	4	100	5	3	60	2	0	0	2	0	0	**19**	**9**	47.36
April	3	1	33.33	2	2	100	2	0	0	1	1	100	0	0	0	3	2	66.66	5	3	60	0	0	0	1	1	100	**17**	**10**	58.82
May	3	3	100	2	1	50	3	3	100	0	0	0	2	0	0	0	0	0	5	1	20	2	0	0	3	0	0	**20**	**8**	40
June	5	2	40	1	1	100	3	1	33.33	1	0	0	2	0	0	0	0	0	2	1	50	2	2	100	3	1	33.33	**19**	**8**	42.10
July	2	0	0	2	0	0	0	0	0	2	1	50	0	0	0	2	2	100	9	4	44.44	2	0	0	0	0	0	**19**	**7**	36.84
Aug.	2	1	50	2	1	50	3	1	33.33	2	1	50	1	0	0	1	1	100	1	1	100	5	2	40	3	0	0	**20**	**8**	40
Sep.	9	4	44.44	1	1	100	1	1	100	1	0	0	4	0	0	2	2	100	3	3	100	2	0	0	3	0	0	**26**	**11**	42.30
Oct.	8	4	50	3	1	33.33	2	2	100	3	2	66.66	1	1	100	1	0	0	3	1	33.33	1	1	100	4	3	75	**26**	**15**	57.69
Nov.	3	1	33.33	2	1	50	1	1	100	4	1	25	1	1	100	3	3	100	5	0	0	2	2	100	2	1	50	**23**	**11**	47.82
Dec. 23	3	2	66.66	5	3	60	2	1	50	1	1	100	3	3	100	4	0	0	3	1	33.33	3	2	66.66	3	0	0	**27**	**13**	48.14
Total	41	19	46.34	23	13	56.52	17	10	58.82	26	13	50	18	6	33.33	24	17	70.83	48	23	47.91	27	13	60	29	7	24.13	**253**	**121**	**47.83**

I = No. of animals inseminated C. = No. of animals conceived CR%= Conception rate %

9.8. Bull-wise conception rate during the period 4/2023 to 3/2024

Sr. No.	Bull No.	Set No.	Total Number of AI	Total Conceived	CR%
1.	1354	3rd	7	5	71.43
2.	1437	4th	20	0	0.00
3.	1451	4th	12	5	41.67
4.	1506	4th	8	5	62.50
5.	1796	7th	11	7	63.64
6.	1875	8th	6	2	33.33
7.	1994	9th	11	5	45.45
8.	2383	16th	7	5	71.43
9.	2459	15th	8	3	37.50
10.	2607	17th	4	3	75.00
11.	2759	19th	1	0	0.00
12.	2831	20th	19	11	57.89
13.	2838	20th	2	0	0.00
14.	2979	21st	7	5	71.43
15.	3004	20th	13	4	30.77
16.	3014	21st	16	10	62.50
17.	5481	20th	4	1	25.00
18.	5505	20th	12	6	50.00
19.	5511	20th	1	0	0.00
20.	5629	21st	8	3	37.50
21.	5638	21st	3	2	66.67
22.	6007	15th	8	6	75.00
23.	6044	14th	11	5	45.45
24.	7630	21st	7	4	57.14
25.	7649	20th	7	2	28.57
26.	7768	21st	3	2	66.67
27.	7990	21st	4	3	75.00
28.	575	Non-Set	1	0	0.00
29.	2786	Non-Set	7	3	42.86
30.	1431	Non-Set	1	1	100.00
31.	2847	Non-Set	1	1	100.00
32.	3007	Non-Set	4	3	75.00
33.	Khan	Non-Set	4	1	25.00
34.	Kohinoor	Non-Set	1	1	100.00
35.	Parikishit	Non-Set	7	4	57.14
36.	Veera	Non-Set	7	3	42.86
Total			**253**	**121**	**47.83**

9.9. Bull-wise semen stock 4/2023 to 3/2024

Sr. No	Bull No.	Set No	Opening Balance	Semen Prod./ Received	Consumption for AI/Supplies etc						Balance
					Dairy Farm	Field Unit	Other agencies	Sold	Discard	Total Consumption	
1	M 293	1	200	0	0	0	0	0		0	200
2	M 458	2	200	0	0	0	0	0		0	200
3	M 558	3	200	0	0	0	0	0		0	200
4	M 610	4	200	0	0	0	0	0		0	200
5	M 888	5	200	0	0	0	0	0		0	200
6	M 82	6	180	0	0	0	0	5		5	175
7	M 156	7	200	0	0	0	0	0		0	200
8	M 432	8	34	0	0	0	0	0		0	34
9	M 584	9	200	0	0	0	0	0		0	200
10	M 675	10	69	0	0	0	0	0		0	69
11	M 1354	NW3	1809	0	0	0	0	0		0	1809

12	M 1437	NW4	1124	0	20	0	0	0		20	1104
13	M 1451	NW4	1036	0	20	0	0	0		20	1016
14	M 1506	NW4	3569	0	0	0	0	0		0	3569
15	M1749	NW7	323	0	0	0	0	5		5	318
16	M 1796	NW7	574	0	20	0	0	0		20	554
17	M 1875	NW8	2584	0	20	0	0	19		39	2545
18	M 1994	NW 9	383	0	0	0	0	20		20	363
19	M 2045	NW10	261	0	0	0	0	0		0	261
20	M 2073	NW10	221	0	0	0	0	0		0	221
21	M 2074	NW10	293	0	0	0	0	0		0	293
22	M 2083	NW10	293	0	0	0	0	0		0	293
23	M 2133	NW11	344	0	0	0	0	0		0	344
24	M 2148	NW11	200	0	0	0	0	0		0	200
25	M 2154	NW11	534	0	0	0	0	0		0	534
26	M 2176	NW12	2106	0	0	0	0	0		0	2106
27	M 2177	NW12	2365	0	0	0	0	0		0	2365
28	M 2185	NW12	1394	0	0	0	0	0		0	1394
29	M 2234	NW13	30	0	0	0	0	0		0	30
30	M 2269	NW13	264	0	0	0	0	25		25	239
31	M 2304	NW13	1035	0	0	0	0	0		0	1035
32	M 2357	NW14	3854	0	0	0	0	10		10	3844
33	M 2369	NW14	245	0	0	0	0	0		0	245
34	M 2371	NW15	4401	0	0	0	0	0		0	4401
35	M 2412	NW15	1090	0	0	0	0	0		0	1090
36	M 2417	NW15	375	0	0	0	0	0		0	375
37	M 2429	NW15	4144	0	0	0	0	0		0	4144
38	M 2459	NW15	2725	0	20	0	0	98		118	2607
39	M 2467	NW15	5815	0	0	0	0	785		785	5030
40	M 2383	NW16	4621	0	30	0	0	2820		2850	1771
41	M 2501	NW16	2840	0	0	0	0	125		125	2715
42	M 2558	NW17	14587	0	0	0	0	927		927	13660
43	M 2565	NW17	3631	0	0	0	0	1065		1065	2566
44	M 2588	-	310	0	0	0	0	0		0	310
45	M 2594	NW17	8799	0	0	0	0	70		70	8729
46	M 2607	NW17	4916	1690	0	0	0	2128		2128	4478
47	M 2645	NW18	7446	0	0	0	0	20		20	7426
48	M 2676	NW18	7210	0	0	0	0	1000		1000	6210
49	M 2677	NW18	2104	0	0	0	0	0		0	2104
50	M 2689	NW18	5069	0	0	0	0	705		705	4364
51	M 2674	NW19	1092	0	0	0	0	40		40	1052
52	M 2737	NW 19	4918	1115	0	0	0	250		250	5783
53	M 2759	NW 19	2851	7305	0	0	0	6412		6412	3744
54	M 2792	-	3824	0	0	0	0	290		290	3534
55	M2786	Future	4990	3075	0	0	0	2920		2920	5145
56	M2793	NW20	1610	7410	0	0	0	750		750	8270
57	M2814	NW20	1240	0	0	0	0	0		0	1240
58	M2831	NW20	2721	6965	10	325	0	5593		5928	3758
59	M2848	NW20	2720	0	0	0	0	0		0	2720
60	M2850	NW20	1340	0	0	0	0	0		0	1340
61	M 3004	NW20	58	2265	0	0	0	398		398	1925
62	M 3007	Future	0	8465	0	0	0	53		53	8412
63	M 2822	Future	700	0	0	0	0	100		100	600
64	M 3024	Future	4810	2130	0	0	0	3317		3317	3623
65	M 188	HLDB	722	0	0	0	0	598		598	124
66	M2838	NW20	2675	7580	0	0	0	5017		5017	5238
67	M2847	-	3165	4215	0	0	0	50		50	7330
68	M2921	-	535	3395	0	0	0	0		0	3930

69	M2930	-	560	260	0	0	475	0		475	345
70	M2979	NW21	705	5665	0	1130	4900	0		6030	340
71	M 2990	NW21	0	2470	0	25	2445	0		2470	0
72	M3014	NW21	3425	1615	30	110	4315	30		4485	555
Grand Total			**151268**	**65620**	**170**	**1590**	**12135**	**35645**		**49540**	**167348**

9.10 Body weights since inception of Network

Year	At birth	3 Months	6 Months	12 Months	18 Months	24 Months	At AFC	Adult
Female								
1991-92	32.08	54.53	78.74	143.86	238.40	297.26	433.07	
1992-93	30.64	51.40	87.89	161.61	203.40	293.26	399.31	
1993-94	32.71	61.53	93.14	160.38	222.27	284.25	440.92	
1994-95	30.62	59.92	93.91	165.60	242.29	304.86	435.68	
1995-96	31.11	62.02	87.98	154.51	236.73	322.04	441.69	
1996-97	31.48	65.96	97.06	174.88	242.09	330.71	476.09	
1997-98	29.27	59.87	95.59	168.95	252.98	318.33	455.27	
1998-99	29.13	62.68	92.62	187.02	269.70	343.06	458.21	
1999-00	30.27	60.59	86.46	163.34	277.21	342.58	461.34	
2000-01	31.74	61.32	94.43	159.20	243.10	329.79	490.33	
2001-02	32.44	62.04	94.96	188.23	271.09	341.46	512.25	
2002-03	34.26	62.12	95.02	187.45	287.49	368.89	485.89	
2003-04	32.00	61.57	92.04	160.65	261.52	349.24	461.74	
2004-05	31.67	59.85	90.61	168.47	265.27	354.22	486.85	
2005-06	30.57	70.23	96.21	162.58	235.74	314.75	481.06	
2006-07	30.94	65.11	104.38	169.75	246.33	324.79	516.50	
2007-08	29.47	59.68	91.76	171.21	238.38	322.80	480.07	
2008-09	31.62	62.69	99.45	180.28	274.86	352.00	507.28	
2009-10	30.04	60.49	104.76	194.36	281.54	361.78	500.69	
2010-11	31.35	61.50	101.58	202.80	306.67	380.00	477.14	
2011-12	29.77	65.31	96.40	183.75	267.71	359.11	469.25	
2012-13	31.08	62.63	106.07	222.56	311.48	380.00	492.42	
2013-14	29.35	67.46	110.68	217.78	301.91	376.20	543.75	
2014-15	30.50	65.88	101.73	212.20	289.52	363.59	490.65	
2015-16	29.18(17)	65.44 (18)	102.54 (13)	211.71 (16)	287.76 (22)	358.50 (25)	490.46 (24)	553(120)
2016-17	29.4 (29)	67.26 (24)	99.45 (37)	197.63 (35)	284.30 (32)	374.09 (17)	528.33 (23)	560(101)
2017-18	31.7(27)	68.64 (26)	97.24 (48)	195.2 (21)	294.3 (19)	377.8(23)	547(24)	582(99)
2018-19	31.6	67.9	100.6	200.7	297.7	388.8	552.2	578
2019-20	30.82	68.4	99.7	198.6	296.2	385.3	542.9	589
2020-21	30.34	67.86	98.09	197.2	299.4	381.9	539.7	598
2021-22	30.8	69.07	95.68	195.6	289.23	396.8	559.5	607
2022-23	31.0	66.03	93.25	188.56	278.52	383.0	550.8	617
2023-24	**32.83**	**61.00**	**94.55**	**206.94**	**313.04**	**438.36**	**560.38**	**570**

Male

Year	At Birth	3 Months	6 Months	12 Months	18 Months	24 Months
1991-92	33.53	57.23	81.76	161.00	246.44	262.75
1992-93	33.04	55.46	83.23	163.29	-	-
1993-94	33.90	63.57	94.64	138.00	250.71	322.63
1994-95	33.60	64.69	96.61	181.27	271.00	325.75
1995-96	32.60	61.45	94.08	145.47	267.00	346.29
1996-97	32.41	72.24	100.29	198.75	312.33	350.43
1997-98	29.88	58.90	105.52	201.59	288.77	384.00
1998-99	30.35	59.73	97.00	206.67	312.00	410.00
1999-00	33.40	65.13	91.69	148.30	318.75	415.00
2000-01	33.40	64.05	97.00	159.25	213.63	340.56
2001-02	33.17	62.53	103.11	187.27	340.00	-
2002-03	34.79	65.00	99.38	205.56	346.88	460.00
2003-04	33.03	64.32	106.94	193.75	284.84	405.62
2004-05	34.36	60.53	105.88	195.25	288.44	408.56
2005-06	31.36	69.37	112.58	204.30	313.18	386.10

2006-07	33.44	70.86	111.81	215.08	335.63	403.75
2007-08	31.25	61.27	101.90	202.81	295.42	402.45
2008-09	32.37	67.50	108.53	211.43	286.11	387.27
2009-10	32.35	60.94	108.89	198.75	308.75	371.67
2010-11	32.73	66.60	98.70	200.00	287.00	398.00
2011-12	32.62	68.70	107.79	209.44	320.00	402.50
2012-13	31.96	63.36	110.88	262.00	370.71	397.50
2013-14	32.32	69.72	120.71	230.42	372.56	430.00
2014-15	30.03	68.53	97.70	201.20	360.00	356.67
2015-16	30.07(29)	67.18(28)	105.04(23)	203.9(14)	348.91(12)	421.25(04)
2016-17	30.82(24)	69.37(19)	103.40(15)	207.13(5)	337.24(9)	490.24(6)
2017-18	33.6(33)	68.5(22)	99.4(14)	224(6)	334(7)	456(5)
2018-19	32.5	66.1	101.0	224.5	335.2	451.3
2019-20	32.04	67.8	99.8	222.3	331.4	438.9
2020-21	33.8	69.6	102.7	219.4	342.2	480.4
2021-22	33.23	71.05	104.2	216.23	364.79	487.3
2022-23	34.2	72.08	103.9	218.1	361.3	485.6
2023-24	**34.88**	**65.5**	**118.22**	**231.8**	**347.62**	**458.0**

9.11. Production performance of buffaloes completing their lactation during the period 4/2023 to 3/2024

Lactation No.	No. of Obs.	Av. Lact. Yield (kg)	Av. Lact. Length (days)	305-day Milk Yield (kg)	Av. Peak yield (kg)
1st	15	2618.50±106.98	318.66±7.21	2568.50±103.24	13.29±0.33
2nd	18	2745.41±111.58	301.38±8.48	2709.45±108.37	14.58±0.52
3rd	3	3358.03±335.23	340.66±32.91	3188.56±319.21	16.03±1.63
4th	7	2737.71±281.90	301.42±28.00	2708.31±264.58	14.94±1.41
5th & onwards	7	2968.6±308.04	332.0±14.91	2869.6±289.74	15.68±1.15
Overall	50	2774.26±73.08	313.2±4.89	2718.17±67.76	14.49±0.31

9.12 Production performance of buffaloes (general herd) since inception

Years	No. of Obs.	Av. Lact. Yield (kg)	Av. Lact. Length (days)	305-day Milk Yield (kg)	Av. Peak yield (kg)
1991-92	157	1858	321	1738	10.80
1992-93	138	1894	340	1730	10.81
1993-94	144	2238	370	1948	11.01
1994-95	121	2003	320	1877	12.06
1995-96	126	2248	350	2008	11.86
1996-97	125	2115	334	1948	11.40
1997-98	98	2255	354	1995	11.03
1998-99	125	2411	372	2101	11.50
1999-00	114	2238	375	2041	11.41
2000-01	103	2257	347	2032	11.82
2001-02	112	2419	344	2175	12.95
2002-03	105	2245	304	2144	13.16
2003-04	111	2464	342	2233	12.90
2004-05	106	2501	346	2270	12.74
2005-06	78	2480	322	2327	13.17
2006-07	91	2389	326	2235	12.39
2007-08	67	2362	323	2176	12.62
2008-09	88	2346	329	2141	11.96
2009-10	67	2478	336	2271	12.73
2010-11	81	2836	376	2470	13.28
2011-12	87	2454	322	2306	13.38
2012-13	75	2741	349	2528	13.84
2013-14	55	2789	366	2509	13.63
2014-15	46	2948	353	2674	14.84
2015-16	45	2959	383	2640	14.63
2016-17	53	2924	390	2561	14.60

2017-18	54	2906	338	2707	14.73
2018-19	62	2904	335	2771	15.10
2019-20	73	2936	316	2841	15.43
2020-21	50	2708	311	2614	14.21
2021-22	62	2759	309	2672	14.94
2022-23	31	2643	310	2564	14.78
2023-24	**50**	**2774**	**313**	**2718**	**14.49**

9.12.1 Production performance of buffaloes (elite) since inception of network project

Year	No. of Obs.	Av. Lact. Yield (kg)	Av. Lact. Length (days)	305-day Milk Yield (kg)	Av. Peak yield
1991-92	16	2798	390	2490	13.20
1992-93	07	2822	433	2371	10.60
1993-94	18	3162	429	2657	14.40
1994-95	13	3060	381	2751	16.07
1995-96	21	3148	409	2630	14.08
1996-97	25	3021	390	2651	14.34
1997-98	18	3296	418	2773	14.27
1998-99	31	3410	440	2778	13.71
1999-00	21	3199	424	2684	13.42
2000-01	23	3133	410	2672	14.01
2001-02	35	3156	377	2815	15.31
2002-03	32	3030	337	2849	15.45
2003-04	39	3183	397	2757	14.58
2004-05	38	3160	380	2793	14.40
2005-06	34	2967	340	2755	14.52
2006-07	39	2893	349	2681	13.68
2007-08	19	3143	383	2752	14.02
2008-09	22	3106	388	2654	13.43
2009-10	25	3000	362	2694	13.71
2010-11	40	3474	404	2941	14.85
2011-12	32	3172	360	2879	15.41
2012-13	38	3188	367	2899	15.46
2013-14	13	3685	406	3186	16.07
2014-15	12	4046	423	3366	17.28
2015-16	10	3846	393	3332	20.07
2016-17	16	3855	407	3267	17.4
2017-18	14	3638	379	3417	17.8
2018-19	15	3693	374	3431	17.8
2019-20	13	3669	351	3497	18.3
2020-21	8	3414	356	3414	20.8
2021-22	12	3791	347	3608	20.25
2022-23	8	3418	309	3343	19.3
2023-24	**10**	**3500**	**331**	**3410**	**16.62**

9.13. Average milk components during the period (month-wise) 4/2023 to 3/2024

Month	Number of Observation	Fat %	SNF	Protein	Lactose
April, 2023	60	7.38	9.68		
May	76	7.65	10.04		
June	60	8.00	9.51		
July	54	7.16	9.65		
August	53	7.29	9.73		
September	58	7.33	9.66		

October	53	7.43	9.61		
November	52	6.96	9.56		
December	53	7.52	9.61		
January, 2024	60	8.53	9.55		
February	67	8.05	9.56		
March	63	7.77	9.45		
Overall	59	7.58	9.63		

9.14. Reproduction performance of buffaloes calving during the period 4/2023 to 3/2024

Lactation No	Average Age at Calving (Months)	No. of observation	Average Service Period (Days)	Average Dry Period (days)	Average Calving Interval (Days)
1	39.78±0.89 (30)		-	-	-
2	-	18	143.72±14.79	151.55±14.81	452.05±14.17
3	-	14	103.92±11.52	137.35±17.68	414.64±11.70
4	-	04	110.00±20.18	190.75±20.48	420.50±20.43
5 & Above		05	122.60±31.00	119.00±20.46	440.20±31.16
Overall		**41**	**124.26± 8.85**	**146.56±9.58**	**434.75±09.46**

9.14.1. Reproduction performance of buffaloes calving since inception of network

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
1991-92	49.2 (73)	169 (93)	187 (101)	493 (101)
1992-93	44.4 (48)	207 (100)	190 (98)	510 (100)
1993-94	46.7 (24)	228 (105)	184 (106)	532 (106)
1994-95	47.5 (37)	206 (96)	182 (96)	512 (96)
1995-96	45.6 (43)	218 (105)	196 (104)	526 (105)
1996-97	49.4 (34)	196 (76)	167 (76)	510 (76)
1997-98	45.0 (45)	248 (94)	203 (94)	553 (94)
1998-99	47.0 (34)	232 (81)	204 (84)	553 (87)
1999-00	42.0 (54)	213 (59)	175 (63)	518 (63)
2000-01	44.4 (27)	197 (81)	170 (82)	511 (82)
2001-02	44.7 (32)	164 (95)	149 (84)	496 (84)
2002-03	40.2 (39)	133 (95)	147 (95)	463 (95)
2003-04	36.8 (23)	160 (107)	153 (93)	455 (93)
2004-05	41.7 (27)	140 (80)	155 (80)	478 (80)
2005-06	43.7 (35)	143 (65)	119 (60)	433 (60)
2006-07	43.3 (20)	166 (69)	115 (61)	438 (61)
2007-08	42.8 (30)	147 (53)	126 (58)	419 (58)
2008-09	42.6 (43)	142 (90)	134 (52)	438 (52)
2009-10	39.3 (29)	151 (76)	174 (72)	492 (72)
2010-11	39.1 (21)	154 (94)	150 (76)	457 (76)
2011-12	37.4 (22)	136 (65)	154 (85)	473 (85)
2012-13	38.9 (34)	151 (53)	136 (59)	435 (59)
2013-14	42.3 (12)	159 (67)	190 (64)	471 (64)
2014-15	38.6 (23)	160 (40)	185 (40)	513 (41)
2015-16	40.1 (24)	162 (26)	119 (25)	458 (25)
2016-17	41.5 (27)	184 (26)	104(26)	472 (26)
2017-18	41.3 (25)	152 (41)	122 (41)	459 (41)
2018-19	40.7 (39)	136 (104)	130 (104)	441 (104)
2019-20	40.4 (23)	125 (82)	133 (82)	436 (82)
2020-21	40.56 (34)	138 (95)	129 (95)	434 (95)
2021-22	40.93 (53)	147 (55)	142 (55)	454 (55)
2022-23	39.28 (31)	128 (66)	162 (66)	437 (66)
2023-24	**39.78(30)**	**124.23(41)**	**146.56(41)**	**434.75(41)**

Figures in parenthesis indicate number of observations

9.15. Month-wise milk production and disposal during the period 4/2023 to 3/2024

	Production	**Disposal**			
Month	Total milk produced (kg)	Liquid milk (kg)	Calf feeding (kg)	Experimental purposes (kg)	Milk lost in handling (kg)
April, 2023	16921.1	15314	1584.2	3	19.9
May	17654.2	16049	1583.5		21.7
June	15547.4	14174	1344.5	2	26.9
July	14649.6	13310	1313.7		25.9
August	14511.2	12814	1673.7		23.5
September	15428.6	13220	2180.2	2	26.4
October	14605.2	12334	2248.7		22.5
November	14155.8	12071	2061.1		23.7
December	15408.8	13166	2216.2		26.6
January, 2024	16367.3	13673	2668.9		25.4
February	16821.7	14088	2709.7		24
March	17775.5	15362	2390.9		22.6
Total	**189846.4**	**165575.0**	**23975.3**	**7**	**289.1**

9.16. Feed and fodder purchased and offered (qtls) to animals during the period 4/2023 to 3/2024

Month	**Type of fodder/feed**	**Qty. produced at Farm**	**Qty. Purchased**	**Fed**	**Balance**
April,2023	Green	3287.55			
	Dry	157.17			
	Silage				
	Concentrate		664.000		
May	Green	2227.75			
	Dry	47.5			
	Silage				
	Concentrate		677.750		
June	Green	2249.1			
	Dry				
	Silage				
	Concentrate		737.000		
July	Green	3328.62			
	Dry				
	Silage				
	Concentrate		740.500		
August	Green	2761.67			
	Dry				
	Silage				
	Concentrate		689.000		
September	Green	2912.72			
	Dry				
	Silage				
	Concentrate		687.500		
October	Green	3109.47			
	Dry				
	Silage				
	Concentrate		690.500		
November	Green	1914.87			
	Dry				
	Silage				

	Concentrate		690.500		
December	Green	3304.8			
	Dry				
	Silage				
	Concentrate		655.500		
January 2024	Green	3047.8			
	Dry				
	Silage				
	Concentrate		661.250		
February	Green	3069.12			
	Dry	8.64			
	Silage				
	Concentrate		655.000		
March	Green	3017.9			
	Dry	159.65			
	Silage				
	Concentrate		670.00		
Total	Green	**34231.37**			
	Dry	**372.96**			
	Silage				
	Concentrate		**8218.5**		

9.17. Milking performance during the period 4/2023 to 3/2024

Month	No. of Animal in milk	No. of Animal dry	Total Animal	% in Milk	Wet average (kg)	Herd average (kg)
April, 2023	60	33	93	63.4	9.34	5.93
May	63	32	95	66.31	8.62	5.72
June	54	36	90	60.0	8.51	5.10
July	50	37	87	57.47	8.49	4.88
August	56	33	89	62.92	7.92	4.98
September	51	41	92	55.43	9.77	5.42
October	53	38	91	58.24	8.52	4.96
November	58	29	87	66.66	7.95	5.30
December	55	35	90	61.11	9.00	5.50
January, 2024	62	32	94	65.95	8.33	5.49
February	66	30	96	68.75	8.73	6.00
March	63	40	103	61.16	9.10	5.56
Overall	58	35	92	62	8.69	5.40

9.17.1. Milking performance since inception

Years	No. of Animal in milk	No. of Animal dry	Total Animal	% in Milk	Wet average (kg)	Herd average (kg)
1991-92	148	74	222	66.67	5.65	3.79
1992-93	149	77	226	65.93	5.54	3.68
1993-94	115	76	191	60.21	6.20	3.71
1994-95	116	67	183	63.39	6.09	3.86
1995-96	123	66	189	65.08	6.43	4.21
1996-97	112	72	194	60.87	6.17	3.73
1997-98	116	61	177	65.54	6.53	4.30
1998-99	119	65	184	64.67	6.26	4.06
1999-00	109	55	164	66.46	6.26	4.17
2000-01	105	58	163	64.42	6.70	4.36
2001-02	94	48	142	66.20	7.09	4.70
2002-03	109	48	157	69.43	7.22	5.00

2003-04	108	52	160	67.50	7.01	4.80
2004-05	91	45	136	66.91	7.33	5.00
2005-06	74	31	105	70.48	7.36	5.21
2006-07	81	27	108	75.00	7.03	5.27
2007-08	70	29	99	70.35	6.90	4.90
2008-09	78	38	116	67.00	7.07	4.73
2009-10	83	40	123	69.17	7.62	5.15
2010-11	88	47	135	64.93	7.21	4.72
2011-12	88	51	139	63.06	7.56	4.79
2012-13	78	45	123	63.49	7.74	4.90
2013-14	61	43	104	58.29	7.98	4.67
2014-15	54	32	86	62.34	7.97	4.98
2015-16	54	35	89	61.89	8.04	5.01
2016-17	49	25	74	70.00	7.92	5.45
2017-18	49	30	79	64.84	8.03	5.25
2018-19	68	34	102	65.9	8.40	5.38
2019-20	67	38	105	66.46	8.31	5.44
2020-21	64	39	103	62.64	8.22	5.06
2021-22	72	37	109	66.44	8.42	5.58
2022-23	54	35	88	60.84	8.45	5.07
2023-24	**58**	**35**	**92**	**62**	**8.69**	**5.40**

9.18. Bull-wise daughters born/daughters reaching A.F.C. and completing 1st lactation records during the period 4/2023 to 3/2024.

Bull No.	Total No. of daughters born	No. of daughters reaching A. F. C.	No. of daughters completing 1st Lactation	Last Lactation
#1354	4	-	-	-
#1451	3	-	-	-
#1506	2	-	-	-
#1796	1	-	-	-
#2459	1	-	-	-
*2607	1	-	-	-
*2786	2	-	-	-
*2831	1	-	-	-
*2838	1	-	-	-
*2847	1	-	-	-
*3004	2	-	-	-
#4354	2	-	-	-
*5005	1	-	-	-
*5427	1	-	-	-
*5505	1	-	-	-
#6007	1	-	-	-
#6044	2	-	-	-
M188	1	-	-	-
Rustem E Hind	6	-	-	-
Total	**34**	-	-	-
Bull No.	**Total No. of daughters born**	**No. of daughters reaching A. F. C.**	**No. of daughters completing 1st Lactation**	**Last Lactation**
*1209		2	-	-
#1875		1	-	-
*2558		1	-	-
*2565		1	-	-

*2645		1	-	-
*2689		1	-	-
*2766		1	-	-
*4905		4	-	-
*4995		2	-	-
*7094		4	-	-
*7147		1	-	-
*7227		2	-	-
*7263		2	-	-
*DARA		1	-	-
PURCHASE		4	-	-
RAMBO		1	-	-
*SIKANDER		1	-	-
Total		**30**	-	-
Bull No.	**Total No. of daughters born**	**No. of daughters reaching A. F. C.**	**No. of daughters completing 1st Lactation**	**Last Lactation**
#2185	-	-	1	-
*2558			1	-
*2565			1	-
*2594			2	-
*2677			1	-
*2689			1	-
*4837			1	-
M BALI			1	-
M 53			1	-
R HIND			1	-
SHERU 2			1	-
PURCHASE			3	-
Total			**15**	-

9.19. Bull-wise daughters completing 1st lactation during the period 4/2023 to 3/2024

Sr. No	Bull No.	Daughter No.	Date of birth	Date of calving	1st lactation 305-day milk yield (kg)	Total lactation yield (kg)	Lactation length (days)
1	#2185	3266	28-06-19	07-11-22	2623	2635	319
2	*2558	3233	28-02-19	19-10-22	2322	2369	335
3	*2565	3293	24-10-19	11-08-22	2478	2478	303
4	*2594	3234	03-03-19	22-10-22	2807	2807	299
5	*2594	3269	20-12-22	21-12-22	2616	2616	305
6	*2677	3296	30-10-19	06-09-22	2571	2775	356
7	*2689	3306	28-11-19	09-10-22	2083	2083	280
8	*4837	3255	07-04-19	25-12-22	3147	3341	362
9	M BALI	3283	20-02-23	20-02-23	2741	2741	305
10	M 53	3199	15-11-18	01-05-22	2144	2327	374
11	R HIND	3259	26-05-19	20-10-22	2393	2459	334
12	SHERU 2	3292	19-10-19	01-11-22	1740	1740	284
13	PURCHASE	3395	12-10-20	27-12-22	2677	2677	301
14	PURCHASE	3431	18-12-19	27-04-23	2937	2941	308
15	PURCHASE	3432	20-12-22	25-11-22	3248	3288	313

9.20 List of future breeding/young bulls as on 3/2024

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's Highest 305 days or less yield (kg)
1.	2786	08-05-18	P2969	6753	3403
2.	2918	28-12-19	P2897	SHERU2	4815
3.	2991	02-01-21	P2542	1994	3429
4.	3007	28-10-19	NOORI	147010	4132
5.	3024	14-04-17	LAXMI	LADEN	4680
6.	3060	20-11-21	P3503	PUR	525
7.	3097	26-07-21	RANI	SIKANDER	4824
8.	3113	16-09-22	P2897	BHISMA104	4815
9.	3121	20-10-22	P3259	KURU184	2393
10.	3122	22-10-22	P3234	KURU184	2807
11.	3126	07-11-22	P2766	102699	3602
12.	3135	20-12-22	P3269	SONU-352	2616
13.	3136	27-12-22	P3395	RAJU	2677

9.21 Target achieved during the years

S.N	Trait	Target	2019-20	2020-21	2021-22	2022-23	2023-24
1.	Av. Age at first calving	40 months	40.42 (23)	40.56 (34)	40.93 (53)	39.28 (31)	39.78 (30)
2.	Av. Service period	130 days	125 (82)	138 (95)	147 (55)	128 (66)	124.26(41)
3.	Calf mortality (0-3 months)	≤5 %	3.45	8.18	13.87	17.43%	9.62%
4.	Wet average	≥8.5 kg.	8.31	8.22	8.42	8.45	8.69 Kg
5.	Herd average	≥5.5 kg.	5.44	5.06	5.58	5.07	5.40 Kg

10. Salient Research Achievements including survey reports/farmers animals covered in the project:

- Fourteen bulls have been presented for proposed 21st set of the project and six has been selected.
- The average age at 1st calving is achieved to 39.28 months.
- The average age at first collection of the bulls at the institute was 26 months.
- The average 305-day yield of the herd was 2564 kg and wet average of 8.69 kg and herd average of 5.40 kg during the period 4/2023 to 3/2024.

11. Publications: Nil

12. Expected Socio-economic impact in the tract :

- Supply of high genetic merit frozen semen has helped to increase the production average of animals in the tract
- Farmers are adopting AI as main mean of mating rather than natural service
- Awareness among farmers of rearing animals on scientific lines like making concentrate ration of their own and other managemental practices

13. Constraints if any:

Regular staff like beldars, cattle attendants and milk recorder has been reduced in the strength in the project which is causing working problems in maintaining the herd.

14. Focus of work in the coming year:

Efforts are being made to further improve the reproductive efficiency and herd strength with special focus on increasing elite animals and keeping calf mortality at lower levels.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR Share as per R E	Expenditure as per AUC		Receipts (ICAR Share)	Balance
Total	ICAR Share		ICAR Share	State Share		
67.00	48.00+3.00*	51.00*	51.00	16.00	3.53306	+ 3.53306

* SCSP Funds

Herd Performance:

Herd strength at the centre was 305 animals with 160 breedable buffaloes (> 2 year). During the period 85 calving were reported with 51 male and 34 females, and six abortions. The calf mortality (0-3 months) during the period was 9.62 % (10/104). Improvement in female conception rate at the farm 47.83% as compared to 46.83%, in 2022.23.

During the report period 65620 semen doses were produced and 49540 semen doses were sold and supplied to field unit/ other Murrah centers and other agencies. In total 167348 frozen semen doses from superior bulls are available at the centre. Increased in 305 day or less day milk yield of 2718 kg (50) was recorded than previous year 2564 kg (31). AFC was sustained (39.78 months) as compared to previous year 39.28 months. An improvement in the reproductive performance viz. SP, Dry period and CI of 124 days (41), 147 days (41), and 435 days (41), respectively was observed as compared to last year 128 days (66), 162 days (66), and 437 days (66). The wet average and herd average improved from 8.45 kg and 5.07 kg to 8.69 kg and 5.40 kg during the year.

Accomplishment and Targets Achieved:

S.N	Trait	Target	2019-20	2020-21	2021-22	2022-23	2023-24
1.	Av. Age at first calving	40 months	40.42 (23)	40.56 (34)	40.93 (53)	39.28 (31)	39.78 (30)
2.	Av. Service period	130 days	125 (82)	138 (95)	147 (55)	128 (66)	124.26(41)
3.	Calf mortality (0-3 months)	≤5 %	3.45	8.18	13.87	17.43%	9.62%
4.	Wet average	≥8.5 kg.	8.31	8.22	8.42	8.45	8.69 Kg
5.	Herd average	≥5.5 kg.	5.44	5.06	5.58	5.07	5.40 Kg

Recommendations:

- To maintain the breedable buffalo population of 200, the Murrah herd strength should be increased at GADVASU.
- The calf mortality should be controlled and restrict below 5% as project target.
- The production performance particularly herd average needs to be improved.

ICAR-NATIONAL DAIRY RESEARCH INSTITUTE, KARNAL

1. Name of Center : **NDRI, Karnal, Main Unit**
2. Project Code : 1010476
3. Project Title : Network project on buffalo improvement-Institute herd
   (Lead Division: Animal Genetics & Breeding-ICAR-NDRI, Karnal)
   Subproject : Performance recording and improvement of Murrah (NDRI Herd)
4. Date of Start : 1993-1994
   Name of the Project In-charge: Dr. Vikas Vohra
5. Objectives : To establish elite herd of 50 to 100 Murrah for the production of genetically superior young bulls. To evaluate sires through institutional progeny testing. To produce, test, propagate and conserve high genetic merit male germplasm.
6. Technical Programme
   - Establishment and maintenance of an elite herd of buffalo breed with a herd strength of 500 and 300 breedable females (Murrah).
   - Selection and testing of minimum 15 bulls of Murrah / 4-6 bulls for other breeds in every 18/24 months cycle.
   - Production of minimum 10,000 (Murrah) and 3000 to 5000 (Other breeds) frozen semen doses from each test bull.
   - Maintain a minimum number of 8000 (Murrah) and 2000 (other breeds) frozen semen doses until the particular SET gets evaluated.
   - Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
   - Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
   - Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield, Milk yield per day of herd life (total milk produced from date of birth till completion of 4th or more lactation).
   - Monthly testing of milk constituents (Fat %, SNF % and Protein %) and Somatic Cell Count, wherever feasible, at institutional herds.
   - Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
   - Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. Financial Statement

Financial Statement NBPI/ICAR-NDRI (Main Unit)	Head wise budget allocation and utilization; revenue receipts		
	Equipment	Contingency (including SCSP)	Total
Total funds Received during 2023-24	Rs 5,00,000	Rs 20,50,000	Rs 25,50,000
Expenditure up to 31-03-2024	Rs 4,98,806	Rs 20,49,969	Rs 25,48,775
Closing Balance on 31-03-2024*	Rs 1,194	Rs 31	Rs 1,225

*AUC and SOC for FY 2023-24 submitted on 12th April 2024.

8. Staff Position - Staff associated with the project through Redeployment

Discipline	Name of Scientist / Staff	Status PI/Co-PI
AGB	Dr. Vikas Vohra, Principal Scientist (from Jan. 2021) Dr. G. R Gowane, Prinicipal Scientist (from March 21)	PI Co-PI
ARGO	Dr. T. K. Mohanty, Principal Scientist Dr. Mukesh Bhakat, Principal Scientist (up to Oct. 2023)	Co-PI Co-PI
LPM	Dr. Pawan Singh, Principal Scientist, I/c LRC & ABRC	Co-PI
Health/Other		

No. of staff	
Administrative staff and Technical staff -- Nil	
Contractual staff	2 (High Skilled) – 11 months 2 (Skilled) – 11 months

9. Herd Performance Enclosed Tables 9.1 to 9.21

9.1 Herd Strength during the Period 1st April 2023 to 31st March, 2024

Sr. No.	Category	Addition			Disposal				CB
		OB	B / P*	T/E	D	T/E	S	E	CB
	Female								
1	Below 3 months	3	43		6	37	-		3
2	3-12 months	40		37	-	43	-		34
3	1-2 years	33		43	1	31	1		43
	Above 2 years	83		31	2	37	7		68
4	Buffaloes in Milk	86		37	5	24	7		87
5	Buffaloes Dry P /NP	48		24	2		17		53
	Sub Total	**336**	**46**	**212**	**21**	**212**	**68**		**293**
	Males								
1	Below 3 months	12	51		3	47			13
2	3-12 months	16		47	1	15	22		25
3	1-2 years	-		15	-	5	6		4
	Above 2 years	-		5	3	2	-		-
4	Breeding bulls	55		2	-	0	3		54
5	Bullocks / Teasers	2		0	-		-		2
	Sub Total	**85**	**51**	**69**	**7**	**69**	**31**		**98**
	Grand Total	**378**	**94**	**241**	**23**	**241**	**63**		**386**

OB = Opening Balance; B = Birth; P= Purchase; T = Transfer;
E = Experimental; D = Death; S = Sale; CB = Closing Balance as on 31.03.2024

9.2 Calving Statistics including abnormalities (1st April 23 to 31st March 2024)

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 23	-	1	-	1	-	1	-	3
May	1	-	-	1	-	-	-	2
June	2	-	-	-	-	1	-	3
July	3	-	-	3	-	1	-	7
August	9	12	-	1	-	3	2	27
September	8	8	1	4	-	1	-	22
October	6	6	1	-	1	-	-	14
November	2	8	-	1	-	2	-	13
December	5	5	-	-	-	1	-	11
January	7	1	-	-	-	1	-	9
February	3	2	-	1	-	-	-	6
March	5	-	1	-	-	2	1	9
Overall	**51**	**43**	**3**	**12**	**1**	**13**	**3**	**126**

Sex ratio Male : Female 1.18:1; SB% = 2.38%; Abortion % = 9.52%

9.3. Disposal of Animals during the Period 1st April 23 to 31st March 24

Female	Primary cause of disposal							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves 0 to 3 months	-	-	-	-	-	6	-	6
3-12 months	-	-	-	-	-	-	-	

Heifers 1-2 years	-	-	-	-	-	1	-	1
> 2 years	-	-	-	-	-	2	-	2
Buffaloes Milch	-	2	-	-	-	5	-	7
Dry	-	-	-	-	-	2	-	2
Sub Total		**2**				**16**	**-**	**18**
Males	**Primary cause of disposal**							
Calves 0 to 3 months	-	-	-	-	-	3	-	3
3-12 months	22	-	-	-	-	1	-	23
1 to 2 year	6							6
>2 year	-	-	-	-	-	3	-	3
Breeding bulls	-	3	-	-	-	-	-	3
Bullock+Teaser+Others	-	-	-	-	-	-	-	-
Sub Total	**28**	**3**	**-**	**-**	**-**	**7**	**-**	**38**
Grand Total	**28**	**5**	**-**	**-**	**-**	**23**	**-**	**56**

9.4. Mortality during the Period 1st April 2023 to 31st March, 2024

Month	No. Died %	Female						Male					Over all Herd
		0-3 Month	3-12 Month	1-2 Yrs.	> 2 Yrs.	Milk + Dry	Overall Female	0-3 Month	3-12 Month	1 -2 Yrs.	>2 yrs.	Overall Male	
Apr, 23	No.	2	43	32	84	134	295	7	20	-	-	27	322
	Died	-	-	-	-	-	-	-	-	-	-	-	-
	%							-	-	-	-	-	-
May, 23	No.	1	41	32	87	133	294	5	23	-	-	28	322
	Died	-	-	-	-	2	2	-	-	-	-	-	2
	%	-	-	-	-	1.50	0.6	-	-	-	-	-	0.6
Jun, 23	No.	1	40	33	87	130	291	3	24	-	-	27	318
	Died	-	-	-	-	-	-	-	-	-	-	-	-
	%	-	-	-	-	-	-	-	-	-	-	-	-
Jul, 23	No.	-	37	34	82	122	275	6	14	-	-	20	295
	Died	-	-	-	-	-	-	-	-	-	1	1	1
	%	-	-	-	-	-	-	-	-	-	1	5.0	0.3
Aug, 23	No.	11	32	37	75	118	273	14	12	-	-	26	299
	Died	1	-	-	-	-	1	-	-	-	1	1	2
	%	9.09	-	-	-	-	0.3	-	-	-	-	3.84	0.6
Sep, 23	No.	17	25	37	75	126	280	20	14	-	-	34	314
	Died	2	-	1	-	2	5	-	-	-	-	-	5
	%	11.76	-	2.70	-	1.58	1.7	-	-	-	-	-	1.5
Oct, 23	No.	23	17	40	76	131	287	23	15	1	-	39	326
	Died	-	-	-	-	-	-	-	1	-	1	2	2
	%	-	-	-	-	-	-	-	6.66	-	-	5.12	0.6
Nov, 23	No.	19	20	41	78	134	292	15	24	1	-	40	332
	Died	2	-	-	-	1	3	1	-	-	-	1	4
	%	10.52	-	-	-	0.74	1.0	6.66	-	-	-	2.5	1.2
Dec, 23	No.	17	20	44	76	136	293	13	29	3	-	45	338
	Died	1	-	-	1	1	3	-	-	-	-	-	3
	%	5.88	-	-	1.31	0.73	1.0	-	-	-	-	-	0.8
Jan, 24	No.	13	23	44	73	139	292	13	33	5	-	51	343
	Died	-	-	-	1	-	1	1	-	-	-	1	2
	%	-	-	-	1.36	-	0.3	7.69	-	-	-	1.96	0.5
Feb, 24	No.	8	29	44	73	142	296	14	31	6	-	51	347
	Died	-	-	-	-	-	-	-	-	-	-	-	-
	%	-	-	-	-	-	-	-	-	-	-	-	-
Mar, 24	No.	3	34	43	68	140	288	13	25	4	-	42	330
	Died	-	-	-	-	1	1	1	-	-	-	1	2
	%	-	-	-	-	1.4	2.8	0.13	-	-	-	0.42	0.6
Overall	Died	6	-	1	2	7	16	3	1	-	3	7	23
	%	5.2	-	0.2	0.2	0.4	0.4	2.0	0.3	-	-	1.6	0.6

Female (0-3 months calves) (Opening Balance + Born= 3+43 => 46; calf died = 13.04%)
Male (0-3 months calves) (Opening Balance + Born= 12+51 => 63; calf died = 4.76%)
Overall (0-3 months calves) (Opening Balance + Born = 15+94 => 109; calf died = 8.25%)

9.5. Causes of Mortality (quarter wise) during the period 1st April 23 to 31st March 2024

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	Total
Enteritis	-	1	3	1	5
Pneumonitis	-	-	-	1	1
Septicemia / Toxemia	1	-	-	-	1
Peritonitis	-	-	-	-	-
JD/TB	-	-	-	-	-
Milk Fever / metabolic diseases	-	-	-	-	-
TRP / TP	-	-	-	-	-
Parasitism	-	-	-	-	-
Sudden death	-	-	-	-	-
Peri-parturient disorders	-	-	-	-	-
General Debility	-	-	1	1	2
Miscellaneous	1	7	5	1	14
Total	**2**	**8**	**9**	**4**	**23**

9.6 Prophylactic Measures undertaken during 2023-24

Disease	**Vaccination Date / No. of animals**	**No. of animals Tested / Positive**		**Dates and No. of animals treated for Parasitism**
FMD	February 2023 & August 2023	All	Nil	
HS	March 2023 & September 2023	All	Nil	
BQ	March 2023 & September 2023	All	Nil	
Brucelloses				
JD				
TB				
IBR				
Mastites				

9.7. Female Conception Rate During the Period January to December 2023

AI No.→	1st			2nd			3rd			4th & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	67	36	53.73	28	17	60.71	9	6	66.67	2	0	0	106	59	55.66
1st calvers	41	25	60.98	13	8	61.54	2	1	50	0	0	0	56	34	60.71
Multiparous	72	34	47.22	25	10	40	8	1	12.5	10	1	10	115	46	40.00
Overall	**180**	**95**	**52.78**	**66**	**35**	**53.03**	**19**	**8**	**42.11**	**12**	**1**	**8.33**	**277**	**139**	**50.18**

AIs = No. of animals inseminated; C = No. of animals conceived ; CR % = Conception rate%

9.8 Quarter-wise conception rate During the Period January to December 2023

Quarter	No. of A I	Preg. animals	CR %
Jan – Mar	61	32	52.46
Apr- Jun	45	18	40.00
Jul- Sep	34	16	47.06
Oct- Dec	137	73	53.28
Overall	**277**	**139**	**50.18**

9.9. Bull-wise Conception Rate During the period January to December, 2023

Sr. no.	Bull No.	Set No.	Total Number of AI	Total Conceived	CR%
1.	2459 P	15	2	1	50
2.	6007 P	15	17	4	23.53
3.	M-29 P	16	13	6	46.15
4.	1053 P	16	12	7	58.33
5.	2383 P	16	4	2	50.00
6.	19 MR	20	16	10	62.50
7.	2831	20	11	3	27.27
8.	2838	20	13	6	46.15
9.	2850	20	13	7	53.85
10.	5427	20	5	3	60.00
11.	5500	20	20	7	35.00
12.	7584	20	4	3	75.00
13.	7649	20	9	6	66.67
14.	2930	21	4	2	50.00
15.	2979	21	10	6	60.00
16.	3014	21	27	13	48.15
17.	5414	21	21	6	28.57
18.	5629	21	12	8	66.67
19.	5638	21	20	13	65.00
20.	5690	21	17	10	58.82
21.	7630	21	6	3	50.00
22.	7768	21	12	9	75.00
23.	7990	21	10	4	40.00
Overall			**277**	**139**	**50.18**

9.10 Bull Wise Semen Stock (April-2023 to March 2024)

S. No.	**Bull No.**	**Centre**	**Opening balance on date 01.04.2023**	**Total semen received & produced**	**Utilization-NPBI**				**Total utilization**	**Closing Balance on date 31.03.24**
					NDRI, Karnal		**CIRB Hissar**	**Other utilization/ Sale**		
					Main Unit	**Field Unit**				
21th set bull										
1	109	LUVAS	0	780	50	325	-	-	375	405
2	112	LUVAS	0	1040	70	500	-	-	570	470
3	297	IVRI	0	1040	-	75	-	-	75	965
4	5414	CIRB	0	1300	75	350	-	-	425	875
5	5629	CIRB	0	1300	110	350	-	-	460	840
6	5638	CIRB	0	1300	50	300	-	-	350	950
7	5690	CIRB	0	520	50	100	-	-	150	370
8	5764	CIRB	0	1040	50	500	-	-	550	490
9	5723	CIRB	0	260	-	-	-	-	0	260
10	2930	GADVASU	0	260	25	150	-	-	175	85
11	2979	GADVASU	0	1180	75	450	-	-	525	655
12	2991	GADVASU	0	0	-	-	-	-	0	0
13	3014	GADVASU	0	1020	75	400	-	-	475	545
14	2990	GADVASU	0	1040	50	150	-	-	200	840
15	7630	NDRI	640	3388	25	400	2750	-	3175	853
16	7990	NDRI	520	3680		500	1700	-	2200	2000
17	7768	NDRI	1892	4442	25	700	4300	260	5285	1049
Proven	M-29	CIRB	0	50	50				50	0
Proven	1053	LUVAS	0	50	50				50	0
Proven	2383	GADVASU	0	50	50				50	0
Total			**3052**	**23740**	**880**	**5250**	**8750**	**260**	**15140**	**11652**

9.11 Average Body weight (kg) since 1999 (Indicate number of animals in parenthesis)

Year	Birth	3 Months	6 Months	12 Months	18 Months	24 Months	At AFC
Female							
Since 1999	31.32	65.00	104.62	171.67	251.95	333.05	559.23
Current year	31.62	65.88	108.35	182.35	250.54	330.71	558.30
Male					**Adults**		
Current year	32.37	73.77	104.60	-	-	-	-

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	22	2763.6	363.8	2538.7	13.3
2nd	13	2731.6	391.0	2399.2	13.8
3rd	9	2726.6	334.3	2610.1	13.8
4th	11	2748.0	336.5	2604.8	14.3
5th & above	9	2745.2	317.4	2692.6	14.3
Overall	**64**	**2746.6**	**354.0**	**2553.4**	**13.8**

9.12.1 Average production performance of Buffaloes since Inception of Network

Year	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1993-1994	2513.70 (117)	311.00 (117)	2351.80 (137)	-
1994-1995	2382.30 (128)	325.90 (128)	2270.10 (128)	11.70 (128)
1995-1996	2750.90 (106)	323.10 (106)	2576.10 (106)	14.20 (106)
1996-1997	2636.50 (105)	330.00 (105)	2423.10 (105)	13.20 (105)
1997-1998	2336.10 (128)	301.00 (128)	2191.20 (128)	11.80 (128)
1998-1999	2190.00 (112)	328.30 (112)	2032.60 (112)	11.10 (112)
1999-2000	1951.00 (095)	316.80 (095)	1822.40 (102)	11.10 (102)
2000-2001	2075.30 (116)	292.30 (116)	2019.10 (126)	12.00 (126)
2001-2002	2070.80 (085)	315.90 (085)	1963.20 (091)	11.80 (091)
2002-2003	2209.44 (072)	330.07 (072)	2000.67 (081)	12.01 (081)
2003-2004	2009.08 (077)	315.23 (077)	1897.08 (089)	10.93 (092)
2004-2005	2091.94 (080)	317.00 (080)	2025.00 (098)	10.86 (098)
2005-2006	2226.97 (126)	301.25 (126)	2159.06 (142)	12.41 (142)
2006-2007	2143.65 (099)	307.39 (099)	2053.77 (111)	11.80 (111)
2007-2008	2254.75 (112)	322.15 (112)	2094.16(127)	12.50(127)
2008-2009	2419.13 (081)	341.61 (081)	2256.01 (086)	12.43 (086)
2009-2010	2272.54 (077)	313.04 (077)	2221.61 (084)	12.08 (084)
2010-2011	2146.04 (125)	310.69 (125)	2014.70 (130)	11.24 (130)
2011-2012	2344.16 (67)	331.83 (67)	2191.83 (67)	10.67 (67)
2012-2013	2381.05 (78)	304.87 (78)	2255.81 (83)	11.56 (83)
2013-2014	2631.90 (82)	332.68 (82)	2430.91 (82)	11.98 (98)
2014-2015	2486.33 (119)	305.15 (119)	2223.57 (124)	12.86 (124)
2015-2016	2727.78 (118)	329.77 (118)	2523.32 (118)	14.10 (118)
2016-2017	2716.96 (87)	335.97 (87)	2535.51 (87)	13.36 (87)
2017-2018	2523±58.3 (96)	335.3±6.1 (96)	2386.7±44.8 (96)	13.00±0.2 (96)
2018-2019	2390.93 (123)	307.39 (123)	2318.78 (123)	12.10 (123)
2019-2020	2256.1 (106)	296.82 (106)	2184.1 (106)	12.80 (106)
2020-2021	2390±62.55 (90)	346.73±8.3 (90)	2198.75±41.48 (90)	12.21±0.13 (90)
2021-2022	2587.11±71.87 (85)	319.94±8.07 (85)	2435.74±58.10 (85)	13.99±0.19 (85)
2022-2023	2647.33±75.80 (70)	348.40±8.24 (70)	2453.96±55.86 (70)	13.47±0.12 (70)
2023-2024	**2746.6±62.57 (64)**	**354.0±7.55 (64)**	**2553.4±53.0 (64)**	**13.81±0.12 (64)**

9.12.2 Herd Life Production (up to ≥4th Lactation) during 2023-24

Animal No.	Date of Birth	Date of completion of ≥ 4th lactation	Date of 1st calving	LTMY	HLF Days	HPL Days	PL Days	UNPLDays	MY/ HLF	MY/HPL
6109	11-09-2019	26-09-2023	21-06-2015	14309.5	5129	3020	1797	1347	2.78	4.73
6503	10-08-2012	26-05-2023	15-10-2017	13426	3942	2050	1547	591	3.40	6.59
6635	03-02-2013	07-09-2023	26-02-2017	14492.5	3869	2385	1775	754	3.74	6.07
6682	02-02-2013	06-07-2023	31-12-2016	10359	3807	2379	1282	1201	2.72	4.35
6792	15-09-2013	26-09-2023	15-08-2018	9761	3664	1869	1384	484	2.66	5.22
6828	26-12-2013	26-04-2023	22-12-2017	10047	3409	1952	1288	737	2.94	5.14
6846	23-01-2014	26-05-2023	16-09-2017	11783	3411	2079	1480	687	3.45	5.66
6847	26-01-2014	05-08-2023	12-09-2017	12624.5	3479	2154	1541	671	3.62	5.80
6866	24-03-2014	29-08-2023	18-09-2017	6612	3446	2172	918	1363	1.91	3.04
6895	30-04-2014	26-06-2023	03-09-2017	13595.5	3345	2123	1615	601	4.06	6.40
6897	02-05-2014	26-06-2023	04-12-2016	12914.5	3343	2386	1711	779	3.86	5.41
6905	31-05-2014	27-05-2023	28-11-2017	11948.5	3284	2007	1437	650	3.63	5.95
6962	04-10-2014	25-11-2023	25-03-2018	11535.5	3340	2072	1400	673	3.45	5.56
6983	14-11-2014	26-11-2023	15-11-2017	9533	3300	2203	1345	886	2.88	4.32
7025	24-01-2015	22-01-2024	26-04-2018	14286	3286	2098	1555	664	4.34	6.80
7096	18-04-2015	25-10-2023	14-06-2019	11059	3113	1595	1267	325	3.55	6.93
7134	02-08-2015	29-05-2023	18-10-2018	5710	2858	1685	876	825	1.99	3.38
7207	08-07-2013	29-02-2024	16-08-2016	10865.5	3889	2754	1515	474	2.79	3.94
7363	16-05-2011	10-09-2023	01-11-2016	15096	4501	2505	1763	811	3.35	6.02
Average				11577	3677	2215	1447	764	3.22	5.33
Max				15096	5129	3020	1797	1363	4.34	6.93
Min				5710	3284	1869	876	325	1.91	3.04

HLF (Herd Life) = Date of birth to date of completion of 4th or more lactations Or date of disposal
HPL(Herd Life) =Date of first calving to date of completion of 4th or more lactations or date of disposal
PL (Productive Days) = Total days in milk
UNPLF (Unproductive days) = Total days when buffalo not give milk from the date of first calving

9.13 Average Milk Compositions from 1st April 2023 to 31st March 2024

Month	No. of Animals	Fat (%) (Mean±SE)	SNF (%) (Mean±SE)	Total solids (%)	Protein (%)	Lactose (%)
Apr, 23	75	8.51±0.13	10.06±0.03	18.57	3.80	5.73
May, 23	64	7.74±0.16	10.30±0.03	18.04	3.94	5.94
Jun, 23	56	8.55±0.15	10.11±0.04	18.66	3.78	5.75
Jul, 23	61	8.34±0.12	10.12±0.04	18.46	3.67	5.61
Aug, 23	56	8.41±0.15	10.07±0.04	18.48	3.73	5.65
Sep, 23	77	8.05±0.12	10.28±0.03	18.33	3.83	5.77
Oct, 23	79	8.31±0.12	10.22±0.02	18.53	3.93	5.89
Nov, 23	92	8.66±0.09	10.03±0.03	18.69	3.80	5.78
Dec, 23	88	8.52±0.08	10.14±0.03	18.66	3.89	5.88
Jan, 24	105	8.17±0.10	10.21±0.03	18.38	3.89	5.85
Feb, 24	104	8.37±0.09	10.13±0.03	18.50	3.79	5.76
Mar, 24	97	8.11±0.09	9.99±0.02	18.10	3.71	5.65
Overall	**80**	**8.31±0.11**	**10.13±0.03**	**18.45**	**3.56**	**5.77**

9.14: Reproductive Performance during the period 1st Apr, 2023 to 31st March 2024

Lactation / Parity	AFC (Months) (N)	SP (Days) (N)	Dry Period (Days) N	Calving Interval CI (Days) N
1	43.97 (38)	81.0 (2)	99.0 (2)	351.5 (2)
2		245.6 (5)	141.2 (2)	554.4(2)
3		148.0 (1)	110.0 (1)	451.0(1)
4		100.3 (3)	83.6(3)	412.3(3)
5th and above		98.8 (6)	92.8(6)	398.0 (6)
Over all	**43.97 (38)**	**143.05 (17)**	**107.1 (17)**	**444.1 (17)**

Figures in parenthesis indicate the number (N) of animals

9.14.1 Reproduction Performance Since inception of Network

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
1993-1994	45.50 (44)	148.63 (97)	123.26 (98)	428.02 (98)
1994-1995	46.00 (37)	119.70 (70)	103.18 (71)	428.20 (70)
1995-1996	43.84 (27)	114.79 (72)	113.03 (72)	422.64 (72)
1996-1997	46.81 (27)	114.33 (66)	96.06 (66)	423.27 (66)
1997-1998	44.84 (34)	96.80 (59)	93.49 (59)	394.68 (60)
1998-1999	46.24 (54)	118.24 (63)	108.50 (62)	424.40 (62)
1999-2000	42.60 (29)	159.18 (82)	113.94 (52)	435.19 (52)
2000-2001	42.40 (42)	107.10 (53)	111.50 (56)	407.70 (56)
2001-2002	44.03 (34)	123.56(77)	118.65 (43)	428.12 (43)
2002-2003	44.02 (20)	140.87 (59)	82.98 (31)	405.90 (31)
2003-2004	43.87 (62)	131.65 (117)	103.59 (37)	438.58 (37)
2004-2005	43.37 (47)	126.45 (93)	106.03 (35)	427.99 (35)
2005-2006	39.90 (36)	149.06 (68)	109.61 (54)	413.31 (54)
2006-2007	41.42 (50)	131.40 (80)	113.86 (50)	419.02 (50)
2007-2008	41.82 (42)	119.61 (84)	121.95 (55)	441.01 (55)
2008-2009	40.75 (31)	130.58 (61)	102.04 (21)	423.71 (21)
2009-2010	41.08 (25)	145.96 (62)	107.08 (30)	412.54 (30)
2010-2011	41.26 (50)	145.06 (76)	119.36 (44)	442.40 (44)
2011-2012	42.13 (24)	120.66 (87)	110.83 (56)	428.33 (56)
2012-2013	41.58 (29)	123.93 (69)	96.94 (55)	401.96 (55)
2013-2014	41.87 (36)	128.37 (73)	100.73 (48)	423.74 (48)
2014-2015	40.39 (35)	134.71 (71)	111.45 (40)	420.97 (40)
2015-2016	39.29 (24)	134.03 (92)	130.75 (92)	429.99 (92)
2016-2017	43.21 (29)	132.20 (54)	110.81 (27)	428.44 (27)
2017-2018	42.29 (35)	138.20 (49)	127.4 (33)	432.4 (33)
2018-2019	44.39 (41)	139.00 (77)	154.00 (77)	446.0 (77)
2019-2020	44.52 (37)	133.50 (60)	162.63 (60)	443.6 (60)
2020-2021	45.1 (26)	140.3 (39)	127.4 (39)	440.1 (39)
2021-2022	58.7 (35)	142.7 (27)	141.6 (27)	452.0 (27)
2022-2023	42.2 (40)	118.5 (28)	111.4 (28)	426.8 (28)
2023-2024	**43.97 (38)**	**143.05 (17)**	**107.1 (17)**	**444.1 (17)**

9.15 Milk Production and Disposal during the period Apr, 2023- Mar, 2024

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April 2023	18400.0	Total milk produced was supplied to the milk plant, NDRI, Karnal		
May	15942.5			
June	13093.0			
July	11277.0			
August	11702.0			
September	15718.0			
October	19940.0			
November	21747.0			
December	23715.0			
January 2024	23329.0			
February	21043.0			
March	21502.5			
Total	**217409.5**			

9.16 Feed and fodder (Quintals) availability:

Months	Green fodder produced at Farm	Green fodder Purchased	Total
April, 23	12165.30	-	12165.30
May	9718.19	-	9718.19
June	10592.70	-	10592.70
July	11615.08	-	11615.08
August	11359.95	-	11359.95
September	10108.50	-	10108.50
October	9504.91	-	9504.91
November	9478.80	-	9478.80
December	12671.50	-	12671.50
January, 24	14066.56	-	14066.56
February	13480.65	-	13480.65
March	15533.48	-	15333.48
Total Green	**140295.62**	**-**	**140295.62**
Silage	-	-	-
Dry	42197.20		42197.20
Concentrate	136141.0		136141.0

9.17: Milk performance during during the period Apr, 2023- Mar, 2024

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April 2023	79	55	134	58.96	7.5	4.6
May	71	62	133	53.28	7.2	3.9
June	64	66	130	49.23	6.8	3.3
July	59	64	123	47.96	6.4	3.0
August	60	58	118	50.85	6.3	3.2
September	74	52	126	58.73	7.1	3.9
October	79	52	131	60.30	8.1	4.8
November	83	51	134	61.94	8.7	5.4
December	85	51	136	62.50	9.0	5.6
January 2024	92	47	139	66.18	8.2	5.4
February	94	48	142	66.20	8.0	4.9
March	87	53	140	62.14	8	4.9
Total	**77**	**55**	**132**	**58.19**	**7.6**	**4.4**

9.17.1 Milking performance since inception

Year	No. of Animals in Milk	No. of Animals in Dry	Total No. of Animals	% in Milk	Wet Av. (kg)	Herd Av. (kg)
1993-1994	115	45	160	72.15	7.80	5.60
1994-1995	114	54	168	68.02	8.39	5.72
1995-1996	109	51	160	68.12	8.03	5.50
1996-1997	103	43	146	70.55	7.90	5.60
1997-1998	119	47	166	71.98	7.40	5.30
1998-1999	100	68	168	59.40	5.93	3.52
1999-2000	094	71	165	75.53	6.60	3.90
2000-2001	104	59	163	63.56	6.65	4.23
2001-2002	090	53	143	62.69	6.26	3.93
2002-2003	073	34	106	68.48	6.23	4.27
2003-2004	080	37	117	68.38	6.36	4.31
2004-2005	111	46	157	70.50	7.39	5.23
2005-2006	107	65	172	62.14	7.05	4.38
2006-2007	100	78	178	56.18	6.70	3.75
2007-2008	104	69	173	60.00	6.80	4.00
2008-2009	064	65	130	50.25	7.09	3.49
2009-2010	091	65	156	58.33	7.32	4.25
2010-2011	096	109	205	46.82	5.83	2.75
2011-2012	066	81	147	44.89	6.79	3.03
2012-2013	090	51	141	63.69	7.35	4.63
2013-2014	101	65	166	60.84	7.80	4.70
2014-2015	115	82	197	58.05	8.05	5.10
2015-2016	132	107	239	55.44	8.43	4.13
2016-2017	105	90	195	53.73	8.39	4.52
2017-2018	99	110	209	47.36	8.23	4.21
2018-2019	112	102	214	52.30	7.4	3.9
2019-2020	118	105	220	52.12	6.7	3.5
2020-2021	86	111	197	43.65	6.6	3.0
2021-2022	85	80	165	51.52	7.7	4.0
2022-2023	87	68	155	56.10	7.8	4.7
2023-2024	**77**	**55**	**132**	**58.19**	**7.6**	**4.4**

9.18: Bull wise daughters born (only numbers) during the period Apr, 2023- Mar, 2024

Set No.	Centre	Bull No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
15	GADVASU	2459	1	-	-
20	GADVASU	2838	2	-	-
20	GADVASU	2850	1	-	-
15	CIRB	4354	1	-	-
20	CIRB	5427	11	-	-
20	NDRI	6007 P	2	-	-
20	NDRI	7584	12	-	-
20	NDRI	7649	10	-	-
20	LUVAS	19 MR	3	-	-
		Total	**43**	-	-

9.19 Bull wise daughters completing 1st lactation during the Period April 2023 to March 2024

Bull No.	Daughter No.	Date of birth	Date of calving	AFC (month)	Lact. Length (days)	TLMY (kg)	SLMY (kg)
M-29 P (16)	7539	22-12-2017	04-02-2022	49.5	447	3679.5	**2792**
2565 (17)	7612	18-07-2018	23-07-2022	48.2	352	3322	**3108.5**
4687 (17)	7731	27-11-2018	23-07-2022	43.9	348	3111	**3111**
4733 (17)	7740	09-02-2018	15-09-2022	55.2	348	1891.5	1857
4837 (17)	7772	12-02-2019	30-08-2022	42.6	285	2626	2626
3267P (11)	7787	21-03-2019	03-09-2022	41.5	330	3114.5	**3004.5**
6942 (17)	7789	27-03-2019	03-10-2022	42.3	358	2923	2289
6942 (17)	7811	17-04-2019	29-08-2022	40.4	357	2197.5	2083.5
4837 (17)	7814	04-05-2019	08-12-2022	43.2	342	2300	2178.5
2565 (17)	7817	14-06-2019	02-09-2022	38.7	392	3035	**2867**
6942 (17)	7830	04-08-2019	13-01-2023	41.4	423	2502	2100.5
2558 (17)	7838	18-08-2019	13-01-2023	46.9	374	3332	**3029**
2558 (17)	7841	20-08-2019	27-01-2023	41.3	397	2175	1882
7010 (17)	7855	02-09-2019	11-01-2023	40.3	382	2892.5	2548
7010 (17)	7864	09-09-2019	17-12-2022	39.3	316	2779	**2762**
B1-330 (17)	7869	20-09-2019	27-10-2022	37.2	182	1305	1305
4733 (17)	7873	22-09-2019	18-08-2022	34.9	376	2851.5	**2754.5**
4733 (17)	7874	24-09-2019	30-09-2022	36.2	390	2307	2078
4733 (17)	7883	07-10-2019	22-10-2022	36.6	331	2806	**2750.5**
4733 (17)	7884	07-10-2019	04-11-2022	36.9	331	2672.5	2594
2558 (17)	7900	27-10-2019	25-10-2022	36	323	2289	2257.5
2558 (17)	7902	06-11-2019	17-01-2023	38.4	377	2612	2407
4733 (17)	7912	27-11-2019	29-12-2022	37.1	426	3381	**2773**
Average				**41.2±1.03**	**355.9±11.23**	**2700.2±112.9**	**2485.1±96.79**

Out of 23 bulls used, daughters of 10 bulls had given SLMY greater than 2700 kg in NDRI herd

9.20 Breeding bulls Selected for current set (21st) during the period Apr, 2023- Mar, 2024

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best SLMY
1	7630	05-09-2018	M-51	6852	3343 /15.5
3	7768	01-02-2019	2607	6922	3323 / 16.5
4	7990	19-08-2020	183 PT	6626	3991 / 18.0

9.20.1 PT Bulls for nominated mating during the period April 2023 to March 2024

Bull No.	Set No.	Centre	Dams' Best yield	Sire index/ Breeding Value	% Superiority
6007	15	NDRI	3260	2588	1.61
2459	15	GADVASU	4636	2587	1.58
M-29	16	CIRB	4600	2579	3.82
1053	16	LUVAS	3559	2567	3.35
2383	16	GADVASU	4636	2547	2.53

9.20.2 List of breeding bulls as on 31.3.2024

Sr. No	Bull No.	DOB	Sire No.	Dam No.	Dam's best SLMY	Semen doses available
1.	6379	17-10-2011	4915	402	3505	3289
2.	6646	07-02-2013	N.K.	6627	3533	6145
3.	6753	13-07-2013	858	470	3389	235
4.	6822	13-12-2013	2422	490	4187	-
5.	6942	23-08-2014	4439	6627	3533	13311
6.	7094	08-04-2015	N.K.	6625	3465	8069

7.	7147	14-08-2015	N.K.	6631	3018	8894
8.	7227	04-01-2016	6044	5851	3099	1500
9.	7263	28-05-2016	6290	6625	3465	5148
10.	7277	22-07-2017	2459	6236	3508	-
11.	7450	14-05-2017	6409	6116	3570	-
12.	7465	08-08-2017	6646	6852	3343	-
13.	7492	09-10-2017	1027	6906	2799	-
14.	7511	17-11-2017	2133	470	3389	-
15.	7524	28-11-2017	1053	6905	3518	-
16.	7542	27-12-2017	2133	5620	3104	-
17.	7545	29-12-2017	4705	6843	3050	-
18.	7568	24-02-2018	2501	7351	3010	-
19.	7584	30-07-2018	6253	6147	3600	2930
20.	7586	08-04-2018	2501	6946	3091	-
21.	7590	17-04-2018	3591	6122	3590	-
22.	7604	18-06-2018	7010	6477	3158	5446
23.	7619	03-08-2018	2565	6799	3171	-
24.	7630	05-09-2018	51	6852	3343	643
25.	7638	22-09-2018	4687	6795	3076	-
26.	7649	15-10-2018	2558	6735	3203	6323
27.	7759	18-01-2019	2565	7251	3188	-
28.	7768	04-02-2019	2607	6922	3251	2889
29.	7784	17-03-2019	6942	6722	3234	-
30.	7895	23-10-2019	2558	6795	3076	-
31.	7911	27-11-2019	7094	6478	2996	-
32.	7973	15-03-2020	183	6477	3158	-
33.	7990	19-08-2020	183	6626	3991	1060
34.	8049	24-11-2020	7147	7359	3085	-
35.	8054	25-11-2020	1219	6780	3006	-
36.	8080	04-04-2021	3591	6843	3050	-
37.	8082	25-02-2021	4905	7046	3228	-
38.	8092	27-09-2021	7604	6895	3177	-
39.	8100	01-08-2021	2357	6871	3272	-
40.	8129	20-09-2021	7604	7460	3125	-
41.	8141	03-10-2021	2357	7045	3006	-
42.	8149	10-10-2021	7604	6478	2926	-
43.	8150	12-10-2021	5246	7437	2966	-
44.	8159	02-11-2021	7604	7423	2880	-
45.	8164	05-11-2021	2357	6477	3158	-
46.	8185	27-12-2021	2737	6774	3466	-
47.	8198	14-02-2022	6044	5620	3104	-
48.	8200	25-02-2022	6044	7352	3015	-
49.	8249	04-09-2022	2759	6895	3177	-
50.	8295	18-11-2022	6007	7162	3011	-
51.	8311	13-01-2023	3004	7838	3029	-
52.	8318	18-02-2023	2848	7020	3055	-
53.	8319	23-02-2023	2848	7437	2966	-
54.	8344	31-03-2023	5427	7112	2998	-

9.21 Target achieved during the year during the period April 2023 to March 2024

Trait	Target	Achieved (2023-24)
Average Age at first calving (months)	40.0	43.97 (38)
Average Service period (days)	130.0	143.05 (17)
Calf mortality (0-3 months) in %	≤ 5 %	8.25 %
Wet average (kg)	≥8.5 kg	7.60 kg
Herd average (kg)	≥5.5 kg	4.40 kg

10. Salient Research Achievements:

Activity carried out during the period: The NDRI center is involved for genetic improvement of Murrah Buffalo breed along with other centers under Network Project on Buffalo Improvement

i) **Technical Programme:** The breeding programme in the Murrah herd was followed for test mating of 20th and 21st set of bulls. Eight bulls from 20th set and ten bulls from 21st set were used till March 2024. Semen was received/collected from 17 bulls of 21st set and three proven bulls from 16th set were used, (bull no. M-29, 1053, and 2383). The dam's best lactation 305-day milk yield of bulls of NDRI under 21st set had ranged from 3323 to 5170 kg. The dam's best lactation 305-day milk yield of 2 bulls of NDRI under 21st set had ranged from 3323 to 3991 kg.

ii) Targets and Achievements: The herd strength of breedable buffaloes was 208 in 2023-24. Average age at first calving of buffaloes was 43.9 months. The average service period of buffaloes has been estimated as 143 days. The overall female conception rate in the herd was 50.18% for the buffaloes inseminated during Jan-Dec, 2023. The overall mortality (0-3 months) during the year was only 8.25%. The wet and herd average was 7.60 and 4.4 kg, respectively. The average Milk Fat, SNF, Total Solid, Protein and Lactose were estimated as 8.31±0.11, 10.13±0.03, 18.45, 3.56 and 5.77%, respectively.

Selection of bulls: Total 03 elite Murrah male calves were reserved during the period (2023-24) on the basis of Expected Predicted Difference and dam's best 305day or less lactation milk yield, breed characteristics and physical conformity for selection of young male calves for future breeding. Finally, 13 young bull with their dam's best 305 days lactation milk yield of ranged from 3006 kg in any lactation to 3466 kg was reserved. On the basis of 15th set evaluation out of three top ranking bulls, selected for nominated mating from 1st August 2023 to 31st December 2024.

Progeny Test Evaluation – Set-wise: The information on 305 days milk yield of daughters completing first lactation during 2023-24 were collected and compiled for genetic evaluation of Murrah bulls.

Technologies developed / Success story(s)

Supply of Quality germplasm: The NDRI Centre has produced a total **23740** doses of frozen semen, out of which **11510** doses from the bulls of 21st set were procured / produced during the period. The NDRI unit has supplied 8750 doses of frozen semen to the lead center and field units, out of which 5250 doses were supplied to Field unit of NDRI Karnal. A total of 14990 FSD were utilized for 21st set bulls. In addition, doses of semen were supplied from ABRC for research purpose in the institute, though sale to farmers and other dairy development organizations during the period.

The germplasm of genetically superior progeny tested proven bulls are being used on elite buffaloes in organized herds for production of high-pedigreed bulls for further multiplication and production of superior germplasm and establishment of elite herds. Superior semen of proven and high-pedigreed bulls of NDRI center is being used by various dairy development agencies and dairy farmers for bringing genetic improvement of Murrah buffaloes.

Bulls for elite mating: The breeding programme in the herd was followed for nominated mating using semen of four proven Murrah Bulls. About 10 Murrah buffaloes were identified as elite animals. The average best lactation milk yield of elite Murrah buffaloes was 3113.2 kg which was 21.92% higher than the herd average. The best lactation milk yield of elite Murrah buffaloes ranged between 1558.5 kg to 3200 kg in 305 days. Forty-three daughters and 51 male calves were born in the herd of which five female and three males were born to elite dams and proven sires. Total **217409.5** kg milk was produced by average 87 milch animals during the year.

11. Gaps/ Constraints, if any

The center has faced the impact of the constraint of high mortality in Murrah happened during 2019-20. The number of elite females has been dropped.

12. Future programme

The efforts will continue to further improving the wet and herd average performance of buffaloes for achieving the targets specified in the project.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR Share as per R E	Expenditure as per AUC		Closing Balance
Total	ICAR Share		ICAR Share	State Share	
25.50*	25.50*	25.50*	25.48775	0.00	(+) 0.01225

* Includes Rs. 1.00 lakh under SCSP

Herd Performance

Herd strength was 386 out of which 208 were breedable buffaloes (>2year). During the period 94 calving took place consisting of 51 males, 43 females, 3 still births and 12 abortions. The calf mortality (0-3 months) was high 8.25 %, in 2023-24 as compared to previous year (3.77%). Female conception rate improved from 48.46 to 50.18 percent. During the report period 23740 semen doses were produced and 15140 frozen semen doses were disseminated (supply to NPBI/sold/FPT unit). Closing balance of frozen semen doses from superior bulls at the centre 11652 are available.

Average total lactation milk production increased from 2647 kg (70) to 2747 kg (64); 305 days or less days average milk yield increased from 2454 kg (70) to 2554 kg (64), Lactation length was 354 days (64) increased to previous year 348 days (70). Age at first calving was 43.97 months (38) as compare to previous year 42.20 months (40), Similarly, average service period increased from 119 days (28) to143 days (17); average dry period improved from 111 days (28) to 107 days (17) and average calving Interval increased from 427 days (28) to 444 days (17). Centre wet average and herd average decreased from 7.8 kg and 4.7 kg, respectively to 7.6 kg and 4.4 kg in 2023-24. During the report period 58.19 percent animals were in milk as compared to 56.10 percent in 2022-23.

Accomplishment and Targets Achieved:

Trait	Target	2019-20	2020-21	2021-22	2022-23	2023-24
Av. Age at first calving (months)	40	44.52 (37)	45.10 (26)	58.7 (35)	42.2 (40)	43.97 (38)
Av. Service period (days)	130	133.5 (60)	140.3 (39)	142.7 (27)	118.5 (28)	143.05 (17)
Calf mortality (0-3 months)	≤ 5%	11.49	4.07	7.44	3.77	8.25 %
Wet average (kg)	≥8.5 kg	6.7	6.60	7.70	7.80	7.60 kg
Herd average (kg)	≥5.5 kg	3.5	3.00	4.00	4.70	4.40 kg

Recommendations:

- To maintain the breedable buffalo population of 250, the herd strength should be increased at NDRI Murrah Unit.
- To meet out the target, there is a need to improve the milk production performance of buffaloes of NDRI Murrah herd.
- As per the project target, calf mortality needs to be controlled and restricted under 5%.

ICAR- INDIAN VETERINARY RESEARCH INSTITUTE, IZATNAGAR
Report Period: 2023-24

1. Name of centre : I.C.A.R.-I.V.R.I., Izatnagar
2. Project Code : OXX00185
3. Project Title : Network Project on Buffalo Improvement
Subproject : Performance recording and improvement of Murrah buffalo
4. Date of Start : 01.07.1993
5. Objectives :

i. To establish elite herd of 150 Murrah for the production of genetically superior young bulls.
ii. To evaluate sires through institutional / associated herd progeny testing scheme
III. To produce, test, propagate and conserve high genetic merit male germplasm.

6. Technical Programme:

a) Establishment and maintenance of an elite herd of Murrah buffalo breed with a herd strength of 150 breedable females
b) Selection and testing of minimum 15 bulls of Murrah breed in every 18 / 24 months cycle.
c) Production of minimum 10,000 (Murrah) frozen semen doses from each test bull.
d) Maintain a minimum number of 8000 (Murrah) and 2000 (other breeds) frozen semen doses until the particular SET gets evaluated.
e) Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
f) Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
g) Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days & 1500 kg in Murrah) and Peak yield, milk yield per day of herd life (total milk produced from date of birth till completion of 4th or more lactation).
h) Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds.
i) Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
j) Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. Staff associated with the project:

Discipline	Name of Scientist / Staff	Status PI/Co-PI/ Associated)
AGB	Dr. A.K.S. Tomar, Pr. Scientist	Principal Investigator
	Dr. G.K. Gaur, Pr. Scientist	Project Associate (w.e.f. 2023-24)
	Dr. A.K. Pandey, Pr. Scientist	Project Associate (w.e.f. 2022-23)
ARGO	Dr. S. K. Ghosh, Pr. Scientist	Project Associate
	Dr. M.K. Patra, Scientist	Project Associate (w.e.f. 2017-18)
ANFT	Dr. Narayan Dutta, Pr. Scientist	Project Associate
LPM	Dr. Triveni Dutt, Director	Project Associate
	Dr. H.O. Pandey, Sci. (LPM)	Project Associate
Health / Others	Dr. (Er.) Mukesh Singh, Pr. Scientist (FMP)	Project Associate
	Dr. Rajeev Ranjan Kumar, Sr. Scientist, LPT Div./ Dr. A. K. Biswas, Sr. Scientist, LPT/ Dr. Devender Kumar, Sr. Scientist (LPT)	Project Associate (w.e.f. 26th June, 2021 to March, 2022)/ (w.e.f. 2022-23)
	Dr. K. Mahendran, Scientist (Medicine)	Project Associate (w.e.f. 2021-22)
	Scientist - Division of Surgery (Rotational arrangement)	Project Associate

No. of staff	
Administrative staff	None
Technical staff	None
Contractual staff (~~RA / SRF /~~ YP-I, ~~YP-II~~)	One (up to 31st March, 2024) - continue

8. Financial Statement: Head wise budget allocation and utilization; revenue receipts

Financial Year	Head wise Budget allocated (lakh Rs.)			Utilization (Lakh Rs.)			Revenue Generated (Lakh Rs.)
	Recurring contingency	Non-recurring (Equipment)	Total	Recurring contingency	Non-recurring (Equipment)	Total	
2023-24	16.00	2.25	18.25	15.48985	2.24898	17.73883	69.95934*
							4.83100**
Grand Total	**16.00**	**2.25**	**18.25**	15.48985	2.24898	**17.73883**	**1.58300*** **

* Through sale of 155595.0kg milk; ** Sale of 12 buffaloes
*** Sale of 7915 frozen semen doses of Murrah buffalo by GP center

9.1 Herd Strength (2023-24)

Sr. No.	Category	Addition			Disposal				CB
		OB	B / P	T	D	T	S	E	CB
	Female								
1.	Below 3 months	8	44	-	2	43*	-	-	7
2.	3-12 months	31	-	43*	-	39*	-	-	35
3.	1-2 years	26	-	39*	-	26*	-	-	39
	Above 2 years	48	-	26*	-	30*	2	-	42
4.	Buffaloes in Milk	70	-	30*	1	16*	1	-	82
5.	Buffaloes Dry P /NP	44	-	16*	2	-	4	-	54
	Sub Total	**227**	**44**	**154***	**5**	**154***	**7**	**-**	**259**
	Males								
1.	Below 3 months	8	53	-	6	48*	-	-	7
2.	3-12 months	25	-	43*	-	3 29*	3	-	38
3.	1-2 years	11	-	29*	-	8 13*	-	-	19
	Above 2 years	5	-	13*	-	8*	2	-	8
4.	Breeding bulls	8	-	8*	-	1	-	-	15
5.	Bullocks / Teasers / others	2	-	-	-	-	-	-	2
	Sub Total	**59**	**53**	**98***	**6**	**12 98***	**5**	**-**	**89**
	Grand Total	**286**	**97**	**252***	**11**	**12 252***	**12**	**-**	**348**

OB = Opening Balance as on 1st April 21 D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T/* = Internal Transfer ** Purchased CB = Closing Balance as on 31st March

9.2 Calving statistics including abnormalities (2023-24)

Month	Male	Female	Still Birth	Abortion	ROP	Prolapse	Dystokia
April 23	1	-	-	1	-	-	-
May	1	-	-	-	-	-	-
June	2	1	-	-	-	-	-
July	8	7	-	1	1	-	-
August	7	7	-	1	2	-	-
September	8	9	-	-	1	1	-
October	7	8	-	-	2	1	-
November	4	4	-	1	-	-	-
December	6	1	-	-	1	-	-
January 24	6	2	-	-	-	-	-
February	-	3	-	-	-	-	-
March	1	2	-	-	-	-	-
Overall	51	44	-	4	7	2	-

Sex ratio (Male : Female)= 1.00 : 0.86; Abortion% = 4.21% (4*100)/95

9.3. Disposal of Animals (2023-24)

Female	**Primary cause of disposal**							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves								
0 to 3 months	-	-	-	-	-	2	-	2
3-12 months	-	-	-	-	-	-	-	-
Heifers								
1-2 years	-	-	-	-	-	-	-	-
> 2 years	-	-	1	-	-	-	-	1
Buffaloes								
Milch	-	-	-	1	-	2	-	3
Dry	-	-	5	-	-	1	-	6
Sub Total	**-**	**-**	**6**	**1**	**-**	**5**	**-**	**12**
Males	**Primary cause of disposal**							
Calves								
0 to 3 months	-	-	-	-	-	6	-	6
3-12 months	3	-	-	-	-	-	3	6
1 to 2 year	-	-	-	-	-	-	8	8
>2 year	2	-	-	-	-	-	-	2
Breeding bulls	-	-	-	-	-	-	1	1
Bullock/Teaser/ Others	-	-	-	-	-	-	-	-
Sub Total	**5**	**-**	**-**	**-**	**-**	**6**	**12**	**23**
Grand Total	**5**	**-**	**6**	**1**	**-**	**11**	**12**	**35**

9.4. Mortality during the Period 1st April 2023 to 31st March, 2024

Sex	**Female**						**Male**					**Overall Herd**
Class	**0-3 m**	**3-12 m**	**1-2 yr**	**> 2 yr**	**Milk + Dry**	**Overall Female**	**0-3 m**	**3-12 m**	**1 -2 Yr**	**>2 yr**	**Overall Male**	
No.	52	113	65	262	160	271	61	113	81	-	112	383
Died	2	-	-	-	3	5	6	-	-	-	6	11
%	**3.84**	**-**	**-**	**-**	**1.87**	**1.84**	**9.83**	**-**	**-**	**-**	**5.35**	**2.87**

Percent calf Mortality = 7.08% (8*100)/113

9.5. Causes of Mortality (quarter wise) during the period (2023-24)

Particulars	**1st quarter**	**2nd quarter**	**3rd quarter**	**4th quarter**	**Total**
A. Respiratory System:					
Pneumonia/Broncho Pneumonia/Chronic Supp. Pneumonia	-	-	-	-	-
Pneumonia Enteritis /Gastroenteritis	-	-	-	2	2
B. Digestive System:					
Septicemia & Toxemia/ Enteritis leading to Septicemia, Acute Abomasamitis & Septicemia, Fib. Pleuritis, Acute Peritonitis Septicemia due to Navel ill/Joint ill	-	-	-	-	-
C. Others					
Still birth / NSD/Bacterial infection/Premature birth	-	1	-	-	1
Splenic Rupture /acute Selenitis	-	-	-	-	-
P.M. report not available	-	-	-	-	-
Chronic supp Myositis & peritonitis	-	-	-	-	-
Abortion/ NSD /bacterial infection	1	2	-	2	5
Protein Enteropathy or Nephropathy	-	-	-	-	-
Post mortem report not available	-	2	-	1	3
Total	**1**	**5**	**-**	**5**	**11**

9.6 Prophylactic measures undertaken (2023-24)

Vaccination	No. of animals		Screen-ing	No. of animals		No of animals treated for Parasitism etc.
	Available	Inoculated		Tested	Result	
F.M.D.	-	903	Faecal samples	7	03 (-ve), 01 (+ve) 03 fecal sample was found tested for sensitivity/ABST Test, out of which, one sample was found sensitive to cohistin & nitrofurantion, one sample was found sensitive for Amikacin, One sample was found sensitive for Ceftizoxime & Amikacin	Postnatal Coverage 95 Endoparasites 353 Coccidiostat 66 Liq. Vitamin supplement 44 Feed supplement 84
H.S.	-	323				
Brucella	-	39	Blood sample	7	06 (+ve) for Anaplasmosis,	
LSD	-	34	Serum	-	01(-ve) for TB/JD Test	

9.7. Female Conception Rate During the Period April 2023 to March 2024

AI No.→	1st			2nd			3rd			4th			5th & above			Overall		
Parity↓	**AIs**	**C**	**CR%**	**AIs**	**C**	**CR%**	**AIs**	**C**	**CR%**	**AIs**	**C**	**CR%**	**AIs**	**C**	**CR%**	**AIs**	**C**	**CR%**
Heifers	25	14	56.00	13	10	76.92	3	2	66.67	1	1	100.00	0	0		42	27	64.29
Adults	97	53	54.64	39	17	43.59	23	12	52.17	5	2	40.00	4	3	75.00	168	87	51.79
Overall	**122**	**67**	**54.92**	**52**	**27**	**51.92**	**26**	**14**	**53.85**	**6**	**3**	**50.00**	**4**	**3**	**75.00**	**210**	**114**	**54.29**

AIs = No. of animals inseminated; C = No. of animals conceived; CR % = Conception rate%

9.8 Quarter-wise conception rate (2023-24)

Quarter	No. of A I	Preg. animals	CR %
April – June 2023	14	6	42.85
July – September 2023	36	22	61.11
October- December 2023	93	51	54.83
January- March 2024	67	35	52.23
Overall	**210**	**114**	**54.29**

9.9. Bull wise conception rate (inseminated during April, 2023 to March 2024)

Sl. No	Bull No.	Set No.	Total No of AI	Total Conceived	CR %
1.	B-19	20th	5	3	60.00
2.	M-29	17th (PT)	6	0	0.00
3.	1053	17th (PT)	5	1	20.00
4.	1454	20th	3	2	66.67
5.	2383	17th\ (PT)	4	3	75.00
6.	2793	20th	2	1	50.00
7.	2814	20th	1	0	0.00
8.	2831	20th	2	1	50.00
9.	2979	21st	22	10	45.45
10.	3014	21st	21	11	52.38
11.	5414	21st	25	10	40.00
12.	5481	20th	8	6	75.00
13.	5500	20th	9	6	66.67
14.	5505	20th	8	3	37.50
15.	5511	20th	1	0	0.00

16.	5629	21st	25	15	60.00
17.	5690	21st	4	3	75.00
18.	5723	21st	4	3	75.00
19.	5764	21st	5	4	80.00
20.	7584	20th	1	1	100.00
21.	7630	21st	20	12	60.00
22.	7768	21st	21	12	57.14
23.	7990	21st	8	7	87.50
Over all			**210**	**114**	**54.29**
No. of services per conception			**1.84 (210/114)**		

9.10 Bull Wise Semen Stock (April, 2023 to March, 2024)

Sl. No.	Set No.	Bull No	Opening balance (1st April, 2021	Semen Doses received	Doses used / Consumption	Balance (as on 31/03/2022)
1.	21st	297	-	100	-	100
2.	21st	112	-	100	-	100
3.	21st	109	-	100	-	100
4.	21st	2990	-	100	-	100
5.	21st	7990	-	100	30	70
6.	21st	5764	-	100	20	80
7.	21st	5723	-	100	16	84
8.	21st	5690	-	100	20	80
9.	21st	5638	-	100	0	100
10.	21st	2383	-	20	20	0.0
11.	17th	M-29	-	20	20	0.0
12.	17th	1053	-	20	20	0.0
13.	21st	7768	-	100	92	08
14.	21st	7630	-	100	86	14
15.	21st	5414	-	100	100	0.0
16.	21st	5629	-	100	100	0.0
17.	21st	3014	-	100	98	02
18.	21st	2979	-	100	100	0.0
19.	21st	2390	-	45	0.0	Discarded
20.	20th	2850	57	0.0	0.0	57
21.	20th	5481	90	0.0	56	34
22.	20th	5505	53	0.0	30	23
23.	11th (PT)	3591	02	0.0	0.0	2.0
24.	20th	1454	82	0.0	08	74
25.	20th	B-19	70	0.0	16	54
26.	20th	5511	80	0.0	12	68
27.	20th	5500	88	0.0	54	34
28.	20th	2793	59	0.0	8	51
29.	20th	3004	41	0.0	0.0	41
30.	20th	2831	25	0.0	25	0.0
31.	20th	5588	8	0.0	0.0	8
32.	20th	2814	15	0.0	4.0	11
33.	20th	7649	67	0.0	0.0	67
34.	20th	7584	18	0.0	4.0	14
35.	20th	5427	15	0.0	0.0	15
Grand Total			**770**	**1605**	**939**	**1391**

9.11.1 Average body weight (kg) since inception

Year	Birth	3 m	6 m	12 m	18 m	24 m	At AFC
Female							
1997-98	24.84±0.59 (19)	92.50±1.77 (18)	123.75±0.71 (12)	229.29±2.09 (14)	254.50±0.26 (10)	366.25±0.50 (8)	-
2002-03	29.10±0.98 (09)	80.00±7.35 (04)	107.08±7.22 (12)	195.62±10.32 (16)	277.14±10.53 (07)	347.27±13.71 (11)	-
2003-04	31.44±0.98 (17)	54.50±2.26 (10)	98.43±6.43 (16)	190.00±12.32 (11)	297.69±10.38 (13)	342.81±10.38 (16)	-
2004-05	30.44±1.06 (34)	59.00±3.13 (15)	95.00±8.05 (10)	175.00±11.30 (06)	271.66±12.91 (12)	381.00±13.24 (10)	-
2005-06	30.75±0.83 (29)	57.66±1.99 (15)	85.71±10.09 (21)	173.42±9.82 (19)	280.38±12.42 (13)	355.45±11.81 (11)	-
2006-07	31.39±0.89 (28)	59.44±2.69 (18)	94.33±4.84 (15)	180.76±9.53 (13)	268.68±9.59 (19)	355.75±10.10 (20)	-
2007-08	30.30±0.92 (29)	66.50±1.79 (30)	107.86±4.83 (28)	179.04±6.33 (26)	245.67±8.75 (15)	313.64±7.99 (11)	475.38±21.28 (13)
2008-09	30.45±0.58 (33)	63.40±2.06 (25)	100.00±3.41 (23)	178.25±8.03 (20)	241.11±10.11 (27)	319.29±11.42 (21)	477.81±18.97 (16)
2009-10	30.59±0.75 (37)	77.11±2.32 (26)	123.80±6.20 (21)	186.31±9.09 (19)	263.69±1176 (23)	343.75±14.64 (20)	509.00±18.49 (15)
2010-11	29.52±5.31 (34)	84.43±7.75 (16)	122.81±7.75 (16)	230.43±6.46 (23)	292.10±5.03 (38)	344.44±7.31 (18)	483.75±16.70 (20)
2011-12	32.09±0.96 (23)	58.18±2.94 (19)	114.69±4.97 (16)	223.06±9.42 (18)	311.25±7.65 (16)	377.90±6.53 (24)	498.44±16.72 (16)
2012-13	33.63±0.78 (24)	69.96±2.46 (24)	126.30±4.82 (23)	233.53±13.84 (17)	334.62±8.98 (13)	391.25±8.84 (16)	535.71±25.87 (07)
2013-14	32.83±1.13 (23)	65.41±2.79 (22)	121.96±4.38 (23)	253.04±10.54 (23)	330.45±8.49 (22)	409.69±10.64 (16)	539.58±23.83 (12)
2014-15	34.75±0.72 (29)	76.44±3.96 (27)	108.33±4.27 (15)	227.38±7.63 (21)	342.86±5.52 (21)	412.80±6.67 (25)	530.56±20.14 (18)
2015-16	30.69±1.30 (26)	63.11±2.13 (18)	96.14±2.94 (22)	205.54±7.78 (28)	311.46±11.05 (24)	411.50±8.44 (20)	505.56±27.33 (09)
2016-17	36.38±0.94 (29)	75.95±2.71 (22)	108.68±3.58 (19)	206.58±9.51 (19)	303.25±7.77 (20)	378.04±9.90 (28)	546.58±9.88 (19)
2017-18	33.46±0.99 (24)	76.42±1.80 (31)	111.55±2.94 (29)	200.00±5.43 (28)	295.23±10.43 (22)	378.89±10.57(18)	320.91±10.30 (23)
2018-19	33.71±0.66 (28)	72.46±2.79 (13)	118.20±2.58 (25)	215.00±6.42 (22)	303.97±5.18 (29)	392.14±6.58 (28)	647.06±14.97 (17)
2019-20	33.52±0.61 (29)	61.22±2.11 (32)	115.56±4.21 (27)	219.17±4.81 (30)	282.40±7.67 (25)	378.86±6.47 (22)	595.50±19.72 (20)
2020-21	34.04±0.95 (27)	81.96±2.94 (23)	120.33±2.93 (30)	181.61±5.11 (28)	273.15±5.95 (27)	340.69±7.15 (29)	565.43±14.92 (23)
2021-22	34.59±0.78 (29)	72.63±1.51 (27)	122.07±2.67 (29)	216.52±3.72 (27)	282.00±4.00 (30)	350.89±5.95 (28)	583.91±14.56 (23)
2022-23	34.33±0.64 (46)	69.26±1.50 (34)	108.79±3.03 (33)	209.04±5.44 (26)	275.36±6.75 (28)	350.37±5.77 (27)	590.22±11.58 (23)
2023-24	32.25±0.83 (44)	66.37±1.91 (41)	118.79±2.30 (39)	204.87±4.83 (39)	258.66±10.99 (32)	337.31±6.73 (26)	550.67±19.07 (15)
Male						**Adults**	
2002-03	29.00±0.80 (5)	82.00±8.77 (5)	-	-	-	-	
2003-04	31.89±0.84 (23)	62.50±2.53 (8)	99.06±6.43 (16)	203.33±23.60 (3)	355.00±21.61 (3)	390.00 (1)	
2004-05	34.60±1.17 (28)	62.20±2.43 (25)	100.33±6.57 (15)	200.83±11.30 (6)	-	355.00 (1)	
2005-06	32.64±0.77 (34)	58.23±1.87 (17)	107.61±10.09 (21)	199.61±11.87 (13)	280.38±12.42 (13)	383.00±17.52 (5)	
2006-07	32.56±1.01 (22)	68.12±2.86 (16)	102.27±5.66 (11)	210.71±12.99 (7)	290.00±29.57 (02)	360.00 (1)	
2007-08	30.71±0.85 (34)	68.97±1.57 (39)	116.54±4.09 (39)	214.67±8.33 (15)	314.00±15.15 (05)	390.00±11.86 (5)	
2008-09	31.70±0.53 (40)	61.61±1.85 (31)	103.15±3.14 (27)	185.79±8.24 (19)	230.00±21.45 (06)	392.50±37.01 (2)	
2009-10	30.70±0.83 (30)	70.00±2.65 (20)	101.47±6.89 (17)	189.16±8.09 (24)	275.31±14.11 (16)	319.00±29.28 (5)	
2010-11	31.15±5.39 (33)	73.00±6.46 (23)	123.87±5.57 (31)	220.66±8.00 (15)	292.22±7.31 (18)	360.00±13.87 (5)	
2011-12	33.42±0.83 (31)	69.23±2.61 (24)	132.77±4.68 (18)	230.00±14.13 (8)	305.00±21.63 (2)	-	
2012-13	37.53±0.71 (29)	68.91±2.52 (23)	126.95±5.30 (19)	235.00±52.18 (8)	-	-	
2013-14	33.91±0.93 (34)	76.55±2.35 (31)	128.33±4.28 (24)	241.50±15.98 (10)	290.00±23.01 (3)	-	
2014-15	38.12±0.74 (34)	78.39±1.89 (23)	111.52±4.08 (23)	219.55±12.60 (11)	-	340.00±65.00 (2)	
2015-16	33.70±0.99 (33)	71.73±2.16 (26)	104.48±3.75 (29)	248.33±11.33 (18)	383.33±44.10 (3)	-	
2016-17	37.11±1.09 (28)	73.35±2.74 (23)	117.41±4.10 (27)	238.64±8.18 (11)	389.55±9.08 (11)	437.50±12.50 (2)	
2017-18	32.05±1.70 (22)	79.30±2.70 (23)	113.10±4.33 (21)	191.32±8.14 (19)	291.00±9.71 (10)	367.50±17.50 (5)	

2018-19	35.90±0.81 (31)	77.23±2.33 (13)	127.50±3.24 (26)	225.71±9.97 (7)	320.00 (2)	-	
2019-20	34.71±0.82 (34)	66.16±2.40 (38)	111.91±3.15 (34)	201.17±5.91 (23)	298.00±9.70 (5)	-	
2020-21	35.02±0.62 (50)	76.53±1.80 (47)	118.06±2.85 (36)	194.81±6.73 (27)	282.00±11.89 (5)		
2021-22	36.55±0.92 (40)	77.58±1.59 (33)	121.42±2.40 (43)	210.03±4.10 (40)	271.33±10.62 (15)	-	-
2022-23	34.00±0.77 (38)	71.28±2.16 (29)	117.58±3.15 (38)	228.86±5.34 (35)	290.83±12.68 (6)	385.00±24.66 (3)	
2023-24	35.10±0.88 (48)	69.85±2.32 (41)	115.05±2.00 (42)	206.85±7.06 (27)	325.00±16.50 (12)	429.29±18.37 (7)	-
Overall Body Weight (in kg) at							
Year	**At Birth**	**3 Months**	**6 Months**	**12 Months**	**18 Months**	**24 Months**	**At AFC**
1992-93	26.30 (30)	60.78 (11)	120.30 (11)	201.43 (11)	265.31 (08)	350.41 (10)	-
1993-94	25.81±1.51 (16)	63.95±8.00 (19)	102.67±10.13 (15)	170.59±13.06 (17)	263.82±24.35 (17)	319.47±27.86 (09)	-
1994-95	25.97±0.71 (31)	51.52±2.39 (04)	77.12±1.39 (26)	148.82±3.66 (34)	217.00±7.88 (15)	284.05±7.32 (16)	-
1995-96	24.25±0.88 (08)	56.67±1.67 (03)	105.00 (01)	165.00±5.00 (05)	180.33±6.14 (15)	286.25±4.31 (24)	-
1996-97	24.38 (16)	86.67 (03)	117.50 (04)	217.50 (02)	248.15 (04)	368.00 (04)	-
1997-98	24.84 (19)	92.50 (18)	123.75 (12)	224.29 (14)	254.50 (10)	366.25 (08)	-
1998-99	26.98 (20)	89.50 (21)	125.41 (13)	220.00 (06)	240.30 (07)	350.81 (08)	-
1999-00	23.60±0.36 (20)	43.60±1.37 (10)	80.46±4.74 (11)	153.33±7.91 (09)	245.00±14.72 (07)	310.67±9.33 (15)	-
2000-01	24.36±0.39 (33)	50.55±3.71 (11)	99.28±3.14 (14)	195.00±5.44 (10)	261.50±8.43 (10)	342.50±9.40 (08)	-
2001-02	26.73±1.03 (11)	59.37±2.85 (08)	59.37±4.08 (09)	183.63±9.06 (11)	284.23±12.70 (13)	359.44±10.69 (09)	-
2002-03	29.10±0.98 (09)	80.00±7.35 (04)	107.08±7.22 (12)	195.62±10.32 (16)	277.14±10.53 (07)	347.27±13.71 (11)	-
2003-04	31.66 (40)	58.50 (18)	98.75 (32)	196.66 (14)	326.34 (16)	366.40 (17)	-
2004-05	32.52 (62)	60.60 (40)	97.66 (25)	187.91 (12)	271.66 (12)	368.00 (11)	501.50± (10)
2005-06	31.77 (63)	57.96 (32)	96.66 (42)	186.51 (32)	300.19 (20)	369.22 (16)	600.50± (10)
2006-07	31.98±0.67 (50)	63.78±1.96 (34)	98.30±3.72 (26)	195.74±8.05 (20)	279.34±15.54 (21)	357.87±23.15 (21)	588.37±15.69 (52)
2007-08	30.53±0.62 (63)	67.74±1.19 (69)	112.19±3.17 (67)	196.85±5.23 (41)	279.83±8.75 (20)	351.82±7.15 (16)	617.89±14.28 (57)
2008-09	31.07±0.39 (73)	62.51±1.38 (56)	101.57±2.32 (50)	182.02±5.75 (39)	235.56±11.86 (33)	355.89±19.37 (23)	477.81±18.97 (16)
2009-10	30.64±0.56 (67)	73.55±1.76 (46)	112.64±4.64 (38)	187.74±6.08 (43)	269.50±9.18 (39)	331.37±16.36 (25)	509.00±18.49 (15)
2010-11	30.34±3.79 (67)	78.71±5.04 (39)	123.34±4.77 (46)	225.55±5.14 (38)	292.16±4.43 (56)	352.22±7.84 (23)	483.75±16.70 (20)
2011-12	32.75±0.63 (54)	63.40±1.95 (43)	123.73±3.41 (34)	226.53±7.84 (26)	308.13±7.21 (18)	377.90±6.53 (24)	498.44±16.72 (16)
2012-13	35.58±0.53 (53)	69.43±1.76 (47)	126.63±3.57 (42)	234.26±11.42 (25)	334.62±8.98 (13)	391.25±8.84 (16)	535.71±25.87 (7)
2013-14	33.37±0.72 (57)	70.98±1.79 (53)	125.15±3.06 (47)	247.27±8.80 (33)	330.45±7.97 (25)	409.69±10.64 (16)	539.58±23.83 (12)
2014-15	36.57±0.56 (63)	77.34±2.29 (50)	110.26±2.96 (38)	224.69±6.53 (32)	342.86±5.52 (21)	407.41±8.00 (27)	530.56±20.14 (18)
2015-16	32.37±0.81 (59)	68.20±1.66 (44)	100.88±2.53 (51)	222.28±7.13 (46)	319.44±11.50 (27)	411.50±8.44 (20)	505.56±27.33 (9)
2016-17	36.74±0.71 (57)	74.62±1.91 (45)	113.80±2.87 (46)	218.33±7.23 (30)	333.87±9.55 (31)	382.00±9.65 (30)	546.58±9.88 (19)
2017-18	32.78± 0.96 (46)	77.65± 1.54 (54)	112.20± 2.47 (50)	196.49± 4.60 (47)	293.91± 7.71 (32)	377.75± 9.60 (20)	527.35±17.99 (23)
2018-19	34.86±0.54 (59)	74.85±1.84 (26)	122.94±2.16 (51)	217.59±5.42 (29)	305.01±4.89 (31)	392.14±6.58 (28)	647.06±14.97 (17)
2019-20	34.16±0.52 (63)	63.90±1.64 (70)	113.52±2.55 (61)	211.36±3.90 (53)	285.00±6.63 (30)	378.86±6.47 (22)	595.50±19.72 (20)
2020-21	34.68±0.52 (77)	78.31±1.57 (70)	119.09±2.04 (66)	188.09±4.26 (55)	274.53±5.32 (32)	340.69±7.15 (29)	565.43±14.92 (23)
2021-22	35.72±0.63 (69)	75.35±1.14 (60)	121.68±1.78 (72)	212.64±2.88 (67)	278.44±4.42 (45)	350.89±5.95 (28)	583.91±14.56 (23)
2022-23	34.18±0.49 (84)	70.19±1.28 (63)	113.49±2.24 (71)	220.41±4.02 (61)	278.09±6.00 (34)	353.83±5.90 (30)	590.22±11.58 (23)
2023-24	33.74±0.62 (92)	68.11±1.50 (82)	116.85±1.52 (81)	205.68±4.03 (66)	276.75±10.13 (44)	356.82±9.24 (33)	-

9.12 Average Production Performance of Buffaloes Completing their Lactation (2023-24)

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	11	2119.84±136.86	336.45±19.38	2022.83±105.05	10.15±0.40
2nd	14	2603.03±151.98	353.07±20.10	2430.06±106.87	12.02±0.73
3rd	14	2357.43±92.95	329.71±15.39	2274.55±78.62	11.03±0.33
4th	15	2393.39±93.40	321.73±12.41	2338.65±83.47	11.45±0.45
5th & above	11	2279.70±128.15	324.09±15.45	2212.82±120.57	11.23±0.62
Overall	**65**	**2365.26±55.95**	**333.09±7.36**	**2269.79±45.51**	**11.23±0.24**

* Test day recording started w.e.f. August 2022.

9.12.1 Average production performance of Buffaloes since Inception of Network

Year	Lact. Length (days)	TLMY (Kg)*	SLMY (kg)*	Peak yield (kg)
1992-93	297.91±9.24 (34)	1502.60±57.03 (34)	1457.72±48.65 (34)	07.88±0.35 (26)
1993-94	276.32±8.46 (28)	1557.30±57.07 (28)	1537.17±49.53 (28)	09.05±0.33 (30)
1994-95	259.25±6.62 (32)	1546.66±51.03 (32)	1535.94±40.61 (32)	09.58±0.30 (35)
1995-96	323.15±7.65 (27)	1522.72±55.66 (27)	1456.50±51.77 (27)	07.40±0.39 (21)
1996-97	341.10±13.41 (20)	1738.33±94.52 (20)	1629.27±76.30 (20)	07.91±0.38 (23)
1997-98	320.35±19.41 (23)	1830.99±119.31 (23)	1714.57±95.93 (23)	08.34±0.39 (22)
1998-99	320.05±12.09 (22)	1980.32±97.68 (22)	1980.32±97.68 (22)	08.45±0.39 (21)
1999-00	309.94±11.65 (18)	2106.83±107.58 (18)	2025.83±98.47 (18)	09.78±0.35 (26)
2000-01	277.15±27.11 (20)	2011.15±169.51 (20)	1897.80±147.16 (20)	10.56±0.39 (22)
2001-02	317.42±9.75 (28)	2090.67±78.93 (28)	2101.89±75.21 (19)	10.12±0.36 (28)
2002-03	298.55±9.95 (05)	1999.43±88.39 (55)	2043.49±66.45 (55)	10.73±0.45 (55)
2003-04	306.51±14.68 (26)	2070.94±98.94 (26)	2103.31±118.1 (26)	10.99±0.68 (26)
2004-05	299.05±8.98 (31)	2182.47±92.90 (31)	2216.03±86.06 (31)	11.25±0.47 (31)
2005-06	307.66±9.70 (45)	2166.92±92.42 (45)	2217.55±89.44 (32)	09.96±0.62 (45)
2006-07	319.85±6.96 (43)	2338.20±89.28 (43)	2412.86±88.60 (27)	11.00±0.43 (43)
2007-08	296.51±3.93 (56)	2379.09±66.65 (56)	2525.47±109.09 (28)	11.89±0.33 (56)
2008-09	291.89±4.87 (43)	2257.76±49.49 (43)	2208.95±106.07 (16)	11.00±0.28 (43)
2009-10	298.50±6.77 (51)	2418.25±77.48 (51)	2570.48±91.81 (26)	11.82±0.35 (51)
2010-11	286.40±4.89 (56)	2157.78±64.94 (56)	2136.48±63.14 (56)	11.16±0.38(56)
2011-12	308.75±7.72 (49)	2208.41±70.08 (49)	2276.82±82.85 (27)	11.54±0.37(49)
2012-13	316.43±8.41(38)	2249.40±8.46 (38)	2242.31±108.05(20)	11.01±0.34(38)
2013-14	304.27±7.95 (47)	2113.36±56.07 (47)	2037.79±62.44 (47)	11.52±0.25 (47)
2014-15	288.81±8.02 (53)	2188.82±55.81 (53)	2135.85±51.77 (53)	10.89±0.31 (53)
2015-16	298.47±8.99 (51)	2382.24±74.18 (51)	2301.49±65.44 (51)	12.30±0.35 (51)
2016-17	305.09±8.04 (55)	2280.66±80.82 (55)	2194.19±72.83 (55)	10.96±0.34 (55)
2017-18	320.76±11.12 (50)	2178.88±82.43 (50)	2128.58±56.25 (45)	10.14±0.30 (50)
2018-19	344.43±15.43 (40)	2387.44±84.17 (40)	2204.67±68.49 (40)	10.54±0.28 (40)
2019-20	325.92±8.43 (63)	2404.94±65.15 (63)	2307.40±50.75 (60)	11.04±0.24(63)
2020-21	349.51±10.77 (57)	2410.76±50.44 (57)	2224.41±37.11 (57)	10.63±0.24 (57)
2021-22	339.53±7.99 (59)	2420.25±58.80 (59)	2272.70±44.35 (59)	11.01±0.34 (59)
2022-23	351.96±8.76 (80)	2414.00±56.86 (80)	2220.75±41.52 (80)	10.58±0.24 (80)
2023-24	333.09±7.36 (65)	2365.26±55.95 (65)	2269.79±45.51 (65)	11.23±0.24 (65)
* Test day recording started w.e.f. August 2022.				

9.12.2 Herd Life Production (up to 4th Lactation) during 2023-24

Period	LTMY (kg)	Productive Life (d)	Productive Days (d)	Unproductive Days (d)	MY/day of HFL (kg/d)	Herd Life (d)	MY/day of Productive Life (kg/d)
2017-18	12853.87	2599.74	1719.32	880.42	3.33	3874.26	5.14
2018-19	13721.90	2680.92	1805.25	875.67	3.50	3895.50	5.21
2019-20	13804.73	2707.04	1864.44	842.60	3.53	3904.96	5.28
2020-21	12408.70	2516.67	1715.00	801.58	3.30	3688.88	4.99
2021-22	12761.10	2474.68	1733.00	741.77	3.46	3666.91	5.16
2022-23	12861.92	2471.15	1726.92	744.23	3.42	3693.73	5.20
23023-24	12301.90	2424.68	1659.00	765.53	3.31	3654.18	5.14

Note: HLF (Herd Life- Date of birth to date of completion of 4th or more lact. or date of disposal); Productive Days (date of first calving to total days in milk), Unproductive days (total days when buffalo not give milk from the date of first calving)

9.13 Average Milk Composition from April 2023 to March 2024

Month	No. of Samples	% Fat	SNF (%)	Total Solids (%)
March,2023	66	6.71	9.64	16.35
April, 2023				
May, 2023	60	7.12	9.05	16.17
June, 2023				
July, 2023	69	6.73	8.71	15.44
August, 2023				
September, 2023				
October, 2023	56	6.93	9.28	16.21
November, 2023				
December, 2023				
January, 2024	23	5.16	8.88	14.04
March, 2024				
Overall	274	6.53	9.11	15.64

9.14 Reproductive Performance (2023-24)

Lactation / Parity	AFC (m)	N →	SP (days)	DP (days)	CI (days)
1	40.57±1.12 (15)	-	-	-	-
2	-	11	192.64±26.73	148.64±14.20	507.27±22.04
3	-	10	133.20±22.24	131.90±20.12	441.70±22.35
4	-	17	127.24±15.63	111.82±5.88	432.65±14.70
5	-	5	99.20±24.81	109.60±13.71	404.40±27.79
≥6		5	122.20±47.23	122.00±24.71	430.40±46.03
Overall	40.57±1.12 (15)	48	140.02±11.34	125.27±6.48	448.46±10.92

9.14.1 Reproduction Performance Since inception of Network.

Years	AFC (m)	Service Period (d)	Dry Period (d)	Calving Interval (d)
1992-93	33.61±1.72 (10)	119.67±33.72 (08)	129.86±10.63 (07)	403.63±21.77 (08)
1993-94	39.38±2.99 (07)	100.90±16.01 (10)	133.15±12.72 (13)	406.08±16.77 (12)
1994-95	38.27±1.70 (10)	77.33±05.56 (09)	129.10±09.72 (20)	377.00±08.00 (20)
1995-96	37.90±1.08 (14)	100.00±11.78 (06)	118.71±11.77 (07)	401.14±16.55 (07)

1996-97	42.08±3.38 (04)	125.14±11.23 (07)	146.00±38.31 (08)	424.00±23.55 (07)
1997-98	40.14±3.38 (06)	82.55±06.54 (11)	101.73±25.10 (11)	391.55±13.11 (11)
1998-99	43.42±2.28 (08)	152.50±25.80 (11)	12.58±08.87 (10)	437.83±15.33 (10)
1999-00	48.80±7.03 (06)	189.82±28.65 (16)	110.36±13.67 (11)	422.46±21.47 (11)
2000-01	42.37±2.81 (04)	164.94±22.66 (17)	126.66±10.74 (09)	410.78±13.05 (09)
2001-02	44.35±2.58 (11)	134.25±24.63 (12)	134.00±15.33 (12)	440.52±23.81 (12)
2002-03	41.20±2.90 (04)	404.60±96.25 (05)	310.77±54.92 (09)	585.50±69.01 (04)
2003-04	41.82±3.19 (08)	108.36±15.51 (19)	256.81±35.81 (29)	553.20±36.24 (29)
2004-05	42.55±1.75 (08)	149.71±15.59 (30)	212.75±29.94 (37)	480.71±28.12 (37)
2005-06	42.25±2.43 (10)	179.91±28.47 (54)	204.41±41.40 (38)	477.45±42.50 (37)
2006-07	41.87±2.26 (10)	139.01±15.40 (40)	171.09±21.44 (28)	452.42±21.30 (30)
2007-08	45.84±0.96 (28)	114.97±07.56 (62)	150.33±19.04 (43)	443.24±21.39 (43)
2008-09	39.73±1.79 (48)	152.44±11.71 (48)	167.02±10.70 (48)	451.51±10.57 (48)
2009-10	41.32±4.73 (15)	121.77±11.25 (59)	154.69±14.01 (63)	444.64±13.01 (63)
2010-11	39.59±1.16 (25)	175.27±16.26 (26)	183.24±21.07 (60)	449.08±15.74 (60)
2011-12	45.61±3.21 (20)	152.91±20.66 (29)	207.38±22.22 (39)	460.89±17.90 (39)
2012-13	39.69±2.79 (07)	213.49±26.37 (30)	232.93±21.36 (31)	479.29±22.88 (31)
2013-14	38.20±2.15 (18)	140.07±12.79 (39)	170.63±11.86 (39)	470.87±14.03 (39)
2014-15	37.64±1.33 (18)	123.84±10.72 (55)	162.27±16.31 (44)	439.48±15.97 (44)
2015-16	40.23±2.64 (09)	142.02±14.76 (51)	148.24±11.26 (49)	447.37±15.72 (49)
2016-17	38.99±1.15 (19)	145.85±9.53 (52)	171.45±13.54 (40)	457.65±15.02 (40)
2017-18	38.64±1.16 (14)	140.77±15.44 (35)	158.53±11.18 (40)	482.80±19.53 (35)
2018-19	38.62±1.05 (16)	169.22±15.96 (46)	181.47±13.70 (36)	495.83±18.93 (36)
2019-20	39.24±2.11 (20)	172.68±19.55 (47)	169.11±14.95 (47)	448.70±12.77 (47)
2020-21	39.03±0.84 (23)	137.24±11.09 (50)	154.76±11.14 (50)	434.22±11.67 (50)
2021-22	39.38±1.30 (23)	140.78±11.24 (46)	131.87±5.72 (46)	443.07±9.28 (46)
2022-23	39.15±1.23 (23)	140.15±10.29 (46)	139.28±09.07 (46)	456.17±11.73 (46)
2023-24	40.57±1.12 (15)	140.02±11.34 (48)	125.27±6.48 (48)	448.46±10.92 (48)

9.15 Milk Production and Disposal (2023-24)

Month	**Total milk produced (kg)**	**Disposal (Kg)**		
		Milk sold	**Calf feeding**	**Expt.**
April, 2023	13772.0	The whole milk was given to DT Section (LPT) for disposal		
May, 2023	12055.0			
June, 2023	9177.0			
July, 2023	9100.0			
August, 2023	10838.0			
September, 2023	11516.0			
October, 2023	14245.0			
November, 2023	14425.0			
December, 2023	15077.0			
January, 2024	13980.0			
February, 2024	13249.0			
March, 2024	13489.0			
Total	**150923.0**			

9.16 Feed and fodder (Quintals) availability (2023-24)

Quarter	Type of fodder	Qty. produced at Farm	Qty.* Purchased	Actually fed (Qtls)*	Balance
I	Green /Semi Dry	-	-	4530.4	-
	Dry	-	-	422.0	-
	Silage	-	-	-	-
	Concentrate	-	-	361.4	-
II	Green /Semi Dry	-	-	5666.1	-
	Dry	-	-	339.1	-
	Silage	-	-	-	-
	Concentrate	-	-	348.8	-
III	Green /Semi Dry	-	-	4033.8	-
	Dry	-	-	753.2	-
	Silage	-	-	-	-
	Concentrate	-	-	543.7	-
IV	Green /Semi Dry	-	-	4744.9	-
	Dry	-	-	674.2	-
	Silage	-	-	-	-
	Concentrate	-	-	637.8	-
Total	**Green /Semi Dry**	**-**	**-**	**18975.2**	**-**
	Dry	**-**	**-**	**2188.5**	**-**
	Silage	**-**	**-**	-	**-**
	Concentrate	**-**	**-**	**1891.7**	**-**

*Concentrate mixture supplied/purchased by F.T. Unit of Institute

Table 9.17 Milk performance during (April 2023- March 2024)

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April, 2023	70.07	40.50	112.00	62.60	6.55	4.10
May, 2023	65.78	45.30	111.00	59.20	5.91	3.50
June, 2023	55.83	55.02	111.00	50.30	5.47	2.76
July, 2023	57.16	61.70	119.00	48.10	5.14	2.55
August, 2023	67.65	48.30	116.00	58.30	5.17	3.02
September, 2023	76.07	44.33	120.40	63.18	5.05	3.19
October, 2023	87.55	38.50	126.00	69.40	5.25	3.64
November, 2023	85.77	43.63	129.40	66.28	5.61	3.72
December, 2023	92.51	42.46	133.61	69.24	5.26	3.64
January, 2024	89.77	45.56	133.87	67.06	5.04	3.37
February, 2024	81.86	53.14	135.00	60.64	5.58	3.38
March, 2024	81.41	55.73	135.35	60.15	5.34	3.21
Overall	**75.95**	**47.85**	**123.55**	**61.20**	**5.45**	**3.34**

9.17.1 Milking performance since inception

Year	No. of Animal in Milk	No. of Animal Dry	Total Animal	% in Milk	Wet Ave. * (kg)	Herd Ave. * (kg)
1992-93	22.44	13.56	36	62.33	4.31	2.68
1993-94	38.15	25.85	64	59.60	4.62	2.75
1994-95	38.62	44.38	83	46.53	3.90	1.81
1995-96	29.17	41.83	71	41.08	3.63	1.49
1996-97	28.20	31.80	60	47.00	4.19	1.96
1997-98	26.67	23.33	50	53.34	4.84	2.58
1998-99	20.30	22.70	43	47.20	5.79	2.73
1999-00	22.64	11.36	31.70	71.41	4.77	4.17

2000-01	26.97	10.03	38.73	69.63	5.42	3.80
2001-02	32.61	19.17	51.78	59.80	5.82	3.64
2002-03	33.64	29.98	63.62	51.75	4.94	2.47
2003-04	36.82	54.79	91.61	39.67	5.94	2.46
2004-05	37.68	53.90	91.58	40.95	5.99	2.53
2005-06	45.64	53.22	98.87	46.16	6.14	3.07
2006-07	41.42	35.33	76.75	53.96	6.15	3.42
2007-08	62.03	33.16	93.23	66.53	5.98	4.05
2008-09	53.45	31.23	84.69	63.12	6.69	4.27
2009-10	45.28	41.66	86.94	52.08	6.68	3.34
2010-11	46.67	43.33	90.00	51.85	5.88	3.14
2011-12	40.68	31.56	72.27	57.44	5.82	3.39
2012-13	39.16	23.08	62.25	62.92	5.66	3.59
2013-14	44.94	22.84	67.78	65.97	5.85	3.91
2014-15	42.93	23.36	66.05	65.15	6.80	4.49
2015-16	43.61	21.88	65.47	66.49	6.48	4.33
2016-17	46.02	27.42	73.25	62.85	6.00	3.77
2017-18	50.51	27.73	78.34	64.52	5.77	3.72
2018-19	49.95	22.98	72.42	67.64	6.43	4.40
2019-20	62.99	34.96	98.15	63.96	5.95	3.81
2020-21	67.88	36.38	104.99	65.14	5.84	3.88
2021-22	71.67	38.66	110.38	64.76	5.86	3.84
2022-23	70.99	42.28	113.30	62.71	5.99	3.76
2023-24	**75.95**	**47.85**	**123.55**	**61.20**	**5.45**	**3.34**

9.18 Bull wise daughters born (only numbers)

Bull No.	Set No	Daughters born	Daughters Calved	Daughters completing 1st Lactation
2848	-	3	-	-
2850	20	5	-	-
5427	20	2	-	-
3004	20	4	-	-
5505	20	6	-	-
2831	20	5*	-	-
2793	20	2	-	-
1454	20	5	-	-
7584	20	2	-	-
2814	-	1	-	-
5588	-	2	-	-
6007	15	2	-	-
5511	20	2	-	-
5481	20	2	-	-
19	20	1	-	-

* 2 Died

9.19 Bull wise daughters completing 1st lactation

Sl. No.	Bull No.	Daughter number	Date of Birth	Date of Calving	AFC (days)	Lact. ength (d)	TLMY (kg)	SLMY (kg)	Remarks
1.	Purchased	356/18	21.08.2018	17.07.2022		284	1281.3	-	-
2.	3267	329/18	05.01.2018	28.06.2022		330	2563.4	2480.6	-
3.	7010	389/17	08.11.2018	27.09.2022		227	1609.5	-	-
4.	M-51	464/19	11.11.2019	27.04.2023		-	-	-	-
5.	4733	467/19	28.11.2019	29.08.2022		268	1823.3	-	-
6.	4753	388/18	04.11.2018	11.08.2022		302	2108.6	-	-

7.	4715	380/18	02.10.2018	31.08.2022		316	1701.5	1699.1	-
8.	B1-330	445/19	30.06.2019	20.07.2023		15	27.5	-	-
9.	4715	458/19	05.11.2019	13.07.2023		-	-	-	-
10.	4837	413/19	25.06.2019	13.08.2022		408	1992.7	1914.9	-
11.	4687	439/19	12.09.2019	17.11.2022		345	1882.1	1797.0	-
12.	M-51	408/19	11.03.2019	25.09.2023		-	-	-	Died
13.	5147	506/20	10.09.2020	31.08.2023		70	109.8	-	-
14.	4905	531/20	15.11.2020	11.09.2023		59	92.1	-	-
15.	2665	414/19	30.06.2019	13.12.2022		395	2085.1	1888.4	-
16.	2565	406/19	24.02.2019	01.08.2023		167	753.6	-	Died
17.	4715	442/19	18.09.2019	30.12.2022		392	1340.6	1245.2	-
18.	183	447/19	06.10.2019	08.04.2023		293	1826	-	-
19.	2676	484/20	18.06.2020	12.12.2023		62	637.9	-	-
20.	4889	317/17	21.10.2017	05.12.2022		441	3056.9	2586.7	-
21.	2565	424/19	28.07.2019	08.02.2023		376	2669.1	2517.0	-
22.	4733	459/19	07.11.2019	06.01.2024		44	86.2	-	-

9.20 Breeding bulls selected for current set (21th set)

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best SLMY
1	297	18/08/2017	869	4705	2914.5/4th Lac.
2	374	18/09/2018	1012	4733	2951.0/2nd Lac.

9.20.1 PT Bulls for nominated mating

Bull No.	Set No.	Centre	Dams' Best yield	Rank	Breeding Value	% Superiority
1053	Proven (17th set)	-	-	-	-	-
M-29	Proven (17th set)	-	-	-	-	-
2383	Proven (17th set)	-	-	-	-	-

9.20.2 List of Future breeding bulls (as on 31.03.2024)

Sr. No.	Bull No.	Date of birth	Dam No.	Sire No.	Dams best SLMY (kg) / Parity	Semen doses available	Expected predicted Difference (EPD)
1.	235/2016	24/05/2016	1012	4363	3270.0/II	-	-
2.	374/2018	18/09/2018	1012	4733	3270.0/II	-	-
3.	456/2019	02/11/2019	720	183	3267.5/II	-	-
4.	499/2020	24/08/2020	1088	2269	3242.6/II	-	-
5.	532/2020	18.11.2020	1091	2671	3034.5/II	-	-
6.	536/2020	03.12.2020	128/14	1219	3075.6/I	-	-
7.	555/2021	30.03.2021	132/14	5147	3445.1/III	-	-
8.	596/2021	27.10.2021	1012	2677	3275.0/II	-	-
9.	633/2022	08.06.2022	132/14	7604	3445.1/III		
10.	683/2022	11.12.2022	293/17	7584	3376.2/I		

9.21 Target achieved during the year 2023-24

Trait	Target	2019-20*	2020-21*	2021-22*	2022-23	2023-24
Av. Age at first calving (months)	40	37.33±1.56 (18)	39.03± 0.84 (23)	39.38± 1.30 (23)	39.15± 1.23 (23)	40.57 ±1.12 (15)
Av. Service period (days)	90/130	128.40±10.93 (43)	137.24±11.09 (50)	140.78±11.24 (46)	140.15±10.29 (46)	140.02±11.34 (48)
Calf mortality	≤ 5 %	6.58 %	0.00 %	2.63 %	9.68 %	7.08 %
Wet average (kg)	≥8.5 kg	5.95 kg	5.84 kg	5.86 kg	5.99 kg	5.45 kg
Herd average (kg)	≥5.5 kg	3.81 kg	3.88 kg	3.84 kg	3.76 kg	3.34 kg

** Based on pail yields*

10. Salient Research Achievements:

(a) **Herd Strength:** The opening balance (herd strength) of Murrah buffaloes as on 01/04/2023 was 286 (59 males and 227 females). Additions in the herd were due to birth of 44 female and 53 male calves (97 calves). Deletions from the herd were due to death of 11 animals (6 males and 5 females), external transfer of 12 males and auction/sale of 12 buffaloes (5 males and 7 females). In all, 35 animals were deleted from the herd due to various reasons, whereas 97 animals were added due to new births. The new calvings showed a peak of 17 calvings during September, 2023. The male: female ratio of new calvings was 1.00:0.86. The closing balance of the buffalo herd as on 31/03/2024 was 348 buffaloes (259 females and 89 males, Table 9.1 and 9.2).

Out of total 12 animals culled/sold during the current year (Table 9.1 and 9.3), all buffaloes were sold/auctioned due to surplus/reproductive problems/weak & old (Table 9.3).

(b) **Mortality (Detailed):** The overall mortality percent during the current year was 2.87%. The overall female and male group mortality percents were 1.84 and 5.35%, respectively (Table 9.4). A total of 11 deaths (5 females and 6 males) were recorded in IVRI buffalo herd during the current year. The major causes of mortality are presented in Table 9.5.

Prophylaxis: The prophylaxis measures taken in the Murrah Buffaloes have been presented in Table 9.6.

(d) Reproductive Performance: The overall conception rate was 54.29% (Table 9.7). The respective figures in heifer and adult groups were 64.29 and 51.79%, respectively. The overall calving abnormalities were 13 (4 abortions, 7 ROP and 2 prolapse cases, Table 9.2). The quarter wise and bull wise conception rates are presented in Table 9.8 and 9.9. Bull wise semen stock position during the report period is presented in Table 9.10.

The means for age at first calving, service period, dry period and calving interval were 40.57±1.12 months, 140.02±11.34 days, 125.27±6.48 days and 448.46±10.92 days, respectively (Table 9.14 and 9.14.1).

Bull wise daughters born, bull wise daughters completing first lactation, breeding bulls selected for current set, PT bulls for nominated matings and list of future breeding bulls as on 31/03/2024 are presented in Table 9.18 to 9.20.2, respectively.

(e) Growth performance: The means for overall live body weights at birth, 3, 6, 12, 18 and 24 months of age were 33.74±0.62, 68.11±1.50, 116.85±1.52, 205.68±4.03, 276.75±10.13 and 356.82±9.24 kg, respectively. The respective values for females and males were 32.25±0.83, 66.37±1.91, 118.79±2.30, 204.87±4.83, 258.66±10.99 and 337.31±6.73 and 35.10±0.88, 69.85±2.32, 115.05±2.00, 206.85±7.06, 325.00±16.50 and 429.29±18.37 kg, respectively. The weight at first calving during the current year was 550.67±19.07 kg (Table 9.11.1).

(f) Milk Production Performance: Buffaloes produced **150923.0** kg milk during the period under report (Table 9.15). Means for overall wet and herd averages were 5.45 and 3.34 kg, respectively (Table 9.17 and 9.17.1). On an average, 61.20% of the total adult females were in the milk during this period (Table 9.17).

The means for total lactation milk yield, average lactation length, standard lactation milk yield and peak yield were 2365.26±55.95 kg, 333.09±7.36 days, 2269.79±45.51 kg and 11.23±0.24 kg, respectively (Table 9.12 and Table 9.12.1). The values for LTMY, productive life, productive days, unproductive days, MY/day of HFL, herd life and MY/day of productive life were 12301.90 kg, 2424.68 days, 1659.00 days, 765.53 days, 3.31 kg/d, 3654.18 days and 5.14 kg/day, respectively (Table 9.12.2).

The means for fat, SNF and total solids % were 6.53, 9.11 and 15.64%, respectively (based on 274 samples, Table 9.13). The analysis for lactational traits was done for animals expressing total lactation milk yield ≥ 1500 kg and/or LL≥150.

(g) Feeds and Fodder Availability: The feeds and fodder supplied to the buffaloes of the project are presented in Table 9.16.

11. Publications/Presentations: List of Publications:

(i)	**Papers in research journals (national/international)**	**:**	**9**
(ii)	**Technical bulletins/Books/Book Chapters**	**:**	**One**
(iii)	**Scientific/Teaching reviews**	**:**	-Nil-
(iv)	**Presentations in Conferences/Symposia/Seminars/Other Form**	**:**	**07**
(v)	**Contributions made in compilation/documentation**	**:**	**07**
(vi)	**Any other (please specify):**		
	(a) Training Programm Organized	**:**	**One**
	(b) Thesis guided (as Chairman, SAC)	**:**	**04**
	(c) Invited Lectures	**:**	**03**

12. Expected Socio-economic impact in the tract: Surplus Murrah buffaloes along with breeding males have been sold in the public auction to the local dairy farmers. It will not only improve the milk and meat production in the field in the form of Murrah/graded Murrah progenies but will also uplift the socioeconomic status of the dairy farmers of northern India.

13. **Constraints (if any):** Paucity of project staff

14. Focus of the work in the coming year:

i. To increase the number of elite buffaloes in the herd.
ii. To carry out the envisaged technical programme for fulfillment of laid down objectives.
iii. To distribute superior germ-plasm to the buffalo farmers in field.
iv. To establish a high yielding nucleus herd of Murrah buffaloes at IVRI Izatnagar.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR Share as per R E	Expenditure as per AUC		Balance
Total	ICAR Share		ICAR Share	State Share	
18.25	18.25	18.25	17.73883	0.00	(+) 0.51117

Herd Performance:

Herd strength at the centre was 348 animals including 178 breedable buffaloes (>2 year). During the period 97 calving were reported consisting of 53 males and 44 females, 4 abortions. The calf mortality (0-3 months) was 7.08 % higher from the target. Conception rate was almost same 54.29 % during the year as 54.95 in 2022-23.

The average total lactation milk yield and 305 days or less day milk yield decreased 2414 kg and 2221 kg to 2365 kg and 2270 kg during the year, respectively. Reproductive performance viz AFC, SP and DP were 40.57 months, 140 days and 125 days, respectively. Wet and herd averages decreased from 5.99 kg and 3.76 kg respectively in 2022-23 to 5.45 kg and 3.34 kg during the year. An average of 62.20 percent animals were in milk as compare to previous year 62.71 percent.

Accomplishment and Targets Achieved:

Trait	**Target**	**2019-20***	**2020-21***	**2021-22***	**2022-23**	**2023-24**
Av. Age at first calving (months)	40	37.33±1.56 (18)	39.03± 0.84 (23)	39.38± 1.30 (23)	39.15± 1.23 (23)	40.57 ±1.12 (15)
Av. Service period (days)	90/130	128.40±10.93 (43)	137.24±11.09 (50)	140.78±11.24 (46)	140.15±10.29 (46)	140.02±11.34 (48)
Calf mortality	≤ 5 %	6.58 %	0.00 %	2.63 %	9.68 %	7.08 %
Wet average (kg)	≥8.5 kg	5.95 kg	5.84 kg	5.86 kg	5.99 kg	5.45 kg
Herd average (kg)	≥5.5 kg	3.81 kg	3.88 kg	3.84 kg	3.76 kg	3.34 kg

Recommendations:

- Continuous efforts should be made to improve the milk production parameters to meet the project target.
- During the year, percentage of animals in milk is low which needs to be increased.
- Calf mortality needs to be controlled and restricted under 5% through proper care and management.

NETWORK PROJECT ON MURRAH BUFFALO IMPROVEMENT
LUVAS UNIT, HISAR

1. **Name of Centre**: Buffalo Research Centre
   Department of Livestock Production Management, LUVAS, Hisar
2. **Project Code** 5508 C(b) LPM-3 ICAR
3. **Project Title** Network Project on Murrah Buffalo Improvement
   Subproject Performance recording and improvement of Murrah
4. **Date of start:** 1993
5. **Objectives:**
   - To establish elite herd of 50 to 100 Murrah (at each center) /Nili Ravi /50 Bhadawari / 50 Surti / 70 Jaffarabadi for the production of genetically superior young bulls.
   - To evaluate sires through institutional / associated herd/field progeny testing.
   - To produce, test, propagate and conserve high genetic merit male germplasm
6. **Technical Program**:
   I. Establishment and maintenance of an elite herd of buffalo breed with a herd strength of 500 and 300 breedable females (Murrah).
   II. Selection and testing of minimum 15 bulls of Murrah / 4-6 bulls for other breeds in every 18 / 24 months cycle.
   III. Production of minimum 10,000 (Murrah) and 3000 to 5000 (Other breeds) frozen semen doses from each test bull.
   IV. Maintain a minimum number of 8000 (Murrah) and 2000 (other breeds) frozen semen doses until the particular SET gets evaluated.
   V. Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
   VI. Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
   VII. Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield, Milk yield per day of herd life (total milk produced from date of birth till completion of 4^{th} or more lactation).
   VIII. Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds.
   IX. Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
   X. Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. **Staff associated with the project:**

Discipline	**Name of Scientist / Staff**	**Status PI/Co-PI/ Associated)**
LPM	Dr. Dipin Chander Yadav Dr. Man Singh	PI Co-PI
AGB	Dr. Poonam Ratwan	Associated
VGO	Gynaecologist (As per requirement)	-
Health / Others	TVCC (as and when required)	-
Administrative staff	Nil	
Technical staff	Nil	
Contractual staff (RA / SRF / YP-I, YP-II)	Nil	

8. Financial Statement: Head wise budget allocation and utilization (Rs. In Lakhs)

SOE	Remittance (ICAR Share)	Total Expenditure	Expenditure (ICAR Share)	Balance (ICAR Share)
M&S(General)	46.50	61.97669	46.48252	0.01748
M&S(SCSP)	2.50	2.50000	2.50000	0.00
M&E(General)	4.50	5.97217	**4.47913**	0.02087
M&E(SCSP)	0.50	0.50000	0.50000	0.00
Total	**54.00**	**70.94886**	53.96165	**0.03835**

9. Herd performance: In tables from 9.1 to 9.21.

9.1 Herd Strength during the Period 4/2023 to 3/2024

Category		Addition			Disposal				
S. N.		**OB**	**B/P**	**T**	**D**	**T**	**S**	**E**	**CB**
Female									
1.	Calves 0 – 3 months	5	50		1	-46	2	-	6
2.	Calves >3 – 12 months	42	-	+46	4	-42	4	1	37
3.	Heifers 1 – 2 years	44		+42	-	-34	11	-	41
	> 2 years	53	3	+34	1	-27	7	-	55
4.	Buffaloes in Milk	91		+27	1	-28	8	-	81
5.	Buffaloes Dry P /NP	43		+28	3	-	7	-	61
	Sub Total	278	53	-	10	-	39	1	281
Male									
1.	Calves 0 – 3 months	5	48		3	-44	-	-	6
2.	Calves >3 – 12 months	45		+44	2	-42	8	-	37
3.	1 – 2 years	41		+44	-	-22	22	-	39
	> 2 years	15	9	+22		-2	11	-	33
4.	Breeding bulls	0		+2	-	-	2	-	-
5.	Bullocks/Teaser/Other	3		-	-	-	-	-	3
	Sub Total	109	57	-	5	-	43	-	118
	Grand Total	**387**	**110**	**-**	**15**	**-**	**82**	**1**	**399**

OB = Opening Balance D = Death S= Sale E= Experimental
T = Transfer CB = Closing Balance B= Birth

9.2 Calving Statistics during the Period 4/2023 to 3/2024

Month	Male		Female		Dystokia		Prolepses		Still Birth		Abortion		Overall	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
April, 23	5		3		-		-		-		1		1	
May	6		10		-		-		-		2		2	
June	5		3		-		-		-		7		7	
July	5		8		-		-		-		3		3	
August	7		8		-		-		-		6		6	
September	5		3		-		-		-		-		-	
October	5		1		-		-		-		3		3	
November	2		0		-		-		1		1		2	
December	2		8		-		-		-		-		-	
January,24	2		4		-		-		-		-		-	
February	2		0		-		-		-		2		2	
March	2		2		-		-		-		2		2	
Overall	**48**		**50**		-		-		**1**		**27**		**28**	

Sex ratio Male: Female **(0.96:1)**, SB% = 0.79 %, Abortion % = 21.42%

9.3 Disposal of Animals during the Period 4/2023 to 3/2024

Female	**Primary cause of disposal**							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves								
0 to 3 months	2	-	-	-	-	1	-	3
3-12 months	4	-	-	-	-	4	1	9
Heifers								
1-2 years	11		-	-	-	-	-	11
> 2 years	1		6	-	-	1	-	8
Buffaloes								
Milch	1	-	-	4	2	1	-	8
Dry	-	-	4	3	1	3	-	11
Sub Total	19		10	7	3	10	1	50
Males	**Primary cause of disposal**							
Calves								
0 to 3 months	-	-	-	-	-	3	-	3
3-12 months	8	-	-	-	-	2	-	10
1 to 2 year	22	-	-	-	-	-	-	22
. >2 year	10	-	-	-	-	-	-	10
Breeding bulls	3	-	-	-	-	-	-	3
Bullock+Teaser +Others	-	-	-	-	-	-	-	-
Sub Total	43	-	0	0	0	5	0	48
Grand Total	**62**		**10**	**7**	**3**	**15**	**1**	**98**

9.4 Month-wise Mortality during the Period 4/2023 to 3/2024

	Female						**Male**					**Overall Herd**
Month	**0-3 Month**	**3-12 Month**	**1-2 Yrs.**	**Above 2 Yrs.**	**Milk + Dry**	**Overall Female**	**0-3 Month**	**3-12 Month**	**1 -2 Yrs.**	**>2 yrs.**	**Overall Male**	
No. Died	1	4	-	1	1+3	10	3	2	-	-	5	15
%												

Calves (0-3) Mortality =3.70 % (4/108)

9.5 Causes of Mortality (quarter-wise) During the Period 4/2023 to 3/2024

Particulars	**1st quarter (April-June)**	**2nd quarter (July-Sept)**	**3rd quarter (Oct-Dec.)**	**4th quarter (Jan.-March)**	**Total**
Enteritis	1	1	2	3	7
Pneumonities	1	-	1	2	4
Septicamia / Toxaemia	-	-	-	-	-
Peritonitis	-	-	-	-	-
JD/TB	-	-	-	-	-
Milk Fever/metabolic diseases	-	-	-	-	-
TRP / TP	-	-	-	-	-
Parasitism	-	-	-	-	-
Accidental death	-	-	-	-	-
Peri-parturient disorders	-	-	-	-	-
Miscellaneous	1	1	1	1	4
Total	**3**	**2**	**4**	**6**	**15**

9.6 Prophylactic Measures Taken during the Period 4/2022 to 3/2023

Disease	Vaccination Date / No. of animals	No. of animals Tested / Positive		Dates and No. of animals treated for Parasitism
FMD	Whole herd (twice a year)	-	-	All calves upto the age of 1 year at regular interval
HS	Whole herd (twice a year)	-	-	
BQ	-	-	-	
Brucellosis	Calf-hood vaccination (Regular interval)	-	-	
JD	Screening done	-	-	
TB	Screening done	-	-	
IBR	-	-	-	
Mastitis	Milch herd (Once a year)	-	-	

9.7 Female conception rate during January 2023 to December 2023

AI No.→	1st			2nd			3rd			4th & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	50	18	36.0	12	5	41.6	6	3	50	9	4	44.4	77	30	38.9
Adults	138	14	10.0	82	28	34.1	44	14	31.8	31	8	25.8	295	102	34.57
Overall	188	32	17.0	94	33	35.1	50	17	34.0	40	12	30.0	372	132	**35.48**

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8 Quarter-wise conception rate (1.1.2023 to 31.12.23)

Quarter	No. of A I	Preg. animals	CR %
January – March (Previous Year)	73	31	42.4
April - June	66	18	27.2
July - September	125	40	35.2
October- December	108	43	39.8
Overall	**372**	**132**	**35.48**

9.9 Bull-wise Conception Rate During the Period 4/2022 to 3/2023

Sr. No.	Bull No.	SET No.	Total Number of AI	Total Conceived	CR%
1.	PT-6007	XIV	17	10	58.8
2.	5500	XX	2	-	0
3.	5427	XX	11	6	54.5
4.	PT-2459	XIV	9	2	22.2
5.	2838	XX	16	4	25.0
6	PT-4354	XIV	13	5	38.4
7	1454	XX	8	2	25.0
8	19	XX	12	6	50.0
9	2793	XX	4	1	25.0
10	2831	XX	8	2	25.0
11	4334	XX	1	-	0
12	285	XX	14	2	14.2
13	7584	XX	8	2	25.0
14	7649	XX	8	3	37.5
15	5481	XX	18	4	22.2
16	5505	XX	10	3	30.0
17	2930	XXI	19	5	26.3
18	5629	XXI	20	6	30.0
19	5414	XXI	25	9	36.0

20	2979	XXI	31	12	38.7
21	3014	XXI	20	7	35.0
22	PT-M-29	XXI	1	-	0
23	5690	XXI	22	12	54.5
24	PT-2383	XXI	7	1	14.2
25	297	XXI	9	5	55.5
26	5638	XXI	22	8	36.3
27	7768	XXI	19	7	36.8
28	PT-1053	XXI	2	1	50.0
29	2990	XXI	14	5	35.7
30	7990	XXI	1	1	100.0
31	7630	XXI	1	1	100.0
Overall			**372**	**132**	**35.48**
No. of services per conception = 2.8:1					

9.10 Bull Wise Semen Stock

Bull No.	Set no.	Opening balance	Semen produced /Received	Consumption for AI/ Supplied	Balance
5505	XX	60	-	60	-
5481	XX	60	-	60	-
2850	XX	56	-	56	-
7584	XX	30	-	30	-
7649	XX	30	-	30	-
PT4354	XX	-	10	10	-
6007	XX	-	10	10	-
5414	XXI	-	100	100	-
5629	XXI	-	100	100	-
2930	XXI	-	100	100	-
2979	XXI	-	100	100	-
3014	XXI	-	100	100	-
4354	XV	6	-	3	3
2459	XV	8	-	8	-
1053	XXI	-	30	24	6
M-29	XXI	-	20	20	-
2383	XXI	-	20	20	-
297	XXI	-	100	100	-
5638	XXI	-	100	100	-
5690	XXI	-	100	100	-
7768	XXI	-	100	100	-
7630	XXI	-	100	100	-
2990	XXI	-	100	100	-
7990	XXI	-	100	100	-
109	XXI	-	100	30	70
112	XXI	-	100	40	60
5723	XXI	-	100	50	50
5764	XXI	-	100	55	45
19	XX	20	-	20	-
2793	XX	20	-	20	-
2831	XX	9	-	9	-
2838	XX	32	-	32	-

9.11 Body Weights since Inception of Network Project

Year	Birth (n)	3 Months (n)	6 Months (n)	12 Months (n)	18 Months (n)	24 Months (n)	At AFC (n)
Female							
1994-95	34.0	62.8	97.1	150.7	203.2	262.5	470.03
1995-96	36.48	51.20	77.89	106.75	138.79	191.28	448.08
1996-97	35.26	53.7	90.5	118.65	146.59	206.49	423.18
1997-98	36.65	55.7	94.25	123.75	148.42	217.1	439.53
1998-99	36.87	55.94	94.4	112.31	149.94	217.1	439.53
1999-00	35.43	57.11	102.1	139.27	163.66	241.97	417.74
2000-01	39.49 (71)	59.52 (40)	104.76 (37)	134.0 (32)	164.69 (31)	237.38 (30)	494.59 (27)
2001-02	37.6 (56)	50.85 (41)	84.69 (32)	167.9 (27)	238.6 (35)	300.9 (35)	470.1 (11)
2002-03	37.3 (87)	74.8 (88)	105.9 (77)	177.0 (49)	259.6 (40)	-	457.4 (40)
2003-04	37.2 (87)	74.8 (88)	105.9 (77)	177.0 (49)	259.6 (40)	345.1 (36)	457.4 (40)
2004-05	36.7 (85)	74.8 (85)	105.4 (75)	183.7 (68)	260.6 (48)	341.0 (39)	459.2 (26)
2005-06	35.8 (81)	64.3 (53)	89.9(23)	140.1 (25)	190.6 (20)	295.6 (16)	463.8 (12)
2006-07	36.8 (87)	71.2 (73)	103.2 (61)	141.5 (41)	181.9 (29)	262.5 (38)	467.4 (21)
2007-08	36.6 (85)	66.2 (78)	105.8 (63)	201.6 (50)	249.0 (36)	302.7 (34)	463.2 (24)
2008-09	36.3 (65)	66.4 (37)	94.5 (43)	146.7 (26)	184.2 (87)	246.6 (57)	459.4 (267)
2009-10	36.6 (71)	70.8 (70)	105.0(52)	154.4(43)	199.8 (49)	244.2 (38)	502.5 (24)
2010-11	35.8 (75)	72.3 (75)	108.0(52)	166.4(62)	209.3 (50)	287.9 (46)	522.9 (33)
2011-12	35.0 (71)	68.5 (63)	101.6(49)	175.6(40)	269.6 (46)	311.6 (34)	512.6 (23)
2012-13	36.4 (86)	68.2 (64)	105.1(51)	189.2(38)	278.4 (46)	302.8 (31)	528.7 (39)
2013-14	36.1 (83)	76.2 (41)	122.7(13)	185.5(43)	280.5 (30)	326.0 (19)	521.4 (32)
2014-15	37.2 (75)	63.8 (60)	84.9 (57)	174.5(25)	247.6 (26)	325.9 (25)	511.0 (17)
2015-16	35.7 (96)	54.4 (60)	92.3 (30)	189.7(30)	249.5 (30)	300.0 (30)	485.8 (27)
2016-17	36.2 (57)	65.6 (55)	98.7 (27)	174 (22)	250.6 (15)	302.0 (3)	447.5 (36)
2017-18	34.6±0.18 (48)	57.0±0.79 (44)	89.0±1.6 (38)	154.3±2.8 (44)	207.3±6.3 (26)	300.1±12.3 (4)	461.4±7.3 (27)
2018-19	34.4±0.4 (42)	52.7±0.5 (100)	84.2±1.2 (82)	149.6±3.0 (49)	223.5±4.4 (24)	291.0±10.9 (5)	462±5.4 (21)
2019-20	35.0±0.2 (46)	52.9±1.0 (41)	83.7±1.7 (33)	146.6±2.4 (36)	198.7±9.7 (15)	317.8±19.3 (12)	460.1±5.8 (24)
2020-21	35.0±0.4 (43)	50.9±0.9 (38)	90.4±1.3 (28)	143.9±3.1 (32)	198.6±8.5 (19)	258.3±2.6 (12)	411.6±7.1 (22)
2021-22	34.0 ±0.3 (48)	57.6±0.5 (68)	84.8±1.07 (61)	138.5±3.3 (41)	207.8±3.81 (44)	270.4±4.01 (25)	403.6±5.03 (33)
2022-23	**35.6 ±0.4 (48)**	**57.9±0.68 (35)**	**80.3±1.35 (21)**	**136.7±1.33 (35)**	**221 ±55.2 (16)**	**281±3.18 (17)**	**420±8.81 (40)**
2023-24	32.6±0.9 (50)	62.6±1.5 (37)	92.8±2.8 (28)	143.8±10.7 (09)	218.05±54.5 (23)	300.09±4.0 (24)	391±5.9 (27)
Male							
2016-17	36.4 (59)	60.7 (50)	90.3 (28)	170.9 (17)	282 (6)	-	-
2017-18	35.3±0.16 (29)	58.9±1.01 (32)	87.6±1.7 (44)	153.7±2.8 (46)	219.9±6.8 (14)	318.7±5.8 (3)	-
2018-19	35.1±0.3 (44)	56.7±0.6 (68)	87.1±1.3 (58)	156±2.7 (32)	218.2±3.8 (14)	285±0 (1)	-
2019-20	35.4±0.2 (45)	55.9±1.1 (34)	83.2±2.0 (30)	136.3±4.8 (7)	247.6±2.6 (8)	310.4±7.4 (5)	-
2020-21	36.4±0.3 (45)	58.6±0.8 (33)	95.5±1.1 (29)	163.3±3.7 (12)	203.1±2.6 (11)	272.0±2.3 (10)	-
2021-22	35.0±0.19 (53)	58.8±0.59 (80)	89.5±1.1 (65)	159.2±2.46 (40)	236.3±5.35 (29)	286.7±5.59 (12)	-

2022-23	35.2±0.4 (56)	68±0.67 (38)	86±0.98 (25)	145.6±3.67 (37)	242±3.12 (16)	326±6.8 (22)	-
2023-24	**35.8±0.6 (48)**	**66.6±1.2 (38)**	**96.9±2.2 (30)**	**164.3±1.4 (22)**	**223.4±55.8 (26)**	**304.3±7.4 (23)**	-

9.12 Average Production Performance During the Period 4/2023 to 3/2024

Lact. No.	No. of obs.	Av. Lact. Yield (kg)	Av. Lact. Length (days)	305-day Milk Yield (kg)	Av. Peak yield
1st	29	2436.7	291.4	2390.9	11.1
2nd	23	2824.6	297.7	2800.4	13.4
3rd	16	2918.6	295.3	2868.0	14.4
4th	12	2748.5	282.4	2696.8	13.1
5th& above	22	2697.7	269.2	2534.5	13.5
Overall	**102**	**2725.2±103.4**	**287.2±6.9**	**2658.1±102.4**	**13.1±0.3**

Figures in parenthesis indicate number of observations

9.12 Average Production Performance since Inception of Network Project

Year	Av. Lactation Yield in kg (N)	Av. Lactation Length in days (N)	Av. 305 or less day Milk Yield in kg (N)	Av. Peak yield (N)
1995-96	2033.0 (70)	285.0 (70)	1987.5 (70)	10.8 (70)
1996-97	1896.5 (75)	269.4 (75)	1880.8 (75)	10.0 (75)
1997-98	2150.3 (83)	297.2 (83)	2103.7 (83)	10.9 (83)
1998-99	1815.0 (51)	302.6 (51)	1964.7 (51)	10.2 (51)
1999-00	1798.1 (64)	311.5 (64)	1688.7 (64)	10.0 (64)
2000-01	2226.4 (42)	305.0 (42)	2183.1 (42)	11.0 (34)
2001-02	2205.4 (50)	307.2 (50)	2119.4 (50)	11.0 (50)
2002-03	2659.0 (46)	329.7 (46)	2522.3 (46)	12.7 (46)
2003-04	2115.5 (75)	293.6 (75)	2061.9 (75)	11.5 (75)
2004-05	2215.8 (61)	311.13 (61)	2134.4 (61)	11.3 (61)
2005-06	2346.9 (77)	307.8 (77)	2251.9 (77)	11.2 (89)
2006-07	2407.9 (75)	325.2 (75)	2261.4 (75)	11.4 (75)
2007-08	2199.2 (80)	286.0 (80)	2129.6 (80)	11.2 (80)
2008-09	2124.8 (76)	295.1 (76)	2040.6 (76)	10.5 (76)
2009-10	1885.5 (84)	288.2 (84)	1857.6 (84)	9.97 (84)
2010-11	2158.8 (66)	309.7 (66)	2041.8 (66)	9.9 (66)
2011-12	2544.4 (54)	332.4 (54)	2377.7 (54)	11.1 (54)
2012-13	3010.3 (55)	319.3 (55)	2879.8 (55)	13.5 (55)
2013-14	2966.7 (65)	318.3 (65)	2808.3(65)	13.3 (65)
2014-15	2653.4 (62)	300.2 (62)	2584.4 (62)	12.9 (62)
2015-16	2664.9±63.71 (78)	304.5±6.5 (78)	2576.8±56.9 (78)	13.0±1.8 (78)
2016-17	3138.4±76.27 (60)	328.0±7.48 (60)	2967.0±64.1 (60)	13.8±3.25 (60)
2017-18	3373.4±94.83 (69)	354±8.52 (69)	3050±72.7 (69)	14.2±2.93 (69)
2018-19	3193.6±91.4 (66)	313.9±6.1 (66)	3067.3±84.1 (66)	15.1±0.3 (66)
2019-20	3107.0±54.2 (60)	301.4±3.0 (60)	3090.4±54.1 (60)	14.6±0.3 (60)
2020-21	3147.9±76.3 (65)	322.0±5.4 (65)	2976.3±52.4 (65)	13.5±0.3 (65)
2021-22	2902±56.12 (101)	311.9±4.36 (101)	2793.0±49.91(101)	13.6±0.22 (101)
2022-23	3059±62.62 (92)	317.0±4.6 (92)	2957.0±49.4 (92)	13.2±0.22 (92)
2023-24	**2725.2±103.4(102)**	**287.2±6.9(102)**	**2658.1±102.4(102)**	**13.1±0.3(102)**

Figures in parenthesis indicate number of observations.

9.12.2 Herd Life Production (up to 4th Lactation) during 2023-24

Sr. No.	Traits	2020-21		2020-21		2022-23		2023-24	
		No.	Average	No.	Average	No.	Average	No.	Average
1.	Herd Life (days)	18	3326	26	3348	21	3306	32	3446
2.	Productive Days	18	1523.5	26	1554.6	21	1500.9	32	1643.9
3.	Unproductive days	18	511.2	26	467.3	21	521.6	32	555.0
4.	Productive Life (days)	18	2034.7	26	2021.9	21	2022.5	32	2198.9
5.	Life time milk Yield (kg)	18	15715.2	26	15054.15	21	15385.6	32	16194.6
6.	Milk yield / day HLF (kg)	18	4.7	26	4.5	21	4.6	32	4.7
7.	Milk yield / day PLF (kg)	18	7.7	26	7.4	21	7.6	32	7.4
8.	Milk Yield / day productive day	18	10.3	26	9.7	21	10.2	32	9.8

Note: HLF (Herd Life- Date of birth to date of completion of 4th or more lact. Or date of disposal) Productive Days (date of first calving to total days in milk), Unproductive days (total days when buffalo not give milk from the date of first calving)

9.13. Average Milk Fat Component during the period 4/2023 to 3/2024

Month	Animal in milk (N)	Av. Fat (%)	SNF	Protein	Lactose
April, 2023	91	6.9	-	-	-
May	90	6.7	-	-	-
June	85	6.9	-	-	-
July	85	7.2	-	-	-
August	88	7.4	-	-	-
September	92	7.5	-	-	-
October	88	7.5	-	-	-
November	88	7.6	-	-	-
December	92	7.1	-	-	-
January, 24	95	7.2	-	-	-
February	95	6.9	-	-	-
March	88	7.0	-	-	-
Overall	**90**	**7.1**	**-**	**-**	**-**

9.14 Reproduction Performance during the Period 4/2023 to 3/2024

Lactation / Parity	AFC (Months) (N)	N →	SP (Days)	DP (Days)	CI (Days)
1	39.9±1.1 (27)		-	-	-
2	-	35	151.7±18.3	142.8±18.9	444.5±20.4
3	-	23	150.5±29.1	126.0±23.4	432.2±24.8
4	-	14	147.8±35.2	128.4±27.7	439.7±31.0
5th and above	-	24	93.6±19.5	92.7±10.6	387.6±18.1
Over all	**39.9±1.1 (27)**	**96**	**135.9±25.5 (96)**	**105.3±20.1 (96)**	**426.0 ± 23.5 (96)**

9.14.1 Reproduction Performance since Inception of Network Project

Year	AFC (Days/ months)	Average Service Period (days)	Average Dry Period (days)	Average Calving Interval (days)
1993-94	1570.2	107.5	-	-
1994-95	1560.6	163.1	132.7	459.5
1995-96	1575.8 (26)	135.0 (54)	161.0 (36)	456.0 (40)
1996-97	1438.2 (44)	107.0 (63)	109.7 (31)	408.5 (76)
1997-98	1480.4 (28)	107.7 (55)	143.1 (55)	389.2 (55)

1998-99	1439.5 (22)	108.7 (47)	156.0 (38)	417.2 (46)
1999-00	1502.0 (15)	148.3 (49)	148.6 (49)	459.0 (49)
2000-01	1540.0 (17)	146.0 (25)	137.0 (25)	479.6 (25)
2001-02	1400.1 (14)	147.0 (31)	128.0 (31)	457.0 (31)
2002-03	47.01 months (27)	165.3 (47)	156.4 (47)	472.1 (47)
2003-04	40.4 (40)	87.6 (42)	115.9 (42)	396.4 (42)
2004-05	40.0 (26)	95.8 (52)	128.0 (52)	402.2 (52)
2005-06	41.0 (31)	147.8 (128)	156.2 (26)	454.8 (128)
2006-07	41.8 (15)	165.2 (60)	162.6 (64)	472.5 (60)
2007-08	44.4 (30)	164.9 (57)	147.1 (57)	467.2 (57)
2008-09	48.4 (54)	139.1 (54)	146.0 (54)	444.0 (54)
2009-10	45.7 (27)	156.86 (68)	163.6 (68)	459.3 (68)
2010-11	45.8(33)	155.38 (38)	160.3 (38)	461.8 (38)
2011-12	46.0 (23)	154.0 (47)	147.8 (47)	462.8 (47)
2012-13	46 (39)	112.1 (36)	100.8 (36)	411 (36)
2013-14	43.6 (33)	118.0 (39)	119.8 (39)	423 (39)
2014-15	45.9 (17)	116.8 (52)	135.6 (52)	425 (52)
2015-16	41.7±1.28 (27)	127.5±10.2 (58)	126.1±6.6 (58)	434.2±10.48 (58)
2016-17	42.0±7.08 (34)	129±9.6 (43)	120±8.85 (43)	434.6±10.07 (43)
2017-18	42.2±0.87 (27)	135.43±12.51 (46)	113.29±5.98 (46)	444.59±12.41 (46)
2018-19	42.5±0.83 (21)	144.9±10.7 (60)	111.4±7.0 (60)	454.1±11.1 (60)
2019-20	43.5±0.49 (22)	122.6±7.5 (64)	111.7±6.0 (64)	430.5±7.9 (64)
2020-21	43.1±0.8 (27)	127.3±9.2(67)	128.5±7.5 (67)	437.3±9.2 (67)
2021-22	46.5±0.8 (33)	117.9±12.11 (68)	114.45±6.28 (68)	419.9±8.91 (68)
2022-23	44.8±0.9 (40)	144.8±8.7 (64)	133±7.1 (64)	454±8.9 (64)
2023-24	**39.9±1.1 (27)**	**135.9±25.5 (96)**	**105.3±20.1 (96)**	**426.0 ± 23.5 (96)**

Figures in parenthesis indicate number of observations

9.15 Milk Production and Disposal during the Period 4/2023 to 3/2024

Month	Total milk produced (kg)	Disposal		
		Liquid Milk	Calf feeding	Expt.
April, 22	22199	21923	276	-
May	23109	22059	1050	-
June	19642	18766	876	-
July	19020	18138	882	-
August	20880	19786	1094	-
September	22269	21159	1110	-
October	22954	22244	710	-
November	20814	20416	398	-
December	21290	20862	428	-
January, 23	23597	22977	620	-
February	19316	19074	242	-
March	20240	20036	204	-
Total	**255330**	**247440**	**7890**	**-**

9.16 Feed & Fodder (Qtls.) during the Period 4/2023 to 3/2024

Month	Type of fodder/feed	Qty. produced at Farm (qtl.)	Qty. Purchased	Actually fed	Balance
Total	Green	22677.75	-	22677.75	-
	Silage	-	-	-	-
	Dry	3554	-	3554	-
	Concentrate	3582.14	-	3582.14	-

9.17 Milking Performance during the Period 4/2023 to 3/2024

Month	No. of Animal in Milk	No. of Animal dry	Total Animal	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April, 23	91	49	140	65.0	8.9	5.8
May	90	39	129	69.7	8.8	6.3
June	85	46	131	64.8	8.6	5.6
July	85	48	133	63.9	8.0	5.1
August	88	52	140	62.8	8.2	5.1
September	92	49	141	65.2	9.1	5.9
October	88	55	143	61.5	9.8	6.0
November	88	55	143	61.5	9.0	5.6
December	92	51	143	64.3	8.4	5.4
January, 24	95	47	142	66.9	8.9	6.0
February	95	48	143	66.4	8.0	5.2
March	88	54	142	61.9	8.0	5.0
Overall	**89**	**49**	**139**	**64.4**	**8.6**	**5.6**

9.17.1 Milking Performance since Inception of Network Project

Month	No. of animals (in milk)	No. of animals (Dry)	Total animals	Animals in milk (%)	Wet Average (kg)	Herd Average (kg)
1993-94	42	43	85	49.0	6.3	3.8
1994-95	49	39	88	55.7	7.2	3.4
1995-96	53	39	92	57.1	7.3	4.0
1996-97	76	46	122	62.4	7.0	4.3
1997-98	68	36	104	65.4	6.5	3.7
1998-99	71	27	98	70.0	6.2	4.2
1999-00	60	23	83	72.5	5.2	3.8
2000-01	55	17	72	75.8	6.7	5.1
2001-02	48	22	70	68.6	7.5	5.2
2002-03	47	25	72	65.3	7.5	5.0
2003-04	68	29	97	70.0	7.3	5.1
2004-05	68	36	104	65.4	7.7	5.0
2005-06	63	32	95	66.5	7.7	5.2
2006-07	65	31	96	68.0	7.8	5.3
2207-08	66	34	100	66.0	7.6	5.1
2008-09	62	33	95	66.0	7.1	4.7
2009-10	69	41	110	62.7	6.8	4.3
2010-11	64	30	94	68.1	7.3	5.0
2011-12	58	24	82	71.5	8.5	6.1
2012-13	58	30	88	65.1	10.0	6.6
2013-14	61.0	35.0	96.5	64.1	9.4	6.0
2014-15	64	36	100	64.3	8.7	5.6
2015-16	72	42	114	63	9.9	6.2
2016-17	80	41	121	66.1	9.7	6.6
2017-18	81	28	109	74.3	10.3	7.6
2018-19	76	29	104	73.2	11.0	8.0
2019-20	78	26	104	75.1	10.4	7.7
2020-21	73	36	109	67	9.6	6.3
2021-22	81.5	35	116	68.8	9.25	6.5
2022-23	85	37	122	69.2	9.4	6.6
2023-24	**89**	**49**	**139**	**64.4**	**8.6**	**5.6**

9.18 Bull-wise Daughters Performance (1st lactation) During the Period 4/2023 to 3/2024

Bull No.	Set No	Total No. of daughters born	No. of daughters reaching A.F.C.	No. of daughters completing 1st Lactation
5500		5	-	-
1454		3	-	-
5588		2	-	-
6007		6	-	-
4354		2	-	-
7584		5	-	-
2850		2	-	-
5511		3	-	-
2793		1	-	-
19		5	-	-
2459		6	-	-
2831		3	-	-
2838		5	-	-
3004		1	-	-
5481		1	-	-
Sikander		-	1	3
4837		-	1	-
2558		-	1	2
1148		-	1	2
183		-	2	4
6942		-	2	2
4715		-	2	2
4905		-	1	1
2607		-	1	2
2234		-	1	-
7010		-	1	1
4995		-	2	-
4687		-	1	1
1219		-	2	-
2269		-	1	-
UK		-	1	-
2677		-	1	-
2185		-	2	5
1150		-	2	-
2676		-	1	-
3591		-	-	2
M-53		-	-	4
1027		-	-	1
1053		-	-	1
M-51		-	-	2
2565		-	-	1
Dara		-	-	2
B1/330		-	-	4
4733		-	-	1
2594		-	-	1
4837		-	-	1
4889		-	-	1
Total		**50**	**27**	**46**

9.19 Bull-wise Daughters Completing 1st Lactation during the Period 4/2023 to 3/2024

Bull No.	Daughter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)
2185	17	15.10.18	26.06.22	46.3	305	2551	2551
3591	1396	25.10.17	28.06.22	56.0	301	2413	2413
M-53	57	13.05.19	29.06.22	37.5	301	2467	2467
Sikendar	96	21.08.19	24.07.22	35.1	305	2645	2645
3591	1408	25.11.17	30.07.22	56.1	292	2318	2318
M-53	64	24.05.19	06.08.22	38.4.	339	2982	2804
1027	1426	06.02.18	19.08.22	54.1	294	2200	2200
183	33	02.01.19	22.08.22	43.6	282	2029	2029
1053	1401	08.11.17	26.08.22	57.6	284	2986	2986
M-51	1474	02.08.18	28.08.22	48.9	197	2829	2829
2565	1458	28.06.18	04.09.22	50.0	283	2493	2493
4687	1475	02.08.18	14.09.22	49.0	332	2441	2396
183	74	21.06.19	16.09.22	39.0	275	1922	1922
M-53	60	18.05.19	19.09.22	40.0	279	2102	2102
2185	1478	09.08.18	23.09.22	49.5	365	3044	2700
2185	34	05.11.19	25.09.22	44.5	297	1523	1523
DARA	85	06.08.19	30.09.22	38.0	224	1496	1496
B.1.330	54	05.05.19	11.10.22	41.0	275	2448	2448
M-51	003	20.08.18	12.10.22	50.0	312	2674	2649
M-53	67	03.06.19	17.10.22	40.0	345	3436	3151
2185	78	16.07.19	27.10.22	39.0	305	2727	2727
B.1.330	72	16.06.19	28.10.22	40.0	259	2038	2038
1148	119	14.10.19	31.10.22	36.0	270	1824	1824
2185	84	01.08.19	06.11.22	39.0	293	2505	2505
2558	71	16.06.19	17.11.22	41.0	275	2579	2579
Sikander	100	30.08.19	28.11.22	39.0	294	2308	2308
DARA	58	13.05.19	05.11.22	42.7	290	2434	2434
183	29	24.11.18	09.12.22	48.5	284	2073	2073
4733	44	26.03.19	14.12.22	44.6	288	2516	2516
B.1.330	56	08.05.19	21.12.22	44.0	245	1563	1563
6942	116	07.10.19	06.02.23	40.2	356	2958	2777
2594	35	12.01.19	18.02.23	49.9	347	3102	2838
Sikander	95	20.08.19	02.04.23	43.5	360	2813	2490
4837	103	06.09.19	13.04.23	43.2	290	2430	2430
2558	50	17.04.19	19.04.23	48.0	284	1940	1940
1148	77	04.07.19	25.04.23	45.7	238	1625	1625
183	131	17.01.20	25.04.23	39.2	296	2359	2359
6942	79	21.07.19	24.04.23	45.1	338	2774	2620
4715	123	10.01.19	03.05.23	42.0	323	2691	2586
4905	130	11.01.20	04.05.23	40.0	265	1662	1662
2607	66	25.05.19	09.05.23	47.0	287	2242	2242
4715	122	28.10.19	16.05.23	42.0	309	2177	2170
7010	42	07.03.19	28.06.23	51.7	195	1294	1294
4889	1434	04.04.18	10.06.23	50.0	319	2715	2696
B.1.330	55	06.05.19	23.06.23	37.5	306	3067	3066
2607	61	18.05.19	19.01.23	44.0	281	2249	2249

9.20 List of Breeding bulls selected for current set (21st)

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best lact.305 or days less yield (kg)
1	109	17.09.19	1068	M-53	3660/2
2	112	23.09.19	943	6942	4390/4

9.20.1 PT bulls for nominated mating

Bull No.	Set No.	Centre	Dams' Best yield	Sire Index	Breeding Value	% Superiority
M-29	16Set	CIRB	4600	I	2578.94	3.82
1053	16Set	LUVAS	3559	II	2567.15	3.35
2383	16Set	GADVASU	4636	III	2546.77	2.53

9.20.2 List of Future breeding bulls

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dams best SLMY (kg) / Parity	Semen doses available	Expected predicted Difference (EPD)
1	225	04.01.21	1288	1208	**3388/2**	-	-
2	270	24.07.21	1131	2185	**3827/2**	-	-
3	281	15.08.21	1058	4196	**4204/2**	-	-
4	288	23.08.21	953	2357	**4296/2**	-	-
5	306	13.11.21	1358	5232	**3847/2**		
6	317	28.12.21	1068	4196	**3660/2**		

9.21 Targets Achieved during the year 2023-24

Sr. No.	Trait	Target Fixed	2019-20	2020-21	2021-22	2022-23	2023-24
1	Av. Age at first Ist. Calving (months)	40.0	43.5±0.49 (22)	43.1±0.8 (27)	46.5±0.8 (33)	44.8±0.9 (40)	39.9±1.1 (27)
2	Av. Service Period. (days)	130	123±7.5 (64)	127±9.2 (67)	118±12.1 (68)	144.8±8.7 (64)	135.9±25.5 (96)
3	Calf Mortality (0-3 months)	≤ 5 %	4.72 %	1.85 %	5.22 %	3.20 %	3.7 %
4	Wet Average (kg)	≥ 8.5 kg	10.4 kg	9.6 kg	9.25 kg	9.40 kg	8.6 Kg
5	Herd Average (kg)	≥ 5.5 kg	7.7 kg	6.3 kg	6.50 kg	6.60 kg	5.6 Kg

10. Salient Research Achievements (example):

The LUVAS Murrah Centre has been making steady progress in meeting out the objectives of the Network Project which are reflected in the Annual Progress Report. Some of the salient findings:

I. Overall Wet average and Herd average were 8.6 kg and 5.6 kg, respectively.

II. Overall 305d lactation milk yield and total lactation milk were reported 2658 kg and 2725 kg, respectively.

III. Service period and calving interval during the period was observed 135 days and 426 days, respectively.

IV. During the period 1st April, 2023 to 31st March 2024, overall mortality rate was 3 %.

Publications

11. Socioeconomic impact / Success stories:

- Propagated superior Murrah bulls to Village Gram Panchayats, Govt. organizations and progressive farmers.
- Imparted Skill development training on Dairy Farming to ninety beneficiaries under SCSP.
- Exposure visit of farmers by Director of Extension Education, LUVAS and other agencies at regular interval.

12. Constraints if any

Financial assistance may be provided to improve the existing facilities in the buffalo farm such as:

- Improving the Micro Climate of Milking Parlour.
- Modification of old sheds and working yard.
- Budgetary allocation for procurement of farm machinery like tractor, TMR, Chaff cutter etc.

13. Focus of work in the coming year: Improving the performance of herd and as per the guidelines of Network Project on Buffalo (Murrah) improvement**.**

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023 -24		Released ICAR Share as per R E	Detail as per PUC 2023-24	
Total	ICAR Share		Expenditure (ICAR Share)	Balance (ICAR Share)
71.00*	51.00+3.00*	54.00*	53.96165	0.03835

* Includes 3.00 lakhs for SCSP

Herd Performance

Herd strength at the centre was 399 heads with 197 breedable buffaloes (>2 year). A total of 110 calves were added due to birth. During the reporting period, calf mortality rate (0-3 months) was 3.70% which was within the project target. Conception rate was decreased from 48.26 % in 2022-23 to 35.48 % in 2023-24.

Average lactation yield decreased from 3059 kg (92) in 2022-23 to 2725 kg (102) in 2023-24. Similarly, 305 or less day average milk yield also decreased from 2957 kg (92) to 2658 kg (102). The lactation length was 287 days (102) during the year as compared to 317 days (92) in 2022-23. The age at first calving reduced from 44.8 months (40) in last year to 39.4 months (27) in 2023-24. Other reproductive traits viz., dry period, service period and calving interval were improved during the period from 133 days (64), 145 days (64), 454 days (64) in 2022-23 to 105 days (96), 136 days (96) and 426 days (96), respectively. Wet and herd averages decreased from 9.40 and 6.60 kg to 8.6 kg and 5.6 kg respectively during 2023-24. During the report period 64.4 percent animals were in milk as compared to 69.2 percent in 2022-23.

Accomplishment and Targets Achieved:

Sr. No.	Trait	Target Fixed	2019-20	2020-21	2021-22	2022-23	2023-24
1	Av. Age at first Ist. Calving (months)	40.0	43.5±0.49 (22)	43.1±0.8 (27)	46.5±0.8 (33)	44.8±0.9 (40)	39.9±1.1 (27)
2	Av. Service Period. (days)	130	123±7.5 (64)	127±9.2 (67)	118±12.1 (68)	144.8±8.7 (64)	135.9±25.5 (96)
3	Calf Mortality (0-3 months)	≤ 5%	4.72 %	1.85 %	5.22 %	3.20 %	3.7 %
4	Wet Average (kg)	≥ 8.5 kg	10.4 kg	9.6 kg	9.25 kg	9.40 kg	8.6 Kg
5	Herd Average (kg)	≥ 5.5 kg	7.7 kg	6.3 kg	6.50 kg	6.60 kg	5.6 Kg

Recommendations:

- During the reporting period, the production performance of the LUVAS herd declined, which requires immediate attention for improvement.
- Conception rate of Buffaloes in LUVAS herd is low which needs to be improved.
- Use of PT bull semen in elite buffaloes should be ensured.

ICAR RESEARCH COMPLEX FOR EASTERN REGION, PATNA (BIHAR)

Report Period 2023-24

1. **Name of centre** : ICAR Research Complex Eastern Region Patna
2. **Project Code**
3. **Project Title** : Network Project on Murrah Buffaloes
4. **Date of Start** : July 2014
5. **Objectives** :
   - I. To establish elite herd of 50 to 100 Murrah (at each center) / Nili Ravi / 50 Bhadawari / 50 Surti / 70 Jaffarabadi for the production of genetically superior young bulls.
   - II. To evaluate sires through institutional / associated herd/field progeny testing
   - III. To produce, test, propagate and conserve high genetic merit male germplasm
6. **Technical Programme:**
   - Establishment and maintenance of an elite herd of buffalo breed with a herd strength of 500 and 300 breedable females (Murrah).
   - Selection and testing of minimum 15 bulls of Murrah / 4-6 bulls for other breeds in every 18/24 months cycle.
   - Production of minimum 10,000 (Murrah) and 3000 to 5000 (Other breeds) frozen semen doses from each test bull.
   - Maintain a minimum number of 8000 (Murrah) and 2000 (other breeds) frozen semen doses until the particular SET gets evaluated.
   - Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
   - Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
   - Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield, Milk yield per day of herd life (total milk produced from date of birth till completion of 4th or more lactation). New Table
   - Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds.
   - Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
   - Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. **Staff associated with the project:**

Discipline	Name of Scientist / Staff	Status PI/Co-PI/ Associated)
AGB	Dr PC Chandran, Sr. Sci. Dr Rakesh Kumar, Sci.	Principal Investigator Co- Principal Investigator
Veterinary Medicine	Dr Pankaj Kumar, Sr. Sci.	Co- Principal Investigator
Animal Biotechnology	Dr Rajni Kumari, Sr. Sci.	Co- Principal Investigator
ARGO	Dr Chandra Sekar Azad, Asst. Professor	Co- Principal Investigator
Vety. Surgery	Dr RK Tiwari, Asst. Prof.	Co- Principal Investigator
Veterinary Pathology	Dr PK Ray, Sr. Sci.	Co- Principal Investigator
Contractual staff (RA / SRF / YP-I, YP-II)	Nil	

8. Financial Statement : Head wise budget allocation and utilization; revenue receipts

Fund utilization in Network Project for 2023-24 (Amount in Lakhs)											
Heads	**Capital**						**Salary**	**General**			
	Works	**Equip.**	**Library**	**Livestock**	**Furniture**	**Others**		**TA**	**HRD**	**Contingency**	**Total**
Fund released	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.00	23.00
Fund utilized	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.00	23.00*

* Rs.406.00 unspent

9.1 Herd Strength during the Period 1st April 2023 to 31st March, 2024

Sr. No.	Category	Addition			Disposal				CB
		OB	**B / P**	**T**	**D**	**T**	**S**	**E**	**CB**
	Female								
1.	Below 3 months	3	17		1	19			0
2.	3-12 months	18		19	1	18			18
3.	1-2 years Above 2 years	5 18		18 12		12 12			11 18
4.	Buffaloes in Milk	26		23		24			25
5.	Buffaloes Dry P /NP	9		24		11	16		06
	Sub Total	79	17	94	2	94	16		78
	Males								
1.	Below 3 months	2	13			11			4
2.	3-12 months	3		11		6	4		4
3.	1-2 years Above 2 years	2 1		6 4		4	2 4		2 1
4.	Breeding bulls								
5.	Bullocks / Teasers	1							1
	Sub Total	9	13	21	0	21	10	0	12
	Grand Total	88	30	115	2	115	26	0	90

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics including abnormalities

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April, 2023		2						2
May		1		1				1
June	1	1						2
July	3	4						7
August	1	4					1	5
September		1		1				1
October	2						1	2
November		2						2
December	2	2						4
January, 2024				1			2	0
February	2							2
March	2			1				2
Overall	**13**	**17**		**4**			**4**	**30**

Sex ratio Male : Female (1:1.31)

9.3. Disposal of Animals during the Period 1st April 23 to 31st March 24

Female	Primary cause of disposal							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves								
0 to 3 months	-	-	-	-	-	1	-	1
3-12 months	-	-	-	-	-	1	-	1
Heifers								
1-2 years	-	-	1	-	-	-	-	1
> 2 years	-	-	-	-	-	-	-	-
Buffaloes								
Milch	-	-	-	-	-	-	-	-
Dry	4	5	6	-	-	-	-	15
Sub Total	**4**	**5**	**7**	**-**	**-**	**2**	**-**	**18**
Males	**Primary cause of disposal**							
Calves								
0 to 3 months	-	-	-	-	-	-	-	-
3-12 months	-	-	-	-	-	-	-	-
1 to 2 year	15	-	-	-	-	-	-	15
. >2 year	-	-	-	-	-	-	-	-
Breeding bulls	-	-	-	-	-	-	-	-
Bullock+Teaser +Others	1	-	-	-	-	-	-	1
Sub Total	16	-	-	-	-	-	-	16
Grand Total	**20**	**5**	**7**	**-**	**-**	**2**	**-**	**34**

9.4. Mortality during the Period 1st April 2023 to 31st March, 2024

Female						Male				Overall Herd
	0-3 Month	3-12 Month	1-2 Yrs.	Above 2 Yrs.	Milk + Dry	0-3 Month	3-12 Month	1 -2 Yrs.	>2 yrs.	
No.	20	18	13	18	29	15	4	2	2	90
Died	1	1	0	0	0	0	0	0	0	02
%	5.00	5.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.11

Calf mortality (0 to 3 months) = 2.86 % (1/35)

9.5. Causes of Mortality (quarter wise) during the period April 2023 to March 2024

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	Total
Enteritis	-	1	-	-	1
Pneumonitis	-	1			1
Septicaemia/ Toxaemia	-	-	-	-	-
Peritonitis	-	-	-	-	-
JD/TB	-	-	-	-	-
Milk Fever / metabolic disorders	-	-	-	-	-
TRP / TP	-	-	-	-	-
Parasitism	-	-	-	-	-
Accidental death	-	-	-	-	-
Peri-parturient disorders	-	-	-	-	-
Misc. (Snake bite)	-	-	-	-	-
Total	0	2	0	0	2

9.6 Prophylactic Measures undertaken

Disease	**Vaccination Date / No. of animals**	**No. of animals** Tested / Positive		**Dates and No. of animals treated for Parasitism**
FMD	15/02/2024	-	-	Calves are dewormed once in two months; And the adult animals are dewormed once in six months
HS		-	-	
BQ		-	-	
Brucellosis	-	-	-	
JD	-	-	-	
TB	-	-	-	
IBR	-	-	-	
Mastitis	-	-	-	

9.7. Female Conception Rate during the Period January to December 2023

AI No.→	1st			2ND			3RD			4TH & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	06	04	66.7	03	01	33.3	03	01	33.3	0	0	0	12	06	50.0
Adults	12	06	50.0	10	04	40.0	11	04	36.4	03	2	66.7	36	16	44.4
Overall	18	10	55.5	13	05	38.5	14	05	35.7	03	2	66.7	48	22	45.8

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8 Quarter-wise conception rate

Quarter	No. of A I	Preg. animals	CR %
January – March Previous year	05	02	40.0
April – June	10	03	30.0
July – September	14	07	50.0
October- December	19	10	52.6
Overall	**48**	**22**	**45.8**

9.9. Bull-wise Conception Rate During the period January to December, 2023

Sr. No.	Bull No.	SET No.	Total Number of AI	Total Conceived	CR%
1	7649	XX	03	01	33.3
2	1454	XX	02	01	50.0
3	2979	XXI	08	03	37.5
4	3014	XXI	06	04	66.7
5	5629	XXI	06	03	50.0
6	5414	XXI	08	04	50.0
7	7630	XXI	08	03	37.5
8	7768	XXI	07	03	42.9
Overall			**48**	**22**	**45.8**
No. of services per conception					**2.18**

9.10 Bull Wise Semen Stock

Sr. No	Set No	Bull No	OB	Doses produced / received	Doses used /disseminated			Balance
					Supply	Sold	Exp.	
1.	XXI	2979	50	20	15	--	2	53
2.	XXI	3014	50	20	13	--	3	54
3	XXI	5629	50	20	14	--	2	54
4	XXI	5414	50	20	16	--	4	50
5	XXI	7630	50	20	17	--	2	51
6	XXI	7768	50	20	15	--	2	53

7	XXI	109	0	50	0	--	--	50
8	XXI	112	0	50	0	--	--	50
9	XXI	297	0	50	0	--	--	50
10	XXI	2990	0	50	0	--	--	50
11	XXI	5638	0	50	0	--	--	50
12	XXI	5690	0	50	0	--	--	50
13	XXI	5764	0	50	0	--	--	50
14	XXI	7790	0	50	0	--	--	50
Grand Total			**300**	**520**	**90**	**0**	**15**	**715**

9.11.1 Average body weight (kg) since inception (Indicate number of animals in parenthesis):

Body weight was not taken as the balance is under repairing.

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	10	1948.33±134.12	334.26±37.80	1819.54±126.11	9.83±1.42
2nd	3	2718.63±141.93	363.41±31.76	2405.27±112.40	12.83±1.54
3rd	5	2988.13±146.81	358.81±29.77	2583.62±132.82	14.11±1.76
4th	2	2764.39±138.54	367.59±12.18	2515.44±122.86	13.04±1.22
5th & above	5	2714.88±151.49	344.86±17.62	2523.08±145.13	13.17±1.52
Overall	**25**	**2467.32±140.55**	**347.45±21.43**	**2239.02±114.14**	**12.13±1.58**

9.12.1 Average production performance of Buffaloes Since Inception of Network

Year	Lact. Length (days)	TLMY (kg)	SLMY (kg)	Peak yield (kg)
2014-15	421.21±8.56 (13)	2176.98±89.23 (13)	1827.22±46.22 (13)	9.72±0.32 (13)
2015-16	329.04±6.35 (18)	2018.9±60.35 (18)	1865.60±36.75 (18)	9.06±0.28 (18)
2016-17	351.80±10.65 (19)	1932.25±18.12 (19)	1736.04±21.48 (19)	9.27±0.28 (19)
2017-18	405.42±35.15 (12)	2404.76±203.77 (12)	1996.65±122.6 (12)	12.34±0.48 (12)
2018-19	370.27±23.5 (16)	2356.17±147.22 (16)	1984.85±135.23 (16)	13.08±0.38 (16)
2019-20	329.38±12.15 (20)	2127.44±18.50 (20)	2088.45±19.16 (20)	12.75±2.11 (20)
2020-21	336.31±18.19 (31)	2166.04±89.10 (31)	1824.42±63.04 (31)	9.93±0.43 (31)
2021-22	335.01±21.16 (25)	2135.44±89.10 (25)	1944.40±78.37 (25)	10.21±0.43 (25)
2022-23	374.47±12.77 (19)	2688.62±134.72 (19)	2373.76±88.54 (19)	14.31±1.52 (19)
2023-24	**347.45±21.43 (25)**	**2467.32±140.55 (25)**	**2239.02±114.14 (25)**	**12.13±1.58 (25)**

9.13 Average Milk Composition from April 2023 to March 2024

Month	N	Fat	SNF	Protein	Lactose	SCC
April	60	7.12	9.07			
May	60	7.38	9.38			
June	60	7.55	8.83			
July	60	7.40	8.69			
August	60	7.47	9.56			
September	60	7.56	9.10			
October	60	7.63	9.15			
November	60	7.34	9.03			
December	60	7.41	9.17			
January	60	7.28	8.90			
February	60	7.22	9.22			
March	60	7.10	9.16			
Overall	**720**	**7.37**	**9.11**			

9.14: Reproductive Performance

Lactation / Parity	AFC (Months)	N →	SP (Days)	DP (Days)	CI (Days)
1	51.28±7.18 (3)	-	--	--	-
2		7	127.38±21.16	113.72±24.06	430.18±25.72
3		5	118.57±17.34	101.14±20.43	424.82±23.41
4		2	137.28±30.63	118.77±47.15	441.23±29.69
5th and above		4	141.04±22.45	124.47±26.31	450.13±23.25
Over all	**51.28±7.18**	**18**	**129.07±22.54**	**113.18±27.34**	**434.35±28.16**

9.14.1 Reproduction Performance Since inception of Network

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
2014-15		146.3±8.98 (9)	124.9±5.91 (9)	569.4±14.54 (9)
2015-16		139.86±4.76 (12)	94.17±1.70 (12)	424.90±1.42 (12)
2016-17		183.1±6.25 (14)	122.2±3.13 (14)	481.2±6.56 (14)
2017-18		195.3±8.21 (12)	110.4±6.58 (12)	515.2±7.12 (12)
2018-19		157.22±9.28 (18)	92.25±10.47 (18)	463.12±22.17 (18)
2019-20		130.92±12.55 (20)	91.97±13.22 (20)	425.91±40.62 (20)
2020-21	48.34±5.26 (3)	130.45±11.47 (31)	99.90±12.62 (31)	467.82±23.74 (31)
2021-22	51.35±12.44 (3)	123.31±12.44 (25)	110.55±16.15 (25)	445.59±24.18 (25)
2022-23	54.00 (1)	131.54±14.63 (25)	114.02±20.92 (25)	437.69±24.37 (25)
2023-24	51.28±7.18 (3)	129.07±22.54 (18)	113.18±27.34 (18)	434.35±28.16 (18)

9.15 Milk Production and Disposal

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April 2023	5490.75	3930.7	1550.05	10
May	4944.50	3995.4	939.1	10
June	3915.00	3170	735	10
July	4398.90	3529	859.9	10
August	5549.78	4151.2	1388.58	10
September	6076.20	4408.9	1657.3	10
October	6293.78	4639.2	1644.58	10
November	5532.23	4246.2	1276.03	10
December	6758.00	5226.2	1521.8	10
January 2024	8308.78	6293.8	2004.98	10
February	6398.85	4891.6	1497.25	10
March	4543.36	3398.1	1135.26	10
Total	68210.11	51880.3	16209.83	120

9.16 Feed and fodder (Quintals) availability

Months	Green fodder produced at Farm	Green fodder Purchased	Total
April 2023	151.8	-	285.4
May	175.2	-	297.1
June	251.4	-	348.4
July	268.0	-	364.3
August	302.1	-	455.2
September	303.8	-	586.8
October	291.4	-	551.0
November	204.0	-	351.5
December	138.7	-	250.8

January 2024	162.6	-	262.7
February	259.7	-	284.2
March	299.7	-	351.3
Total Green	**2808.4**	-	**4388.7**
Silage	-	-	-
Dry	625	1200	1825
Concentrate	-	1080	1080

9.17: Milk performance during April 23 to March 24

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April 23	29	12	41	70.73	6.31	4.46
May	29	12	41	70.73	5.68	4.02
June	27	10	37	72.97	4.83	3.53
July	31	12	43	72.09	4.73	3.41
August	28	10	38	73.68	6.61	4.87
September	30	11	41	73.17	6.75	4.94
October	29	10	39	74.36	7.23	5.38
November	31	9	40	77.50	5.95	4.61
December	32	9	41	78.05	7.04	5.49
January 24	32	8	40	80.00	8.65	6.92
February	27	5	32	84.38	7.9	6.67
March	25	6	31	80.65	6.06	4.89
Overall	**29**	**10**	**39**	**75.69**	**6.48**	**4.93**

9.17.1 Milking performance since inception

Year	No. of Animals in Milk	No. of Animals dry	Total Animals	% in Milk	Wet Av. (kg)	Herd Av. (kg)
2014-15	8.17	10.83	19	42.98	3.98	1.71
2015-16	13.5	11.0	61	51.83	7.45	3.91
2016-17	19.1	9.4	68.1	66.1	6.39	4.51
2017-18	16.92	8.42	77.8	68.37	4.30	2.93
2018-19	14.75	10.67	25.33	58.01	4.85	3.08
2019-20	27.42	16.5	43.92	52.12	5.12	3.25
2020-21	27.25	19.17	46.41	58.75	4.42	2.58
2021-22	26.42	21.08	47.50	55.46	5.44	3.02
2022-23	27.08	22.08	49.17	55.08	6.77	3.73
2023-24	29.17	9.50	38.6	75.69	6.48	4.93

9.18: Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
B-851	XIII	2	2	2
4324	XIV	3	3	3
4328	XIV	1	1	1
4354	XIV	2	2	2
4363	XIV	1	1	1
4438	XIV	3	3	3
2565	XV	1	1	1
2594	XV	1	1	1
2607	XV	2	2	2
4733	XV	1	1	1

M51	XV	2	2	2
4705	XVI	2	2	1
4889	XVI	1	1	1
2467	XVI	2	2	2
4905	XVIII	1		
1150	XVIII	2	1	
1209	XVIII	3	1	
1219	XVIII	2		
4995	XVIII	2		
1315	XIX	2		
5320	XIX	2		
5310	XIX	2		
2759	XIX	1		
2737	XIX	2		
2674	XIX	1		
5181	XIX	1		
5232	XIX	1		
5246	XIX	1		
7604	XIX	1		
5427	XX	2		
7584	XX	2		
2831	XX	2		
5481	XX	1		
5588	XX	2		
1454	XX	1		
7649	XX	1		
2793	XX	2		
2814	XX	2		
2848	XX	1		
2850	XX	1		
3004	XX	2		
2838	XX	1		
5500	XX	2		
19	XX	2		

9.19 Bull wise daughters completing 1st lactation

Bull No.	Daughter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)
B-851	40	20.03.2015	07.01.2020	55	368	2045	1745
4438	78	10.05.2016	07.07.2019	33	399	1527	1316
4328	81	09.07.2016	26.10.2020	51	340	1639	1350
B-851	42	15.05.2015	16.11.2020	65	278	1524	1524
4438	48	15.01.2016	16.11.2020	57	325	1730	1685
4324	75	16.03.2016	15.03.2019	33	251	1440	1440
4324	87	09.09.2016	16.12.2020	51	323	1668	1598
4354	86	26.08.2016	23.01.2021	52	291	1526	1526
4705	102	15.10.2017	21.06.2022	57	295	1733	1733
4889	98	03.05.2017	10.02.2022	58	448	2727	2126
4705	102	15.10.2017	21.06.2022	57	295	1733	1733
2467	103	06.11.2017	19.08.2022	58	305	1876	1876
2467	115	08.01.2018	09.07.2022	55	313	2076	2047

9.20 Breeding bulls Selected for current set : Nil
9.20.1 PT Bulls for nominated mating : Nil
9.20.2 List of Future breeding bulls : Nil

9.21 Target achieved during the year

Trait	Target	2019-20	2020-21	2021-22	2022-23	**2023-24**
Av. Age at first calving (months)	40	-	48.34±5.26 (3)	51.35±12.44 (3)	54.00 (1)	51.28±7.18 (3)
Av. Service period (days)	130	131±12.55 (20)	130±11.47 (31)	123±12.44 (25)	132±14.63 (25)	129.07±22.54 (21)
Calf mortality (0-3 months)	≤ 5 %	2.77% (1/36)	0.0	4.16 % (1/24)	7.32% (3/41)	2.86% (1/35)
Wet average (kg)	≥8.5 kg	5.12	4.42	5.44	6.77	6.48
Herd average (kg)	≥5.5 kg	3.25	2.58	3.02	3.73	4.93

Publications

Chandran, P.C., Dey, A., Barari, S.K. and Kamal, R. (2023). Scenario and strategies for sustainable buffalo production in Eastern region of India. Buffalo Bulletin. 42: 1-9.

Socioeconomic impact / Success stories:

One day training cum farmers' awareness programme under SCSP component of Network Project on Buffalo Improvement programme was organized on February 27, 2024 in Dipuji Jan Pam village of Kamrup (M) district, Guwahati. Scientists from ICAR Research Complex for Eastern Region, Patna visited the village and interacted with the less privileged farmers on Buffalo based Integrated Farming Systems, and various crop productivity improvement practices.

Fig.: SCSP training programme in Dipuji Jan Pam Village.

During the training programme, the possibilities of improving the livelihood in wetland ecosystem using agriculture, livestock and fisheries was also discussed among the farmers. In addition, the agricultural inputs such as high-quality seeds, milk cans, sprayers and delivery pipes were also distributed in order to enhance the productivity. More than 60 farmers participated in the programme and got benefitted with scientific inputs and knowledge on recent agricultural technologies. At the end of the programme, the farmers had an interaction session with the scientists and expressed their desire to have such program on regular intervals to understand the newer technologies and necessary implementations.

Constraints if any: Shortage of land for farming and fodder cultivation.
Focus of work in the coming year: Continue focus on reproduction performances of buffaloes.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR	Expenditure as per AUC		Balance
Total	ICAR Share	Share as per R E	ICAR Share	State Share	(ICAR Share)
23.00*	22.00+1.00*	23.00*	22.99594	--	+ 0.00406

* Includes Rs. 1.00 lakhs for SCSP

Herd Performance

The herd strength of farm was 90 head as on March 2024, comprising 49 breedable buffaloes. 30 calves added due to birth during the year. The calf mortality (0-3 months) was remained 2.86% within the targat. The Conception rate decreased from 53.1 percent in 2022-23 to 45.8 percent in 2023-24.

Average TLMY, SLMY and Peak yield were decreased from 2689 kg (19), 2374 kg (19) and 14.31 kg (19) in 2022-23 to 2467 kg (25), 2239 kg (25) and 12.13 kg (25), respectively in 2023-24. The average lactation length was 347 days during the year. The wet average decreased from 6.77 kg/d to 6.48 kg/d and herd average improved from 3.73 kg/d to 4.93 kg/d during the year. The service period, dry period and calving interval were 129 days (18), 113 days (18) and 434 days (18) during the period. The AFC was very high at 51.28 (3) months

A. Accomplishment and Targets Achieved:

Trait	**Target**	2019-20	2020-21	2021-22	2022-23	**2023-24**
Av. Age at first calving (months)	40	-	48.34±5.26 (3)	51.35±12.44 (3)	54.00 (1)	51.28±7.18 (3)
Av. Service period (days)	130	131±12.55 (20)	130±11.47 (31)	123±12.44 (25)	132±14.63 (25)	129.07±22.54 (21)
% Calf mortality (0-3 months)	≤ 3 %	2.77% (1/36)	0.0	4.16 % (1/24)	7.32% (3/41)	2.86% (1/35)
Wet average (kg)	≥8.5 kg	5.12	4.42	5.44	6.77	6.48
Herd average (kg)	≥5.5 kg	3.25	2.58	3.02	3.73	4.93

Recommendations:

- Buffalo milk production parameters like TLMY, SLMY and peak yield have declined, more devotion is required for its improvement.
- As per the project target, more efforts should be made to reduce the AFC.

ICAR-CIRB SUB CAMPUS, NABHA

1. **Name of the center** : Central Institute for Research on Buffaloes, Sub campus, Nabha
2. **Project Code** : 18-3/97 ASR-II Dated 29/03/2001
3. **Project title** : Network project on improvement of Nili-Ravi buffaloes
4. **Date of Start** : 11/10/ 2001

5. Objectives:

I. To establish elite herd of 200 Nili-Ravi Buffaloes for the production ofgenetically superior young bulls.
II. To evaluate sires through progeny testing
III. To produce, test, propagate and conserve high genetic merit male germplasm

6.Technical Programme:

I. Establishment and maintenance of an elite herd of 200 bnreedable Nili-Ravi buffaloes.
II. Selection and testing of 8-10 bulls (superior germplasm) for each set for breed improvement.
III. Production and storage 1000 – 1500 frozen semen doses from each test bull, for future use.
IV. Maintain a minimum number of 8000 frozen semen doses until the particular SET gets evaluated.
V. Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 2 bulls as proven bulls from each set.
VI. Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
VII. Dissemination of semen/surplus males to farmers and agencies involved in propagation and conservation of Nili-Ravi germplasm.

7. **Financial Statement for the year 2023-24** (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR	Expenditure as per AUC		Balance
Total	ICAR Share	Share as per R E	ICAR Share	State Share	ICAR Share
45.00*	41.00+4.00*	45.00*	45.00	0.00	0.00

* Includes Rs. 4.00 lakhs for SCSP

8. **Staff Position**: Through redeployment

9. Herd performance: As stated below in table 9.1 to 9.21.

9.1 Herd Strength during the Period 1st April 2023 to 31st March, 2024

Sr. No.	Category	Addition				Disposal				CB
		OB	**B/P**	**P**	**T**	**D**	**T**	**S**	**Sold to Farmer**	**CB**
	Female									
1.	Below 3 months	11	51			03		01	-	16
2.	3-12 months	44	-			01		02	-	31
3.	1-2 years	68	-			0		-	-	52
	Above 2 years	96	-			01		04	-	121
4.	Buffaloes in Milk	106	-			01		10	-	113
5.	Buffaloes Dry P /NP	38	-			02		6	-	53
	Sub Total	**363**	**51**			**08**		**23**	**-**	**386**
	Male									
1.	Below 3 months	13	65			07		01		18
2.	3-12 months	47	-			01		06	-	32
3.	1-2 years	20	-			-		19	1	40
	Above 2 years	16	-			0		3	3	29
4.	Breeding bulls	12	-			01			05	06
5.	Bullocks/Teasers / others	01	-			-		-	-	1
	Sub Total	**109**	**65**			**9**		**29**	**09**	**126**
	Grand Total	**472**	**116**			**17**		**52**	**9**	**512**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March 2024

9.2 Calving Statistics including abnormalities

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 23	01	02	-	-	-	-	-	03
May	0	01	-	02	-	-	-	01
June	01	02	01	01	-	-	-	04
July	06	02	02	-	-	-	-	08
August	08	02	-	01	-	-	-	10
September	08	07	02	-	-	-	-	17
October	10	12	01	-	-	-	-	23
November	06	03	-	01	-	-	-	09
December	05	03	01	-	-	-	-	08
January 2024	08	05	01	-	-	-	-	14
February	09	08	-	01	-	-	-	17
March	03	04	-	-	-	-	-	07
Overall	**65**	**51**	**08**	**06**	**-**	**-**	**-**	**124**

Sex ratio Male: Female (65: 51) SB% = 6.45%

9.3. Disposal of Animals during the Period 1st April 23 to 31st March 24

Female	Primary cause of disposal							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Exp. purposes	Total
Calves								
0 to 3 months	01	-	-	-	-	03	-	04
3-12 months	02	-	-	-	-	01	-	03
Heifers								
1-2 years	-	-	-	-	-	-	-	-
> 2 years	-	-	4	-	-	01	-	05
Buffaloes Milch/ Dry	3	5	5	1	2	03	-	19
Sub Total	**6**	**5**	**9**	**1**	**2**	**8**	**-**	**31**
Males	**Primary cause of disposal**							
Calves								
0 to 3 months	01	-	-	-	-	07	-	08
3-12 months	06	-	-	-	-	01	-	07
1 to 2 year	20	-	-	-	-		-	20
. >2 year	06	-	-	-	-		-	06
Breeding bulls	05	-	-	-	-	01	-	06
Bullock+Teaser+Others	-	-	-	-	-		-	-
Sub Total	**38**	-	-	-	-	**09**	-	**47**
Grand Total	**44**	**5**	**9**	**1**	**2**	**17**	**-**	**78**

9.4. Mortality during the Period 1st April 23 to 31st March, 2024

		Females						Males						
Month		0-3	3-6	6-12	>1yr	>2yrs	All	0-3	3-6	6-12	>1yr	>2yrs	All	Total
Apr-23	No	09	14	32	67	243	365	09	26	26	20	28	109	474
	Died	-	-	-	-	-	-	-	-	-	-	-	-	-
	%	-	-	-	-	-	-	-	-	-	-	-	-	-
May	No	07	10	39	66	243	365	06	13	40	21	27	107	472
	Died	-	-	-	-	01	01	01	-	-	-	01	02	03
	%	-	-	-	-	0.41	0.27	16.66	-	-	-	3.70	1.87	0.64
Jun	No	05	11	41	66	244	367	02	12	46	20	28	108	475
	Died		-	-	-	-	-	-	-	-	-	-	-	-
	%		-	-	-	-	-	-	-	-	-	-	-	-
Jul	No	05	09	44	64	247	369	07	08	50	20	29	114	483
	Died	-	-	-	-	-	-	02	-	-	-	-	02	02
	%	-	-	-	-	-	-	28.57	-	-	-	-	1.75	0.41
Aug	No	06	07	32	71	255	371	14	06	45	23	33	121	492
	Died	-	-	-	-	-	-	02	-	-	-	-	02	02
	%	-	-	-	-	-	-	14.28	-	-	-	-	1.65	0.41
Sep	No	11	05	25	72	265	378	20	02	42	31	33	128	506
	Died	-	-	-	-	-	-	-	-	-	-	-	-	-
	%	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct	No	20	05	21	67	256	369	23	06	32	11	31	103	472
	Died	-	-	-	01	-	01	01		-	-	-	01	02
	%	-	-	-	1.49	-	0.27	4.35		-	-	-	0.97	0.42
Nov	No	20	06	17	69	258	370	22	13	19	23	32	109	479
	Died	01	-	-	-	01	02	-	-	-	-	-	-	02

	%	5.0	-		-	0.39	0.54	-	-	-	-	-	-	0.42
Dec	No	16	10	16	60	269	371	19	19	14	25	36	113	529
	Died	-	01	-	-	01	02	01	-	-		-	01	03
	%	-	10.0	-	-	0.37	0.54	5.26	-	-		-	0.88	0.56
Jan-24	No	11	18	14	54	278	375	17	22	14	29	37	119	494
	Died	-	-	-	-	01	01	01	-	-	-	-	01	02
	%	-	-	-	-	0.36	0.27	5.88	-	-	-	-	0.84	0.40
Feb-24	No	16	19	13	53	282	383	19	21	19	31	33	123	506
	Died	-	-	-	-	-	-	01	-	-	-	-	01	01
	%	-	-	-	-	-	-	5.26	-	-	-	-	0.81	0.19
March-24	No	16	16	15	52	287	386	18	18	21	36	33	126	512
	Died	-	-	-	-	-	-	-	-	-	-	-	-	-
	%	6.25	-	-	-	-	-	-	-	-	-	-	-	-
Overall	**No**	**61**	**57**	**70**	**121**	**279**	**414**	**79**	**81**	**80**	**77**	**55**	**193**	**587**
	Died	**01**	**01**	**-**	**01**	**04**	**07**	**09**	**-**	**-**	**-**	**01**	**10**	**17**
	%	**1.6**	**1.75**	**-**	**0.83**	**1.43**	**1.93**	**11.39**	**-**	**-**	**-**	**1.82**	**5.18**	**2.90**

Note: calf mortality 7.14% (10/140)

9.5. Causes of Mortality (quarter wise) during the period April 2023 to March 24

Particulars	1st quarter	2nd quarter	3rd quarter	4th quarter	Total
A. Respiratory System					
1. Broncho-pneumonia	-	-	02	01	03
2. Acute Resp. failure	-	-	-	-	-
3. Pheumo-Enteritis	-	-	-	-	-
B. Digestive system	-	-	02	02	04
1. Enteritis	-	-	-	-	-
2. Gastritis	-	-	-	-	-
3. Impaction	-	-	-	-	-
4. Peritonitis		-			-
5. Hepatitis	-	-	01	-	01
6. Tympanitis	-	-	-	-	-
C. Cardio-vascular System	-	-	01	-	01
D. Urogenital System	-	-	-	-	-
1. Pyelonephritis	-	-	-	01	01
E. Others					
1. Premature birth	-	01	-	-	01
2. Congenital abnormality	-	-	-	-	
3. Joint-ill/ Naval ill	-	-	-	-	
4. Euthanasia	-	-	-	-	
5. Accident	02	-	-	-	02
6.Neurological disorder	01	-	-	-	01
7.Tetanus	-	-	-	-	-
8.Snake bite	-	-	-	-	-
9.Babesiosis/Anaplasma	-	-	-	01	01
10.Echinococcus	-	-	-	-	-
11.Miscellaneous & Others	-	01	01	-	02
Total	**03**	**02**	**07**	**05**	**17**

9.6 Prophylactic Measures undertaken 2023-2024

Vaccination	*No. of animals*		*Screening*	*No of animals*		*No of animals treated for Parasitism*
	Available	*Inoculated*		*Tested*	*Results*	
FMD	843[$]	843[$]	TB *	10	0 +ve	105 calves dewormed
HS	843	843	JD*	10	0 +ve	
BQ	-	-	Brucellosis**	30	0 +ve	
RP	--		Mastitis***	30	10 +ve	
Brucellosis	50	50	Campylobacteriois	0	0 +ve	
LSD	--					

[$]Vaccination done twice in the year; * Based on Intradermal Tuberculin PPD/Johnin PPD
** Based on RBPT/SAT; ***Based on CMT

9.7. Female Conception Rate During the Period January 2023 to December 2023

AI No.→	1st			2nd			3rd			4th & above			Over all		
Parity↓	AIs	C	CR%	AIs	C	CR%	AIs	C	CR%	AIs	C	CR %	AIs	C	CR%
Heifers	79	34	43.04	51	22	43.14	33	18	54.55	30	07	23.33	193	81	41.97
Adults	137	56	40.88	70	25	35.71	48	22	45.83	56	21	37.5	311	124	39.87
Overall	216	90	41.67	121	47	38.84	81	40	49.38	86	28	32.56	504	205	40.67

AIs = No. of animals inseminated; C = No. of animals conceived; CR % = Conception rate per cent

9.8 Month wise conception rate during the period January 2023 to December 2023

Month.	Total AI	Total Conceived	CR%
Jan, 23	41	19	46.34
Feb	31	10	32.26
Mar	52	18	34.62
Apr	35	19	54.29
May	19	8	42.11
June	31	12	38.71
July	29	6	20.69
Aug	27	6	22.22
Sep	58	25	43.10
Oct	58	20	34.48
Nov	69	37	53.62
Dec, 23	54	25	46.30
TOTAL	**504**	**205**	**40.67**

9.8.1: Quarter-wise conception rate

Quarter	No. of AI	Pregnant animals	CR %
January – March (Previous year)	124	47	37.90
April - June	85	39	45.88
July - September	114	37	32.46
October- December	181	82	45.30
Overall	**504**	**205**	**40.67**

9.9. Bull-wise Conception Rate During the period January 2023 to December, 2023

Sr. No.	Bull No.	SET No.	Total Number of AI	Total Conceived	CR%
1	03	5th	10	5	50.00
2	27	5th	11	4	36.36
3	252	6th	32	10	31.25
4	254	6th	21	8	38.09
5	561	9th	7	4	57.14
6	728	10th	75	36	48.00
7	753	10th	33	15	45.45
8	800	10th	112	45	40.18
9	852	10th	130	42	32.31
10	856	10th	71	34	47.89
11	782	10th	2	2	100.00
			504	**205**	**40.67**

9.10 Bull Wise Semen Stock

Sr. No	Bull No.	Set No.	O.B.	Doses produced / received	Doses used /disseminated		Balance
					Consumption for AI/Testing	Sold.	
1	411	1st	545				545
2	464		552				552
3	473		542				542
4	479		619				619
5	523	2nd	634			90	544
6	524		1358				1358
7	525		458				458
8	535		813			10	803
9	562		894				894
10	577		1121				1121
11	596	3rd	800				800
12	674		1204			15	1189
13	702		883			60	823
14	716		1150				1150
15	719		996				996
16	771		566				566
17	791		1066				1066
18	802		946				946
19	806	4th	1150				1150
20	878		1340			90	1250
21	881		606			75	531
22	891		887				887
23	900		751				751
24	902		1031			50	981
25	905		1197			145	1052
26	916		1403				1403
27	930		1256			130	1126
28	941		1230				1230
29	991	5th	2174				2174
30	3		493		20	70	403
31	25		1890				1890
32	27		2445		22	44	2379
33	63		3100				3100

34	113		1731			180	1551
35	168	6th	548				548
36	181		919				919
37	245		2627				2627
38	252		522		64	95	363
39	254		2149		42	85	2022
40	298	7th	1909			100	1809
41	308		687			20	667
42	312		680				680
43	336		212				212
44	342		2400				2400
45	352		2042			52	1990
46	359		2359				2359
47	435	8th	1436				1436
48	480		1436			123	1313
49	487		9886			10	9876
50	501		2476			25	2451
51	507		3679			61	3618
52	511		1992			35	1957
53	516		3107			135	2972
54	543		5142			140	5002
55	551	9th	4535			45	4490
56	556		4168			135	4033
57	561		60		14	40	6
58	565		126				126
59	579		1282				1282
60	674		4181			285	3896
61	705		2421			220	2201
62	728	10th	1922	956	250	162	2466
63	753		494	80	125	183	266
64	773		239	587	50	575	201
65	800		1919	675	310	1242	1042
66	852		1171	1682	350	798	1705
67	856		467	881	215	345	788
68	782		60	583	50	50	543
69	865		65	967	50	100	882
70	858		0	1483	50	81	1352
Total			**107149**	**7894**	**1612**	**6101**	**107330**

Summary Report (2023-24)			
Brief Information	**2023-24**	**2022-23**	**2021-22**
Opening balance on 1st April	107149	107205	94557
Semen Production up to March	7894	7062	16797
Semen doses supplied NPBI	1612	1327	1424
Semen doses sold up to March	6101	3165	2725
Semen doses used for Experiment	-		
Closing Balance	**107330**	**109774**	**107205**

9.11 Average Body weight (kg) since inception: Information not available

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	Av. Lactation Yield(kg)	Av. Lactation length (days)	305-days yield (kg)	Av. Peak Yield (kg)
1st	38	2693±103.32	353±9.38	2426±73.66	11.22±0.33
2nd	21	2999±96.44	310±6.58	2966±97.92	14.78±0.61
3rd	10	3171±330.46	321±15.67	3050±301.22	14.99±1.58
4th	11	2770±174.20	300±10.11	2715±146.48	13.77±0.79
5th & above	18	2932±148.07	313±8.35	2871±136.58	14.69±0.70
Overall	**98**	**2860±65.99**	**327±5.03**	**2720±59.74**	**13.29±0.33**

9.12.1 Average production performance of Buffaloes Since Inception of Network

Year	Lact. Length (days)	TLMY (kg)	SLMY (kg)	Peak yield (kg)
1991-92	373 (68)	2017 (68)	1813 (68)	
1992-93	309 (105)	1974 (105)	1921 (105)	
1993-94	328 (70)	1776 (70)	1744 (70)	
1994-95	350 (77)	2043 (77)	1944 (77)	
1995-96	354 (70)	2049 (70)	1894 (70)	
1996-97	392 (81)	2092 (81)	1807 (81)	
1997-98	354 (67)	2126 (67)	2056 (67)	
1998-99	341 (97)	2153 (97)	2056 (97)	
1999-00	337 (99)	1968 (99)	1874 (99)	
2000-01	305 (89)	1890 (89)	1812 (89)	
2001-02	296 (86)	1926 (86)	1885 (86)	10.00 (86)
2002-03	293 (105)	2007 (105)	1941 (105)	10.49 (105)
2003-04	307 (93)	1968 (93)	1895 (93)	10.49 (93)
2004-05	315 (116)	1974 (116)	1848 (116)	8.00 (116)
2005-06	306 (102)	2190 (102)	2090 (102)	10.0 (102)
2006-07	304 (118)	1921 (118)	1795 (118)	9.00 (118)
2007-08	302 (122)	1787 (122)	1629 (122)	9.10 (122)
2008-09	289 (108)	2036 (108)	1929 (108)	9.94 (108)
2009-10	302 (146)	1927 (146)	1822 (146)	9.40 (146)
2010-11	292 (115)	2042 (115)	1972 (115)	10.54 (115)
2011-12	279 (88)	2045 (88)	1998 (88)	10.60 (88)
2012-13	264 (123)	2048 (123)	2017 (123)	11.14 (123)
2013-14	285(109)	2297(109)	2241(109)	12.20 (109)
2014-15	303(115)	2464(115)	2384(115)	12.38 (115)
2015-16	305(110)	2564(110)	2471(110)	12.4 (110)
2016-17	298(136)	2452(136)	2377(136)	12.3 (136)
2017-18	282± 4.80 (110)	2363± 60.83 (110)	2321± 55.25 (110)	12.7± 0.28 (110)
2018-19	311± 5.18 (111)	2797± 63.94 (111)	2679± 52.63 (111)	13.7± 0.29 (111)
2019-20	304±4.68 (105)	2688±63.44 (105)	2597±54.68 (105)	13.38±0.26 (105)
2020-21	300±4.39 (114)	2647±61.43 (114)	2594±58.69 (114)	13.78±0.27 (114)
2021-22	294±4.62 (130)	2609.41±66.62(130)	2535.42±57.06 (130)	14.0±0.30 (130)
2022-23	309±4.85 (113)	2715±61.21 (113)	2624±53.92 (113)	14.25±0.30 (113)
2023-24	**327±5.03 (98)**	**2860±65.99 (98)**	**2720±59.74 (98)**	**13.29±0.33 (98)**

9.12.2 Herd Life Production (up to 4th Lactation) during 2022-23

No. of Buff	HLF (days)	PLF (days)	MY/HLF	MY/PL	PD (days)	UPD (Days)
29	3621(29)	2243(29)	4.76(29)	6.88(29)	1662(29)	571(29)

HLF (Herd life) = Date of birth to date of completion of 4th or more lactation or date of disposal
PLF (Production life) = Date of first calving to date of completion of 4th or more lactation
PD (Productive days) = Total days in milk completion of 4th or more lactation;
UPD (Unproductive days) = Production life – Productive days
MY/HLF = Milk yield per days of herd life; **MY/PL** = Milk yield days of production life

9.13 Average Milk Composition from April 2023 to March 2024

Month	N	% Fat	Solid not fat	Protein	Lactose	Total Solids
April 23	**85**	8.72	9.60	3.65	5.46	18.32
May	91	8.58	9.40	3.55	5.32	17.98
June	64	8.57	9.20	3.46	5.20	17.77
July	122	8.17	9.79	3.58	5.43	17.96
August	102	8.07	9.67	3.65	5.41	17.74
September	92	7.77	9.62	3.61	5.39	17.39
October	84	7.44	9.71	3.59	5.39	17.15
November	90	7.30	9.65	3.57	5.35	16.95
December	107	7.28	10.00	3.73	5.56	17.28
January 2024	127	7.26	10.23	3.76	5.63	17.49
February	96	7.09	10.30	3.81	5.73	17.39
March	80	7.86	9.73	3.69	5.42	17.59
Overall	**1140**	**7.84**	**9.74**	**3.64**	**5.44**	17.58

9.14: Reproductive Performance 2023-24

Lactation / Parity	AFC (Months) (N)	N →	Service period (Days)	Dry period (Days)	Calving interval (Days)
1	43.92±0.67 (29)				
2		28	187±13.88	131±6.45	492±13.83
3		17	112±13.06	154±7.69	421±13.12
4		8	146±28.53	149±11.58	453±29.09
5th and above		20	111±14.58	140±8.91	419±14.18
Over all		**73**	**144±8.83**	**143±6.73**	**451±8.71**

9.14.1 Reproduction Performance Since inception of Network.

Years	AFC (days)	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
1988-89	1273±44 (27)	41.88	205±14.0 (69)	211 (76)	518±16.0 (72)
1989-90	1301±35 (16)	42.80	186±29.0 (58)	177 (58)	511±36.0 (58)
1990-91	1297±40 (20)	42.66	276±22.0 (56)	197 (56)	517±25.0 (56)
1991-92	1411±24 (39)	37.53	312±24.0 (58)	243 (58)	622±25.0 (58)
1992-93	1438±37 (28)	47.30	207±17.0 (68)	180 (67)	490±16.0 (67)
1993-94	1356±39 (28)	44.60	211±22.0(58)	176 (58)	513±22.0 (58)
1994-95	1476±31 (29)	48.55	232±21.0 (63)	207 (63)	527±19.0 (63)
1995-96	1529±48 (24)	50.29	243±20.0 (52)	199 (52)	539±19.0 (52)
1996-97	1371±30 (31)	45.10	260±14.0 (69)	176 (89)	561±15.0 (69)
1997-98	1262±23 (32)	41.51	246±51.0 (60)	183 (60)	550±53.0 (59)
1998-99	1230±35 (26)	40.46	170±29.0 (89)	150 (89)	481±30.0 (89)

1999-00	1197±16 (22)	39.38	134±09.0 (91)	134 (91)	467±10.0 (91)
2000-01	1213±14 (45)	39.90	143±10.0 (80)	131 (80)	443±11.0 (80)
2001-02	1266±18 (31)	41.64	137±09.0 (83)	133 (83)	445±09.0 (83)
2002-03	1277±19 (58)	42.00	132±08.0 (90)	132 (90)	440±08.0 (90)
2003-04	1266±17 (59)	41.64	138±09.0 (78)	136 (78)	443±09.0 (78)
2004-05	1306±28 (39)	42.96	155±10.1(89)	146 (89)	463±10.2 (89)
2005-06	1294±27 (58)	42.57	167±10.9 (72)	157 (72)	474±10.6 (72)
2006-07	1214±29 (57)	39.93	165±14.7 (58)	160 (58)	478±14.3 (58)
2007-08	1241±22 (43)	40.82	165±11.2 (74)	150 (74)	458±11.1 (74)
2008-09	1206±18 (69)	39.67	172±11.8 (70)	172 (70)	489±16.3 (70)
2009-10	1249±24 (52)	41.09	170±14.0 (76)	163 (76)	478±14.1 (76)
2010-11	1250±19 (47)	41.12	191±13.7 (71)	170 (71)	500±13.7 (71)
2011-12	1207±18 (43)	39.70	136±20.2 (48)	150 (48)	464±23.0 (48)
2012-13	1205±18 (52)	39.64	126±10.8 (75)	151 (75)	436±10.9 (75)
2013-14	1210±25 (42)	39.80	127±10.6 (67)	159 (67)	447±8.53 (97)
2014-15	1213±20 (36)	39.90	112±7.89 (88)	138 (88)	420±8.09 (88)
2015-16	1217±19 (56)	40.03	145.3±9.20 (88)	150 (88)	453.3±9.20 (88)
2016-17	1260±19 (28)	41.45	140.4±7.00 (118)	147 (118)	448±7.07 (118)
2017-18	1248±17 (49)	41.05±0.56	135±8.46 (95)	157± 5.56 (95)	444±8.44 (95)
2018-19	1235±19 (55)	40.61±0.63	129±8.55 ((77)	148± 5.93 (77)	438±8.54 (77)
2019-20	1270±13.93 (42)	41.78±0.78	157±7.27 (94)	157±15.27(94)	466±7.29 (94)
2020-21	1357±16.34 (39)	44.66±0.54 (39)	136±7.1 (106)	144±5.85 (106)	444±7.25 (106)
2021-22	1325±13.00 (51)	43.62±0.42 (51)	116±7.26 (85)	130±6.42 (85)	419±7.30 (85)
2022-23	1324±15.54 (51)	43.54±0.51 (51)	134±8.95 (86)	151±7.30 (86)	441±8.83 (86)
2023-24	**1335±20.49 (29)**	**43.92±0.67 (29)**	**144±8.83 (73)**	**143±6.73 (73)**	**451±8.71 (73)**

9.15 Milk Production and Disposal durin 2023-24

Month	**Total milk produced (kg)**	**Disposal (Kg)**		
		Milk sold	**Calf feeding**	**Expt.**
April 23	30643.10	24264.5	5483.6	2.5
May	27528.5	22394.00	4330.2	2.5
June	24080.30	19580.5	3795.9	2.5
July	21040.7	17981.0	2444.9	2.0
August	19960.0	16582.0	2793.6	3.0
September	19776.8	16509.0	2689.3	2.5
October	23235.5	18933.4	3623.3	2.0
November	24481.0	19130.0	4636.0	2.0
December	27372.6	20397.5	6175.3	2.5
January 24	27246.3	20474.5	5976.2	2.0
February	26125.4	19667.0	5695.5	2.0
March	29432.2	22111.5	6461.0	2.5
Total	**300922.4**	**238024.9**	**54104.8**	**28**

9.16 Feed and Fodder purchased and offered to animals during the year 2022-23

Quarter	Fodder of Fodder	OB (Q)	Produced at CIRB	Purchased	Total	Actually Fed (Q)	Closing Balance
I	Green	Nil	11770	Nil	-	11770	Nil
	DRY	150	2852	Nil	3002	598	2404
	Silage	Nil	Nil	Nil	Nil	Nil	Nil

	Concentrate	Nil	1312.91	Nil		1312.91	Nil
II	Green	Nil	14730	Nil		14730	Nil
	DRY	Nil	2404	Nil	2404	284	2120
	Silage	Nil	Nil	Nil	Nil	Nil	Nil
	Concentrate	Nil	1400.89	Nil		1400.89	Nil
III	Green	Nil	14628	Nil		14628	Nil
	DRY	Nil	2120	Nil	2120	692	1428
	Silage	Nil	Nil	Nil	Nil	Nil	Nil
	Concentrate	Nil	1297.08	Nil		1297.08	Nil
IV	Green	Nil	13779	Nil	-	13779	Nil
	DRY	Nil	1428	Nil	1428	1174	254
	Silage	Nil	Nil	Nil	Nil	Nil	Nil
	Concentrate	Nil	1331.16	Nil	-	1331.16	Nil
Total	**Green**	**Nil**	**54907**	Nil	54907	**54907**	Nil
	DRY	**Nil**	**2852**	Nil	2852	**2598**	**254**
	Silage	**Nil**	Nil	Nil	Nil	Nil	Nil
	Concentrate	**Nil**	**5342.04**	Nil		**5342.04**	Nil

9.17: Milk performance during April 2023 to March 2024

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April 23	106	39	145	73	9.65	7.05
May	104	42	146	71	8.51	6.07
June	99	48	147	67	8.16	5.49
July	93	56	149	62	7.31	4.47
Aug	91	58	149	61	7.08	4.31
Sep	92	61	153	60	7.16	4.31
Oct	92	59	151	61	8.16	4.97
Nov	92	52	144	64	8.78	5.64
Dec	97	49	146	66	9.15	6.08
Jan 24	97	49	146	66	9.04	5.99
February	102	50	152	67	8.74	5.87
March	110	55	165	67	8.65	5.75
Overall	**98**	**52**	**149**	**65**	**8.39**	**5.50**

9.17.1 Milking performance since inception

Year	**No. of Animals in Milk**	**No. of dry Animals**	**Total Animals**	**% in Milk**	**Wet Av. (kg)**	**Herd Av. (kg)**
1992-93	98	53	151	64	5.86	3.42
1993-94	81	58	139	58	5.75	3.39
1994-95	92	44	136	67	6.01	4.18
995-96	86	35	121	71	5.61	3.99
1996-97	81	52	133	61	5.71	3.49
1997-98	113	40	153	74	6.03	4.45
1998-99	104	42	146	72	6.13	4.26
1999-00	85	39	124	68	6.01	4.23
2000-01	96	33	129	74	6.31	4.69
2001-02	86	38	124	69	6.85	4.82
2002-03	106	38	144	73	6.56	4.83
2003-04	106	37	143	74	6.35	4.70
2004-05	100	47	147	67	6.86	4.65
2005-06	114	46	160	71	6.85	4.84

2006-07	119	48	167	71	6.20	4.40
2007-08	102	54	156	65	6.73	4.46
2008-09	122	44	166	73	6.91	5.03
2009-10	110	58	168	65	7.00	4.66
2010-11	98	43	141	70	7.11	4.93
2011-12	84	40	124	68	7.74	5.30
2012-13	90	49	139	65	8.26	5.34
2013-14	94	52	146	64	8.25	5.32
2014-15	99	41	140	71	8.48	5.98
2015-16	110	41	151	72	8.51	6.22
2016-17	102	53	155	65	7.96	5.23
2017-18	97	45	142	68	8.52	5.84
2018-19	109	38	147	74	8.82	6.54
2019-20	104	50	154	68	9.18	6.25
2020-21	101	44	145	70	9.03	6.38
2021-22	102	49	151	67	8.78	5.96
2022-23	106	51	157	67	8.25	5.56
2023-24	**98**	**52**	**149**	**65**	**8.39**	**5.50**

9.18: Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation durin 2023-24
03	5th	1	-	-
27	5th	13	-	-
561	9th	12	-	-
710	9th	04	-	-
728	10th	08	-	-
800	10th	07	-	-
852	10th	05	-	-
856	10th	01	-	-
411	1st PT	-		1
473	1st PT	-	2	
535	2nd PT	-	2	
674	3rd PT	-	2	1
905	4th PT	-	1	
916	4th PT	-	1	
298	7th	-		1
308	7th	-		2
352	7th	-	3	10
359	7th	-	3	12
435	8th	-	2	
480	8th	-	1	
487	8th	-		3
501	8th	-	5	1
507	8th	-	2	2
511	8th	-	3	1
516	8th	-	3	
543	8th	-	6	2
Arjun		-	1	1
Bullet		-	1	1
Tank		-	-	1
Total		**51**	**38**	**39**

9.19 Bull wise daughters completing 1st lactation April 2023 to March 2024

Sr. No.	Bull No.	Daughter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)	PY (Kg)
1	298	741	08/09/2018	27/03/2023	54.57	333	2660	2521	10.5
2	308	740	07/09/2018	24/10/2022	49.54	367	4020	3561	14.7
3	308	743	10/09/2018	05/09/2022	47.84	277	2058	2058	11
4	352	787	13/04/2019	16/12/2022	44.12	392	4400	3581	17.2
5	352	788	13/04/2019	20/09/2022	41.26	472	3160	2468	12.9
6	352	795	03/06/2019	14/02/2023	44.42	339	2841	2673	14
7	352	796	07/06/2019	12/11/2022	41.20	413	3552	3002	13.2
8	352	797	13/06/2019	09/01/2023	42.91	396	2776	2229	9.1
9	352	799	11/07/2019	14/11/2022	40.15	284	1575	1575	9.7
10	352	802	15/07/2019	22/02/2023	43.30	372	2833	2747	11
11	352	806	31/07/2019	02/11/2022	39.10	310	2367	2363	10.8
12	352	810	08/08/2019	20/02/2023	42.45	382	2401	2312	9.7
13	352	811	10/08/2019	28/12/2022	40.61	355	2461	2256	9.6
14	359	764	20/12/2018	06/10/2022	45.54	295	1863	1863	9.1
15	359	765	24/12/2018	17/09/2022	44.78	370	2885	2554	10.3
16	359	770	15/01/2019	13/10/2022	44.91	372	2457	2106	9.7
17	359	771*	24/01/2019	25/08/2022	43.01	255	1360	1360	7.7
18	359	772	25/01/2019	30/08/2022	43.14	346	2779	2563	9.8
19	359	776	04/03/2019	19/09/2022	42.55	263	1823	1823	9.1
20	359	777	04/03/2019	09/09/2022	42.22	455	3287	2348	8.3
21	359	779	13/03/2019	16/03/2023	48.10	259	1700	1700	8.8
22	359	781	02/04/2019	19/09/2022	41.59	402	2313	1860	7.4
23	359	782	03/04/2019	01/12/2022	43.96	316	2620	2620	12
24	359	784	05/04/2019	30/08/2022	40.84	451	2812	2169	9.6
25	359	789	15/04/2019	14/11/2022	43.01	424	3679	3015	12.9
26	411	768	02/01/2019	21/10/2022	45.60	455	3949	2958	12
27	487	819	11/09/2019	05/01/2023	39.82	365	3091	2813	13.7
28	487	828	17/10/2019	06/03/2023	40.61	371	2786	2458	11.9
29	487	829	24/10/2019	22/02/2023	39.98	380	2530	2252	10.7
30	501	815	06/09/2019	09/03/2023	42.05	281	2182	2182	11
31	507	814	29/08/2019	26/11/2022	38.93	321	2642	2617	15
32	507	856	20/03/2020	20/03/2023	35.98	357	2839	2612	12.6
33	511	818	11/09/2019	25/11/2022	38.47	329	2757	2651	11.1
34	543	816	06/09/2019	06/03/2023	41.95	360	2781	2598	10.8
35	543	836	22/11/2019	03/03/2023	39.33	301	2552	2552	12
36	674PT	767	01/01/2019	03/03/2023	50.00	294	2559	2559	12.5
37	Arjun	746	15/09/2018	22/08/2022	47.21	347	2304	2181	9.8
38	Bullet	748	11/10/2018	07/09/2022	46.88	240	1661	1661	11
39	Tank	753	29/10/2018	22/08/2022	45.77	382	2394	2143	11.8

9.20 Bull used for test mating during 2023-24

Sr. No.	Bull No.	Set No.	Date of Birth	Dam No.	Sire No.	Dams best SLMY(kg)/ Parity
1	561	9th	25.08.2015	367	25	3888
2	728	10th	16.08.2017	376	298	4018
3	753	10th	07.12.2017	287	312	4247
4	782	10th	04.05.2018	451	298	3587
5	800	10th	01.08.2018	312	308	3134
6	852	10th	14.07.2019	294	702PT	3771
7	856	10th	05.08.2019	450	352	4202

9.20.1 PT bulls used nominated mating during 2023-24

Bull No.	Set No.	Centre	Dams' Best yield	Sire Index	% Superiority
27	5th	CIRB Nabha	3979	2488.1	6.79
03	5th	CIRB Nabha	2866	2401.2	4.47
252	6th	CIRB Nabha	3469	2616.82	5.93
254	6th	CIRB Nabha	2811	2579.39	4.42

9.20.2 Breeding bulls selected for 10th set

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dams best SLMY (kg) / Peak yield	Semen doses available	Expected predicted Difference (EPD)
1	728	16.08.17	376	298	4018/22.0	1666	-
2	753	07.12.17	287	312	4247/21.5	266	-
3	773	10.04.18	448	312	3725/17.0	201	-
4	782	04.05.18	451	298	3587/17.7	543	-
5	800	01.08.18	312	308	3134/18.5	1042	-
6	852	14.07.19	294	702 PT	3771/17.4	1705	
7	856	05.08.19	450	352	4202/23.8	788	
8	858	08.08.19	445	352	3422/14.8	1352	

Table 9.21 No. of Elite animals having 305 DLMY ≥ 3000 kg

Sr. No.	305 DLMY groups	No. of elite buffalo
1	3000 to 3500 kg	28
2	3500 to 4000 kg	20
3	≥ 4000 kg	8
Total		**56**

9.21 Target achieved during the years

Traits	Target	2019-20	2020-21	2021-22	2022-23	2023-24
Av. AFC (Months)	40.0	41.78 (42)	44.66 (39)	43.62 (51)	43.54 (51)	43.92 (29)
Av. service period (Days)	130	157 (94)	136 (106)	116 (85)	134 (86)	144 (73)
Calf mortality (0-3 months)	≤ 5 %	4.55%	8.72 %	5.42%	3.50%	7.14%
Wet average (Kg)	≥ 8.50 kg	9.18	9.03	8.78	8.25	8.39 Kg
Herd average (Kg)	≥ 5.50 kg	6.25	6.38	5.96	5.56	5.50 Kg

11. Achievements and summary:

Herd Strength: The overall herd strength of Nili-Ravi buffaloes in March 2024 was 512, which included 287 breedable buffaloes, 97 suckling calves (< 1 year), 69 young males (1-2.5 years), 52 young females (1-2 years) and 6 breeding males (>2.5 years).

Mortality: During the period April 2023 to March 2024 calf mortality (0-3 month) was reported 7.14 percent.

Milk Production Performance: The overall wet average and herd average were reported 8.39 and 5.50 kg, respectively. The overall 305 days lactation milk yield and total lactation milk yield during April 2023 to March 2024 was reported 2720 and 2860 kg, respectively. During the period under report 98 buffaloes completed their lactation. Average Peak yield of 13.29 Kg was recorded during reporting period.

Reproductive Performance: The overall conception rate during January to December 2023 was reported 40.67 %. The other reproductive traits viz. Age at first calving, service period and calving interval were observed 43.92 months, 144 days and 451 days, respectively for buffaloes calved during April 2023 to March 2024.

Semen Production and Dissemination: A total 7892 semen doses frozen at CIRB Lab during April 2023 to March 2024. A total of 1612 doses of frozen semen were supply in NPBI and 6101 frozen semen doses sold during the period under report. 9 males were sold on book value for breeding purpose.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR	Expenditure as per AUC		Balance
Total	ICAR Share	Share as per R E	ICAR Share	State Share	ICAR Share
45.00*	41.00+4.00*	45.00*	45.00	0.00	0.00

* Includes Rs. 4.00 lakhs for SCSP

Herd Performance

Herd strength was 512 out of which 287 were breedable buffaloes (>2year). During the period 116 calving took place consisting of 65 males, 51 females. The calf mortality (0-3 months) was 7.14 % which is higher than project target. Conception rate was 40.67 percent, is low as compared to last year 41.65 %. Total 7894 semen doses produced during 2023-24 and the centre has used/ disseminated 7713 doses for AI/Exp. purpose. A total 107330 frozen semen doses were in stock as on 31 March 2024.

Average lactation milk yield (kg) and 305 or less day lactation milk yield was 2860 kg (98) and 2720 kg (98) increased from last year (2022-23) of 2715 kg (113) and 2624 kg (113) respectively. Average lactation length reported 327 days (98). Reproductive performance viz. Age at first calving, Service Period, Dry Period and Calving Interval were 43.92 (29) months, 144 (73) days, 143 (73) days and 451 (73) days, respectively. During the reporting period the wet averages and herd average were 8.39 kg and 5.50 kg respectively. Total 65% animals remained in milk during the year 2023-24.

Accomplishment and Targets Achieved:

Traits	Target	2019-20	2020-21	2021-22	2022-23	2023-24
Av. AFC (Months)	40.0	41.78 (42)	44.66 (39)	43.62 (51)	43.54 (51)	43.92 (29)
Av. service period (Days)	130	157 (94)	136 (106)	116 (85)	134 (86)	144 (73)
Calf mortality (0-3 months)	≤ 5 %	4.55%	8.72 %	5.42%	3.50%	7.14%
Wet average (Kg)	≥ 8.50 kg	9.18	9.03	8.78	8.25	8.39 Kg
Herd average (Kg)	≥ 5.50 kg	6.25	6.38	5.96	5.56	5.50 Kg

Recommendations:

- The declining levels of milk production parameters such as wet average, herd average and peak yield require more attention to improve production performance.
- Percentage of animals in milk has been decreasing in last few years which needs to be increased.
- Utmost managemental care should be taken to control the calf mortality within the target of 5%.
- More efforts are needed to increase the production of frozen semen doses and its dissemination to farmers level.

KAMDHENU UNIVERSITY, JUNAGADH (GUJARAT)

1. Name of center : Cattle Breeding Farm, Kamdhenu University, Junagadh.
2. Project Code : 18-3 / 97-ASR - II dt. 29 / 03 / 2001
3. **Project Title :** **Network Project on Buffalo Improvement (Jaffarabadi)**
Subproject : Performance recording and improvement of Jaffarabadi buffalo/Progeny testing of Jaffarabadi bulls under field conditions
4. **Date of Start :** 01/ 04 / 2001
5. **Objectives**:

i. To establish elite herd of 60 - 70 Jaffarabadi buffaloes for the production of genetically superior young bulls.
ii. To evaluate sires through institutional / associated herd/field progeny testing
iii. To produce, test, propagate and conserve high genetic merit male germplasm

6. **Technical Programme:**

I. Establishment and maintenance of an elite herd of 225 breedable Jaffarabadi females.
II. Selection and testing of minimum 4-6 bulls in every 24 months cycle.
III. Production of minimum 3000 to 5000 frozen semen doses from each test bull.
IV. Maintain a minimum number of 2000 frozen semen doses until the particular SET gets evaluated.
V. Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
VI. Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
VII. Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield, Milk yield per day of herd life (total milk produced from date of birth till completion of 4th or more lactation).
VIII. Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds.
IX. Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
X. Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. Staff Associated with the project (From Other Budget)

Name of Scientist / Staff	Discipline	Status PI/Co-PI/ Associated)
Dr. M. R. Gadariya	LPM	Project Incharge
Dr. H. P. Vijyeta	Animal Repro. Gyn. & Obst.	Co - PI
Dr. J. K. Chaudhary	Animal Repro. Gyn. & Obst.	Associated
Dr. S. S. Parikh	Animal Repro. Gyn. & Obst.	Associated
Dr. P. M. Gamit	LPM	Associated
Dr. V. K. Karangiya	Animal Nutrition	Associated
Dr. M. Y. Bhavsar	Animal Nutrition	Associated
Shree N. L. Joshi	Livestock Inspector	Associated
Shree J. R. Bhut	Livestock Inspector	Associated
Administrative staff	Nil	Nil
Technical staff		
Contractual staff (RA / SRF / YPs)		

8. Financial Statement: Head wise budget allocation and utilization; revenue receipts

Financial Statement : Budget head:**2305/03** **Year: 2023-24**

Item / Head	Grant (Rs.)				
	ICAR	State	Allotted	Expenditure	Balance
A. Recurring	0	0	0	0	0
Pay & Allowances	0	0	0	0	0
TA	0	0	0	0	0
Total(A)	0	0	0	0	0
Recurring	4050000	1349999	5399999	3944395	1455604
B. Non-recurring	500000	150000	650000	0	650000
Total(B)	4550000	1499999	6049999	3944395	2105604
SCSP	250000		250000		250000
Total(A+B)	**4800000**	**1499999**	**6299999**	**3944395**	**2355604**

ICAR:- 4550000
State:- 1499999
ICAR(SCSP):- 250000

9.1 Herd Strength during the Period 1st April 2023 to 31st March, 2024

Sr. No.	Category	Addition			Disposal				CB
		OB	**B / P**	**T**	**D**	**T**	**S**	**E**	**CB**
	Female								
1.	Below 3 months	10	27		2	25			10
2.	3-12 months	36		25	4	33	2		22
3.	1-2 years	41		33	1	36			37
	Above 2 years	89		36	13	7	20		85
4.	Buffaloes in Milk	88		49	6	74	20		37
5.	Buffaloes Dry P /NP	24		74	4	42	20		32
	Sub Total	**288**	**27**	**217**	**30**	**217**	**62**		**223**
	Males								
1.	Below 3 months	9	22		4	20			7
2.	3-12 months	27		20		30			17
3.	1-2 years	30		30	2	12	26		20
	Above 2 years	7		12	1		13		5
4.	Breeding bulls	12			2		3		7
5.	Bullocks / Teasers / others	1					1		0
	Sub Total	**86**	**22**	**62**	**9**	**62**	**43**		**56**
	Grand Total	**374**	**49**	**279**	**39**	**279**	**105**		**279**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics including abnormalities

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 2023	2	3						**5**
May	0	2						**2**
June	0	0						**0**
July	2	4						**6**
August	2	0						**2**
September	1	3						**4**

October	4	5						**9**
November	3	0						**3**
December	4	3						**7**
January 24	1	2						**3**
February	1	2						**3**
March	2	3						**5**
Overall	**22**	**27**						**49**

Sex ratio Male : Female (44.9 : 55.1) SB% = Nil Abortion % = Nil

9.3. Disposal of Animals during the Period 1st April 23 to 31st March 2024

Female	Primary cause of disposal							
Category	Surplus	Below farm prod. standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves								
0 to 3 months						02		02
3-12 months	02					04		06
Heifers								
1-2 years	00					01		01
> 2 years	20					13		33
Buffaloes								
Milch	20					06		26
Dry	20					04		24
Sub Total	**62**					**30**		**92**
Males	**Primary cause of disposal**							
Calves								
0 to 3 months	03					04		07
3-12 months	05					00		05
1 to 2 year	26					02		28
. >2 year	13					01		14
Breeding bulls	03					02		05
Bullock+Teaser+ Others	01					00		01
Sub Total	**51**					**09**		**60**
Grand Total	**113**					**39**		**152**

9.4. Mortality during the Period 1st April 2023 to 31st March, 2024

Month		Female						Male					Overall Herd
		0-3 Month	3-12 Month	1-2 Yrs.	Above 2 Yrs.	Milk + Dry	Overall Female	0-3 Month	3-12 Month	1 -2 Yrs.	>2 yrs.	Overall Male	
April	No.	9	40	37	89	112	287	6	33	29	18	86	373
	Died					1	1					0	1
	%	0.0	0.0	0.0	0.0	0.9	0.3	0.0	0.0	0.0	0.0	0.0	0.3
May	No.	10	40	37	90	111	288	6	32	29	19	86	374
	Died					1	1					0	1
	%	0.0	0.0	0.0	0.0	0.9	0.3	0.0	0.0	0.0	0.0	0.0	0.3
June	No.	5	44	35	93	111	288	4	34	30	19	87	375
	Died					0	0					0	0
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
July	No.	6	44	36	94	111	291	4	36	29	21	90	381
	Died					1	1					0	1

	%	0.0	0.0	0.0	0.0	0.9	0.3	0.0	0.0	0.0	0.0	0.0	0.3
Aug.	No.	5	39	39	97	111	291	7	30	31	24	92	383
	Died		1				1			1		1	2
	%	0.0	2.6	0.0	0.0	0.0	0.3	0.0	0.0	3.2	0.0	1.1	0.5
Sep.	No.	10	32	39	98	75	254	7	30	27	25	89	343
	Died		1			2	3	1				1	4
	%	0.0	3.1	0.0	0.0	2.7	1.2	14.3	0.0	0.0	0.0	1.1	1.2
Oct.	No.	10	25	40	106	70	251	8	19	10	9	46	297
	Died	1				2	4				1	1	5
	%	10.0	0.0	0.0	0.0	2.9	1.6	0.0	0.0	0.0	11.1	2.2	1.7
Nov.	No.	11	18	40	97	70	236	9	20	9	12	50	286
	Died			2	13	1	16			1		1	17
	%	0.0	0.0	5.0	13.4	1.4	6.8	0.0	0.0	11.1	0.0	2.0	5.9
Dec.	No.	9	20	38	100	71	238	11	15	15	11	52	290
	Died					1	1		1	1	1	3	4
	%	0.0	0.0	0.0	0.0	1.4	0.4	0.0	6.7	6.7	9.1	5.8	1.4
Jan.	No.	5	22	35	105	71	238	7	14	20	13	54	292
	Died	2					2	1				1	3
	%	40.0	0.0	0.0	0.0	0.0	0.8	14.3	0.0	0.0	0.0	1.9	1.0
Feb.	No.	6	22	35	85	70	218	5	17	20	11	53	271
	Died					1	1					0	1
	%	0.0	0.0	0.0	0.0	1.4	0.5	0.0	0.0	0.0	0.0	0.0	0.4
March	No.	10	22	37	85	69	223	7	17	20	12	56	279
	Died	0	0	0									0
	%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Overall Av.	No.	**33**	**31**	**37**	**95**	**88**	**283**	**26**	**25**	**22**	**16**	**89**	**373**
	Died	**3**	**2**	**2**	**13**	**10**	**31**	**2**	**1**	**3**	**2**	**8**	**39**
	%	**9.1**	**6.5**	**5.4**	**13.7**	**11.4**	**10.9**	**7.7**	**4.0**	**13.4**	**12.4**	**9.0**	**10.5**

* % Calf mortality = 8.82 % (6/68)

9.5. Causes of Mortality (quarter wise) during the period April 2023 to March 2024

Particulars	**1st quarter (April-June)**	**2nd quarter (July-Sept)**	**3rd quarter (Oct-Dec.)**	**4th quarter (Jan.-March)**	**Total**
Enteritis	0				0
Pheumonities		1	1		2
Septicamia / Toxaemia		3			3
Peritonitis					0
JD/TB					0
Milk Fever / metabolic diseases					0
TRP / TP					0
Parasitism					0
Accidental death			1	3	4
Peri-parturient disorders					0
Miscellaneous		1	2		3
Old Age Senility	2		5	1	8
Thaileriosis			16		16
Server Bloat / Tympany		2			2
Weak & Debility			1		1
Total	2	7	26	4	39

9.6 Prophylactic Measures undertaken

Disease	**Vaccination Date / No. of animals**	**No. of animals** Tested / Positive		**Dates and No. of animals treated for Parasitism**
FMD	Jan-Feb. 2024/294			
HS	May-2023/364			
BQ				
Brucellosis	May (23): 25 female calves March (24): 26 female calves	Sept. (23):135 Dec. (23):289		
JD		Dec. (23):289	--	
TB		Dec. (23):289	--	
IBR				
Mastitis				

9.7 Female Conception Rate During the Period 2023-24

AI No.→	1st			2nd			3rd			4th & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR%	AIs	C	CR %
Heifers	27	9	33.33	9	2	22.22	6	1	16.67	1	0	0.00	43	12	27.91
Adults	50	39	78.00	21	10	47.62	13	4	30.77	2	1	50.00	86	54	62.79
Overall	**77**	**48**	**62.34**	**30**	**12**	**40.00**	**19**	**5**	**26.32**	**3**	**1**	**33.33**	**129**	**66**	**51.16**

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8 Quarter-wise conception rate

Quarter	No. of A I	Preg. animals	CR %
January – March (Previous year)	48	23	47.9
April - June	17	10	58.8
July - September	10	7	70.0
October- December	54	26	48.2
Overall	**129**	**66**	**51.2**

9.9. Bull-wise Conception Rate During the period 2023-24

Sr. No.	Bull No.	SET No.	Total Number of AI	Total Conceived	CR%
1	Badal	IV	13	7	53.85
2	Hamir	IV	18	14	77.78
3	Janak	IV	10	7	70.00
4	Kamlesh	IV	12	6	50.00
5	Mayur	IV	19	4	21.05
6	Nakul	IV	13	9	69.23
7	Nayak	IV	17	9	52.94
8	Samrat	IV	3	1	33.33
9	Sango	IV	24	9	37.50
Over all			**129**	**66**	**51.16**

No. of services per conception: 1.95

9.10 Bull Wise Semen Stock 2023-24

Sr. No	Set No	Bull No	O.B.	Doses produced / received	Doses used /disseminated				Balance
					Supply		Sold	Exp.	
					field	farm			
1	I	Nagraj	3259	0	0	0	0		3259
2	I	Bhagro	6845	0	0	0	0		6845
3	I	Laxman	3417	0	0	0	0		3417

4	II	Haresh	1790	0	0	0	0		1790
5	II	Moti	7728	0	0	0	0		7728
6	II	Raja	5785	0	0	0	0		5785
7	II	Sunder	3014	0	0	0	0		3014
8	II	Dhinglo	7191	0	0	0	0		7191
9	II	Bholenath	1839	0	0	0	0		1839
10	III	Nayan	6517	0	0	0	0		6517
11	III	Madhav	6689	0	0	0	0		6689
12	III	Abhijeet	5916	0	0	0	0		5916
13	III	Alok	9600	0	0	0	20		9580
14	III	Ronak	5140	0	0	0	0		5140
15	III	Girish	4556	0	0	0	0		4556
16	III	Raghu	4597	0	0	0	0		4597
17	III	Chaman	14715	330	0	0	950		14095
18	IV	Badal	6845	0	0	40	0		6805
19	IV	Kamlesh	1655	0	0	0	0		1655
20	IV	Mayur	1420	0	575	40	25		780
21	IV	Balo	9960	0	0	60	0		9900
22	IV	Janak	6665	0	330	40	105		6190
23	IV	Hamir	9665	0	0	45	0		9620
24	IV	Sango	2165	0	0	40	0		2125
25	IV	Nayak	4675	1370	620	40	0		5385
26	IV	Samrat	7185	0	0	10	0		7175
27	IV	Nakul	0	0	0	0	0		0
28	V	19027	0	860	0	0	0		860
29	V	Yuvraj	0	1690	120	0	0		1570
30	V	Ranmal	0	505	0	0	50		455
Grand Total			**148833**	**4755**	**1645**	**315**	**1150**		**150478**

9.11 Average Body weight (kg) since inception…. (Indicate number of animals in parenthesis)

Year	Birth	3 Month	6 Month	12 Month	18 Month	24 Month	Heifer	Adult
Female								
2004-05	29.69	70.53	112.38	161.55	215.69	258.64		457.23
2005-06	32.01	69.40	106.28	155.30	216.57	260.35		458.40
2006-07	33.60	70.72	105.70	154.10	217.24	259.69		449.89
2007-08	32.23	71.70	110.80	169.85	229.80	288.40		566.78
2008-09	30.74	69.25	107.35	166.20	228.69	290.84		559.17
2009-10	29.61	68.20	105.40	164.80	230.70	294.51		555.17
2010-11	29.65	68.90	106.25	232.17	-	443.89		592.45
2011-12	33.60	82.00	142.00	237.40	308.70	444.50		586.00
2012-13	31.80	67.60	100.20	158.10	268.60	362.20		565.40
2013-14	32.40	73.40	122.4	172.1	266.90	314.33		---
2014-15	33.60	87.75	118.20	200.00	269.78	315.14		650.00
2015-16	33.12	87.75	117.45	197.66	269.80	316.17	396.50	649.70
2016-17	29.03	78.00	118.04	180.85	270.59	316.80	380.01	651.28
2017-18	34.85	95.18	115.08	180.08	272.05	388.10	419.50	640.30
2018-19	31.90	74.05	117.81	173.00	265.00	353.00	383.00	480.00
2019-20	32.54	75.92	123.39	177.63	271.12	367.40	384.72	504.10
2020-21	33.71	78.90	130.40	181.60	275.16	370.23	401.70	507.60

2021-22	34.60	81.30	132.40	183.70	278.20	378.70	409.90	511.50
2022-23	32.94	89.44	127.90	159.71	256.23	314.87	397.80	509.11
2023-24	**36.90**	**82.50**	**134.70**	**181.30**	**265.00**	**367.00**	**445.00**	**502.30**
Male						**Adults**		
2004-05	31.90	71.24	109.54	164.12	225.14	272.80		--
2005-06	34.71	72.61	106.61	152.57	223.47	269.62		--
2006-07	33.98	71.72	107.05	156.70	222.29	265.23		--
2007-08	36.62	73.14	114.00	171.60	234.50	289.35		--
2008-09	32.51	70.10	110.58	169.30	236.72	295.32		--
2009-10	32.59	70.75	109.52	170.10	238.89	297.32		--
2010-11	29.97	69.93	139.00	285.40	360.00	412.33		--
2011-12	30.90	85.00	178.00	255.30	357.00	409.00		--
2012-13	33.00	79.80	120.90	158.60	289.40	375.80		--
2013-14	33.60	78.00	118.40	160.00	234.60	329.75		--
2014-15	33.47	86.00	108.90	171.50	232.83	331.90		--
2015-16	32.30	85.17	111.90	172.40	231.00	332.00		769.79
2016-17	30.09	78.20	114.00	180.06	223.72	273.72		684.25
2017-18	32.91	91.75	114.26	182.41	235.50	281.45		655.30
2018-19	32.20	76.05	119.05	183.71	272.00	372.00		605.00
2019-20	34.64	78.06	121.22	188.57	283.17	393.63		630.00
2020-21	34.86	79.10	132.90	191.70	286.41	389.64		626.81
2021-22	35.70	80.90	133.80	193.30	291.30	387.80		621.70
2022-23	34.00	88.10	123.25	154.60	281.12	368.70		618.19
2023-24	**39.20**	**78.70**	**124.20**	**189.40**	**289.30**	**371.60**		**596.20**

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	15	2121.4	344.6	1924.4	11.1
2nd	19	2512.5	341.2	2332.1	13.7
3rd	12	2835.1	368.5	2568.0	13.6
4th	17	2619.4	357.9	2398.9	13.1
5th & above	11	2632.8	340.9	2428.0	14.1
Overall	**74**	**2519.8**	**350.9**	**2306.9**	**13.0**

* Average of 74 animals presented

9.12.1 Average production performance of Buffaloes Since Inception of Network

Year	Lact. Length (days)	TLMY (kg)	SLMY (kg)	Peak yield (kg)
2001-02	303.29 (38)	1945.58 (38)	1813.72 (38)	12.77 (38)
2002-03	358.46 (39)	2028.18 (39)	1793.85 (39)	09.32 (39)
2003-04	406.00 (41)	2534.80 (41)	2069.10 (41)	11.30 (41)
2004-05	316.00 (36)	2122.40 (36)	2020.80 (36)	11.80 (36)
2005-06	311.00 (41)	1957.57 (41)	1771.96 (41)	10.34 (41)
2006-07	343.00 (38)	1953.42 (38)	1695.00 (38)	10.20 (38)
2007-08	338.00 (39)	2026.88 (39)	1807.05 (39)	10.53 (39)
2008-09	318.28 (29)	2009.28 (29)	1769.90 (29)	11.26 (29)
2009-10	382.72 (46)	1837.65 (46)	1779.61 (46)	11.43 (46)
2010-11	317.70 (44)	2134.70 (44)	2098.30 (44)	11.36 (44)
2011-12	332.20 (30)	2383.08 (30)	2083.92 (30)	12.23 (30)

2012-13	352.00 (39)	2007.00 (39)	1737.0 (39)	9.70 (39)
2013-14	305.2 (33)	1709.3 (33)	1629.2 (33)	10.30 (33)
2014-15	379.1 (37)	2396.7 (37)	2095.7 (37)	11.80 (37)
2015-16	322.1±12.3 (48)	2187.0±86.9 (48)	2008.7±72.0 (48)	13.1±0.4 (48)
2016-17	323.2±9.8 (45)	2119.6±102.7 (45)	1985.4±80.6 (45)	12.8±0.4 (45)
2017-18	383.2±12.1 (47)	2242.8±108.8 (47)	1907.3±89.3 (47)	11.4±0.4 (47)
2018-19	317.3±7.6 (57)	2500.6±99.2 (57)	2359.8±85.1 (57)	14.7±0.5 (57)
2019-20	315.6±14.4 (56)	2408.5±105.7 (56)	2245.1±76.3 (56)	14.3±0.3 (56)
2020-21	359.6±10.5 (56)	2794.2±113.7 (56)	2499.9±78.7 (56)	14.4±0.3 (56)
2021-22	298.5±9.1 (60)	2452.0±110.2 (60)	2375.1±101.2 (60)	14.8±0.5 (60)
2022-23	306.3±7.0 (66)	2628.8±89.4 (66)	2524.6±74.4 (66)	15.3±0.4 (66)
2023-24	**350.9±9.6 (74)**	**2519.8 ±84.5 (74)**	**2306.9 ±62.5 (74)**	**13.0±0.3 (74)**

9.12.2 Herd Life Production (up to 4th Lactation) during 2023-24

Animal No.	DOB	Date of completion of 4th or more lact. or disposal	HLF (days) up to 4th or more lactation or disposal (d)	LTMY (kg)	Productive Days	Unproduc-tive Days	MY/day HLF
18/09	26/07/2009	14/10/2023	5193	13338.6	1675	3518	2.6
41/11	28/09/2011	01/01/2022	3748	5484.6	696	3052	1.5
21/11	10/08/2011	01/10/2023	4435	9159.5	1785	2650	2.1
22/12	05/08/2012	11/03/2024	4236	12732.9	1924	2312	3.0
45/11	27/10/2011	12/11/2022	4034	11543.4	1617	2417	2.9
36/11	02/09/2011	01/12/2021	3743	9973.8	1257	2486	2.7
48/13	08/10/2013	30/09/2023	3644	9901.3	1457	2187	2.7
17/13	25/08/2013	16/08/2022	3278	12640.4	1152	2126	3.9
30/13	10/09/2013	01/08/2023	3612	14207.7	1490	2122	3.9
31/13	10/09/2013	16/06/2023	3566	11422.4	1413	2153	3.2
15/13	22/08/2013	01/04/2023	3509	12015.3	1436	2073	3.4
29/13	07/09/2013	01/08/2023	3615	13826.6	1661	1954	3.8
38/13	21/09/2013	24/09/2022	3290	4311.8	681	2609	1.3
38/14	18/12/2014	21/02/2024	3352	11652.4	1388	1964	3.5
11/14	12/07/2014	28/09/2023	3365	7462.5	1299	2066	2.2
01/15	01/01/2015	29/02/2024	3346	10465.8	1383	1963	3.1
09/15	13/02/2015	08/01/2024	3251	13353.4	1287	1964	4.1
28/14	15/11/2014	16/07/2023	3165	8076.5	1117	2048	2.6
45/12	15/11/2012	28/09/2023	3969	10159.6	1427	2542	2.6
07/16	21/01/2016	06/01/2024	2907	3718.0	891	2016	1.3
26/14	07/11/2014	18/01/2023	2994	8664.4	1075	1919	2.9
20/14	05/10/2014	24/11/2023	3337	11976.8	1256	2081	3.6
18/13	27/08/2013	02/03/2024	3840	10583.2	1393	2447	2.8
55/15	14/11/2015	31/12/2023	2969	12789.4	1278	1691	4.3
08/08	17/07/2008	04/05/2023	5404	11318.1	1920	3484	2.1
08/09	26/01/2009	02/10/2023	5362	8419.9	996	4366	1.6
41/09	21/09/2009	30/12/2023	5213	6323.3	1149	4064	1.2
24/11	20/08/2011	21/04/2023	4262	8530.6	1365	2897	2.0
22/09	09/08/2009	10/11/2023	5206	4958.5	794	4412	1.0
06/15	26/01/2015	06/09/2023	3145	11514.0	1312	1833	3.7
07/05	31/05/2005	26/09/2023	6692	29857.2	3438	3254	4.5
15/07	06/07/2007	27/09/2023	5927	14575.0	2545	3382	2.5
45/08	14/10/2008	26/09/2023	5460	12822.8	2048	3412	2.3
36/09	15/09/2009	27/09/2023	5125	6644.3	1416	3709	1.3

28/10	09/09/2010	27/09/2023	4766	11709.8	1946	2820	2.5
14/09	18/07/2009	27/09/2023	5184	13038.7	2075	3109	2.5
50/10	20/10/2010	26/09/2023	4724	11072.7	1709	3015	2.3
47/11	01/11/2011	03/10/2023	4354	11453.2	1739	2615	2.6
26/12	04/09/2012	27/09/2023	4040	6983.3	1300	2740	1.7
19/11	07/08/2011	26/09/2023	4433	11762.3	1738	2695	2.7
52/11	01/12/2011	27/09/2023	4318	4711.2	772	3546	1.1
05/11	09/06/2011	27/09/2023	4493	11645.5	1555	2938	2.6
32/12	01/10/2012	27/09/2023	4013	6645.7	1201	2812	1.7
53/11	27/12/2011	27/09/2023	4292	4255.3	557	3735	1.0
39/11	05/09/2011	27/09/2023	4405	7962.1	1194	3211	1.8
06/12	13/05/2012	03/10/2023	4160	11452.1	1514	2646	2.8
03/12	01/04/2012	27/09/2023	4196	10031.5	1337	2859	2.4
57/13	10/11/2013	26/09/2023	3607	11709.4	1439	2168	3.2
42/12	09/11/2012	27/09/2023	3974	4489.4	568	3406	1.1
16/14	09/08/2014	26/09/2023	3335	5042.5	806	2529	1.5
07/13	02/05/2013	26/09/2023	3799	6542.1	1123	2676	1.7
19/14	02/09/2014	29/09/2023	3314	3445.8	721	2593	1.0
11/15	15/02/2015	27/09/2023	3146	5756.9	874	2272	1.8
30/15	02/08/2015	27/09/2023	2978	6290.7	1128	1850	2.1
13/14	14/07/2014	27/09/2023	3362	8890.4	1217	2145	2.6
17/14	16/08/2014	26/09/2023	3328	4183.5	746	2582	1.3
19/15	11/04/2015	26/09/2023	3090	5947.2	925	2165	1.9
38/15	14/09/2015	26/09/2023	2934	4433.1	1000	1934	1.5

Note: HLF (Herd Life- Date of birth to date of completion of 4th or more lact. Or date of disposal) **Productive Days** (date of first calving to total days in milk), **Unproductive days** (total days when buffalo not give milk from the date of first calving)

9.13 Average Milk Composition from April 2023 to March 2024

Month	**N**	**Fat**	**SNF**	**Protein**	**Lactose**	**SCC**
April 2023	64	7.8	10.6	4.6	6.2	---
May	61	8.0	10.7	4.2	5.4	---
June	59	8.1	11.7	4.2	5.8	---
July	53	7.8	10.6	4.2	5.5	---
August	52	8.0	11.1	4.4	5.9	---
September	54	8.5	11.1	4.2	5.6	---
October	61	8.1	11.0	4.4	6.0	---
November	67	7.9	10.8	4.2	6.1	---
December	64	8.1	10.9	4.0	6.0	---
January 2024	71	8.0	11.1	4.6	6.2	---
February	74	7.8	10.5	4.2	6.2	---
March	74	7.6	10.6	4.0	5.8	---
Overall	62.9	8.0	10.9	4.3	5.9	---

9.14: Reproductive Performance

Lactation / Parity	AFC (Months) (N)	N →	SP (Days)	DP (Days)	CI (Days)
1	48.94±1.45 (07)				
2		11	195.4 ± 65.9	255.2 ± 54.2	505.4 ± 65.9
3		06	205.0 ± 54.6	337.6 ± 97.6	515.0 ± 54.6
4		10	133.1 ± 23.4	182.9 ± 27.5	443.1 ± 23.4
5th& above		15	186.6 ± 31.3	232.4 ± 32.5	496.6 ± 31.3
Over all	**48.94±1.45 (07)**	**42**	**181.1 ± 22.7**	**245.7 ± 25.3**	**491.1 ± 22.7**

9.14.1 Reproduction Performance Since inception of Network

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
2001-02	46.84 (13)	159.41 (33)	166.50 (33)	496.36 (33)
2002-03	47.02 (15)	155.12 (33)	179.66 (33)	465.79 (33)
2003-04	57.71 (3)	205.00 (23)	213.00 (23)	513.00 (23)
2004-05	59.44 (12)	225.00 (34)	195.00 (33)	539.00 (34)
2005-06	59.97 (16)	194.00 (45)	218.00 (45)	459.00 (45)
2006-07	55.57 (11)	188.00 (32)	267.00 (35)	499.00 (32)
2007-08	59.53 (07)	263.08 (24)	238.83 (24)	568.33 (24)
2008-09	59.52 (11)	302.69 (41)	249.62 (41)	543.67 (41)
2009-10	54.28 (20)	149.52 (45)	194.20 (45)	463.35 (45)
2010-11	52.66 (11)	127.40 (35)	168.70 (35)	436.80 (35)
2011-12	49.28 (06)	186.09 (23)	161.83 (23)	484.48 (23)
2012-13	49.31 (10)	174.00 (42)	464.58 (42)	217.16 (42)
2013-14	48.00 (24)	144.67 (33)	206.51 (43)	523.16 (43)
2014-15	46.60 (5)	140.43 (30)	176.53 (30)	450.43 (30)
2015-16	47.82 (11)	158.40 (42)	163.40 (42)	468.40 (42)
2016-17	49.80 (12)	190.00 (33)	184.70 (33)	492.70 (33)
2017-18	54.05 (21)	149.85 (48)	244.77 (48)	530.94 (48)
2018-19	49.90 (22)	180.4 (35)	213.4 (35)	471.2 (35)
2019-20	46.1±1.4(24)	164.6±18.6 (43)	192.0±14.8 (43)	477.3±18.7 (43)
2020-21	47.81±0.86 (10)	143.79±11.70 (38)	181.03±16.06 (38)	453.79±11.70 (38)
2021-22	46.90±1.82 (20)	160.5±12.89 (41)	196.1±17.06 (41)	470.51±12.89 (41)
2022-23	47.9±1.27 (29)	165.4±12.78 (80)	205.90±13.79 (80)	470.25±13.86 (80)
2023-24	**48.94±1.45 (07)**	**181.1 ± 22.7(42)**	**245.7 ± 25.3(42)**	**491.1 ± 22.7(42)**

9.15 Milk Production and Disposal

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April-2023	15718.5	15678.5	40.0	
May	16370.0	16351.0	19.0	
June	14234.5	14228.5	6.0	
July	13965.5	13924.5	41.0	
August	13373.5	13349.5	24.0	
September	11162.0	11120.0	42.0	
October	9632.0	9577.0	55.0	
November	9126.5	9097.5	29.0	
December	9458.0	9411.0	47.0	
January-2024	10008.0	9995.0	13.0	
February	8877.5	8853.5	24.0	
March	9474.5	9438.5	36.0	
Total	**141400.5**	**141024.5**	**376.0**	

9.16.1 Feed and fodder (Quintals) availability 2023-24

Quarter	Feeds and Fooder	Qty. Produced at Farm (kg)	Qty. Purchased (kg)	Actually fed (Quintals)	Balance (Kg)
I (April – June)	Green	774250	0	774250	0
	Dry	0	246360	155779	783731.5
	Silage	0	0	0	0
	Concentrate	0	89250	80757.5	60575
II (July – September)	Green	666050	0	666050	0
	Dry	0	86500	179251	225296
	Silage	0	0	0	0
	Concentrate	0	90750	104450	42475
III (October –December)	Green	999000	0	999000	0
	Dry	12340	214892.5	76071.5	205635.5
	Silage	0	0	0	0
	Concentrate	0	120000	101200	67275
IV (January-March)	Green	874050	0	874050	0
	Dry	270470	514747.5	128454	1075861
	Silage	0	0	0	0
	Concentrate	0	160000	99425	154675
Total	**Green**	**3313350**	**0**	**3313350**	**0**
	Dry	**282810**	**1062500**	**539555.5**	**2290524**
	Silage	**0**	**0**	**0**	**0**
	Concentrate	**0**	**460000**	**385832.5**	**325000**

9.17: Milk performance during April 23 to March 24

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April -2023	89	22	111	80.2	5.9	4.7
May	83	27	110	75.5	6.4	4.8
June	77	33	110	70.0	6.2	4.3
July	75	35	110	68.2	6.0	4.1
August	72	38	110	65.5	6.0	3.9
September	60	52	112	53.6	6.2	3.3
October	63	47	110	57.3	4.9	2.8
November	60	49	109	55.0	5.1	2.8
December	60	50	110	54.5	5.1	2.8
January-2024	35	35	70	50.0	9.2	4.6
February	35	34	69	50.7	9.1	4.6
March	38	31	69	55.1	8.0	4.4
Overall	**62.3**	**37.8**	**100**	**62.3**	**6.5**	**3.9**

9.17.1 Milking performance since inception

Year	No. of Animals in Milk	No. of dry Animal	Total Animals	% in Milk	Wet Av. (kg)	Herd Av. (kg)
2001-02	40.00	31.00	71.00	56.19	5.44	3.01
2002-03	32.00	34.00	66.00	48.89	7.19	3.55
2003-04	26.00	35.00	61.00	41.26	8.03	3.30
2004-05	32.00	34.83	66.89	44.65	7.91	3.96
2005-06	33.00	46.58	79.58	41.80	7.45	3.08
2006-07	34.00	44.92	78.92	42.27	7.31	3.11
2007-08	30.75	40.58	71.42	42.87	7.52	3.21
2008-09	25.25	43.12	69.41	39.05	6.81	2.44
2009-10	37.63	47.93	85.56	43.85	6.46	2.85

2010-11	35.14	33.92	69.06	50.32	7.27	3.62
2011-12	27.67	20.08	47.75	58.03	6.91	4.06
2012-13	34.00	51.33	85.33	39.78	6.73	2.67
2013-14	34.00	47.42	81.42	40.64	6.90	2.83
2014-15	33.00	48.75	81.75	40.22	7.38	3.01
2015-16	37.0	47.30	84.30	43.90	8.10	3.50
2016-17	42.0	55.0	97.0	43.65	7.4	3.2
2017-18	42.0	49.0	91.0	45.1	6.7	3.0
2018-19	65.10	43.50	108.60	60.40	5.80	3.60
2019-20	64.40	62.20	126.60	50.90	6.30	3.20
2020-21	60.10	57.80	117.90	51.10	6.60	3.40
2021-22	58.1	38.0	96.1	60.0	7.6	4.5
2022-23	70.4	51.3	121.7	57.7	7.8	3.8
2023-24	**62.3**	**37.8**	**100.0**	**62.3**	**6.5**	**3.9**

9.18 Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
Gajanan				
Khemlo				
Bhagaro	I			
Raja	II			
Rana				
Nagraj	I			
Moti	II			
Sundar	II			
Ashok				
Laxman	I			
Bholenath	II			
Haresh	II			
Dhingalo	II			
Nayan	III			
Madhav	III			
Ronak	III			
Alok	III		1	1
Abhijit	III			
Raghu	III		2	1
Chaman	III		3	5
Girish	III			2
Babar	III		1	6
Badal	IV	6		
Kamlesh	IV	4		
Mayur	IV	1		
Balo	IV	5		
Janak	IV	2		
Hamir	IV	3		
Sango	IV	3		
Nayak	IV	3		
Samrat	IV	0		
Nakul	IV	0		
Total		**27**	**07**	**15**

9.19 Bull wise daughters completing 1st lactation 2023-24

Bull No.	Daug-hter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)	Peak Yield
Babar	84/18	06.11.2018	24/09/2022	46.6	256	1400.7	1400.7	8.5
Chaman	32/19	02.08.2019	02/10/2022	38.1	259	1383.6	1383.6	7.7
Babar	87/18	17.12.2018	06/01/2023	48.7	280	1434.7	1434.7	8.7
Raghu	61/18	10.09.2018	25/08/2022	47.5	243	1464.1	1464.1	10.4
Chaman	75/18	14.10.2018	22/08/2022	46.3	276	1566.5	1566.5	10.7
Babar	59/18	28.08.2018	24/08/2022	47.9	264	1684.5	1684.5	11.5
Alok	13/19	14.02.2019	17/09/2022	43.1	416	2011.5	1732.4	9.8
Girish	07/19	24.01.2019	09/08/2022	42.5	265	2110.1	2110.1	14.2
Babar	55/18	17.08.2018	13/08/2022	47.9	338	2234.2	2183.8	12.5
Chaman	23/19	14.06.2019	08/10/2022	39.9	438	2276.8	1844.6	9.7
Chaman	30/17	19.12.2017	07/01/2023	60.7	450	2441.2	2340.8	10.7
Chaman	58/19	13.10.2019	26/12/2022	38.5	400	2568.7	2206.8	10.7
Babar	17/19	25.03.2019	13/10/2022	42.7	439	2745.6	2256.3	12.8
Babar	35/17	28.12.2017	31/07/2022	55.1	458	3218.3	2491.7	13.7
Girish	28/18	23.01.2018	17/09/2022	55.9	387	3279.8	2765.3	14.2
Average				**46.8**	**344.6**	**2121.4**	**1924.4**	**11.1**
SE				**1.7**	**21.7**	**165.5**	**114.3**	**0.5**

9.20 Breeding bulls Selected for current set

Sr. No.	Set	Bull Name	Bull No	Date of Birth	Sire No.	Dam No.	Dam's best SLMY	Remarks
1	V	Yuvraj	391566	29/08/2017	Girish	Mausami (A8-11)	3789	2023-24
2	V	-	19027	21/07/2019	Babar	Kusum (46/15)	3884.1	2023-24
3	V	Ranmal		Purchased			>3500	2023-24
4	V	-	19038	08/08/2019	Alok	Ladli (27/09)	3942.1	
5	V	-	19067	21/10/2019	Girish	Moti (30/13)	4236.3	
6	V	Talala	776243	Purchased	-	-	>3500	

9.20.1 PT Bulls for nominated mating

Bull No.	Set No.	Centre	Dams' Best yield (kg)	Sire Index	Breeding Value	% Superiority
Laxman	I	Junagadh	3738.0	2732.07	±9.05	
Moti	II	Junagadh	>3000	2730.36	±8.38	
Bhagaro	I	Junagadh	>3000	2672.21	±6.26	

9.20.2 List of breeding / young bulls under I to V set

Sr. No.	**Name**	**Bull No.**	**Date of birth**	**Dam**	**Sire**	**Dams best lact.300days or less yield (kg)**	**Remarks**
Set I							
1	Bhagro		Purchased	----	----	20 lit/d	CBF
2	Laxman		16-10-03	Laxmi	Subiraj	3738.0	CBF
3	Nagraj		18-12-02	Nagari	Rupnath	2957	CBF
Set II							
1	Haresh		08-02-04	Hitad	Hemalo	2884.0	2009-10
2	Moti		Purchased	--	--	>3000 litter	2010-11

3	Sunder		13-07-05	Sundari	Lailano	2732.0	2012-13
4	Raja		08-05-04	Ranjita	Subiraj	2948.0	2012-13
5	Dhingalo		Purchased	--	--	>3000 litter	2013-14
6	Bholenath		Purchased	--	--	>3000 litter	2013-14
Set III							
1	Nayan (07/10)		12-06-2010	Mira	Nagraj	4120.9 litter	2014-15
2	Abhijit (A1/10)		Purchased	Hedi		3184.2	2015-16
3	Madhav (37/10)		19-09-2010	Manisha	Nagraj	3895.8	2015-16
4	Alok		Purchased			>3500	2016-19
5	Ronak (09/11)		10-07-2011	Rita	Gajanan	3140.0	2015-16
6	Girish (11/13)		18-08-2013	Grishma	Dhingalo	3028.0	2015-17
7	Chaman		Purchased			>3500	2017-18
8	Raghu		Purchased			>3000	2016-18
9	Babar		Purchased			>3000	2016-19
Set IV							
1	Badal	3665	Purchased	--	--	>3000	2018-19
2	Mayur	27/15	17/07/2015	Mina(AM 2/11)	Haresh	3181	2020-21
3	Hamir	37/15	05/09/2015	Hedi(AM 4/11)	Bholenath	3616	2019-20
4	Balo	43/15	29/09/2015	Babli(53/09)	Nayan	3201	2019-21
5	Kamlesh	11081	Purchased	--	--	>3000	2018-20
6	Janak	11084	Purchased	--	--	>3000	2018-19
7	Sango	19100	Purchased	--	--	>3000	2019-20
8	Samrat	11086	Purchased	--	--	>3000	2020-21
9	Nayak	11087	Purchased	--	--	>3000	2019-20
Set V							
1	Yuvraj	391566	29/08/2017	Mausami (A8-11)	Girish	3789	2023-24
2	-	19027	21/07/2019	Kusum (46/15)	Babar	3884.1	2023-24
3	Ranmal		Purchased			>3500	2023-24
4	-	19038	08/08/2019	Ladli (27/09)	Alok	3942	
5	-	19067	21/10/2019	Moti (30/13)	Girish	4236	
6	Talala	776243	Purchased	-	-	>3500	

9.21 Target achieved during the years

Trait	Target	2019-20	2020-21	2021-22	2022-23	2023-24
Av. Age at first calving (months)	40	46.1±1.4 (24)	47.81±0.86 (10)	46.90±1.82 (20)	47.90±1.27 (29)	48.94±1.45 (07)
Av. Service period (days)	130	165±18.6 (43)	144±11.70 (38)	161±12.89 (41)	165±12.78 (80)	181.1±22.7 (42)
Calf mortality (0-3 months)	≤ 5 %	5.45	11.11	10.58	23.26	8.82
Wet average (kg)	≥8.5 kg	6.3	6.6	7.6	7.8	6.5
Herd average (kg)	≥5.5 kg	3.2	3.4	4.5	3.8	3.9

10. Salient Research Achievements (example):

11. Publications : --Nil--

12. Socioeconomic impact / Success stories:

13. Constraints if any

- Allocated funds are insufficient for the project implementation satisfactorily.
- Building / Buffalo sheds needs urgent renovations.
- Separate Milking Parlour for Buffaloes is required.
- Semen Freezing Laboratory needs renovation and extension to meet Minimum Standard.

12. Focus of work in the coming year

- Efforts will be concentrated on improving reproductive performance of Jaffrabadi herd.
- Semen Freezing Laboratory will be strengthened.

Performance of Kamdhenu University, Junagadh (Field Units)

F 1. Herd Strength of Registered Females at Different Field Centres during 2023-2024

Sr No.	Centres/ Village	OB	Addition			Deduction		
			New Reg.	Birth	Purchase	Sold	Death	CB
1	Shedhaya	**2072**	**9**	**23**		**36**	**27**	**2041**
2	Pipali	**3366**	**35**	**50**		**42**	**9**	**3400**
3	Loej	**12826**	**47**	**98**		**95**	**12**	**12864**
4	Surva	**4038**	**65**	**53**		**68**	**21**	**4067**
5	Mand likpur	**4802**	**69**	**31**		**104**	**23**	**4775**
6	Hadmdiya	**1065**	**12**	**31**		**125**	**8**	**975**
7	Khorasa	**1214**	**21**	**21**		**96**	**6**	**1154**
8	Gondal	**405**	**37**	**4**		**6**	**3**	**437**
	Total	**29788**	**295**	**311**	**0**	**572**	**109**	**29713**

F 2. Status of Breedable Females at Different Field Unit Centres during 2023-2024

Centres/ Village	**Heifers > 3 years**		**Buffalo**	
	Total	**Pregnant**	**In Milk**	**Dry**
Shedhaya	60		0	0
Pipali	217		12	102
Loej	548		35	366
Surva	189		17	31
Movana	0		0	16
Mand likpur	237		21	71
Hadmdiya	156		11	13
Sherdi	0		0	11
Khorasa	154		8	0
Odadar	0		0	63
Gondal	49		5	0
Total	**1610**		**109**	**673**

F 3. Monthly AI at Different Field Unit Centres during Period 4/2023 to 3/2024

Month	TOTAL									
	Shedhaya	Pipali	Hadmadiya	Loej	Surva	Mandlikpur	Odadar	Khorasa	Gondal	Total
April, 23	0	21	10	34	11	15	31	7	3	132
May	0	15	9	29	8	7	30	6	2	106
June	8	13	9	41	7	13	28	8	3	130
July	7	15	9	22	8	2	27	9	3	102
August	13	21	12	45	11	11	30	10	3	156
September	13	30	11	42	15	15	26	10	4	166
October	10	30	12	20	6	13	36	10	3	140
November	0	25	13	0	7	18	0	11	4	78
December	0	21	10	55	23	21	0	8	5	143

January, 24	12	26	9	29	10	30	0	14	5	135
February	7	22	8	23	12	18	0	15	5	110
March	15	21	11	38	15	13	0	15	5	**133**
TOTAL	**85**	**260**	**123**	**378**	**133**	**176**	**208**	**123**	**45**	**1531**

F 4. Bull-wise AI at Different Field Unit Centres during the Period 4/2023 to 3/2024

Months	**Nayak**	**Samrat**	**Janak**	**Badal**	**Mayur**	**Yuvraj**	**Total**
April, 23	0	21	111	0	0		**132**
May	0	15	85	0	6		**106**
June	0	0	49	0	81		**130**
July	0	0	24	0	78		**102**
August	0	0	11	2	143		**156**
September	19	0	41	20	86		**166**
October	56	0	13	0	71		**140**
November	7	0	18	0	53		**78**
December	99	0	0	0	44		**143**
January, 24	53	0	30	0	52	0	**135**
February	55	0	18	0	37	0	**110**
March	73	0	13	0	0	47	**133**
Total	**362**	**36**	**413**	**22**	**651**	**47**	**1531**

F 5. Month wise Conception at Different Field Unit Centres during the Period 4/2023 to 3/2024

Month	**Village / Centre**									
	Shedhaya		**Pipali**		**Hadmadiya**		**Loej**		**Surva**	
	P	E	P	E	P	E	P	E	P	E
April, 23	7	3	7	8	4	2	19	33	19	12
May	5	3	14	14	5	5	13	18	12	6
June	4	3	7	8	4	4	15	21	13	9
July	0	0	9	12	5	5	13	21	6	5
August	0	0	7	8	5	4	12	17	4	4
September	5	3	6	7	5	4	15	25	3	4
October	4	3	7	8	5	4	13	15	5	3
November	7	6	9	12	6	6	17	26	7	4
December	8	5	12	18	6	5	15	29	9	6
January, 24	5	5	14	16	6	6	6	14	3	3
February	7	3	12	13	8	5	23	32	5	2
March	0	0	10	11	5	5	11	18	14	9
Total	**52**	**34**	**114**	**135**	**64**	**55**	**172**	**269**	**100**	**67**

Cont..

Month	**Village / Centre**									
	Mandlikpur		**Odadar**		**Khorasa**		**Gondal**		**Total**	
	P	E	P	E	P	E	P	E	P	E
April, 23	11	7	9	20	4	4	1	3	81	92
May	8	6	8	20	3	5	2	3	70	80
June	9	8	8	19	4	4	2	3	66	79
July	7	8	10	21	4	3	1	2	55	77
August	3	4	10	20	4	2	1	1	46	60
September	6	5	8	20	4	4	1	2	53	74
October	2	2	10	17	4	5	0	3	50	60
November	5	4	9	21	4	6	1	2	65	87
December	8	8	8	18	4	6	1	3	71	98
January,24	5	4	0	0	5	5	2	1	46	54

February	8	15	0	0	4	7	2	2	69	79
March	10	11	0	0	4	4	2	3	56	61
Total	**82**	**82**	**80**	**176**	**48**	**55**	**16**	**28**	**728**	**901**

F 6. Month wise Calving at Different Field Unit Centres during the Period 4/2023 to 3/2024

Month	Village / Centre											
	Shedhaya		Pipali		Hadmadiya		Loej		Surva		Mandlikpur	
	M	F	M	F	M	F	M	F	M	F	M	F
April, 23	2	1	2	4	3	2	8	7	2	2	2	0
May	3	0	3	5	2	2	9	10	2	1	6	2
June	3	2	3	3	1	3	7	6	2	2	4	0
July	2	0	4	3	1	3	8	11	2	3	3	3
August	3	5	8	5	1	3	9	6	6	7	11	3
September	5	5	3	4	1	3	9	8	7	8	6	5
October	2	3	6	5	2	1	15	14	9	5	4	1
November	4	3	4	3	1	3	11	8	10	9	5	2
December	3	2	8	6	2	3	7	7	5	5	3	2
January 24	2	2	3	4	1	3	6	6	6	6	3	3
February	0	0	4	5	2	3	8	8	3	3	3	1
March	0	0	4	3	2	3	5	7	2	2	1	1
Total	29	23	52	50	19	32	102	98	56	53	51	23

Conti...

Month	Village / Centre						Total	
	Odadar		Khorasa		Gondal			
	M	F	M	F	M	F	M	F
April, 23	2	3	2	1	1	0	24	20
May	2	3	1	1	0	0	28	24
June	5	4	2	2	1	0	28	22
July	1	4	2	1	1	1	24	29
August	4	3	2	1	1	0	45	33
September	3	3	0	2	1	1	35	39
October	4	5	3	2	0	1	45	37
November	4	2	2	2	0	1	41	33
December	4	2	2	1	1	1	35	29
January,24	0	0	1	1	1	0	23	25
February	0	0	2	3	1	0	23	23
March	0	0	3	1	1	0	18	17
Total	29	29	22	18	9	5	369	331

M= Male F= Female

F 7. Bull-wise Conception at Different Field Unit Centres during the Period 4/2023 to 3/2024

Month	Bull No										Total	
	Nayak		Janak		Samrat		Mayur		Badal			
	P	E	P	E	P	E	P	E	P	E	P	E
April, 23	0	0	81	92	0	0	0	0	0	0	81	92
May	0	0	56	66	14	14	0	0	0	0	70	80
June	0	0	59	71	7	8	0	0	0	0	66	79
July	0	0	46	65	9	12	0	0	0	0	55	77
August	0	0	35	50	7	8	4	2	0	0	46	60
September	0	0	26	48	0	0	27	26	0	0	53	74

October	0	0	15	17	0	0	35	43	0	0	50	60
November	0	0	5	4	0	0	60	83	0	0	65	87
December	14	31	8	8	0	0	42	44	7	15	71	98
January, 24	6	14	5	4	0	0	35	36	0	0	46	54
February	28	34	8	15	0	0	33	30	0	0	69	79
March	35	38	0	0	0	0	21	23	0	0	56	61
Total	83	117	344	440	37	42	257	287	7	15	728	901

F 8. Bull-wise Calving at Different Field Unit Centres during the Period 4/2023 to 3/2024

Month	**Bull Name**						**Total**	
	Samrat		**Nayak**		**Janak**			
	M	F	M	F	M	F	M	F
April, 23	24	20	0	0	0	0	24	20
May	28	24	0	0	0	0	28	24
June	28	22	0	0	0	0	28	22
July	23	25	0	0	1	4	24	29
August	0	0	1	0	44	33	45	33
September	0	0	0	0	35	39	35	39
October	0	0	0	0	45	37	45	37
November	0	0	0	0	41	33	41	33
December	8	6	0	0	27	23	35	29
January,24	3	4	0	0	20	21	23	25
February	4	5	0	0	19	18	23	23
March	4	3	0	0	14	14	18	17
Total	**122**	**109**	**1**	**0**	**246**	**222**	**369**	**331**

F 9. Bull-wise Live Female Progeny at Different Field Unit Centres (0-6 month) as on 3/2023

Centres	**Samrat**	**Janak**	**Total**
Shedhaya	3	10	13
Pipali	15	9	24
Hadmdiya	10	6	16
Loej	34	14	48
Surva	8	15	23
Mandlimpur	5	8	13
Odadar	10	10	20
Khorasa	5	3	8
Gonadal	1	1	2
Total	**91**	**76**	**167**

F 10. Bull-wise Live Female Progeny at Different Field Unit Centres (6-12 month) as on 3/2024

Centres	**Samrat**	**Janak**	**Total**
Shedhaya	0	10	10
Pipali	18	8	26
Hadmdiya	0	16	16
Loej	0	50	50
Surva	0	30	30
Mandlimpur	0	10	10
Odadar	0	9	9
Khorasa	0	10	10
Gonadal	0	3	3
Total	**18**	**146**	**164**

F 11. Bull-wise Live Female Progeny at Different Field Unit Centres (1-3 years) as on 3/2024

Centres	Kamlesh	Alok	Badal	Babar	Mayur	Balo	Sango	Total
Shedhaya	0	6	3	0	11	2	1	23
Pipali	10	10	19	0	16	10	12	77
Hadmdiya	5	4	14	0	11	11	8	53
Loej	22	25	38	2	46	39	25	197
Surva	12	12	16	0	11	28	11	90
Mandlimpur	12	9	25	0	7	9	1	63
Khorasa	6	0	9	6	10	6	6	43
Gonadal	9	4	2	1	0	5	2	23
Total	**76**	**70**	**126**	**9**	**112**	**110**	**66**	**569**

F 12. Bull-wise Live Female Progeny at Different Field Unit Centres (> 3years) as on 3/2024

Centres	Nayan	Abhijeet	Ronak	Girish	Alok	Madhav	Babar	Raghu	Chaman	**Total**
Set - III										
Hadmdiya	14	8	15	4	9					**50**
Khorasa	15	5	19	19	20	17	19	19	16	**149**
Loej	13	3	16	10	14	3	7	9	9	**84**
Mandlimpur	19	22	43	48	53	20	86	67		**358**
Odadar					12		4	7	38	**61**
Pipali	9	1	14	20	14	6	17	32	15	**128**
Shedhaya	16	7	15	18	7	7	25	13	8	**116**
Surva			1	6	4		3	7	6	**27**
Total	**86**	**46**	**123**	**125**	**133**	**53**	**161**	**154**	**92**	**973**

Set - IV

Centres	**Badal**	**Hamir**	**Kamlesh**	**Balo**	**Mayur**	**Sango**	**Total**
Hadmdiya	3	7					**10**
Khorasa	21	25	16	6			**68**
Loej	16	24	7	14	11		**72**
Mandlimpur	41	103	34	12			**190**
Odadar	19	25	21	40	11	5	**121**
Pipali	24	38	21	19	7		**109**
Shedhaya	12	14	9	3			**38**
Surva	3	7	12				**22**
Total	**139**	**243**	**120**	**94**	**29**	**5**	**630**

F 13. Bull-wise AI, Conception, Calving and Daughters Retained till Completion of Milk Recording during the Year

S.n.	Centre	Village	Daughter tag no.	Date of birth	Sire name	Set	D.o.c	Afc	Av.m.p.	D.o.d.
500	Loej	Bamanavada	486	10-01-2018	Babar	III	07-06-2022	52.9	10.7	05-04-2023
515	Loej	Rahij	470	16-04-2017	Babar	III	05-05-2022	50.3	10.8	05-04-2023
508	Loej	Sangavada	462	15-03-2017	Babar	III	09-06-2022	52.4	11.3	10-04-2023
510	Loej	Kankasha	464	23-03-2017	Babar	III	05-06-2022	52	9.9	10-04-2023
512	Loej	Shil	275	03-04-2017	Babar	III	11-06-2022	51.7	9.4	10-04-2023
513	Loej	Mankhetra	469	14-04-2017	Babar	III	10-06-2022	51.4	10.6	10-04-2023
516	Loej	Sangavada	273	14-04-2017	Babar	III	22-06-2022	51.9	11	23-04-2023
501	Loej	Loej	474	09-11-2017	Babar	III	01-07-2022	55.7	10.1	30-04-2023
507	Loej	Loej	484	14-03-2017	Babar	III	28-06-2022	53.1	11.6	30-04-2023
511	Loej	Loej	466	29-03-2017	Babar	III	27-07-2022	53.5	11	30-05-2023
504	Loej	Nagichana	222	12-02-2018	Babar	III	04-08-2022	43.7	11.2	05-06-2023

505	Loej	Rahij	460	25-01-2018	Babar	III	06-08-2022	44	11	15-06-2023
628	Loej	Loej	404	25-07-2017	Raghu	III	08-09-2022	51	10.1	08-07-2023
627	Loej	Nagichana	1.00144E+11	08-12-2017	Raghu	III	08-09-2022	46.8	10.6	10-07-2023
503	Loej	Nagichana	489	03-02-2017	Babar	III	03-10-2022	57.5	11.1	03-08-2023
630	Loej	Kankasha	403	23-07-2017	Raghu	III	18-10-2022	52.3	12.1	18-08-2023
629	Loej	Loej	401	03-07-2017	Raghu	III	26-10-2022	53.8	13.1	25-08-2023
484	Loej	Sangavada	453	21-12-2018	Alok	III	05-11-2022	36.3	11.7	05-09-2023
518	Loej	Loej	1493	09-02-2018	Babar	III	08-12-2022	47.6	11.4	08-10-2023
528	Loej	Kankasha	1473	24-02-2018	Babar	III	28-12-2022	47.8	13.6	30-10-2023
524	Loej	Rahij	1500	03-02-2018	Babar	III	30-01-2023	49.9	11.5	30-11-2023
668	Loej	Sangavada	1457	19-02-2019	Kamlesh	Iv	01-02-2023	37.1	11.3	30-11-2023
521	Loej	Bamanavada	1494	22-01-2018	Babar	III	02-02-2023	50	12.3	02-12-2023
520	Loej	Nagichana	1497	30-01-2018	Babar	III	20-02-2023	50.7	11.4	05-12-2023
522	Loej	Kankasha	1495	22-01-2018	Babar	III	05-02-2023	50.1	10.8	05-12-2023
523	Loej	Mangrol	1491	01-02-2018	Babar	III	05-02-2023	49.8	10.7	05-12-2023
526	Loej	Loej	1480	14-02-2018	Babar	III	09-02-2023	49.5	10.3	10-12-2023
519	Loej	Nagichana	1498	10-02-2018	Babar	III	02-03-2023	50.2	8.5	02-01-2024
525	Loej	Kankasha	1499	07-02-2018	Babar	III	03-03-2023	50.4	9.9	03-01-2024
527	Loej	Kankasha	1471	12-02-2018	Babar	III	05-01-2023	48.3	12.2	05-01-2024
564	Mandlikpur	Bilkha / avatdiya	A5641/100143806575	05-01-2017	Girish	III	02-06-2022	64.9	7	02-04-2023
537	Mandlikpur	Navagam/ghudvadar	G346/340169128177	03-09-2017	Chaman	III	13-09-2022	50.1	5.7	13-07-2023
572	Mandlikpur	Bilkha	G804/340168020395	01-09-2016	Girish	III	30-09-2022	62.8	6.2	03-08-2023
573	Mandlikpur	Bilkha/mandanpara	A5637/340167745234	07-04-2016	Girish	III	14-10-2022	68.1	6.4	17-08-2023
517	Mandlikpur	Khadiya/vijapur	G811/100143810045	29-12-2016	Babar	III	10-11-2022	60.2	6.5	10-09-2023
626	Odadar	Gosa	G1892	30-03-2017	Raghu	III	15-06-2022	52	9.9	15-04-2023
536	Odadar	Balej	A4938	28-04-2017	Chaman	III	17-06-2022	51.2	10	16-04-2023
532	Odadar	Balej	A4908	25-04-2017	Chaman	III	30-06-2022	51.8	10.6	12-05-2023
534	Odadar	Odadar	G1346	27-06-2017	Chaman	III	18-07-2022	50.4	9.8	20-05-2023
533	Odadar	Gosabara	G1345	10-07-2017	Chaman	III	10-08-2022	50.7	10.5	10-06-2023
657	Pipali	Pipali	1308	14-08-2016	Ronak	III	10-06-2022	69.9	7.8	16-04-2023
660	Pipali	Pipali	A2285	26-01-2016	Ronak	III	03-08-2022	68.2	7.7	17-04-2023
656	Pipali	Harmadiya	1306	20-09-2016	Ronak	III	07-07-2022	69.6	8.1	28-04-2023
661	Pipali	Pandar	1304	21-11-2015	Ronak	III	21-07-2022	69.9	8	26-05-2023
565	Pipali	Adavi	A2291	04-03-2016	Girish	III	19-08-2022	67.2	7.3	15-06-2023
659	Pipali	Devli	A2281	14-02-2016	Ronak	III	10-09-2022	68.9	7.7	27-06-2023
663	Pipali	Kafli	A2286	26-02-2016	Ronak	III	17-10-2022	69.7	7.5	26-07-2023
569	Pipali	Sigasar	A2294	24-03-2016	Girish	III	20-09-2022	67.8	12.5	29-07-2023
570	Pipali	Sigasar	A2292	07-04-2016	Girish	III	09-10-2022	67.8	6.6	05-08-2023
571	Pipali	Pandar	A2298	26-04-2016	Girish	III	03-11-2022	68.2	7	07-09-2023
483	Pipali	Bodva	A2241	09-07-2016	Alok	III	14-11-2022	65.9	7.7	08-09-2023
574	Pipali	Velva	A2234	10-09-2016	Girish	III	07-12-2022	64.9	7.3	07-10-2023
485	Pipali	Devli	A2250	28-07-2016	Alok	III	13-12-2022	66.5	7.5	08-10-2023
530	Pipali	Adavi	A2130	05-04-2018	Babar	III	10-01-2023	47.1	7.8	31-10-2023
664	Pipali	Velva	A2108	13-09-2018	Badal	Iv	19-01-2023	42.4	8.9	15-11-2023
671	Pipali	Dudana	A378	01-06-2019	Kamlesh	Iv	03-02-2023	34.1	7.8	05-12-2023
631	Pipali	Kadodra	G1159	01-10-2017	Raghu	III	16-02-2023	54.6	6.6	28-12-2023
538	Pipali	Kadodra	G1185	01-05-2017	Chaman	III	13-01-1900	48.2	7.9	29-12-2023
672	Pipali	Pandar	A330	29-07-2019	Kamlesh	IV	17-03-2023	33.6	8.1	01-01-2024
669	Pipali	Pipali	A325	01-07-2019	Kamlesh	IV	07-04-2023	35.1	6.6	13-02-2024
670	Pipali	Dudana	A366	22-04-2019	Kamlesh	IV	19-04-2023	38	7.7	29-02-2024
529	Pipali	Adavi	A2128	28-04-2018	Babar	III	09-05-2023	50.5	7.9	01-03-2024
531	Pipali	Mitiyaj	G1109	09-01-2018	Babar	III	17-05-2023	53.8	7.4	18-03-2024
665	Pipali	Adavi	A2169	29-11-2018	Badal	IV	03-06-2023	44.3	7.7	28-03-2024

F 14. Bull-wise AI, Conception, Calving and Daughters Retained Till Completion of Milk Recording during the Year

Bull Name	Set No.	Total AI		Conception		Calving				Daughters Retained Up to				
						Total		Female		1 year	2 year	3 year	Calving	Complete Recording
		Pro.	Cur.year (22-23)	Pro.	Cur.year (22-23)	Pro.	Cur.year (22-23)	Pro.	Cur.year (22-23)					
Ranjeet	I	243		108(179)		72		34						
Rupesh	I	777		429(661)		251		116						
Ashok	I	2120		732(1217)		715		346						
Manek	I	741		376(558)		376		182						
Bhagro	I	4747		1902(3830)		1840		877					45	45
Gajanan 4/02	I	929		502(781)		486		245						
Nagraj	I	4016		1822(2452)		799		768					44	44
Laxman	I	5343		2735(4556)		2735		1349					85	85
A		**18916**		**8606(14234)**		**7274**		**3917**					**174**	**174**
Haresh	II	1245		660(1082)		437		211					37	37
Moti	II	2459		1041(2129)		1007		472					50	50
Sunder	II	719		377(702)		329		151					27	27
Raja	II	1443		724(1378)		594		277					48	48
Dhinglo	II	1089		552(1064)		552		259					25	25
Bholenath	II	2557		1235(1988)		843		404					80	80
B		**9512**		**4589(8343)**		**3762**		**1774**					**267**	**267**
Nayan (07/10)	III	1061		503(1000)		391		164					35	29
Abhijit (A1/10)	III	619		279(619)		254		98					13	11
Madhav(37/10)	III	692		295(639)		239		105					28	21
Alok	III	1169		475(1162)		433		202				70	35	30
Ronak(09/11)	III	1737		752(1736)		670		386					34	31
Girish	III	1601		612(1565)		464		210					36	30
Babar	III	1520		609(1380)		431		187				9	21	16
Raghu	III	1312		491(1163)		427		191					6	2
Chaman	III	870		352(836)		263		110					7	5
C		**10581**		**4368(10100)**		**3572**		**1653**					**215**	**175**
Badal	IV	963		408(1028)		376		159				146		
Kamalesh	IV	836		331(836)		304		138			55	83		
Hamir	IV	1418		593(1366)		571		266			266			
Balo	IV	1143		475(1156)		418		187		134	53			
Mayur	IV	783		344(787)		300		130		130				
Sango	IV	757		340(795)		163	157	80	81	80				
Nayak	IV	1354	45	345(779)	252(579)	0	529	0	292					
Samrat	IV		732		326(749)		98		49					
Janak	IV		1028		262(565)									
D		**7254**	**1805**	**2836(6747)**	**840(1893)**	**2132**	**784**	**960**	**422**	**344**	**374**	**229**		
Gr.Total (A±B±C±D)		**46263**	**1805**	**20399(39424)**	**840(1893)**	**16740**	**784**	**8304**	**422**	**344**	**374**	**308**	**656**	**616**

F 15 Performance of FPT Programme since Inception

Duration	AI	Pregnancies	CR%	Calvings	Females Born	Daughters Recorded	Av. AFC (mth)	Av. Milk Yield (kg/day)	Daughters Available for Recording
2005-06	15					-	-	-	-
2006-07	966					-	-	-	-
2007-08	2169	1196(1907)	62.72	468	223	-	-	-	-
2008-09	2961	1141(2065)	55.25	944	455	-	-	-	-
2009-10	3070	1563(2676)	58.41	1429	694				
2010-11	3457	1613(2651)	60.84	1333	666				
2011-12	3738	1603(2918)	54.93	1538	729				

2012-13	4067	1776(3627)	48.97	1684	810				
2013-14	4121	1957(4021)	48.70	1688	801				
2014-15	4781	2150(4271)	50.34	1564	731	1	46.5	8.9	
2015-16	3375	1719(3691)	46.57	1892	867	15	50.2	9.3	
2016-17	2971	1228(3041)	40.38	1256	537	74	49.3	9.1	
2017-18	2462	1032(2436)	42.36	815	365	72	53.6	8.9	
2018-19	2013	840(1971)	42.62	803	347	89	51.6	8.7	
2019-20	1962	776(1894)	40.97	712	308	86	52.8	9.1	
2020-21	2139	928(1273)	42.1	800	374	76	52.1	9.0	
2021-22	1931	842(1910)	44.1	766	344	99	52.6	9.1	
2022-23	1805	840(1893)	44.4	784	422	104	52.9	9.2	
2023-24	1531	728(1629)	44.7	700	331	57	52.7	9.2	
Overall	**49534**	**21932(43874)**	**48.7**	**19176**	**9004**	**673**	**51.4**	**9.1**	

AI, Conception, Calving and Daughters Retained (Set wise)

Set - I	**Bull No.**								
	Ranjit	Rupesh	Ashok	Manek	Bhagro	Gajanan	Nagraj	Laxman	**Total**
AI	243	777	2120	741	4747	929	4016	5343	**18916**
Pregnancies	108	429	732	376	1902	502	1822	2735	**8606**
Daughters Born	34	116	346	182	877	245	768	1349	**3917**
Daughters Calved					45	0	44	85	**174**

Set - II	Haresh	Moti	Sundar	Raja	Dhingalo	Bholenath	**Total**
AI	1245	2459	719	1443	1089	2557	**9512**
Pregnancies	660	1041	377	724	552	1235	**4589**
Daughters Born	211	472	151	277	259	404	**1774**
Daughters Calved	37	50	27	48	25	80	**267**

Set - III	**Bull No.**									
	Nayan	Abhijit	Madhav	Alok	Ronak	Girish	Babar	Raghu	Chaman	**Total**
AI	1061	619	692	1169	1737	1601	1520	1312	870	**10581**
Pregnancies	503	279	295	475	752	612	609	491	352	**4368**
Daughters Born	164	98	105	202	386	210	187	191	110	**1653**
Daughters Calved	29	11	21	34	32	36	45	7	7	**222**

Set - IV	**Bull no.**									
	Badal	Kamlesh	Hamir	Balo	Mayur	Sango	Nayak	Samrat	Janak	**Total**
AI	985	836	1418	1143	1434	757	1761	768	1441	**10543**
Pregnancies	415	331	593	475	601	340	680	363	606	**4404**
Daughters Born	159	138	266	187	130	161	292	158	222	**1713**
Daughters Calved	3	6	1							**10**

Set - V	**Bull no.**									
	Yuvaraj									**Total**
AI	47									47
Pregnancies										
Daughters Born										
Daughters Calved										

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Allocation as per R E 2023–24		Released	Expenditure as per AUC		Closing Balance (Rs. In lakhs)
Total	ICAR Share	ICAR Share	ICAR Share	State Share	
63.00*	45.00+3.00*	28.50±1.00*	29.58296*	6.64574	18.41704

* Includes SCSP Fund

Herd Performance

Herd strength was 279 out of which 154 were breedable buffaloes (>2year). During the period 49 calving took place consisting of 22 males and 27 females. The calf mortality (0-3 months) was recorded at 8.82 %, higher than the fixed target of NPBI ≤ 5 %. Conception rate was considerably improved to 51.16 % from last year (49.10%). During the year 4755 semen doses produced and 3110 frozen semen doses used/ disseminated by the centre. As on 31st March 2023, 150478 frozen semen doses are available at the centre.

Production performances average lactation milk yield, 305 day or less day milk yield and peak yield (kg) decrease from 2629 kg (66), 2525 kg (66) and 15.3 kg (66) to 2520 kg (74) and 2307 kg (74) and 13.0 kg respectively. The reproductive traits viz. AFC, SP, DP and calving interval were 48.94 months (07), 181 days (42), 246 days (42) and 491 days (42), compar to previous year (2022-23) 47.9 months (29), 165 days (80), 206 days (80) and 470 days (80), respectively. During the report period the wet average decrease from 7.80 kg/d to 6.50 kg/d and herd average increase from 3.8 kg/d to 3.9 kg/d.

Accomplishment and Targets Achieved:

Trait	Target	2019-20	2020-21	2021-22	2022-23	2023-24
Av. Age at first calving (months)	40	46.1 ±1.4 (24)	47.81±0.86 (10)	46.90±1.82 (20)	47.90±1.27 (29)	48.94±1.45 (07)
Av. Service period (days)	130	165±18.6 (43)	144±11.70 (38)	161±12.89 (41)	165±12.78 (80)	181±22.7 (42)
Calf mortality (0-3 months)	≤ 5 %	5.45%	11.11%	10.58%	23.26%	8.82%
Wet average (kg)	≥8.5 kg	6.3	6.6	7.6	7.8	6.5
Herd average (kg)	≥5.5 kg	3.2	3.4	4.5	3.8	3.9

Field Unit:

During the period less number of AI (1531) were performed in the field as compared to 1805 AI in 2022-23. Three test bull of set IV were used during the report period. A total 728 conceptions reported with conception rate of 44.7%, 331 female progenies born and 57 daughters completed lactation in 2023-24.

Recommendations:

- There has been a decline in production performance during the reporting period, which requires more efforts to improve.
- Utmost managemental care should be taken to control the calf mortality within the target of 5%.
- Reproductive performance of Jaffarabadi unit need to be improved as most of the reproductive traits have declined during 2023-24.
- More no. of AI in the field should be done in field and recording should also be strengthened.

LIVESTOCK RESEARCH STATION, VALLABHNAGAR

Report Period: 2023-24

1. **Name of center** : Livestock Research Station, Vallabhnagar RAJVASU, Bikaner
2. **Project Code** :
3. **Project Title** : Network Project on Buffalo Improvement
   Subproject : Performance recording and improvement of Surti buffalo
   Progeny testing of Surti bulls under field conditions
4. **Date of start** : 01-04-2001
5. **Objectives** :

I. To establish elite herd of 50 Surti for the production of genetically superior young bulls.
II. To evaluate sires through institutional/field progeny testing
III. To produce, test, propagate and conserve high genetic merit male germplasm

6. **Technical Programme:**

- Establishment and maintenance of an elite herd of 100 breedable Surti buffaloes.
- Selection and testing of minimum 4-6 bulls in every 24 months cycle.
- Production of minimum 2000 frozen semen doses from each test bull.
- Maintain a minimum number of 2000 of frozen semen doses until the particular SET gets evaluated.
- Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
- Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
- Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days) and peak yield, milk yield per day of herd life (total milk produced from date of birth till completion of 4th or more lactation).
- Monthly testing of milk constituents (Fat%, SNF% and Protein %) and Somatic Cell Count, wherever feasible, at institutional herds.
- Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
- Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. Staff associated with the project

Discipline	**Name of Scientist / Staff**	**Status (PI/Co-PI/ Associated)**
AGB	-	-
ARGO/VGO	**Dr Mitesh Gaur**	Project Incharge
ANFT	-	-
LPM	-	-
Health / Others	-	-
No. of staff		
Technical staff	-	
Administrative staff	-	
Contractual staff (RA / SRF / YP-I, YP-II)	One contractual clerk, Two contractual LSAs, one SRF	

8.**Financial Statement:** Head wise budget allocation and utilization; revenue receipts(**Rs. In Lac.)**

Head	**Allocation for the year (ICAR ± State)**	**ICAR share 75% of expenditure**	**State Share 25% of expenditure**	**Total Expenditure**
A. **Recurring**				
1. Pay & Allow.	--	--	--	--
2. T.A.	--	--	--	--
3. Recurring cont.	63,99,000.00	48,00,000.00	15,99,000.00	63,99,000.00
4. Recurring cont **(SCSP)**	2,50,000.00	2,50,000.00	-	2,50,000.00
5. HRD	-	-	-	0.00
Total	**66,49,000.00**	**50,50,000.00**	**15,99,000.00**	**66,49,000.00**
B. **Non-recurring Conti**.		-	-	
1. Equipment **(SCSP)**	50,000.00	50,000.00	-	50,000.00
2. Equipments	4,99,000.00	3,75,000.00	1,24,000.00	4,99,000.00
Total	**5,49,000.00**	**4,25,000.00**	**1,24,000.00**	**5,49,000.00**
G. Total	**71,98,000.00**	**54,75,000.00**	**17,23,000.00**	**71,98,000.00**

Revenue generated(Rs.)

S. No.	**Source**	**Income**
1	Milk sale	15,63,166
2	Animal Sale	3,26,000
3	FYM sale	2,35,921
	Total Income	**21,25,087**

Institutional herd performance: Enclosed Table 9.1 to 9.21.

9.1 Herd Strength during the Period 1st April 2023 to 31st March, 2024

Sr. No.	Category	**Addition**			**Disposal**				**CB**
		OB	**B / P**	**T**	**D**	**T**	**S**	**E**	
	Female								
1.	Below 3 months	**1**	10	0	**3**	8	0	0	**0**
2.	3-12 months	**7**	0	8	1	7	0	0	**7**
3.	1-2 years	**5**	0	7	0	5	0	0	**7**
	Above 2 years	**35**	0	5	2	3	2	0	**33**
4.	Buffaloes in Milk	**27**	0	19	1	27	4	0	**14**
5.	Buffaloes Dry P /NP	**17**	0	27	1	16	2	0	**25**
	Sub Total	**92**	**10**	**66**	**8**	**66**	**8**	**0**	**86**
	Males								
1.	Below 3 months	**4**	9	0	**1**	11	1	0	**0**
2.	3-12 months	**15**	0	11	4	16	0	0	**6**
3.	1-2 years	**8**	0	16	1	4	4	0	**15**
	Above 2 years	**23**	0	4	1	0	15	0	**11**
4.	Breeding bulls	**7**	0	0	0	0	0	0	**7**
5.	Bullocks / Teasers / others	**2**	0	0	1	0	0	0	**1**
	Sub Total	**59**	**9**	**31**	**8**	**31**	**20**	**0**	**40**
	Grand Total	**151**	**19**	**97**	**16**	**97**	**28**	**0**	**126**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics including abnormalities

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 23	0	0	-	-	-	-	-	0
May	1	0	-	1	-	-	-	2
June	0	1	-	1	-	-	-	2
July	1	0	-	-	-	-	-	1
August	1	4	1	-	-	-	-	6
September	6	3	-	-	-	-	-	9
October	0	0	1	-	-	-	-	1
November	0	2	-	-	-	-	-	2
December	0	0	-	-	-	-	-	0
January 24	0	0	-	-	-	-	-	0
February	0	0	-	-	-	-	-	0
March	0	0	-	-	-	-	-	0
Overall	**9**	**10**	**2**	**2**	**0**	**0**	**0**	**23**

Sex ratio **Male : Female (0.9:1.0);** Abortion % = 8.70 %; Still birth % = 8.70 %

9.3. Disposal of Animals during the Period 1st April 2023 to 31st March, 2024

Female								
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	**Total**
Calves								
0 to 3 months	0	0	0	0	0	3	0	**3**
3-12 months	0	0	0	0	0	1	0	**1**
Heifers								
1-2 years	0	0	0	0	0	0	0	**0**
> 2 years	0	2	0	0	0	2	0	**4**
Buffaloes								
Milch	0	0	3	1	0	1	0	**5**
Dry	0	0	2	0	0	1	0	**3**
Sub Total	**0**	**2**	**5**	**1**	**0**	**8**	**0**	**16**
Males								
Calves								
0 to 3 months	1	0	0	0	0	1	0	**2**
3-12 months	0	0	0	0	0	4	0	**4**
1 to 2 year	4	0	0	0	0	1	0	**5**
>2 year	15	0	0	0	0	1	0	**16**
Breeding bulls	0	0	0	0	0	0	0	**0**
Bullock±Teaser±Others	0	0	0	0	0	1	0	**1**
Sub Total	**20**	**0**	**0**	**0**	**0**	**8**	**0**	**28**
Grand Total	**20**	**2**	**5**	**1**	**0**	**16**	**0**	**44**

9.4. Mortality during the Period 1st April 2023 to 31st March, 2024

Female							**Male**					**Overall Herd**
	0-3 m	3-12 m	1-2 Yrs.	Above 2 Yrs.	Milk ± Dry	Overall Female	0-3 m	3-12 m	1 -2 Yrs.	>2 yrs.	Overall Male	
No.	11	15	12	40	90	168	13	26	24	36	99	267
Died	3	1	0	2	2	8	1	4	1	2	8	16
%	**27.3**	**6.7**	**0.0**	**5.0**	**2.2**	**4.76**	**7.7**	**15.4**	**4.2**	**5.6**	**8.08**	**5.99**

Overall Calf Mortality = (04/29)*100 =16.66% Overall Mortality =(16/170)*100= 9.41%

9.5. Causes of Mortality (quarter wise) during the period April 23 to March 24

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	**Total**
Enteritis	1		2	-	**3**
Pneumonitis	1	1	3	-	**5**
Septicemia / Toxemia	1	-	-	-	**1**
Peritonitis	-	-	-	-	**0**
JD/TB	-	-	-	-	**0**
Milk Fever/metabolic diseases	-	-	-	-	**0**
TRP / TP	-	-	-	-	**0**
Parasitism	-	-	-	-	**0**
Accidental death	-	-	-	-	**0**
Peri-parturient disorders	-	-	-	-	**0**
Miscellaneous	2	2	2	1	**7**
Total	**5**	**3**	**7**	**1**	**16**

9.6 Prophylactic Measures undertaken

Disease	Vaccination Date	No. of animals	No. of animals Tested / Positive		Month and no. of animals treated for Parasitism	
FMD	24-06-2023, 31-03-2024	143, 120			April	30
					May	
HS	24-06-2023, 31-03-2024	143, 120			June	146
					July	
BQ	24-06-2023, 31-03-2024	143, 120			August	10
					September	
Brucellosis					October	124
					November	-
JD			4	0	December	-
TB			4	0	January	-
IBR			-	-	February	-
Mastitis			-	-	March	-
LSD			-	-		-

9.7. Female Conception Rate During the Period January to December 2023

AI No.→	**1st**			**2nd**			**3rd**			**4th & above**			**Over all**		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	12	5	41.67	5	3	60.00	1	0	0.00				18	8	44.44
Adults	31	12	38.71	20	6	30.00	14	2	14.29	15	8	53.33	80	28	35.00
Overall	**43**	**17**	**39.53**	**25**	**9**	**36.00**	**15**	**2**	**13.33**	**15**	**8**	**53.33**	**98**	**36**	**36.73**

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8 Quarter-wise conception rate

Quarter	No. of A I	Preg. animals	CR %
January – March	10	2	**20.00**
April - June	28	0	**0.00**
July - September	27	10	**37.04**
October- December	33	24	**72.73**
Overall	**98**	**36**	**36.73**

9.9. Bull-wise Conception Rate During the period January to December, 2023

Sr. No.	Bull No.	SET No.	Total Number of AI	Total Conceived	CR%
1.	1948	1	6	2	33.33
2.	1950	2	14	2	14.29
3.	1952	2	4	1	25.00
4.	1955	3	7	1	14.29
5.	1956	3	3	2	66.67
6.	1961	3	4	0	0.00
7.	1963	4	12	4	33.33
8.	1968	4	4	2	50.00
9.	1976	5	2	2	100.00
10.	1977	5	3	3	100.00
11.	4299	6	14	4	28.57
12.	4302	6	7	5	71.43
13.	4548	8	2	1	50.00
14.	4712	10	5	2	40.00
15.	4728	10	1	1	100.00
16.	4764	10	1	0	0.00
17.	4765	10	4	3	75.00
18.	4768	10	1	0	0.00
19.	4772	10	4	1	25.00
Over all			**98**	**36**	**36.73**
No. of services per conception					**2.72**

9.10Bull Wise Semen Stock

Set No	Bull No	OB	Doses produced / received	Consumption for AI/supplied					Balance
				Inst herd	Field unit	NPBI centres	Sold	Total supply	
I	1948	161		12		0	0	12	149
I	1949	2				0	0	0	2
II	1950	221		28		0	0	28	193
II	1951	15				0	0	0	15
II	1952	151		8		0	0	8	143
II	1953	95				0	0	0	95
III	1955	447		14		0	0	14	433
III	1956	536		6		0	0	6	530
III	1957	876				0	0	0	876
III	1958	163				0	0	0	163
III	1959	0				0	0	0	0
III	1961	389		8		0	0	8	381
IV	1962	85				0	0	0	85

IV	1963	866		24		0	0	24	842
IV	1964	498				0	0	0	498
IV	1965	350				0	0	0	350
IV	1966	1088				0	0	0	1088
IV	1967	2373				0	0	0	2373
IV	1968	1546		8		0	0	8	1538
IV	1969	1630				0	0	0	1630
IV	1970	5				0	0	0	5
V	1971	1111				0	0	0	1111
V	1972	573				0	0	0	573
V	1973	1451				0	0	0	1451
V	1974	1137				0	0	0	1137
V	1975	741				0	0	0	741
V	1976	1346		4		0	0	4	1342
V	1977	1877		6		0	0	6	1871
V	1978	70				0	0	0	70
VI	4203	268				0	0	0	268
VI	4229	3627				0	0	0	3627
VI	4264	2281				0	0	0	2281
VI	4299	5693		28		0	0	28	5665
VI	4302	174		14		0	0	14	160
VI	4321	124				0	0	0	124
VI	4323	99				0	0	0	99
VI	25	248				0	0	0	248
VI	8	565				0	0	0	565
VII	4373	1746				0	0	0	1746
VII	4403	3063				0	0	0	3063
VII	4392	1996				0	0	0	1996
VII	4429	2391				0	0	0	2391
VII	4413	1164				0	0	0	1164
VII	4458	123				0	0	0	123
VIII	4464	1525				0	0	0	1525
VIII	4529	1946				0	0	0	1946
VIII	4542	2832				0	0	0	2832
VIII	4548	1512		4		0	0	4	1508
VIII	4567	1758				0	0	0	1758
VIII	4578	2275				0	0	0	2275
IX	4611	5343			220	0	0	220	5123
IX	4612	1044			805	0	0	805	239
IX	4633	7544			615	0	0	615	6929
IX	4647	2605				0	0	0	2605
IX	4648	9259			120	0	0	120	9139
X	**4712**	2643	909	10		0	0	10	3542
X	**4728**	2887	680	2		0	0	2	3565
X	**4764**	662	1799	2		0	0	2	2459
X	**4765**	0	1191	8		0	0	8	1183
X	**4768**	0	1216	2		0	0	2	1214
X	**4772**	384	1788	8		0	0	8	2164
Total		**87584**	**7583**	**196**	**1760**	**0**	**0**	**1956**	**93211**

9.11 Average Body weight (kg) since inception

Year	N	Birth	N	3 Months	N	6 Months	N	12 Months	N	18 Months	N	24 Months	N	At AFC
Female														
2001-02	14	26.86±1.04	9	62.44±3.88		-		-		-		-		-
2002-03	16	27.78±0.77	13	60.23±2.84	13	99.54±2.99	6	183.33±7.69	1	244.00±NE		-		-
2003-04	11	27.73±1.39	12	58.62±2.03	13	89.88±3.22	12	160.08±5.26	9	232.50±8.88	8	277.29±8.34		-
2004-05	20	27.82±0.75	18	60.85±1.90	26	89.07±3.60	24	165.37±3.06	16	237.75±5.93	8	299.12±9.43	9	405.33±8.08
2005-06	25	27.88±0.64	19	54.80±1.33	17	85.43±2.15	16	129.40±4.08	14	191.45±3.33	16	224.25±4.62	16	415.71±14.98
2006-07	25	28.52±0.54	24	55.00±0.77	24	76.10±1.50	16	119.55±1.61	13	166.14±1.93	14	217.13±3.21		426.57±7.68
2007-08	19	28.89±0.72	14	58.71±2.41	19	83.68±2.74	14	116.43±4.77	13	159.77±2.57	15	208.40±4.35	15	430.47±10.81
2008-09	18	28.56±0.37	15	59.80±1.85	13	84.77±3.62	14	120.64±6.25	12	162.58±4.15	14	210.21±4.17	12	435.83±6.41
2009-10	14	27.71±0.58	16	60.09±3.11	19	85.25±4.54	12	131.50±5.32	13	181.91±4.82	15	209.43±3.83	5	434.23±8.12
2010-11	12	27.54±0.76	12	59.84±3.45	9	72.91±3.96	10	109.09±4.58	11	163.19±5.09	13	205.43±4.16	4	427.67±9.15
2011-12	11	26.84±0.86	11	58.46±2.45	15	74.45±4.23	8	108.37±5.37	9	162.82±7.34	10	208.64±4.64	5	426.54±14.21
2012-13	12	26.80±0.82	16	59.45±2.47	22	75.95±4.25	10	110.40±5.32	8	165.50±7.30	10	212.65±4.75	4	429.50±14.40
2013-14	12	24.13±0.30	5	60.34±2.46	8	77.13±6.26	8	100.67±1.70	6	161.72±12.81	5	209.63±16.76	4	462.50±23.58
2014-15	16	21.66±0.64	11	49.41±2.33	8	64.13±3.44	4	106.5±13.92	2	214.00±4.71	5	239.25±7.27	12	440.75±15.24
2015-16	9	22.80±0.35	5	54.50±1.43	4	70.50±2.68	10	101.50±2.11	6	161.25±11.22	4	217.00±6.05	11	413.90±11.74
2016-17	15	25.20±0.31	6	59.67±1.66	3	73.00±1.89	6	104.67±2.04	8	177.50±8.23	8	214.00±3.58	32	426.47±7.90
2017-18	20	25.21±0.74	8	52.38±3.08	13	73.46±1.71	11	106.55±5.12	6	164.33±2.65	7	193.14±25.42	2	410.50±2.50
2018-19	18	24.43±0.50	11	55.45±1.55	10	70.10±3.37	9	109.56±2.72	15	153.67±3.87	8	197.25±7.64	-	
2019-20	11	24.55±0.37	7	52.04±1.91	10	67.79±1.70	10	115.37±4.88	10	169.14±4.32	12	214.73±4.06	5	443.20±17.36
2020-21	15	23.45±0.33	12	55.29±1.46	7	71.71±2.84	5	119.50±4.82	7	170.36±4.83	11	202.32±3.20	-	-
2021-22	19	25.43±0.15	20	52.94±1.11	11	71.72±1.38	12	119.12±2.85	7	171.82±4.36	12	206.27±3.83	8	325.75±7.67
2022-23	5	25.04±0.55	12	42.94±1.02	4	60.85±7.97	5	114.27±3.77	5	166.20±3.58	16	201.63±24.26	1	330.00
2023-24	**10**	**23.92±0.33**	**9**	**40.01±2.68**	**12**	**49.33±2.68**	**22**	**68.15±3.06**	**6**	**119.17±3.59**	**4**	**195.75±3.59**	**3**	**307.67±6.49**
Male														
2001-02	14	28.71±1.15	12	65.17±3.14	5	99.80±1.74		-		-		-		-
2002-03	11	30.18±3.57	7	63.43±5.66	8	100.38±2.34	8	164.60±3.04	4	239.75±14.92		-		-
2003-04	12	28.21±0.91	13	59.46±3.61	5	88.80±5.16	2	168.00±7.80	3	241.00±7.65	11	338.91±16.86	8	417.62±8.23
2004-05	23	27.76±0.76	17	58.39±1.70	22	90.96±1.87	14	165.33±9.56	6	239.50±7.50	9	335.31±14.21	7	479.25±75.65
2005-06	20	29.45±0.85	15	60.21±2.27	20	86.62±3.49	7	121.71±10.04	4	179.67±21.26	2	260.5±16.5	8	440.0±29.67
2006-07	13	29.85±0.80	14	55.54±1.20	14	83.73±2.10	11	116.40±0.82	9	169.13±10.09	5	214.40±15.86		440.0 29.67
2007-08	19	29.58±0.62	14	60.23±2.30	11	86.00±5.79	12	112.75±6.25	10	171.20±8.86	5	221.20±18.04	8	444.75±6.58
2008-09	18	29.33±0.45	17	61.47±1.80	12	89.42±2.64	12	118.50±5.27	12	176.36±3.90	7	225.71± 6.57	8	441.38±11.54
2009-10	9	27.85±0.57	9	65.86±3.39	17	91.50±4.07	10	132.50±16.6	12	183.88±8.01	5	226.74±9.34	10	439.41±16.48
2010-11	19	28.03±0.54	19	76.71±3.17	17	69.92±3.36	25	109.70±14.86	23	166.28± 6.54	21	214.49±10.91	12	436.37±17.69
2011-12	24	28.37±1.02	23	61.87±4.72	19	79.43±3.66	14	124.97±5.72	14	164.64±445	12	224.54±14.75	9	438.64±31.42
2012-13	26	28.55±1.05	28	62.80±4.75	31	80.35±3.65	22	125.45±5.25	10	170.5±4.50	8	225.75±14.80	8	445.74±31.38
2013-14	13	24.31±0.49	11	60.74±3.36	10	76.00±12.96	7	107.33±10.35	10	166.54±10.35	9	215.59±14.21	10	455.80±65.67
2014-15	19	22.38±0.65	10	52.3±2.28	8	67.81±4.70	5	153.5±14.24	2	184.00±2.83	5	224.5±10.76	10	452.60±28.64
2015-16	12	22.96±0.39	2	51.00±2.12	4	75.25±3.71	6	118.42±2.25	4	181.25±5.69	4	226.25±7.28	9	411.44±22.37
2016-17	12	25.08±0.47	4	62.50±1.03	3	91.33±5.46	5	126.40±1.51	8	202.13±5.31	5	227.60±5.14	6	446.33±20.43
2017-18	10	26.21±1.32	6	53.83±5.62	1	66.00±0.00	2	106.00±3.00	5	150.40±10.99	5	214.00±4.29	-	-
2018-19	14	24.81±0.74	10	56.60±1.65	15	70.33±1.62	4	105.00±4.95	4	158.50±4.41	2	207.50±1.50	-	-
2019-20	24	25.30±0.29	12	51.02±1.50	10	67.79±1.70	12	115.83±2.89	9	164.81±3.72	6	207.45±3.02	-	-
2020-21	16	24.31±0.24	18	53.83±1.29	4	71.75±2.69	14	119.04±2.78	7	169.07±6.86	11	205.00±4.40	-	-
2021-22	17	24.35±0.37	15	55.44±1.17	7	71.34±2.84	7	120.20±3.27	9	171.82±4.36	13	203.60±2.58		
2022-23	17	24.80±0.25	22	41.04±1.64	17	59.65±3.43	4	116.18±10.85	4	134.25±5.12	11	170.09±4.75		
2023-24	**14**	**23.70±0.26**	**9**	**32.29±1.83**	**19**	**49.81±2.12**	**28**	**91.45±6.10**	**19**	**122.34±4.91**	**4**	**145.30±12.66**	**2**	**351.00±21.00**

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	N	TLMY (kg)	Lact Length (days)	SLMY (kg)	Peak Yield (kg)
1st	3	1396.20 ± 143.27	357.00 ± 35.23	1293.74 ± 89.64	6.94 ± 0.65
2nd	3	1625.77 ± 185.72	369.75 ± 36.03	1482.12 ± 158.92	8.70 ± 0.97
3rd	4	1545.35 ± 169.21	393.50 ± 57.5	1354.90 ± 124.54	8.40 ± 0.53
4th	1	1547.15 ± 246.38	374.50 ± 62.66	1388.50 ± 181.93	8.18 ± 0.60
5th & above	8	1636.83 ± 119.48	344.67 ± 26.20	1428.05 ± 88.30	7.87 ± 0.21
Overall	19	1589.02 ± 57.84	364.37 ± 9.61	1433.03 ± 46.59	8.18 ± 1.17

9.12.1 Average production performance of Buffaloes since Inception of Network

Year	**N**	**Av. Lact. Yield (kg)**	**Av. Lact. Length (days)**	**305 day Milk Yield (kg)**	**Av. Peak yield**
2001-02	16	1687.42±110.73	315.00±20.88	1606.00±95.38	9.08±0.40
2002-03	28	1859.21±70.84	304.68±11.87	1792.70±62.60	10.23±0.17
2003-04	34	1653.11±42.43	278.10±5.80	1645.78±41.11	10.59±0.18
2004-05	36	1661.63±49.10	299.10±7.87	1633.26±39.73	11.13±0.23
2005-06	34	1721.07±72.95	292.32±9.97	1667.20±62.32	11.32±0.27
2006-07	41	1684.73±52.55	293.03±5.24	1661.06 ±50.04	10.89±0.31
2007-08	32	1726.25±72.56	303.53±8.26	1649.06 ±45.70	11.17±0.21
2008-09	35	1598.69±51.34	337.62±7.81	1491.37 ±44.77	9.75±0.24
2009-10	30	1600.89±64.93	328.28±16.09	1551.11±49.56	9.69±0.38
2010-11	16	1433.91±72.22	319.00±17.74	1348.87±72.00	9.0±0.28
2011-12	21	1428.65±45.49	318.76±9.91	1386.12±47.16	8.82±0.22
2012-13	27	1432.7±50.59	296.48±9.01	1390.57±41.29	9.70±0.21
2013-14	24	1526.74±49.26	294.30±9.79	1480.64±38.21	9.58±0.18
2014-15	41	1493.40±53.85	294.00±7.69	1443.99±60.65	9.71±0.25
2015-16	20	1623.90±77.97	344.85±15.06	1477.38±58.40	8.78±0.33
2016-17	23	1670.73±80.06	309.96±11.28	1582.82±68.74	9.68±0.29
2017-18	23	1617.70±72.01	282.81±11.02	1586.06±72.01	9.75±0.24
2018-19	22	1649.38±85.81	313.32±15.74	1565.95±64.94	9.60±0.29
2019-20	25	1604.18±117.29	291.65±17.89	1558.62±103.17	9.49±0.49
2020-21	24	1633.00±55.51	327.46±14.12	1557.53±41.34	9.56±0.31
2021-22	32	1662.62±54.61	335.28±12.35	1557.38±40.83	9.86±0.26
2022-23	24	1591.53±67.56	355.79±18.66	1463.00±58.54	8.23±0.37
2023-24	**19**	**1589.02 ± 57.84**	**364.37 ± 9.61**	**1433.03 ± 46.59**	**8.18 ± 1.17**

9.12.2 Herd Life Production (up to 4th Lactation) during 2022-23

Ani. No.	DOB	Date of completion of 4th or more lact. or disposal	HLF (days) up to 4th or more lactation or disposal (d)	LTMY (kg)	Productive Days	Unproductive Days	MY/ day HLF
4482	01-12-2008	22-08-2023	5377	15417.20	2601	1021	2.87
4494	10-04-2009	30-11-2023	5347	11431.60	2384	1217	2.14
4501	02-08-2009	02-11-2023	5205	14410.20	2782	851	2.77
4513	25-09-2009	03-05-2023	4968	8406.40	1817	1372	1.69
4537	22-08-2010	13-10-2021	4070	10935.70	2005	693	2.69
4582	29-09-2011	03-05-2023	4234	9587.10	1681	1121	2.26
4600	28-08-2012	29-11-2022	3745	5921.80	1158	427	1.58
4616	25-10-2012	21-11-2021	3314	5841.80	1129	445	1.76
4625	24-12-2012	21-11-2023	3984	9578.50	1944	713	2.40
4659	07-02-2014	21-11-2023	3574	5021.80	1220	725	1.41
4676	11-08-2014	22-03-2024	3511	4783.70	1096	607	1.36
4700	31-08-2015	26-03-2024	3130	4304.70	1090	578	1.38

Note: HLF (Herd Life- Date of birth to date of completion of 4th or more lact. or date of disposal), Productive Days (date of first calving to total days in milk), Unproductive days (total days when buffalo not give milk from the date of first calving)

9.13 Average Milk Composition from April 2023 to March 2024

Month	N	Fat	SNF	Protein	Lactose	SCC
April 23	20	6.47	-	-	-	-
May	22	7.00	-	-	-	-
June	-	-	-	-	-	-
July	21	7.06	9.94	-	-	-
August	21	6.56	10.18	4.14	4.99	-
September	29	6.52	10.21	3.89	5.00	-
October	25	6.59	-	-	-	-
November	24	6.57	10.64	4.04	4.98	-
December	-	-	-	-	-	-
January 24	-	-	-	-	-	-
February	-	-	-	-	-	-
March	14	8.24	13.20	4.21	5.30	-
Overall	**176**	**6.83**	**10.83**	**4.04**	**5.07**	**-**

9.14: Reproductive Performance

Parity	AFC (Months) (N)	SP (Days)	DP (Days)	CI (Days)
1	59.48±4.83 (3)			
2		113.00 (1)	263.00±62.00 (2)	649.00±26.00 (2)
3		117.14±29.24 (3)	244.20±88.54 (3)	549.21±56.24 (3)
4		109.60±8.93(5)	181.00±60.23 (6)	403.50±47.92 (6)
5th& above		175.00±5.03 (3)	181.75±60.33 (5)	448.11±34.03 (5)
Over all	**59.48±4.83 (3)**	**129.09±10.92 (12)**	**203.54±19.81 (16)**	**483.50±32.87 (16)**

9.14.1 Reproduction Performance Since inception of Network.

Years	AFC (Days/ Months)	AFC months	Service Period (days)	Dry Period (days)	Calving Interval (days)
2001-02	-	-	243.92±42.12	250.08±23.75	556.17±24.96
2002-03	-	-	195.00±22.93	204.45±25.71	489.95±24.01
2003-04	1517.34±50.82	49.75	146.13±14.32	177.35±12.01	454.71±14.45
2004-05	1370.64±86.23	44.94	153.55±11.10	179.37±9.84	462.79±11.33
2005-06	1366.23±31.93	44.79	145.87±18.50	171.83±16.20	451.63±18.03
2006-07	1367.69±29.27	44.84	148.68±13.13	163.32±11.69	450.27±14.29
2007-08	1431.62±22.36	46.94	150.57±13.02	162.03±23.45	456.11±11.48
2008-09	1565.62±41.18	51.33	118.27±16.96	172.88±15.90	480.25±16.10
2009-10	1489.18±29.65	48.83	203.10±22.39	169.57±11.58	453.30±16.06
2010-11	1391.67±88.97 (8)	45.63	108.68±19.01 (34)	193.57±9.64 (30)	503.24±22.75 (30)
2011-12	1461.00±98.49 (5)	47.90	97.11±5.15 (18)	141.19±1.18 (23)	425.90±33.77 (23)
2012-13	1448.00±69.58 (8)	47.47	108.6±14.82 (17)	164.08±1.72 (26)	441.73±22.99 (26)
2013-14	45.47±2.62 (8)	45.47	119.63±1.84 (25)	135.60±7.83 (16)	401.06±11.50 (16)
2014-15	47.01±2.49 (10)	47.01	162.28±8.74 (18)	177.2±35.07 (10)	445.9±33.71 (10)
2015-16	46.29 (1)	46.29	169.29±7.39 (19)	192.47±9.78 (19)	483.74±21.03 (19)
2016-17	46.21±1.11 (4)	46.21	141.07±5.25 (33)	222.75±3.27 (23)	482.63±32.26 (23)
2017-18	50.97±6.08 (2)	50.97	82.94±5.80 (30)	193.3±13.47 (31)	456.44±21.45 (31)
2018-19	42.41±2.71 (7)	42.41	91.60±4.64 (30)	181.62±18.46 (26)	423.69±16.31 (26)
2019-20	45.29±4.66 (8)	45.29	109.77±8.86 (27)	159.38±15.81 (29)	417.43±13.06 (31)
2020-21	46.07±4.10 (4)	46.07	145.26±11.13 (29)	154.83±8.93 (28)	431.92±9.90 (28)
2021-22	50.86±2.11 (10)	50.86	124.41±11.20 (27)	151.71±11.10 (26)	431.71±18.30 (26)
2022-23	53.89±7.65 (4)	53.89	143.14±13.66 (30)	153.16±9.08 (29)	441.42±18.91 (29)
2023-24	**59.48±4.83 (3)**	**59.84**	**129.09±10.92 (12)**	**203.54±19.81(16)**	**483.50±32.87 (16)**

9.15 Milk Production and Disposal

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April 23	2946.1	2598.1	348	0
May	2330	2152.9	174	1.2
June	2311	2145.6	150	1.5
July	2595.4	2410.8	180	2
August	2816.8	2386	396	1.5
September	3473.7	2438.4	979.5	2.5
October	3785	2802.5	973.5	1.5
November	3121.4	2385.6	723	1.5
December	2855.6	2413.1	441	1.5
January 24	2445.3	2264.9	180	0
February	2142.4	2001.4	141	0
March	1823.2	1822.2	0	1
Total	**32645.90**	**27821.50**	**4686.00**	**14.20**

9.16 Feed and fodder (Quintals) availability

Quarter	Type of fodder /feed	Qty produced at farm	Qty. Purchased	Actually fed	Balance (Qt)
I (April - June)	Green	-	72.6	72.6	-
	Dry	-	1991.0	512.5	1478.5
	Silage	-	-	-	-
	Concentrate	-	210.0	220.0	-10.0
II (July - September)	Green	-	25.9	25.9	-
	Dry	-	-	500.0	-500.0
	Silage	-	-	-	-
	Concentrate	-	607.0	329.2	277.9
III (October – Dec.)	Green	-	19.2	19.2	-
	Dry	-	-	480.0	-480.0
	Silage	-	-	-	-
	Concentrate	-	121.2	329.9	-208.7
IV (January - March)	Green	225.4	-	225.4	-
	Dry	-	-	502.0	-502.0
	Silage	-	-	-	-
	Concentrate	-	-	33.2	-33.2
TOTAL	**Green**	**225.4**	**117.7**	**343.1**	**-**
	Dry	**-**	**1991.0**	**1994.5**	**-3.5**
	Silage	**-**	-	-	-
	Concentrate	**-**	**938.2**	**912.2**	**26.0**

9.17: Milk performance during April 2023 to March 2024

Month	**Buffaloes in milk**	**Buffaloes dry**	**Total**	**% in milk**	**Wt. Avg.(kg)**	**Herd Avg.(kg)**
April 23	762	514	1276	59.72	3.87	2.31
May	657	661	1318	49.85	3.55	1.77
June	647	600	1247	51.88	3.57	1.85
July	710	580	1290	55.04	3.66	2.01
August	735	408	1143	64.30	3.83	2.46
September	881	232	1113	79.16	3.94	3.12
October	892	278	1170	76.24	4.24	3.24
November	732	406	1138	64.32	4.26	2.74
December	648	552	1200	54.00	4.41	2.38

January 24	616	582	1198	51.42	3.97	2.04
February	489	603	1092	44.78	4.38	1.96
March	480	729	1209	39.70	3.80	1.51
Overall	**8249**	**6145**	**14394**	**57.31**	**3.96**	**2.27**

9.17.1 Milking performance since inception

Year	No. of Animal in Milk	No. of Animal dry	Total Animal	% in Milk	Wet Av. (kg)	Herd Av. (kg)
2001-02	4298	6652	10950	39.25	6.92	2.72
2002-03	7946	4190	12136	65.47	5.9	3.86
2003-04	10560	4946	15506	68.1	5.99	4.08
2004-05	8731	4717	13448	64.92	6.19	4.02
2005-06	12536	7623	20159	61.69	5.66	3.49
2006-07	12299	8306	20605	59.69	5.64	3.37
2007-08	10057	7717	17774	56.58	5.7	3.23
2008-09	8975	7124	16099	55.75	5.48	3.06
2009-10	10119	7668	17787	56.55	4.27	2.42.
2010-11	9072	6836	15908	58.39	4.48	2.73
2011-12	8501	5212	13713	63.29	4.66	3.02
2012-13	8281	4412	12693	65.24	5.15	3.36
2013-14	8181	4701	12882	63.51	5.11	3.25
2014-15	10214	4639	14853	68.77	4.69	3.22
2015-16	6422 (21)	6986 (16)	13408 (39)	47.9	5.13	2.43
2016-17	7057 (25)	5936 (13)	12993 (38)	54.31	5.22	2.83
2017-18	8138 (48)	4784 (42)	12922 (39)	62.98	5.55	3.43
2018-19	8771 (55)	5046 (33)	13817 (41)	63.48	5.38	3.42
2019-20	8750 (63)	5183	13933	62.80	5.11	3.21
2020-21	8347 (68)	6187 (29)	14534 (45)	57.43	5.14	2.95
2021-22	9147 (73)	6503 (32)	15650 (61)	58.45	5.20	3.04
2022-23	9297 (60)	6472 (24)	15769 (48)	58.96	4.05	2.39
2023-24	**8249 (46)**	**6145 (44)**	**14394 (47)**	**57.31**	**3.96**	**2.27**

9.18: Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
1948	1	2	1	1
1950	2	-	-	1
1952	2	-	-	1
1955	3	2	-	-
1956	3	-	-	-
1961	3	-	-	-
1963	4	-	-	-
1968	4	3	1	-
4203	6	-	-	-
4321	6	-	-	-
4413	7	-	-	-
4464	8	-	-	-
4497	7	-	-	-
4529	8	-	1	-
4548	8	1	-	-
4567	8	-	-	-
4578	8	-	-	-
Total		**8**	**3**	**3**

9.19 Bull wise daughters completing 1st lactation

S. No.	Bull No.	Daughters number	Date of birth	Date of calving	AFC (months)	Lactation length day	TLMY (kg)	SLMY (kg)
1	1948	4742	11-03-2017	27-01-2023	70.43	255	905.5	905.5
2	1950	4762	04-10-2017	24-11-2022	61.54	341	1174.3	1112.7
3	1952	4754	16-08-2017	20-02-2023	66.03	373	1396.2	1209.4

9.19.1 Bull wise daughters completing 1st lactation (since inception)

S. No.	Bull No.	Daughters number	Date of birth	Date of calving	AFC (months)	Lactation lengt	TLMY (kg)	SLMY (kg)
1	1950	4762	04-10-17	24-11-22	61.54	341	1174.3	1112.7
2	1952	4754	16-08-17	20-02-23	66.03	373	1396.2	1209.4
3	4392	B-1803	25-07-15	25-11-22	87.87	305	-	1596.1
	4392	B-1880	02-01-17	02-01-23	71.84	305	-	2109.8
4	4413	A-1313	16-09-16	17-02-22	64.92	305	-	1666.5
	4413	B-1827	08-10-15	25-12-22	86.39	305	-	1665.7
5	4429	C-1469	20-01-17	15-11-22	69.67	305	-	1269.2
6	4458	B-1831	08-12-15	20-03-23	87.18	246	-	1487.9
	4458	D-811	29-08-16	04-02-22	65.08	305	-	1603.8
	4458	D-813	20-10-16	01-03-22	64.20	305	-	1309.5
	4458	H-154	12-10-16	19-01-22	63.11	298	-	1489.9
7	4464	B-1899	23-07-17	15-12-22	64.62	132	-	844.0
	4464	B-1901	04-09-17	11-02-22	53.15	305	-	2104.2
	4464	C-1544	02-01-20	04-04-23	38.95	305	-	1427.9
	4464	C-1546	22-02-20	05-04-23	37.31	305	-	1396.6
8	4529	4776	19-07-18	28-05-22	46.20	10	-	0.0
	4529	B-1923	05-12-17	02-12-22	59.77	305	-	2033.4
	4529	B-1930	06-01-18	12-04-23	63.02	305	-	1364.2
	4529	C-1496	02-01-18	08-08-22	55.05	305	-	1600.7
	4529	D-881	15-07-20	09-05-23	33.70	305	-	1386.7
	4529	H-178	14-08-17	03-02-23	65.54	305	-	1809.1
	4529	H-198	10-05-18	28-01-23	56.52	260	-	1125.9
	4529	H-221	01-09-18	08-01-23	52.13	305	-	1406.0
9	4542	A-1404	21-09-18	22-10-22	48.92	305	-	1818.4
	4542	A-1435	20-04-19	16-08-22	39.80	305	-	1457.1
	4542	B-1908	21-09-17	02-02-23	64.26	305	-	1893.5
	4542	C-1483	23-09-17	13-07-22	57.51	300	-	1488.5
	4542	H-234	18-12-18	10-01-23	48.66	305	-	1633.2
	4542	H-270	17-11-19	25-01-23	38.20	294	-	1165.1
10	4548	A-1399	10-09-18	14-09-22	48.03	305	-	1375.5
	4548	B-1967	18-11-18	17-01-23	49.87	305	-	1696.7
	4548	C-1510	16-09-18	10-11-22	49.70	112	-	583.0
	4548	C-1511	19-09-18	12-12-22	50.66	247	-	1090.9
	4548	H-250	10-08-19	14-04-23	44.03	305	-	1562.1
	4548	H-251	19-08-19	05-08-22	35.48	305	-	1439.4
	4548	H-252	23-08-19	10-04-23	43.48	305	-	1472.6
	4548	H-263	03-10-19	23-08-22	34.59	305	-	1563.7
11	4567	A-1370	08-10-17	10-05-22	54.92	305	-	1467.6
	4567	A-1412	15-10-18	02-07-22	44.46	305	-	1347.2
	4567	A-1421	16-11-18	17-01-23	49.93	305	-	1369.4
	4567	B-1918	07-11-17	20-12-22	61.28	165	-	899.0
	4567	C-1487	18-10-17	01-12-22	61.31	305	-	1670.1
	4567	C-1502	14-05-18	02-05-23	59.48	305	-	1613.1
	4567	H-230	06-01-18	07-10-22	56.89	305	-	1477.7
	4567	H-231	10-11-18	20-01-23	50.23	112	-	399.5
	4567	H-247	19-07-19	25-12-22	41.15	305	-	1598.7
	4567	H-256	02-09-19	12-12-22	39.25	78	-	324.6
12	4578	B-1889	02-04-17	01-01-22	56.89	305	-	2191.7
	4578	B-2061	11-06-20	06-04-23	33.74	305	-	1422.3
	4578	C-1500	26-04-18	09-11-22	54.36	305	-	1606.1
	4578	C-1504	15-07-18	17-08-22	48.98	288	-	1536.4

9.20 Breeding bulls Selected for current set (X Set)

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best SLMY
1	4712	31-10-2015	4446	1950	2091.6
2	4728	09-09-2016	4430	1948	1742.6
3	4764	06-10-2017	4613	1955	1628.0
4	4765	11-10-2017	4520	1963	2061.4
5	4768	25-10-2017	4405	1955	1856.5
6	4772	23-11-2017	4482	1950	2070.8

9.20.1 PT Bulls for nominated mating

Bull No.	Set No.	Centre	Dams' Best 305 day milk yield	Sire Index	Breeding Value	% Superiority
4299	6	Livestock Research Station, Vallabhnagar	1869.7	2	1578.87	2.51
4302	6		1866.6	1	1627.65	9.22
4392	7		1800.5	1	1658.98	6.48
4429	7		1790.5	2	1629.98	5.44

9.20.2 List of Future breeding bulls (proposed for XI Set and XII Set)

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Exp. predicted Difference (EPD)
1.	4872	28-12-2020	4482	1950	145.76
2.	4942	16-10-2022	4880	1950	94.42
3.	4839	22-12-2019	4520	1963	88.01
4.	4829	14-10-2019	4537	1955	73.86
5.	4868	21-12-2020	4537	1955	73.86
6.	4918	07-02-2022	4537	1955	73.86
7.	4791	05-09-2018	4672	4567	62.63
8.	4895	17-07-2021	4672	1961	62.63
9.	4863	26-11-2020	4600	1950	51.96
10.	4921	01-03-2022	4600	1950	51.96

9.21 Target achieved during the year

Trait	Target	2019-20	2020-21	2021-22	2022-23	2023-24
Av. Age at first calving (months)	40	45.29±4.66 (8)	46.07±4.10 (4)	50.86±2.11 (10)	53.89±7.65 (4)	59.48±4.83 (3)
Av. Service period (days)	130	110±8.86 (27)	145 ±11.13 (29)	124 ±11.20 (27)	143 ±13.66 (30)	129 ±10.92 (12)
Calf mortality (0-3 months)	≤ 5 %	31.58	2.5 %	24.5 %	15.00 %	16.67 %
Wet average (kg)	≥6.5 kg	5.11	5.14	5.20	4.05	3.96 Kg
Herd average (kg)	≥4.5 kg	3.21	2.95	3.04	2.39	2.27 Kg

10. Salient Research Achievements:

Six Set of bulls **complete**ly evaluated with 13688 doses of Proven Surti Bulls. Test mating from IX set completed. Test mating of X set underway. Training of bulls for XI set started.

11. Publications:

12. Socioeconomic impact / Success stories:

The supply of high pedigreed test bulls as well as semen of test bulls and progeny tested bulls has helped in improving the scenario of Dairy Farming in the region. Farmers of the region are showing interest towards buffalo rearing for milk production as evident from positive growth rate of buffaloes in comparison to cattle in addition; Buffalo contributed more than 90% of total income from livestock, indicating importance of buffalo in socio economy of farmers in region.

13. Constraints if any: For strengthening of field testing programme:

- Recurring contingency is short to meet out the increased cost of feed and fodder, labour, medicine and liquid nitrogen.
- Training programmes may be organized for the buffalo keepers with the provision of sufficient fund for the same.
- Provision for 6 posts of inseminators on fixed wages of Rs. 8000 pm. (Rs.5.76 Lacs/year)
- Atleast Rs 6.0 lacs for incentives to the registered farmers in terms of vaccination, deworming, mineral mixture supply and organizing treatment camps and events.
- Provision of 2 motorcycles for efficient supervision of field unit centers costing Rs. 2.0 lacs

14. Focus of work in the coming year

Field unit

- Strengthen progeny testing programme in the field.
- Identify elite buffaloes in farmers herd for nominated mating.
- Treatment camps and animal competition will be organised at all the field centres to get better cooperation of farmers.
- Procure male calves born from nominated mating at farmers herd.
- Survey of socio-economic parameters of registered farmers will be under taken seasonally.
- Increasing the foot-print of the project by opening new centers.

Institutional herd

- Preserve required number of doses of **X set** of bulls.
- To preserve doses of XI set of bulls
- Efforts will be made to further increase reproductive and productive efficiency of herd.

Field Unit, Surti (RAJUVAS)

F 1. Herd Strength of Registered Females at Field Unit Centers during 4/2023 to 3/2024

Center	Opening balance	Addition			Deduction			Closing balance
		Birth	Purchased	New Reg.	Sold	Death	Reg. Cancelled	
Menar	562	35	3	0	38	15	0	547
Rundera	461	67	5	0	47	10	0	476
Navania	661	35	12	0	42	12	0	654
Tarawat	383	20	2	0	10	8	0	387
Dhamania	690	53	5	0	35	10	0	703
Total	**2757**	**210**	**27**	**0**	**172**	**55**	**0**	**2767**

F 2. Status of Breedable Females at Different Field Unit Centers during 4/2023 to 3/24

Center	Heifers >3 years		Buffalo Non-Pregnant		Buffalo Pregnant	
	Total	Pregnant	In milk	Dry	In milk	Dry
Menar	115	32	130	35	20	55
Rundera	105	51	115	18	42	90
Navania	75	40	110	12	40	23
Tarawat	55	25	105	20	25	45
Dhamania	125	62	115	22	65	107
Total	**475**	**210**	**575**	**107**	**192**	**320**

F 3. Monthly AI (Center-wise) at Different Field Unit Centers during 4/2023 to 3/2024

Month	**Centre**					**Total**
	Menar	**Rundera**	**Navania**	**Tarawat**	**Dhamania**	
Apr-23	17	3	5	5	8	**38**
May-23	12	8	10	4	11	**45**
Jun-23	18	11	20	3	16	**68**
Jul-23	14	35	21	10	10	**90**
Aug-23	40	44	50	10	29	**173**
Sep-23	60	38	59	24	48	**229**
Oct-23	59	30	49	19	34	**191**
Nov-23	26	45	30	15	32	**148**
Dec-23	53	52	39	8	35	**187**
Jan-24	53	68	45	5	33	**204**
Feb-24	31	62	19	5	25	**142**
Mar-24	33	32	19	6	29	**119**
Total	**416**	**428**	**366**	**114**	**310**	**1634**

F 4. Bull-wise AI at Different Field Unit Centers during the Period 4/2023 to 3/2024

Month	**Bull No.**				
	4611	**4612**	**4633**	**4648**	**Total**
Apr-23	3	13	0	22	**38**
May-23	19	10	0	16	**45**
Jun-23	45	20	0	3	**68**
Jul-23	49	41	0	0	**90**
Aug-23	30	143	0	0	**173**

Sep-23	184	45	0	0	**229**
Oct-23	19	172	0	0	**191**
Nov-23	15	107	26	0	**148**
Dec-23	4	84	99	0	**187**
Jan-24	37	36	131	0	**204**
Feb-24	45	22	50	25	**142**
Mar-24	55	0	52	12	**119**
Total	**505**	**693**	**358**	**78**	**1634**

F 5. Month-wise Conception at Field Unit Centres during 2023

Month	**Centre**					**Total**
	Menar	**Rundera**	**Navania**	**Tarawat**	**Dhamania**	
Apr-23	6	16	8	3	6	**39**
May-23	5	13	11	1	7	**37**
Jun-23	6	13	5	2	6	**32**
Jul-23	6	1	1	2	10	**20**
Aug-23	4	4	1	1	5	**15**
Sep-23	5	5	3	1	5	**19**
Oct-23	5	14	7	3	6	**35**
Nov-23	11	16	13	3	17	**60**
Dec-23	20	14	23	7	25	**89**
Jan-24	18	12	23	7	16	**76**
Feb-24	7	23	15	5	17	**67**
Mar-24	12	20	29	2	22	**85**
Total	**105**	**151**	**139**	**37**	**142**	**574**

F 6. Month-wise Calving at Different Field Unit Centres during the Period 4/2022 to 3/2023

Month	Centre										**Total**	
	Menar		Rundera		Navania		Tarawat		Dhamania			
	M	F	M	F	M	F	M	F	M	F	**M**	**F**
Apr-23	1	2	4	3	0	0	1	0	1	2	**7**	**7**
May-23	2	1	8	6	0	0	1	1	6	3	**17**	**11**
Jun-23	2	2	7	4	1	1	1	1	9	4	**20**	**12**
Jul-23	3	2	9	6	5	5	1	3	9	5	**27**	**21**
Aug-23	3	4	10	10	6	3	4	1	10	5	**33**	**23**
Sep-23	3	4	11	9	5	5	1	2	14	7	**34**	**27**
Oct-23	4	4	6	7	6	8	1	1	3	6	**20**	**26**
Nov-23	4	3	6	7	5	3	2	1	2	4	**19**	**18**
Dec-23	2	2	6	5	5	3	2	1	3	3	**18**	**14**
Jan-24	1	3	5	4	3	2	2	1	5	1	**16**	**11**
Feb-24	3	3	0	1	0	1	0	1	3	1	**6**	**7**
Mar-24	0	0	2	2	1	0	1	0	3	2	**7**	**4**
Total	**28**	**30**	**74**	**64**	**37**	**31**	**17**	**13**	**68**	**43**	**224**	**181**

F 7. Bull-wise Conception at Different Field Unit Centres during 2023

Month	Bull No.				Total
	4611	4612	4633	4648	
Jan-23	16	0	0	23	39
Feb-23	13	0	0	24	37
Mar-23	13	11	0	8	32
Apr-23	1	4	0	15	20
May-23	9	1	0	5	15
Jun-23	15	3	0	1	19
Jul-23	19	16	0	0	35
Aug-23	7	53	0	0	60
Sep-23	73	16	0	0	89
Oct-23	7	69	0	0	76
Nov-23	5	55	7	0	67
Dec-23	0	12	73	0	85
Total	**178**	**240**	**80**	**76**	**574**

F 8. Bull-wise Calving at Different Field Unit Centres during the period 4/2023 to 3/2024

Bull no	4611		4612		4647		4648		Total	
Month	M	F	M	F	M	F	M	F	M	F
Apr-23	0	0	6	5	0	0	1	2	**7**	**7**
May-23	0	0	14	9	1	1	2	1	**17**	**11**
Jun-23	0	0	17	9	1	1	2	2	**20**	**12**
Jul-23	10	6	5	5	0	2	12	8	**27**	**21**
Aug-23	20	9	3	4	0	0	10	10	**33**	**23**
Sep-23	20	14	3	4	0	0	11	9	**34**	**27**
Oct-23	10	17	0	0	0	0	10	9	**20**	**26**
Nov-23	6	7	0	0	0	0	13	11	**19**	**18**
Dec-23	6	5	0	0	0	0	12	9	**18**	**14**
Jan-24	5	4	7	1	0	0	4	6	**16**	**11**
Feb-24	0	1	3	2	0	0	3	4	**6**	**7**
Mar-24	5	4	1	0	0	0	1	0	**7**	**4**
Total	**82**	**67**	**59**	**39**	**2**	**4**	**81**	**71**	**224**	**181**

F 9. Bull-wise Live Female Progeny at Different Field Unit Centres (0-6M) as on 3/2024

Centre	Bull No.			Total
	4611	4612	4648	
Menar	-	3	13	**16**
Rundera	22	-	5	**27**
Navania	7	1	10	**18**
Tarawat	-	-	4	**4**
Dhamania	6	1	6	**13**
Total	**35**	**5**	**38**	**78**

F 10. Bull-wise Live Female Progeny at Different Field Unit Centres (6-12M) as on 3/2024

Centre	Bull No.				Total
	4611	4612	4647	4648	
Menar	-	6	-	5	**11**
Rundera	-	13	-	24	**37**
Navania	8	5	-	-	**13**
Tarawat	4	-	4	-	**8**
Dhamania	14	8	-	-	**22**
Total	**26**	**32**	**4**	**29**	**91**

F 11. Bull-wise Live Female Progeny at Different Field Unit Centres (1-3 yrs) as on 3/2024

Center	Bull No.												Total
	4464	4512	4529	4542	4548	4567	4578	4611	4612	4633	4647	4648	
Menar	-	-	5	5	-	7	-	3	3	5	9	3	**40**
Rundera	11	-	43	14	2	14	55	11	3	-	-	-	**153**
Navania	-	-	8	-	-	2	-	13	2	8	1	7	**41**
Tarawat	-	-	3	-	-	6	5	-	1	-	5	-	**20**
Dhamania	5	-	3	2	-	-	-	5	4	10	4	7	**40**
Total	**16**	**0**	**62**	**21**	**2**	**29**	**60**	**32**	**13**	**23**	**19**	**17**	**294**

F 12. Bull-wise Live Female Progeny at Different Field Unit Centres (>3 yrs) as on 3/2024

	Bull No.							Total
	4373	4464	4529	4542	4548	4567	4578	
Menar	-	5	3	8	1	6	10	**33**
Rundera	1	15	23	7	5	3	29	**83**
Navania	-	7	4	7	13	13	11	**55**
Tarawat	-	-	1	-	1	-	4	**6**
Dhamania	-	2	18	2	3	9	2	**36**
Total	**1**	**29**	**49**	**24**	**23**	**31**	**56**	**213**

F 12.1. Center and Age-wise Live female Progeny as on 3/2024

Center	Age				Total
	0-6M	6-12M	1-3yr	>3yr	
Menar	16	11	40	33	**100**
Rundera	27	37	153	83	**300**
Navania	18	13	41	55	**127**
Tarawat	4	8	20	6	**38**
Dhamania	13	22	40	36	**111**
Total	**78**	**91**	**294**	**213**	**676**

F 13. Bull-wise Daughters Calved at Different Field Unit Centers during 2023-24

Bull No.	Center					Total
	Menar	Rundera	Navania	Tarawat	Dhamania	
4464	2	-	-	-	-	**2**
4529	-	5	1	1	3	**10**
4542	2	3	-	-	3	**8**
4548	4	3	3	-	4	**14**
4567	1	4	2	1	3	**11**
4578	2	4	1	1	1	**9**
Total	**11**	**19**	**7**	**3**	**14**	**54**

F 14. Bull-wise Daughters Recorded at Different Field Unit Centres during 2023-24

Name of village	Bull no.	Daughter no.	Date of birth	Monthly milk recorded	1	2	3	4	5	6	7	8	9	10
Menar	4429	C-1469	20.01.17	DOR	20.11.22	14.12.22	15.01.23	12.02.23	15.03.23	16.04.23	13.05.23	15.06.23	16.07.23	15.08.23
				M	2.7	3	3.2	3.5	3.3	3	2.9	2.7	2.5	2.1
				E	2.5	2.7	2.9	3	2.8	2.5	2.2	2.0	1.8	2.5
Menar	4464	C-1544	02.01.20	DOR	16.04.23	13.05.23	15.06.23	16.07.23	15.08.23	16.09.23	14.10.23	15.11.23	16.12.23	14.01.24
				M	2.5	3.2	3.4	3.2	3	2.8	2.5	2	2.5	2
				E	2.1	3	3.1	2.9	2.7	2.5	2.1	1.5	0	0
Menar	4464	C-1546	22.02.20	DOR	16.04.23	13.05.23	15.06.23	16.07.23	15.08.23	16.09.23	14.10.23	15.11.23	16.12.23	14.01.23
				M	2.1	3	3.5	3.5	3.1	2.9	2.5	2	2	2
				E	1.9	2.5	2.8	2.5	2.4	2.2	2	1.5	1	0.5
Menar	4529	C-1496	02.01.18	DOR	22.08.22	16.09.22	15.10.22	15.11.22	14.12.22	15.01.23	12.02.23	15.03.23	16.04.23	13.05.23
				M	2.5	3	3.5	3.7	3.2	3.1	2.8	2.6	2.4	2
				E	2.1	2.5	2.8	3.1	3	2.8	2.5	2.1	1.8	1.5
Menar	4542	C-1483	23.09.17	DOR	30.07.22	19.08.22	16.09.22	15.10.22	15.11.22	14.12.22	15.01.23	12.02.23	15.03.23	16.04.23
				M	2.1	2.8	3.2	3.3	3.5	3.1	2.8	2.7	3.5	3.1
				E	1.5	2	2.8	2.9	3.1	2.8	2.5	2.4	0	0
Menar	4548	C-1510	16.09.18	DOR	20.11.22	14.12.22	15.01.23	12.02.23	15.03.23	16.04.23	13.05.23	15.06.23	16.07.23	15.08.23
				M	2.2	2.5	3	3.5	Sold on					
				E	1.5	2	2.5	2.9						
Menar	4548	C-1511	19.09.18	DOR	20.12.22	15.01.23	12.02.23	15.03.23	16.04.23	13.05.23	15.06.23	16.07.23	15.08.23	
				M	2	2.5	3	3.3	3	2.5	2.1	2	1.5	Dry
				E	1.5	2.2	2.7	3	2.8	2.2	1.8	0.0	0	Dry
Menar	4567	C-1487	18.10.17	DOR	20.12.22	15.01.23	12.02.23	15.03.23	16.04.23	13.05.23	15.06.23	16.07.23	15.08.23	16.09.23
				M	2.5	3	3.7	3.8	3.6	3.2	3	2.9	2.5	2.2
				E	2.1	2.5	2.9	3.1	2.8	2.7	2.5	2.2	2	1.7
Menar	4567	C-1502	14.05.18	DOR	13.05.23	15.06.23	16.07.23	15.08.23	16.09.23	14.10.23	15.11.23	16.12.23	15.01.24	15.02.24
				M	2	3.1	3.6	3.5	3.5	3.2	3	2.7	2.5	2.2
				E	1.8	2	2.8	3	2.8	2.7	2.5	2.1	2	1.8
Menar	4578	C-1504	15.07.18	DOR	22.08.22	16.09.22	15.10.22	15.11.22	14.12.22	15.01.23	12.02.23	15.03.23	16.04.23	13.05.23
				M	1.5	2.8	3.1	3.5	3.1	3	2.8	2.5	2.5	2
				E	1	2	2.8	3	2.8	2.5	2.2	2.0	0	0
Menar	4578	C-1500	26.04.18	DOR	20.11.22	14.12.22	15.01.23	12.02.23	15.03.23	16.04.23	13.05.23	15.06.23	16.07.23	15.08.23
				M	2.5	3	3.4	3.6	3.2	3	2.7	2.2	2.5	2.5
				E	2	2.2	2.8	3	2.7	2.5	2	1.8	0	0
Navania	4542	A-1435	20.04.19	DOR	07.09.22	10.10.22	08.11.22	10.12.22	12.01.23	08.02.23	10.03.23	08.04.23	09.05.23	10.06.23
				M	2.5	2.8	3.1	3.1	3	2.8	2.5	2.2	2	1.8
				E	2.1	2.4	2.7	2.9	2.7	2.7	2.2	2.0	1.5	0
Navania	4542	A1404	21.09.18	DOR	20.11.22	15.12.22	15.01.23	10.02.23	08.03.23	10.04.23	09.05.23	11.06.23	10.07.23	10.08.23
				M	2.8	3.2	3.7	3.5	3.7	3.6	3.5	3.2	3	2.8
				E	2.5	3	3.2	3	3.2	3	2.8	2.5	2	1.7
Navania	4548	A-1399	10.09.18	DOR	10.10.22	08.11.22	10.12.22	15.01.23	15.02.23	10.03.23	08.04.23	10.05.23	11.06.23	10.07.23
				M	2.2	2.5	2.9	3	2.8	2.8	2.5	2.2	2	2
				E	1.8	2.2	2.7	2.8	2.4	2.2	2	1.8	1.5	0
Navania	4567	A-1421	16.11.18	DOR	10.02.23	08.03.23	10.04.23	11.05.23	11.06.23	10.07.23	10.08.23	11.09.23	10.10.23	10.11.23
				M	2.1	2.5	2.9	3.1	3.5	3	2.8	3	2.5	2.2
				E	1.8	2	2.5	2.8	2.8	2.5	2.3	0.0	0	0
Navania	4567	A1412	15.10.18	DOR	20.07.22	18.08.22	17.09.22	18.10.22	18.11.22	19.12.22	12.01.23	18.02.23	16.03.23	15.04.23
				M	2.2	3.1	3.5	3.5	3.2	3	2.8	2.5	2.3	2
				E	2.1	2.8	2.8	2.6	2.5	2.5	2.5	2.1	2	1.8
Tarawat	4529	D-881	15.07.20	DOR	15.06.23	17.07.23	12.08.23	14.09.23	15.10.23	16.11.23	10.12.23	13.01.24	12.02.24	15.03.24
				M	3.5	3.7	3.8	3.8	3.6	3.5	3.1	3	2.5	2
				E	2.5	2.5	2.7	2.8	2.5	2.2	2	2.0	1.8	0
Rundera	4392	B-1803	25.07.15	DOR	26.12.22	25.01.23	26.02.23	27.03.23	27.04.23	26.05.23	27.06.23	26.07.23	27.08.23	25.09.23
				M	2	2.5	3	3.2	3.5	3.5	3	2.7	2.5	2
				E	2.5	3	3.5	3.7	4	4.2	4	3.5	3.2	1.5
Rundera	4392	B-1880	02.01.17	DOR	02.02.23	03.03.23	04.04.23	04.05.23	04.06.23	04.07.23	03.08.23	04.09.23	05.10.23	05.11.23
				M	2	2.5	3	3.5	3.7	4	3.8	4	2.5	1.5
				E	2.5	3	3.5	3.2	3.2	3.7	3.5	3.2	2	1
Rundera	4413	B-1827	08.10.15	DOR	26.01.23	26.02.23	26.03.23	26.04.23	26.05.23	27.06.23	26.07.23	27.08.23	25.09.23	26.10.23
				M	2.5	3	3.5	4	4.2	4	4	3.9	2.5	2
				E	3	3.5	4	4.5	3.9	3.7	3.6	3.0	2.1	1
Rundera	4458	B-1831	08.12.15	DOR	20.04.23	20.05.23	20.06.23	20.07.23	19.08.23	20.09.23	20.10.23	20.11.23		
				M	2	2.5	2.7	3.2	3.5	3	2.5	2	DRY	
				E	2.7	2.3	2.3	3	3	2.5	2	1.5	DRY	
Rundera	4464	B-1899	23.07.17	DOR	16.01.23	17.02.23	16.03.23	16.04.23						
				M	2.5	3	3.5	4	Sold25.04.23					
				E	3	2.5	4	4.5						
Rundera	4529	B-1923	05.12.17	DOR	12.01.23	13.02.23	13.03.23	15.04.23	15.05.23	16.05.23	16.07.23	15.08.23	15.09.23	
				M	2.6	3	3.5	4	4	3.9	3.2	3	2.1	Dry
				E	3	3.5	4	4.5	4.2	4	3.7	3.7	1.8	Dry
Rundera	4529	B-1930	06.01.18	DOR	15.04.23	16.05.23	15.06.23	14.07.23	15.08.23	15.09.23	14.10.23	15.11.23	16.12.23	14.01.24
				M	1.5	2.6	3.5	3.6	3.2	3	2.8	2.5	2	1.5
				E	1	2.1	2.7	3	2.9	2.5	2.2	1.5	1	0
Rundera	4542	B-1908	21.09.17	DOR	02.03.23	03.04.23	03.05.23	05.06.23	04.07.23	04.08.23	04.09.23	05.10.23	05.11.23	
				M	2.5	3	3	3.2	3.5	3.7	4	3.2	2.5	SOLD
				E	3	3.5	3	3.2	3.2	3.5	3.9	3.0	2	SOLD
Rundera	4548	B-1967	18.11.18	DOR	18.02.23	19.03.23	18.04.23	18.05.23	19.06.23	18.07.23	19.08.23	20.09.23	18.10.23	19.11.23
				M	2	2.2	2.5	2.7	3.2	3.6	3.9	3.1	2.5	2
				E	2.6	2.8	3	3	3.1	3.3	3.6	3.0	2.1	0

Rundera	4567	B-1918	07.11.17	DOR	21.01.23	23.02.23	21.03.23	21.04.23	20.05.23					
				M	2	2.5	3	3.5	2.1	DRY				
				E	2.5	3	3.5	3.5	2	DRY				
Rundera	4578	B-2061	11.06.20	DOR	15.04.23	16.05.23	15.06.23	14.07.23	15.08.23	15.09.23	14.10.23	15.11.23	16.12.23	14.01.24
				M	2.1	3.2	3.7	3.5	3.2	2.9	2.6	2.2	1.9	1
				E	1.5	2.5	3.1	3	2.8	2.5	2.3	1.7	1.4	0
Dhamania	4529	H-221	01.09.18	DOR	15.01.23	15.02.23	16.03.23	15.04.23	16.05.23	15.06.23	14.07.23	13.08.23	15.09.23	14.10.23
				M	2.1	2.9	3.5	3.8	3.7	3.2	2.7	2.5	2	2
				E	2.5	2.7	3	3.1	3	2.8	2.5	1.9	1.5	0
Dhamania	4529	H-198	10.05.18	DOR	30.01.23	15.02.23	16.03.23	15.04.23	16.05.23	15.06.23	14.07.23	13.08.23	15.09.23	14.10.23
				M	1	2	2.9	3.5	3.1	3	2.6	2	1.5	1
				E	0.7	1.5	2.1	2.7	2.5	2.5	2.1	1.7	1	0.8
Dhamania	4529	H-178	14.08.17	DOR	15.02.23	16.03.23	15.04.23	16.05.23	15.06.23	14.07.23	13.08.23	15.09.23	14.10.23	15.11.23
				M	2.5	3.1	3.9	4	3.8	3.5	3.2	2.9	2.6	2.5
				E	2.1	2.7	3.2	4	3.4	3	2.8	2.5	2.1	1.7
Dhamania	4542	H-234	18.12.18	DOR	15.01.23	15.02.23	16.03.23	15.04.23	16.05.23	15.06.23	14.07.23	13.08.23	15.09.23	14.10.23
				M	1.8	2.9	3.4	3.8	3.8	3.4	3	2.8	2.5	2
				E	1.5	2.5	2.9	3.4	3	2.8	2.5	2.2	2	1.5
Dhamania	4542	H-270	17.11.19	DOR	30.01.23	15.02.23	16.03.23	15.04.23	16.05.23	15.06.23	14.07.23	13.08.23	15.09.23	14.10.23
				M	1.2	2.0	2.9	3.4	3.3	3.0	2.8	2.0	2.0	2.0
				E	0.8	1.2	1.9	2.6	2.5	2.5	2.2	1.2	0.0	0.0
Dhamania	4548	H-251	19.08.19	DOR	15.08.22	16.09.22	14.10.22	15.11.22	16.12.22	14.01.23	15.02.23	16.03.23	15.04.23	16.05.23
				M	2.5	3.1	3.8	3.5	3.1	2.8	2.4	2	3	2.5
				E	2	2.5	3	2.9	2.5	2.5	1.9	1.5	0	0
Dhamania	4548	H-263	03.10.19	DOR	30.08.22	16.09.22	14.10.22	15.11.22	16.12.22	14.01.23	15.02.23	16.03.23	15.04.23	16.05.23
				M	2	3.1	3.6	3.5	3.2	3	2.8	2.7	2.3	2
				E	1.9	2.7	2.9	3	2.8	2.5	2.5	2.4	1.7	1.5
Dhamania	4548	H-252	23.08.19	DOR	25.04.23	15.05.23	16.06.23	14.07.23	15.08.23	16.09.23	15.10.23	15.11.23	13.12.23	14.01.24
				M	2.5	3	3.5	3.5	3.2	3	2.8	2.5	3	2.5
				E	2	2.5	3	2.8	2.6	2.5	2.2	2.0	0	0
Dhamania	4548	H-250	10.08.19	DOR	25.04.23	15.05.23	16.06.23	14.07.23	15.08.23	16.09.23	15.10.23	15.11.23	13.12.23	14.01.24
				M	2	3.2	3.8	3.5	3.2	3	2.8	2.5	2.3	3
				E	1.5	2.9	3.2	3	2.8	2.7	2.5	2.2	1.8	0
Dhamania	4567	H-230	06.01.18	DOR	30.10.22	15.11.22	16.12.22	14.01.23	15.02.23	16.03.23	15.04.23	16.05.23	15.06.23	14.07.23
				M	3.1	3.6	3.8	3.5	3.1	2.9	2.5	3	2.5	2.1
				E	2.8	3	3.5	2.9	2.7	2.5	2	0.0	0	0
Dhamania	4567	H-256	02.09.19	DOR	25.12.22	14.01.23	15.02.23							
				M	1.5	2.2	3.1	SOLD						
				E	1	1.5	2.7	27.02.23						
Dhamania	4567	H-247	19.07.19	DOR	31.12.22	14.01.23	15.02.23	16.03.23	15.04.23	16.05.23	15.06.23	14.07.23	13.08.23	15.09.23
				M	1.5	2.7	3.4	3.7	3.5	3.2	3	2.8	2.4	2
				E	1	2.5	3	3.2	3	2.9	2.6	2.5	2.1	1.5
Dhamania	4567	H-231	10.11.18	DOR	30.01.23	15.02.23	16.03.23	15.04.23						
				M	1.5	2.2	2.5	1.5						
				E	1	1.5	2	1	Died	05.05.23				
Dhamania	4578	H-209	05.07.18	DOR	30.10.22	15.11.22	16.12.22	14.01.23	15.02.23	16.03.23	15.04.23	16.05.23	15.06.23	14.07.23
				M	2.4	3.1	3.6	3.9	3.7	3.2	2.9	2.5	2	1.8
				E	2	2.5	3	3.5	3	2.8	2.5	2.0	1.7	1

F 15. Bull wise AI, Conception, Calving and Daughters Retained till completion of milk recording during the year

Bull No. / Set No.	Total AI	Conception	Calving		Daughters retained up to				
			Total	Female	1 year	2 years	3 years	Calving	recording
1946/I	-	-	-	-	-	-	-	7	*7*[*]
1947/I	-	-	-	-	-	-	-	6	*8*[*]
1948/I	43	5	38	16	0	0	0	7	*13*[*]
1949/I	0	-	1	0	0	0	0	2	*4*[*]
1950/II	2	-	31	10	0	0	0	5	*3*[*]
1951/II	87	23	51	23	0	0	0	10	6
1952/II	58	12	91	36	0	0	0	6	5
1953/II	50	13	86	35	0	0	0	12	6
1954/II	65	9	41	17	0	0	0	3	1
1955/III	499	109	156	65	0	0	0	21	18
1956/III	523	123	153	58	0	0	0	14	14
1957/III	952	204	199	80	0	0	0	14	13
1958/III	572	137	141	59	0	0	0	12	9
1959/III	573	121	112	58	0	0	0	11	10
1960/III	15	6	1	0	0	0	0	0	0
1961/III	705	156	142	59	0	0	0	17	17

1962/III	88	13	9	5	0	0	0	2	2
1963/IV	842	223	168	70	0	0	0	10	10
1964/IV	489	145	119	55	0	0	0	10	10
1965/IV	578	152	120	49	0	0	0	9	9
1966/IV	373	80	72	36	0	0	0	9	8
1967/IV	423	112	77	33	0	0	0	6	6
1968/IV	752	220	180	80	0	0	0	13	13
1969/IV	950	270	221	86	0	0	0	11	11
1970/IV	130	34	28	15	0	0	0	4	3
1971/V	336	93	77	31	25	20	15	3	3
1972/V	363	117	90	37	35	28	18	5	4
1973/V	388	122	108	43	37	33	28	7	7
1974/V	902	295	230	94	68	60	53	18	17
1975/V	978	297	236	106	86	76	75	18	15
1976/V	1326	401	329	135	114	92	75	16	13
1977/V	1491	469	379	157	121	103	88	24	21
1978/V	1821	634	507	222	187	160	127	35	27
4203/VI	935	322	247	101	85	78	46	18	17
4229/VI	1776	571	423	185	164	139	120	27	26
4264/VI	1579	515	396	174	149	125	116	29	24
4299/VI	1477	466	343	153	127	105	84	26	21
4302/VI	543	177	129	57	49	46	35	6	5
4321/VI	226	67	49	22	18	16	12	2	2
4323/VI	359	95	89	38	32	28	19	3	3
4373/VII	587	195	148	59	42	22	16	16	12
4392/VII	623	189	148	58	39	31	25	14	14
4403/VII	1130	362	267	92	65	44	37	24	24
4413/VII	889	289	227	91	75	45	34	23	22
4429/VII	640	197	148	66	54	44	35	29	26
4458/VII	574	170	134	51	43	30	21	17	17
4497/VII	451	126	88	33	28	20	14	9	8
4464/VIII	1238	256	204	91	67	37	24	6	5
4529/VIII	1915	654	471	199	161	82	39	21	11
4542/VIII	1052	272	266	120	90	48	22	16	8
4548/VIII	1427	330	294	130	103	52	26	28	8
4567/VIII	1727	480	423	192	151	86	40	34	15
4578/VIII	1816	544	433	196	156	89	38	19	9
4611/IX	918	388	238	107	0	0	0	0	0
4612/IX	1107	333	149	64	0	0	0	0	0
4633/IX	759	328	104	45	30	14	6	0	0
4647/IX	19	155	76	39	0	0	0	0	0
4648/IX	616	203	202	88	8	4	0	0	0
TOTAL	**40,757**	**12,279**	**9,889**	**4,221**	**2,409**	**1,757**	**1,288**	**714**	**590**

*** Daughters recorded during adhoc project duration (1997-2001)**

Performance of FPT Programme since Inception

Duration	AI	Pregnancies	CR%	Calvings	Females Born	Daughters Recorded	Av. AFC (months)	Av. Milk Yield (kg/day)	Daughters Due for Recording
Pre-2001						62	67.03	4.45	0
2001-02	2256	480	21.28	482	191	35	74.74	3.97	0
2002-03	1850	421	22.76	403	171	35	71.25	3.9	0
2003-04	1980	473	23.89	359	156	37	67.58	4.06	0

2004-05	1861	550	29.55	351	168	26	65	4.3	0
2005-06	1717	536	31.22	470	195	29	62.88	4.49	0
2006-07	1691	504	29.80	426	163	35	58.77	4.69	0
2007-08	1811	542	29.93	418	167	22	61.85	4.66	0
2008-09	1804	609	33.76	429	186	17	54.5	4.27	0
2009-10	1975	672	34.03	503	218	24	54.72	5.14	0
2010-11	2038	628	30.81	526	223	25	58.84	5.3	0
2011-12	2023	568	28.08	451	198	30	55.03	5.25	0
2012-13	1897	583	30.73	487	235	27	58.91	4.97	0
2013-14	1591	555	34.88	495	197	37	60.08	5.11	0
2014-15	1534	455	29.66	409	156	45	59.11	5.97	0
2015-16	1986	556	28.00	345	145	44	54.32	5.58	1
2016-17	1979	622	31.43	466	178	32	52.85	5.38	3
2017-18	1478	506	34.24	453	188	16	49.41	4.94	28
2018-19	1719	485	28.21	397	173	9	39.44	4.74	52
2019-20	1538	539	35.05	409	183	3	34.92	4.6	118
2020-21	1678	456	27.18	409	177	-	-	-	160
2021-22	1480	540	36.49	402	185	-	-	-	138
2022-23	1237	425	34.36	394	187	-	-	-	165
2023-24	1634	574	35.13	405	181	-	-	-	11
Overall	40,757	12,279	30.13	9,889	4,221	590	60.51	4.82	676

AI, Conception, Calvings and Daughters Retained (Set wise) 1st set

Particular	Bull No				
	1946	**1947**	**1948**	**1949**	**Total**
AI	**-**	-	43	0	**43**
Pregnancies	-	-	5		**5**
Daughters Born	-	-	16	0	**16**
Daughters Calved	7	6	7	2	**22**
Complete Recording	7	8	13	4	**32**
Daughters Available	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained (Set wise) 2nd set

Particulars	**Bull No.**					**Total**
	1950	**1951**	**1952**	**1953**	**1954**	
AI	2	87	58	50	65	**262**
Pregnancies	-	23	12	13	9	**57**
Daughters Born	10	23	36	35	17	**121**
Daughters Calved	5	10	6	12	3	**36**
Complete Recording	3	6	5	6	1	**21**
Daughters Available	-	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained –3nd Set

Particular	**Bull No**								
	1955	**1956**	**1957**	**1958**	**1959**	**1960**	**1961**	**1962**	**Total**
AI	499	523	952	572	573	15	705	88	**3927**
Pregnancies	109	123	204	137	121	6	156	13	**869**
Daughters Born	65	58	80	59	58	0	59	5	**384**
Daughters Calved	21	14	14	12	11	0	17	2	**91**
Complete Recording	18	14	13	9	10	0	17	2	**83**
Daughters Available	-	-	-	-	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained –4th Set

Particular	Bull No								
	1963	**1964**	**1965**	**1966**	**1967**	**1968**	**1969**	**1970**	**Total**
AI	842	489	578	373	423	752	950	130	**4537**
Pregnancies	223	145	152	80	112	220	270	34	**1236**
Daughters Born	70	55	49	36	33	80	86	15	**424**
Daughters Calved	10	10	9	9	6	13	11	4	**72**
Complete Recording	10	10	9	8	6	13	11	3	**70**
Daughters Available	-	-	-	-	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained –5th Set

Particular	Bull No								
	1971	**1972**	**1973**	**1974**	**1975**	**1976**	**1977**	**1978**	**Total**
AI	336	363	388	902	978	1326	1491	1821	**7605**
Pregnancies	93	117	122	295	297	401	469	634	**2428**
Daughters Born	31	37	43	94	106	135	157	222	**825**
Daughters Calved	3	5	7	18	18	16	24	35	**126**
Complete Recording	3	4	7	17	15	13	21	27	**107**
Daughters Available	-	-	-	-	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained –6th Set

Particular	Bull No							Total
	4203	**4229**	**4264**	**4299**	**4302**	**4321**	**4323**	
	VI	**VI**	**VI**	**VI**	**VI**	**VI**	**VI**	
AI	935	1776	1579	1477	543	226	359	**6895**
Pregnancies	322	571	515	466	177	67	95	**2213**
Daughters Born	101	185	174	153	57	22	38	**730**
Daughters Calved	18	27	29	26	6	2	3	**111**
Complete Recording	17	26	24	21	5	2	3	**98**
Daughters Available	-	-	-	-	-	-	-	-

AI, Conception, Calvings and Daughters Retained –7th Set

Particular	Bull No							Total
	4373	**4392**	**4403**	**4413**	**4429**	**4458**	**4497**	
AI	587	623	1130	889	640	574	451	**4894**
Pregnancies	195	189	362	289	197	170	126	**1528**
Daughters Born	59	58	92	91	66	51	33	**450**
Daughters Calved	16	14	24	23	29	17	9	**132**
Complete Recording	12	14	24	22	26	17	8	**123**
Daughters Available	1	0	0	0	0	0	0	**1**

AI, Conception, Calvings and Daughters Retained –8th Set

Particulars	Bull No.						Total
	4464	**4529**	**4542**	**4548**	**4567**	**4578**	
AI	1238	1915	1052	1427	1727	1816	**9175**
Pregnancies	256	654	272	330	480	544	**2536**
Daughters Born	91	199	120	130	192	196	**928**
Daughters Calved	6	21	16	28	34	19	**124**
Complete Recording	5	11	8	8	15	9	**56**
Daughters Available	**45**	**111**	**45**	**25**	**60**	**116**	**402**

AI, Conception, Calvings and Daughters Retained –9th Set

Particulars	Bull No.					
	4611	**4612**	**4633**	**4647**	**4648**	**Total**
AI	918	1107	759	19	616	**3419**
Pregnancies	388	333	328	155	203	**1407**
Daughters Born	107	64	45	39	88	**343**
Daughters Calved	0	0	0	0	0	**0**
Complete Recording	0	0	0	0	0	**0**
Daughters Available	**93**	**50**	**23**	**23**	**84**	**273**

Set wise AI, Conception and daughters retained

Set No.	No. of Bulls	AI	Preg	Calving		Daughters Retained						
				Total	Female	Up to 1Year	Up to 2 Year	Up to 3 Year	Daughters Recorded	Av. AFC (month)	Av. Milk Yield (kg/day)	Daughters to be Recorded
1	4	43	5	39	16	0	0	0	32	83.32	4.53	-
2	5	262	57	300	121	0	0	0	21	64.70	4.31	-
3	8	3927	869	913	384	0	0	0	83	71.57	4.07	-
4	8	4537	1236	985	424	0	0	0	70	64.97	4.17	**0**
5	8	7605	2428	1956	825	673	572	479	107	58.99	4.64	-
6	7	6895	2213	1676	730	624	537	432	98	58.06	5.13	**0**
7	7	4894	1528	1160	450	346	236	182	123	56.76	5.61	**1**
8	6	9175	2536	2091	928	728	394	189	56	49.43	5.16	**402**
9	5	3419	1407	769	343	38	18	6	0	-	-	**273**

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Allocation as per R E 2023 – 24		Released	Expenditure as AUC		Closing Balance
Total	ICAR Share	ICAR Share	ICAR Share	State Share	(ICAR Share)
72.00*	51.75±3.0*	51.75±3.0*	54.75*	17.23	0.00

***Including SCSP Funds**

Herd Performance

Herd strength declined from 151 to 126, out of which 72 were breedable buffaloes (>2year). During the period 19 calving took place consisting of 09 males, 10 females and 2 still birth and 2 abortions. The calf mortality (0-3 months) was 16.67 % much higher than the target of NPBI $\leq$ 5%. Conception rate decreased 36.73% as compared to last year 40.23% (2022-23). During the report period 7583 semen doses were produced, 1956 doses were used in centre and field. A total of 93211 frozen semen doses are available in stock.

During the year the production performances traits in terms of average lactation milk yield, 305 days or less milk yield and peak yield decreased from 1592 kg (24), 1463 kg (24) and 8.23 kg/d to 1589 kg (19), 1433 kg (19) and 8.18 kg/d (19), respectively during the year. The wet and herd average decreased from 4.05 kg and 2.39 to 3.96 and 2.27 kg during the year. Overall 57 percent buffaloes were in milk. The reproductive traits viz. AFC, SP, DP and calving interval were 59.48 months (3), 129 days (12), 203 days (16) and 483 days (16) respectively.

Accomplishment and Targets Achieved:

Trait	Target	2019-20	2020-21	2021-22	2022-23	2023-24
Av. Age at first calving (months)	40	45.29±4.66 (8)	46.07±4.10 (4)	50.86±2.11 (10)	53.89±7.65 (4)	59.48±4.83 (3)
Av. Service period (days)	130	110±8.86 (27)	145 ±11.13 (29)	124 ±11.20 (27)	143 ±13.66 (30)	129 ±10.92 (12)
Calf mortality (0-3 months)	≤ 5 %	31.58	2.5 %	24.5 %	15.00 %	16.67 %
Wet average (kg)	≥6.5 kg	5.11	5.14	5.20	4.05	3.96 Kg
Herd average (kg)	≥4.5 kg	3.21	2.95	3.04	2.39	2.27 Kg

Field Unit:

A total of 1634 AI were performed in the year 2023-24 as compared to 1237 AI in 2022-23. During the year 574 conceptions were reported with conception rate of 35.13 %, 181 female progenies born out of 405 calving. 676 live progenis of different age standing in the field for future recording.

Recommendations:

- The production and reproductive performance of the herd has been deteriorated during last few years, which requires special efforts to improve.
- Calf mortality rate in institutional Surti herd has remained consistently high during the last three years, which needs to be controlled by better management.
- Conception rate of buffaloes in institutional herds and in field is not satisfactory, more efforts are required to improve it.

ICAR-INDIAN GRASSLAND AND FODDER RESEARCH INSTITUTE, JHANSI

1. **Name of Centre** : IGFRI, Jhansi
2. **Project Code** : 17810170002
3. **Project Title** : Performance recording and improvement of Bhadawari Buffaloes
4. **Date of Start** : 01.04.2001
5. **Objectives** :
   - To establish elite herd of 50 Bhadawari buffalo for the production of genetically superior young bulls.
   - To evaluate sires through institutional / associated herd/field progeny testing
   - To produce, test, propagate and conserve high genetic merit male germplasm

6. **Technical Programme**:
   - Establishment and maintenance of an elite herd of buffalo breed with a herd strength 75 breedable females.
   - Selection and testing of minimum 4-6 breeding bulls in every 24 months cycle.
   - Production of minimum 3000 to 5000 (Other breeds) frozen semen doses from each test bull.
   - Maintain a minimum number of 2000 (Bhadwari) frozen semen doses until the particular SET gets evaluated.
   - Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
   - Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
   - Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd / monthly recording in field units over complete lactation(s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, SLMY (305 days or less, up to minimum of 240 days (All breeds) / 1500 kg in Murrah) and Peak yield, Milk yield per day of herd life (total milk produced from date of birth till completion of 4^{th} or more lactation). New Table
   - Monthly testing of milk constituents (Fat%, SNF% and Protein%) and Somatic Cell Count, wherever feasible, at institutional herds.
   - Recording of reproductive traits viz., AFC, Service period, Days open, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
   - Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

7. **Staff associated with the project**:

Discipline	**Name of Scientist / Staff**	**Status PI/Co-PI/ Associated)**
AGB	Dr. B P Kushwaha	PI
ARGO		
ANFT	Dr. Sultan Singh	Co-PI
LPM	Dr. Deepak Upadhyay	Co-PI (Since November 2018)
LPM	Dr. Pooja Tamboli	Co-PI (Since July 2023)
Health / Others		
No. of staff		
Technical staff	Nil	
Contractual staff (RA / SRF / YP-I, YP-II)	1 (SRF)	

8. **Financial Statement** : Head wise budget allocation and utilization; revenue receipts

Expenditure head		Budget allotted	Expenditure incurred during financial year 2023-24	Balance
A) Recurring				
General		36.50	36.44976	0.05024
SCSP		1.00	0.99999	0.00001
Sub Total		37.50	37.44975	0.05025
B) Non-recurring				
	Equipment	1.50	1.46872	0.03128
	Works	Nil	0.00	0.00
Sub Total		0.00	0.00	0.00
Grand Total		39.00	38.91847 (Rupees Thirty eight lakhs Ninety one thousand eight hundred forty seven only)	0.08153

Revenue generation during 2023-24

S.No.	Item	Revenue generated (Rs.)
1	Animal sale	410200
2	Milk Sale	1535995
3	Semen sale	10600
	Total	**1956795**

9.1 Herd Strength during the Period 1st April 2023 to 31st March, 2024

Sr. No.	Category	Addition			Disposal				CB
		OB	B / P	T	D	T	S	E	CB
	Female								
1.	Below 3 months	3	15		1	12	2		3
2.	3-12 months	10		12		13			9
3.	1-2 years	13		13		13	1		12
	Above 2 years	15		13		6	2		20
4.	Buffaloes in Milk	32		6		3	3		32
5.	Buffaloes Dry P /NP	16		3	1		8		10
	Sub Total	89	15	47	2	47	16		86
	Males								
1.	Below 3 months	2	22			19			5
2.	3-12 months	6		19	1	5	4		15
3.	1-2 years	10		5		5	10		-
	Above 2 years	3		5		3	2		3
4.	Breeding bulls	3		3		1	1		4
5.	Bullocks / Teasers / others			1					1
	Sub Total	24	22	33	1	33	17		28
	Grand Total	**113**	**37**	**80**	**3**	**80**	**33**		**114**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March

9.2 Calving Statistics including abnormalities during 1st April 23 to 31st March 24

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 23	1							1
May	2							2
June								
July		1						1
August	5	2						7
September		2						2
October	1	4						5
November	5	1						6
December	3	2						5
January 24	3	3						6
February	1							1
March	1							1
Overall	**22**	**15**						**37**

Sex ratio Male: Female (59:41) SB% = 0.00 Abortion % = 0.0

9.3. Disposal of Animals during the Period 1st April 23 to 31st March 24

Female								
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves 0 to 3 months 3-12 months	2					1		3
Heifers 1-2 years > 2 years	1 2							1 2
Buffaloes Milch Dry	 3 3	 2	 2		 1	 1		 3 9
Sub Total	11	2	2		1	2		18
Males								
Calves 0 to 3 months 3-12 months	 4					 1		 5
1 to 2 year	10							10
. >2 year	2							2
Breeding bulls	1							1
Bullock±Teaser±Others								
Sub Total	15							18
Grand Total	28	2	2		1	3		36

9.4. Mortality during the Period 1st April 2023 to 31st March, 2024

Female							Male					Overall Herd
	0-3 Month	3-12 Month	1-2 Yrs.	Above 2 Yrs.	Milk ± Dry	Overall Female	0-3 Month	3-12 Month	1 -2 Yrs.	>2 yrs.	Overall Male	
No.	18	22	26	28	57	104	24	25	15	11	46	150
Died	1	-	-	-	1	2	-	1	-	-	1	3
%	5.5	0	0	0	1.75	1.92	0	4.0	0	0	2.17	2.0

Calf mortality (0-3 months) 2.38% (1/42)

9.5. Causes of Mortality (quarter wise) during the period April 2023 to March 2024

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	Total
Enteritis					
Pheumonities					
Septicamia / Toxaemia					
Peritonitis	1				1
JD/TB					
Milk Fever/ metabolic diseases					
TRP / TP					
Accidental death	1				1
Miscellaneous		1			1
Total	2	1			3

9.6 Prophylactic Measures undertaken

Disease	**Vaccination Date / No. of animals**	**No. of animals** Tested / Positive		**Dates and No. of animals treated for Parasitism**
FMD	112 animals			May 23 =104 Aug = 28 Sep = 70 Oct = 14 Nov = 53 Mar 24 = 59
HS	112 animals			
BQ	112 animals			
Brucellosis		8	-ve	
JD		18	-ve	
TB		19	1 ±ve	
IBR		8	1 ±ve	
Mastitis				

9.7. Female Conception Rate During the Period January to December 2023

AI No.→	1st			2nd			3rd			4th & above			Over all		
Parity↓	AIs	C	CR %	AIs	C	CR %	AIs	C	CR%	AIs	C	CR %	AIs	C	CR %
Heifers	8	4	50.00	2	2	100							10	6	60.00
Adults	30	17	56.66	5	5	100							35	22	62.86
Overall	38	21	55.26	7	7	100							45	28	62.22

AIs = No. of animals inseminated C = No. of animals conceived CR % = Conception rate%

9.8. Quarter-wise conception rate

Quarter	No. of A I	Preg. animals	CR %
January – March Previous year	24	16	66.67
April - June	5	3	60.00
July - September	3	1	33.33
October- December	13	8	61.54
Overall	45	28	62.22

9.9. Bull-wise Conception Rate During the period January to December, 2023

Sr. No.	Bull No.	Total Number of AI	Total Conceived	CR%
1.	B333	15	11	73.33
2.	B354	12	6	50.00
3.	B428	7	4	57.14
4.	B452	11	7	63.64
No. of service per conception: 1.60				

9.10 Bull Wise Semen Stock as on 31.03.2024

Sr.No	Bull No	O.B.	Doses produced / received	Doses used /disseminated			Balance
				Supply	Sold	Exp.	
1.	B138	364					364
2.	B122	292					292
3.	B143	400					400
4.	B150	169					169
5.	B167	275					275
6.	B170	254					254
7.	B182	339					339
8.	B184	291					291
9.	B228	1397					1397
10	B240	872					872
11	B244	1105					1105
12	B331	9051					9051
13	B333	974		30			944
14	B354	1612		24			1588
15	B366	2883		500	400		1983
16	B393	9147	4850	600			13397
17	B428	1155		512			643
18	B452	3780	4350	1224	660		6246
19	B481	850					850
Grand Total		**35210**	**9200**	**2890**	**1060**		**40460**

9.11.1 Average Body weight (kg) since inception (Indicate number of animals in parenthesis)

Year	Birth	3 Months	6 Months	12 Months	18 Months	24 Months	At AFC (n)
Females							
2003-04	24.8 (7)	46.4(12)	67.5(9)	118.8(11)	163.8 (8)		
2004-05	24.1(13)	46.1(12)	64.8(5)	106.7(7)	173.40(15)		
2005-06	27.3(13)	44.3(10)	63.2(8)	110.8(12)	183.3(11)	225.1	
2006-07	26.3(11)	44.4(5)	65.0(7)	107.2(8)	166.5(11)	210.4(12)	420 (6)
2007-08	24.7(13)	40.5(16)	62.0(13)	104.1(11)	167.2(5)	230.8(7)	346 (7)
2008-09	26.5(10)	40.9(10)	62.7(11)	108.7(17)	168.2(13)	232.1(14)	327 (6)
2009-10	26.8(18)	41.5(19)	64.8(16)	115.1(16)	169.3(19)	228.0(20)	363 (10)
2010-11	24.5(18)	40.8(13)	60.4(15)	104.8(16)	154.8(13)	206.2(9)	334 (6)
2011-12	26.0(2)	42.6(6)	57.9(11)	108.3(11)	156.9(10)	196.0(10)	336 (7)
2012-13	24.8(9)	43.5(6)	58.0(3)	112.4 (2)	160.0 (4)	201.4(8)	335 (2)
2013-14	25.4(11)	43.7(7)	67.4(7)	106.8(5)	161.2(4)	192.5(2)	387 (6)
2014-15	24.5(12)	48.7(12)	66.8(11)	105.6(11)	155.8(11)	211.4(6)	356 (15)
2015-16	25.6(15)	51.8 (11)	79.2(9)	110.5(11)	143.7(8)	205.5(10)	373 (3)
2016-17	24.7 (7)	53.5 (5)	74.6 (6)	116.9 (10)	164.0 (11)	202 (10)	335 (3)
2017-18	23.6 (11)	52.0 (9)	80.0 (7)	114.5 (7)	170.0 (6)	223 (6)	352 (6)
2018-19	22.06 (12)	51.6 (12)	78.0 (15)	130.4 (10)	180.0 (10)	230 (7)	360 (12)
2019-20	24.8 (10)	56.0 (9)	95.3 (8)	137.1 (9)	183.7 (10)	252.4 (10)	354 (3)
2020-21	27.6 (9)	64.4 (13)	95.1(12)	143.1 (9)	203.2 (6)	265.5 (9)	395.7 (8)
2021-22	24.3 (13)	59.0 (10)	92.0 (17)	151.0 (17)	197.0 (16)	248.0 (9)	386 (15)
2022-23	26.4 (14)	59.4 (9)	81.2 (14)	120.6 (13)	172.0 (5)	229.8 (7)	373 (5)
2023-24	27.9 (15)	52.5 (11)	75.9 (14)	113.2 (22)	150.6 (16)	195.2 (20)	387 (9)
Males							**Adults**
2003-04	26.9 (16)	49.2 (14)	74.8 (10)	133.2 (10)			431 (5)
2004-05	24.6 (12)	47.0 (11)	68.4 (7)	115.7 (11)			501 (4)
2005-06	27.9 (25)	46.9 (20)	68.6 (16)	123.5 (10)	203.6 (10)	258.0	445 (9)
2006-07	27.3 (18)	45.0 (17)	70.4 (17)	115.5 (17)	179.7 (16)	234.3 (10)	460 (9)
2007-08	27.7 (20)	42.5 (20)	67.9 (21)	114.1 (19)	178.2 (14)	234.5 (12)	413 (15)
2008-09	27.3 (10)	43.0 (10)	67.8 (11)	114.3 (18)	180.0 (15)	242.5 (6)	420 (15)
2009-10	27.3 (20)	44.2 (22)	68.3 (19)	116.0 (12)	175.0 (10)	236.0 (11)	423 (9)
2010-11	26.2 (9)	41.9 (11)	65.0 (12)	112.7 (11)	160.4 (5)	224.5 (4)	416 (10)

2011-12	27.4 (5)	42.7 (6)	60.6 (8)	112.0 (3)	165.0 (1)	-	425 (5)
2012-13	25.9 (13)	43.6 (14)	60.5 (10)	116.0 (4)	175.0	235.0 (3)	457 (3)
2013-14	25.8 (13)	45.2 (9)	70.8 (10)	108.3 (10)	157.3(6)	195.0 (3)	446 (2)
2014-15	26.3 (18)	50.5 (14)	63.6 (13)	105.1 (6)	158.7(4)	261.0 (2)	436 (4)
2015-16	26.8 (12)	46.1 (9)	71.6 (6)	122 (8)	155.5(8)	230 (8)	470 (4)
2016-17	26.6 (15)	56.6 (9)	73.9 (17)	114.7 (6)	186.4(3)	221 (3)	459 (6)
2017-18	23.8 (10)	54.0 (9)	81.0 (9)	117.0 (6)	182.0 (2)	258.0 (2)	492 (4)
2018-19	24.3 (10)	53.1 (10)	82.3 (11)	134.0 (4)	198.0 (5)	250.0 (2)	184 (5)
2019-20	25.7 (7)	59.6 (5)	94.8 (7)	139.6 (5)	198.2 (5)	-	476 (6)
2020-21	26.4 (10)	63.7 (10)	99.2 (8)	143.5 (4)	218.5 (4)	249.8 (4)	474 (4)
2021-22	27.3 (22)	64.0 (12)	98.0 (18)	144.0 (9)	217.0 (9)	251.0 (4)	480 (6)
2022-23	29.4 (11)	62 (12)	87.5 (20)	127.8 (15)	178.4 (5)	237.3 (3)	460 (4)
2023-24	28.2 (22)	51.6 (12)	73.8 (7)	118.0 (7)	155.2 (6)	196.8 (5)	425 (4)

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	No. of obs.	TLMY (kg)	Lact. Length (days)	SLMY (kg)	Peak yield (kg)
1st	10	1890.6±63.9	398.5±19.08	1616.1±45.4	8.52±0.18
2nd	8	1538.6±153.4	326.0±28.9	1434.3±107.2	7.61±0.27
3rd	7	1429.9±141.7	319.4±25.3	1336.6±120.6	7.85±0.21
4th	5	1540.0±105.1	294.0±36.7	1464.0±73.0	7.96±0.30
5th & above	5	1806.7±169.4	369.2±17.8	1675.6±172.3	8.60±0.37
Overall	35	1657.4±65.6	352.8±14.4	1496.9±49.9	8.08±0.13

9.12.1 Average production performance of Buffaloes Since Inception of Network

Year	Lactation Length (days)	TLMY (kg)	SLMY (kg)	Peak yield(kg)
2003-04	296 (24)	1067.95	1029.41	6.6
2004-05	245 (29)	997.96	958.96	6.7
2005-06	236.53 (17)	891.81	891.81	6.30
2006-07	304.49 (35)	1294.65	1159.22	6.83
2007-08	279.29 (24)	1201.33	1188.92	6.61
2008-09	344 (31)	1561.11	1433.48	7.41
2009-10	294.7 (26)	1331.47	1286.50	7.5
2010-11	311.0 (34)	1381.44	1310.00	7.22
2011-12	293.76 (13)	1276.65	1214.78	6.19
2012-13	334 (8)	1587.76	1494.9	8.19
2013-14	294.5 (21)	1416.3	1385.9	7.50
2014-15	367 (21)	1638.8	1478.3	7.33
2015-16	330 (25)	1406.64	1321.8	7.36
2016-17	299 (26)	1430.3	1368.2	8.35
2017-18	316.5 (19)	1478.4	1402.5	7.69
2018-19	332 (17)	1373.9	1224.4	6.70
2019-20	357 (18)	1466.88	1285.57	6.73
2020-21	354 (10)	1733.5	1558.1	8.10
2021-22	356.4 (23)	1889.7	1631.8	8.19
2022-23	316.1 (24)	1562.08	1491.09	8.30
2023-24	**352.8 (35)**	**1657.4 (35)**	**1496.9 (35)**	**8.08 (35)**

*Within parenthesis are number of observations

9.12.2 Herd Life Production (up to 4th Lactation) during 2023-24

Animal No.	DOB	Date of completion of 4th or more lact. or disposal	HLF (days) up to 4th or more lactation or disposal (d)	LTMY (kg)	Productive Days	Unproductive Days	MY/day HLF
B248	15.07.08	03.03.23	5344	8264.0	1777	3567	1.54
B258	20.09.08	05.04.23	5310	10844.7	2275	3035	2.04
B287	14.10.09	05.04.23	5098	11162.0	2521	2577	2.18
B293	10.12.09	18.12.22	4756	12100.6	2532	2224	2.54
B295	17.12.09	03.01.23	4765	11694.8	2463	2302	2.45
B308	22.08.10	22.11.23	4840	9967.0	2298	2542	2.05
B346	03.09.12	29.08.23	3985	12307.9	1838	2147	3.08
B415	09.08.15	14.04.23	2805	5847.0	1300	1505	2.08
B416	14.08.15	19.06.23	2886	6673.20	1092	1774	2.32

Note: HLF (Herd Life- Date of birth to date of completion of 4th or more lact. Or date of disposal)
Productive Days (date of first calving to total days in milk), Unproductive days (total days when buffalo not give milk from the date of first calving)

9.13 Average Milk Composition from April 2023 to March 2024

Trait	Number	Average (%)
Fat	63	8.23±0.17
SNF	63	9.78±0.13
Protein	63	3.54±0.04
Lactose	63	5.32±0.07

9.14: Reproductive Performance

Lactation / Parity	AFC (Months) (N)	N →	Service Period (Days)	DP (Days)	CI (Days)
1	45.67±1.13	8			
2		9	188.2±17.8	189.0±21.0	487.3±17.1
3		3	162.0±54.7	144.3±37.0	457.0±56.5
4		6	145.1±33.5	115.5±15.4	436.0±29.5
5th & above		6	178.0±25.0	161.6±24.7	472.5±22.3
Over all		24	168.05±12.91	158.2±12.46	467.0±12.8

*Service Period (days)= Date of 1 st AI – Date of last calving

9.14.1 Reproduction Performance Since inception of Network.

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
2003-04	-	137.90 (16)	220.25 (16)	444.5 (16)
2004-05	-	230.33 (24)	269.29 (24)	535.8 (24)
2005-06	-	156.25 (28)	218.46 (28)	463.57 (28)
2006-07	44.60 (5)	166.33 (21)	203.29 (21)	467.33 (21)
2007-08	43.20 (7)	226.73 (26)	216.13 (26)	530.80 (26)
2008-09	51.20 (6)	148.60 (15)	206.8 (15)	499.6 (15)
2009-10	53.22 (10)	167.84 (24)	202.75 (24)	525.79 (24)
2010-11	49.11 (7)	160.00 (20)	222.75 (20)	516.95 (20)
2011-12	49.00 (2)	179.28 (13)	187.92 (13)	497.20 (13)
2012-13	51.32 (12)	153.75 (8)	202.62 (8)	513.25 (8)
2013-14	50.13 (6)	174.90 (11)	214.2 (11)	520.10 (11)
2014-15	53.97 (15)	182.3 (15)	216.4 (15)	534.0 (15)
2015-16	47.25 (5)	212.3 (24)	192.08 (24)	523 (24)

2016-17	50.6 (4)	176.2 (18)	163.6 (18)	478.3 (18)
2017-18	46.26±0.7 (7)	190.5±31.8 (15)	177.3±24.3 (14)	493.3±31.7 (15)
2018-19	47.28±1.6 (13)	181.7±39.3 (9)	173.1±30.4 (9)	486.8±42.7 (9)
2019-20	48.23±2.9 (3)	189.1±39.0 (11)	171.8±24.3 (11)	490.5±40.4 (11)
2020-21	52.23±2.26 (8)	203.0±46.0 (12)	174.2±28.9 (12)	499.7±52.5 (12)
2021-22	48.2±2.4 (15)	228.1±31.9 (17)	170.8±25.6 (17)	523.1±32.2 (17)
2022-23	51.9±4.5 (6)	171.0±18.9 (16)	177.0±29.4 (16)	465.2±20.32 (16)
2023-24	**45.67±1.30 (8)**	**168.0±12.91 (24)**	**158.2±12.46 (24)**	**467.0±12.8 (24)**

9.15 Milk Production and Disposal

Month	Total milk produced (kg)	Disposal (Kg)		
		Milk sold	Calf feeding	Expt.
April 23	3650.5	2796.2	854.3	
May	3199.9	2377.7	822.2	
June	2897.5	2300.2	597.3	
July	3144.3	2483.5	660.8	
August	3184.1	2450.0	734.1	
September	3374.3	2528.7	845.6	
October	3584.0	2614.9	969.1	
November	3431.8	2391.9	1039.9	
December	3537.6	2296.1	1241.5	
January 24	4290.2	3017.3	1272.9	
February	4012.3	2895.8	1116.5	
March	4494.6	3224.4	1270.2	
Total	**42801.1**	**31376.7**	**11424.4**	

Note: Mention sale price of milk (range during the year): Rs. 46 per kg (upto 09.07.2023) and Rs. 50 per kg w.e.f.10.07.23

9.16 Feed and fodder (Quintals) availabilityApril 2023 to March 2024

Quarter		Qty. Produced at Farm (Qt.)	Qty. Purchased (Qt.	Actually fed (Qt)	Balance (Qt.)
I (April – June)	Green	735		735	
	Dry	533		533	
	Silage	110		110	
	Concentrate	50*		50	
II (July – September)	Green	786		786	
	Dry	636		636	
	Silage	-		-	
	Concentrate	54*		54	
III (October – December)	Green	1962		1962	
	Dry	179		179	
	Silage	-		-	
	Concentrate	48*		48	
IV (January-March)	Green	2120		2120	
	Dry	-	414	160	254
	Silage	-		-	
	Concentrate	54*	244	54	244
Total	Green	5603		5603	
	Dry	1348	414	1508	254
	Silage	110		110	
	Concentrate	206	244	206	244

*From IGFRI stock

9.17: Milk performance during April 2023 to March 2024

Month	Buffaloes in milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April, 23	32	16	48	66.7	4.37	2.53
May	27	20	47	57.4	4.30	2.19
June	24	23	47	51.1	4.35	2.05
July	22	25	47	46.8	4.77	2.15
August	28	19	47	59.6	4.40	2.18
September	29	18	47	61.7	4.35	2.39
October	29	18	47	61.7	4.66	2.45
November	31	7	38	81.6	4.64	3.01
December	30	9	39	76.9	4.69	3.12
January, 24	34	6	40	85	4.69	4.07
February	32	8	40	80	4.46	4.32
March	32	10	42	76.2	4.93	4.53
Overall	**29.1**	**14.9**	**44**	**67**	**4.55**	**2.92**

9.17.1 Milking performance since inception

Year	No. of Animal in Milk	No. of Animal dry	Total Animal	% in Milk	Wet Av. (kg)	Herd Av. (kg)
2002-03	19	23	42	46.03	3.30	1.35
2003-04	18	22	40	44.74	3.44	1.35
2004-05	23	16	38	59.44	3.75	1.97
2005-06	22	20	42	51.43	3.74	1.80
2006-07	27	20	47	57.67	3.56	1.86
2007-08	27	19	46	58.69	4.67	2.57
2008-09	29	18	47	62.9	4.35	2.49
2009-10	27	23	50	54.5	4.64	2.37
2010-11	27	21	48	56.90	3.95	2.02
2011-12	12.5	20.92	33.41	37.41	4.65	1.58
2012-13	14	19.75	34	41.17	4.57	1.75
2013-14	21	19	40	52.50	4.72	2.24
2014-15	28	16	44	63.6	4.22	2.50
2015-16	27.58	15	42.58	64.77	4.49	2.64
2016-17	22.5	10.16	32.7	70.85	4.62	2.97
2017-18	17.83	10.33	28.16	64.02	4.16	2.39
2018-19	20.8	9.08	29.9	70.07	3.67	2.34
2019-20	15.8	14.5	30.3	52.42	4.44	2.10
2020-21	20.25	14.08	34.33	58.53	5.06	2.84
2021-22	25.9	13.4	39.1	65.9	4.66	2.79
2022-23	30.9	15.3	46.3	66.2	4.86	3.07
2023-24	29.1	14.9	44	67	4.55	2.92

9.18: Bull wise daughters born (only numbers)

Bull No.	Set No.	Daughters born	Daughters Calved	Daughters completing 1st Lactation
B1	7	7	7	7
B44	13	9	9	9
B45	4	4	4	4
B46	10	8	8	8
B76	4	3	3	3
B78	5	5	5	5
B79	7	4	4	4
B84	12	8	6	6
B87	7	4	4	4

B89	5	1	1	1
B138	16	6	6	6
B143	2	1	1	1
B147	2			
B170	7	6	5	5
B182	3	1	1	1
B184	8	4	4	4
B228	5	5	3	3
B240	19	15	15	15
B244	15	11	9	9
B331	29	14	11	7
B333	17	6	5	2
B354	30	7	3	-
B366	5	2	-	-
B428	4	-	-	-
B452	3	-	-	

9.19 Bull wise daughters completing 1st lactation

Sire No.	Daughter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)
B-331	B-471	29-09-2017	12-12-2021	51.2	485.00	2255.8	1640
B-331	B-480	03-02-2018	23-09-2022	56.4	416.00	1628.9	1380
B-331	B-488	12-05-2018	07-12-2021	43.5	393.00	2045.1	1560
B-333	B-489	02-07-2018	14-08-2022	50.1	454.00	1875.2	1656
B-331	B-493	27-08-2018	27-01-2022	41.6	445.00	2038.6	1610
B-333	B-498	25-09-2018	24-02-2022	41.6	422.00	1969.9	1635
B-333	B-499	29-09-2018	25-09-2022	48.6	342.00	2077	1900
B-354	B-501	19-11-2018	30-01-2022	38.9	436.00	1601.2	1365

9.20 Breeding bulls/young bull

Sr. No.	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best SLMY
1	B-393	18/09/2014	88	244	2000
2	B-481	03/02/2018	195	331	1927
3	B-524	20/02/2020	258	354	1715
4	B-535	10/10/2020	435	240	1756
5	B-568	03/01/2022	293	366	1875
6	B-576	23/02/2022	364	393	1970

9.21 Target achieved during the years

Trait	**Target**	**Achieved**				
		2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Av. Age at 1st calving (months)	40	48.23±2.9 (3)	52.23±2.26 (8)	48.2±2.4 (15)	51.9±4.5 (6)	45.67±1.30 (8)
Av. Service period (days)	130	172.3±38.4 (11)	181.3±407 (12)	199.2±33.3 (17)	127.8±15.5 (16)	168.0±12.91 (24)
Calf mortality (0-3 months)	≤ 5 %	0.0	4.00	5.55	10.81	2.38
Wet average (kg)	≥5 kg	4.44	5.06	4.66	4.86	4.55
Herd average (kg)	≥3 kg	2.10	2.84	2.79	3.07	2.92

Conservation in the breeding Tract

a) Germ Plasm Dissemination (during 2023-24)

- 1 Breeding bull sold to Banda University of Agriculture and technology, Banda, UP.
- 2 Breeding bulls sold to ICAR-IGFRI ATIC center for distribution among the farmers for breeding purpose under SCSP program.
- 14 male calves sold to farmers through auction.
- 1060 frozen semen doses were sold to the inseminators
- It has been reported by the BAIF that 64762 semen doses were frozen during February 2021 to December 2023 and 5627 doses sold/distributed for AI in the field (Agra, Bareilly, Jhansi, Lucknow, Gorakhpur, Prayag raj and Meerut).
- MPL&PDB, Datia (MP) semen freezing center frozen 70000 doses and disseminated 1200 doses.

b) Artificial Insemination in field (2023-24)

Month	**No. of AI**
April 23	20
May	15
July	30
August	65
September	289
October	357
November	437
December	665
January 24	468
February	113
March	112
TOTAL	**2571**

c) **Activities under SCSP program:** Mineral mixture and veterinary medicines were distributed among the farmers in villages selected under SCSP program.

10. Salient Research Achievements:

- Average lactation milk yield, 305 days or less milk yield and wet average and herd average were recorded as 1657.4 kg, 1496.9 kg, 4.55 kg and 2.92 kg, respectively.
- Average age at first calving, average service period and conception rate were 45.6 months, 168 days and 62.2 percent, respectively.
- Artificial insemination in the Bhadawari breeding tract was continued during the year 2023-24. A total of 2571 artificial inseminations were performed. Field AI work in Bhind and Morena district (MP) was done with the help of state animal husbandry department.
- Kishan gosthy, exhibition in kishan mela and meeting with the farmers were held in the breeding tract to motivate farmers for keeping Bhadawari buffaloes.

11. Publications

Research papers in journals

- Singh, S.; Koli, P.; Kushwaha, B.P.; Anele, U.Y.; Bhattacharya, S.; Ren, Y. Agroecological Zone-Specific Diet Optimization for Water Buffalo (Bubalus bubalis) through Nutritional and In Vitro Fermentation Studies. Animals 2024, 14, 143. https://doi.org/10.3390/ani14010143

Book chapters	:	1
Conferences/symposia	:	1
Abstract	:	2
Publication in News paper	:	1
Publication of Extension Leaflets/ Folders	:	5
Participation in Conference	:	1

Recognition /Award

Best oral presentation award for the research paper entitled "Effect of season and stage of lactation on milk constituents of Bhadawari buffaloes" National conference of Indian Society for Buffalo Development (ISBD) and Symposium on Modern approaches for sustainable buffalo production in the scenario of climate change, DUVASU, Mathura, 27 to 28 October 2023	B P Kushwaha, Sultan Singh, Deepak Upadhyay, K K Singh, Pooja Tamboli and J Jayasankar
Co- Chairman at "International Conference On Feeding the Future through Sustainable Eco-friendly Innovations in Rangeland, Forages and Animal Sciences, 2-4 December, 2023, UAS Bangalore.	B P Kushwaha
Member – Institute Management Committee of ICAR-CSWRI, Avikanagar	B P Kushwaha

12. Constraints if any: Nil

13. Focus of work in the coming year: Breed activities shall be continued through semen freezing and artificial insemination in the Bhadawari breeding tract. Efforts will be made to disseminate Bhadawari germplasm through sale of frozen semen/breeding bulls to various agencies for their use in the field. Demonstration, radiotalk and kishan gosthies shall be organized to motivate farmers for rearing of Bhadawari buffaloes.

Bhadawari Calves and Heifers in the Project herd at IGFRI, Jhansi

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR Share as per R E	Expenditure as per AUC		Closing balance
Total	ICAR Share		ICAR Share	State Share	
39.0*	38.0±1.00*	39.0*	38.91847	0.00	0.08153

* Includes 1.00 lakhs for SCSP

Herd Performance

The Herd strength was 114, which comprises of 62 breeding buffaloes (>2.0 years). During the year 37 calving took place, out of which 22 were male and 15 were female. The calf mortality (0-3-month) was improved 2.38 % as compared to 10.81 % in 2022-23. Conception rate was increased from 60.78 percent in (2022-23) to 62.20%. A total of 9200 doses of frozen semen were produced and 3950 doses were used/supplied for AI in the field. As on 31st March, 2024, 40460 frozen semen doses were in the stock.

Average TLMY and SLMY were increased from 1562 kg (24) and 1491 kg (24) to 1657 kg (35) and 1497 kg (35) respectively during the year. Wet and herd averages was slightly decreased from 4.86 kg and 3.07 to 4.55 kg and 2.92 kg, respectively during the report period. Age at first calving, service period, dry period and calving interval was 45.67 months (8), 168 days (24), 158 days (24) and 467 days (24), respectively. Overall, 67% animals were in the milk during the year. A total of 2531 AI were performed in the field during 2023-24 as compared to 2023 in 2022-23.

Accomplishment and Targets Achieved:

Trait	**Target**	**Achieved**				
		2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Av. Age at 1st calving (months)	40	48.23±2.9 (3)	52.23±2.26 (8)	48.2±2.4 (15)	51.9±4.5 (6)	45.67±1.30 (8)
Av. Service period (days)	130	172.3±38.4 (11)	181.3±407 (12)	199.2±33.3 (17)	127.8±15.5 (16)	168.0±12.91 (24)
Calf mortality (0-3 months)	≤ 5 %	0.0	4.00	5.55	10.81	2.38
Wet average (kg)	≥5 kg	4.44	5.06	4.66	4.86	4.55
Herd average (kg)	≥3 kg	2.10	2.84	2.79	3.07	2.92

Recommendations:

- More efforts are needed to improve the milk production traits such as Wet. average and Herd average.
- Continuous efforts to be taken to increase the inseminations in field and increase the semen sale of Bhadawari bulls.

NETWORK PROJECT ON BUFFALO IMPROVEMENT (NILI-RAVI, GADVASU)

1. Name of centre : GADVASU, Ludhiana
2. Project Code : AS-12/7/2017-AI-I
3. Project Title : Network Project on Buffalo Improvement
Sub-project **:** Performance recording and improvement of Nili-Ravi buffalo
4. Date of Start : 17 November, 2017

5. Objectives :

I. To establish elite herd of 50 to 100 Nili-Ravi (at each center) for the production of genetically superior young bulls.
II. To evaluate sires through institutional / associated herd/ field progeny testing
III. To produce, test, propagate and conserve high genetic merit male germplasm

6. Technical Programme:

- Establishment and maintenance of an elite herd of buffalo breed with a herd strength of 300 and 200 breed able females.
- Selection and testing of minimum 8-10 bulls for other breeds in every 24 months cycle.
- Production of minimum 3000 to 5000 frozen semen doses from each test bull.
- Maintain a minimum number of 2000 of frozen semen doses until the particular SET gets evaluated.
- Evaluation and ranking of bulls on the basis of their progeny performance (first lactation) for selection of top 20-25% as proven bulls from each set.
- Application of proven bull's semen on elite buffaloes for the production of future sires and replacement heifers.
- Minimum weekly recording of milk yield of individual daughters/ buffaloes at institutional herd over complete lactation (s) with wet average, herd average, percent in milk, lactation length, dry period, TLMY, and Peak yield.
- Monthly testing of milk constituents (Fat%, SNF% and Protein %) and Somatic Cell Count, wherever feasible, at institutional herds.
- Recording of reproductive traits viz., AFC, Service period, Calving interval, Number of services per conception, Conception rate and Calving abnormalities.
- Health management including udder health, vaccination, de-worming, disease screening, mortality and periodic body weight records

Name of PI : Dr. Ravi Kant Gupta

8. Financial Statement: Head wise budget allocation

Account Head	Budget Allotted	ICAR Share 75%	Expenses made	Balance
Recurring Contingencies	28,00,000.00	21,00,000.00	28,00,000.00	0
TA/POL	0	0	0	0
Non-Recurring Contingencies				
Livestock	0	0	0	0
Equipments	2,00,000.00	1,500,000.00	2,00,000.00	0
Total	30,00,000.00	22,50,000.00	30,00,000.00	0

ICAR Share 75% = Rs 22.50,000/- State Share 25% = Rs.7,50,000/-.

9.1 Herd Strength during the Period 1st April 2023 to 31st March, 2024

Sr. No.	Category	Addition			Disposal				CB
		OB	B / P	T	D	T	S	E	CB
	FEMALE								
1.	Below 3 months	4	15/ -	-	3	13	-	-	3
2.	3-12 months	14	-	13	-	17	2	-	8
3.	1-2 years	20	-	17	-	21	-	-	16
	Above 2 years	26	-/ 1	21	-	18	6	-	24
4.	Buffaloes in Milk	28	-	18	1	16	2	-	27
5.	Buffaloes Dry P /NP	24	-/ 2	16	-	-	16	6	20
	Sub Total	**116**	**15/3**	**85**	**4**	**85**	**26**	**6**	**98**
	MALE								
1.	Below 0- 3 months	5	19	-	2	19	1	-	2
2.	3-12 months	2	-	19	1	-	6	-	14
3.	1-2 years	6	-	7	-	5	6	-	2
	Above 2 years	1	-	5	-	1	1	-	4
4.	Breeding bulls	3	-	1	-	-	2	-	2
5.	Bullocks / Teasers / others	-	-	-	-	-	-	-	-
	Sub Total	**17**	**19**	**32**	**3**	**25**	**16**	**6**	**24**
	Grand Total	**133**	**37**	**117**	**7**	**110**	**42**	**6**	**122**

OB = Opening Balance as on 1st April D = Deaths S = Sale E = Experimental
B / P = Birth / Purchase T = Transfer CB = Closing Balance as on 31st March 2024

9.2 Calving Statistics including abnormalities

Month	Male	Female	Still Birth	Abortion	Dystokia	ROP	Prolapse	Overall
April 23	1	3	0	0	0	0	0	4
May	1	1	0	1	0	0	0	3
June	2	0	0	0	0	0	0	2
July	2	1	0	0	0	0	0	3
August	3	2	0	1	0	0	0	6
September	1	2	0	0	0	0	0	3
October	3	1	1	1	1	0	0	7
November	2	1	0	0	0	0	0	3
December	2	0	1	0	0	0	0	3
January 24	1	2	0	1	0	0	0	4
February	1	1	0	2	0	0	0	4
March	-	1	0	0	0	0	0	1
Overall	**19**	**15**	**2**	**6**	**1**	**0**	**0**	**43**

Sex ratio Male: Female 1.26:1 SB% = 4.65% Abortion = 13.95%

9.3. Disposal of Animals during the Period 1st April 23 to 31st March 24

Female	**Primary cause of disposal**							
Category	Surplus	Below farm production standard	Reprod. Problem	Weak & Old	Udder Health	Death	Experimental purposes	Total
Calves 0 to 3 months	-	-	-	-	-	3	-	3
3-12 months	-	2	-	-	-	-	-	2
Heifers 1-2 years	-	-	-	-	-	-	-	-
> 2 years	-	5	1	-	-	-	-	6
Buffaloes Milch	-	2	-	-	-	1	-	3
Dry	-	14	1	-	1	-	-	16
Sub Total	**-**	**23**	**2**	**-**	**1**	**4**	**-**	**30**

Males								
Calves 0 to 3 months	1	-	-	-	-	2	-	3
3-12 months	6	-	-	-	-	1	-	7
1 to 2 year	6	-	-	-	-	-	-	6
.>2 year	1	-	-	-	-	-	-	1
Breeding bulls	2	-	-	-	-	-	-	2
Bullock+Teaser+Others	-	-	-	-	-	-	-	-
Sub Total	16	-	-	-	-	3	-	19
Grand Total	**16**	**23**	**2**	**0**	**1**	**7**	**-**	**49**

9.4. Mortality during the Period 1st April 2023 to 31st March, 2024

Month	Details	Female						Male					Total (Male + female)
		0-3 (Month)	3-6	6-12	>1yrs	>2yrs	Overall	0-3 (Month)	3-6	6-12	>1yrs	Overall	
April	No	6	4	8	17	71	106	3	2	1	10	16	122
	Died	-	-	-	-	-	0	2	-	-	-	2	2
	%							0.66				0.12	1.63
May	No	5	2	11	18	71	107	3	2	1	11	17	124
	Died	-	-	-	-	-	0	-	-	-	-	0	0
	%												
June	No	4	4	10	18	68	104	3	4	7	11	25	129
	Died	-	-	-	-	-	0	-	-	-	-	0	0
	%												
July	No	2	6	9	18	65	100	6	3	3	10	22	122
	Died	-	-	-	-	-	0	-	-	-	-	0	0
	%												
August	No	3	5	10	17	68	103	8	3	4	10	25	128
	Died	-	-	-	-	-	0	-	-	-	-	0	0
	%												
September	No	4	3	10	17	69	103	7	3	5	11	26	129
	Died	1	-	-	-	-	1	-	-	-	-	0	1
	%	0.25					0.97						0.77
October	No	5	2	10	18	71	106	7	5	5	11	28	134
	Died	-	-	-	-	-	0	-	-	-	-	0	0
	%												
November	No	4	1	7	22	68	102	6	7	3	10	26	128
	Died	1	-	-	-	-	1	-	-	-	-	0	1
	%	0.25					0.98						0.78
December	No	1	4	7	20	69	101	6	7	3	9	25	126
	Died	-	-	-	-	-	0	-	-	-	-	0	0
	%												
January	No	2	3	8	17	68	99	5	6	6	8	25	125
	Died	-	-	-	-	-	0	-	-	-	-	0	0
	%												
February	No	3	3	7	17	68	98	4	5	8	9	26	124
	Died	-	-	-	-	1	1	-	-	-	-	0	1
	%					0.14	0.10						0.80
March	No	3	1	7	16	71	98	2	6	8	8	24	122
	Died	1	-	-	-	-	1	-	-	1	-	1	2
	%	0.33					0.10			0.12		0.41	1.63
Total	**Died**	3	-	-	-	1	4	2		1		3	7

Calf mortality (0 to 3 months) = 11.63 % (5/43)

9.5. Causes of Mortality (quarter wise) during the period April 23 to March 2024

Particulars	1st quarter (April-June)	2nd quarter (July-Sept)	3rd quarter (Oct-Dec.)	4th quarter (Jan.-March)	Total
Enteritis	1	-	-	2	3
Haem. Enteritis	1	-	1	1	3
Pheumo Enteritis	-	1	-	-	1
Broncho-Pheumonia	-	-	-	-	-
Septicamia / Toxaemia	-	-	-	-	-
Peritonitis	-	-	-	-	-
JD/TB	-	-	-	-	-
Milk Fever / metabolic diseases	-	-	-	-	-
TRP/TP	-	-	-	-	-
Parasitism	-	-	-	-	-
Accidental death	-	-	-	-	-
Peri-parturient disorders	-	-	-	-	-
Miscellaneous	-	-	-	-	-
Total	**2**	**1**	**1**	**3**	**7**

9.6 Prophylactic Measures undertaken

Disease	**Vaccination No. of animals**	**No. of animals** Tested	Positive	**Dates and No. of animals treated for Parasitism**
FMD±HS (Twice)	356		All negative	No clinical case of parasitic infestation was observed during the year.
BQ (Once)	-		All negative	
Brucelloses • Calf Hood • Adult	 17 61		 All negative All negative	
JD	-		All negative	
TB	-		All negative	

9.7. Female Conception Rate during the Period January 2023 to December 2023

AI →	1st			2ND			3RD			4TH & above			Over all		
Parity↓	Ais	C	CR %	Ais	C	CR %	Ais	C	CR%	Ais	C	CR %	Ais	C	CR %
Heifers	12	6	50.0	8	2	25.0	8	4	50.0	8	4	50.0	36	16	44.44
Adults	38	19	50.0	17	5	29.41	11	3	27.27	20	10	50.0	86	37	43.02
Overall	50	25	50.0	25	7	28.0	19	7	36.84	28	14	50.0	122	53	**43.44**

Ais = No. of animals inseminated; C = No. of animals conceived; CR % = Conception rate %

9.8 Quarter-wise conception rate:

Quarter	**No. of A I**	**Preg. Animals**	**CR %**
January – March	37	16	43.24
April – June	22	12	54.54
July – September	34	13	38.23
October- December	29	12	41.37
Overall	122	53	**43.44**

9.9. Bull-wise Conception Rate During the period January to December, 2023

Sr. No.	Bull No.	Total Number of AI	Total Conceived	CR%
1.	252	5	4	80.0
2.	254	16	6	37.5
3.	507	35	13	37.14
4.	579	1	1	100.0
5.	705	1	0	0
6.	728	11	3	27.27

7.	773	5	2	40.0
8.	800	7	3	42.85
9	852	8	3	37.5
10	856	3	0	0
11	763(3002)	20	13	65.0
12	SHENSHAH	10	5	50.0
Total		**122**	**53**	**43.44%**

9.10 Bull Wise Semen Stock: -

Sr. No	Bull No	O.B.	Doses produced/ received	Doses used /disseminated			Total Supply	Balance
				Dairy Farm	Sold	Exp.		
1.	NR 2563	1170	0	0	285	-	285	885
2.	NR 2591	100	0	0	0	-	0	100
3.	NR 507	2319	2000	0	3381	-	3381	938
4.	NR763 (3002)	2587	5955	10	6555	-	6565	1977
5.	NR3088	0	1490	0	975	-	975	515
6.	NR3087	0	3200	0	520	-	520	2680
Total		**6176**	**12645**	**10**	**11716**	**-**	**11726**	**7095**

9.11. Average Body weight (kg) (Indicate number of animals in parenthesis)

Year	**Birth**	**3 Months**	**6 Months**	**12 Months**	**18 Months**	**24 Months**	**WFC**
Female							
2017-18	36.30 (25)	57.00 (17)	92.00 (15)	168.00 (16)	310.00 (24)	385.00 (21)	595.00 (18)
2018-19	34.12 (23)	67.38 (11)	110.63 (11)	193.22 (18)	313.25 (9)	406.00 (14)	605.62 (16)
2019-20	32.34 (25)	63.37 (20)	104.99 (17)	181.17 (16)	309.96 (16)	397.81 (22	561.64 (16)
2020-21	31.80 (25)	61.80 (18)	110.30 (16)	169.00 (14)	298.40 (19)	370.00 (27)	549.54 (12)
2021-22	31.20 (24)	63.79 (15)	110.30 (14)	167.00 (19)	304.00 (17)	344.00 (23)	547.00 (21)
2022-23	35.29 (17)	60.45 (14)	107.50 (4)	184.50 (15)	302.80 (11)	399.80 (14)	550.40 (14)
2023-24	32.56 (15)	45.60 (10)	90.08 (15)	189.50 (16)	305.40 (15)	364.22 (22)	591.00 (12)
Male							Adults
2017-18	34.70 (26)	70 (19)	110(15)	190 (8)	330 (4)	480.00 (2)	
2018-19	34.87 (29)	70.06 (12	110.00 (7)	231.00 (5)	354.20 (5)	490.00 (4)	
2019-20	34.13 (24)	69.45 (12)	113.81 (9)	235.24 (5)	350.0	540.09 (2)	
2020-21	34.07 (26)	72.00 (11)	120.40 (6)	210.60 (8)	335.80 (5)	590.40 (5)	
2021-22	33.20 (27)	70. 80 (5)	114.00 (6)	238.00 (4)	380.00 (3)	690.00 (4)	
2022-23	32.28 (18)	68.80 (10)	119.00 (8)	210.00 (6)	360.70 (3)	575.0 (3)	
2023-24	33.46(19)	54.00 (8)	103 (8)	200.14 (7)	290.0 (4)	381.0 (4)	

9.12 Average Production Performance of Buffaloes Completing their Lactation

Lact. No.	**No. of obs.**	**TLMY (kg)**	**Lact. Length (days)**	**SLMY (kg)**	**Peak yield (kg)**
1st	7	2131.37±118.02	297.42±10.10	2115.94±113.54	12.22±0.45
2nd	7	2871.31±183.04	293.85±12.21	2848.31±173.74	15.98±0.60
3rd	1	4472.6±0.00	555.0±0.00	3259.2±0.00	14.8±0.00
4th	6	2709.38±261.81	313.66±19.43	2630.78±230.44	14.33±0.88
5th & above	4	2954.47±164.36	294.75±18.35	2946.97±124.37	16.22±0.52
Overall	**25**	**2702.62±131.25**	**310.2±12.15**	**2623.26±106.33**	**14.52±0.46**

9.12.1 Average production performance of Buffaloes since Inception of Network

Year	N	Lact. Length (days)	TLMY (kg)	SLMY (kg)	Peak yield (kg)
2017-18	36	278	2248.77	2187.60	12.36
2018-19	39	300	2543	2458	13.54
2019-20	44	302	2549	2478	13.71
2020-21	29	281	2511	2473	13.4
2021-22	32	299.18	2552.0	2485.43	13.94
2022-23	25	292.56	2198.43	2168.95	12.53
2023-24	25	310.2	2702.62	2623.26	14.52

9.12.2 Average production performance of Buffaloes (elite) since Inception of Network

Year	No. of Animals	Av. 305-day Yield (Kg)	Av. Lactation Length (days)	Average Complete Lactation Yield (kg)	Average Peak Yield (kg)
2017-18	3	2810	355	2941	16.03
2018-19	6	3206	342	3452	17.57
2019-20	11	2907	348	3090	14.91
2020-21	6	2900	291	2922	15.6
2021-22	6	3092	329	3185	16.75
2022-23	4	2940	306	2970	15.12
2023-24	8	3197	353	3429	16.20

9.13 Average Milk Composition from April 2023 to March 2024

Month	N	Fat	SNF	Protein	Lactose
April 23	27	6.91	8.45	-	-
May	31	7.31	9.49	-	-
June	24	7.63	9.49	-	-
July	24	7.44	9.66	-	-
August	21	7.03	9.55	-	-
September	26	7.42	9.54	-	-
October	27	7.08	9.25	-	-
November	26	7.40	9.62	-	-
December	27	7.56	9.75	-	-
January 24	28	7.79	9.52	-	-
February	32	8.08	9.65	-	-
March	27	8.03	9.67	-	-
Overall	**27**	**7.47**	**9.47**	**-**	**-**

9.14: Reproductive Performance during the year 4/2022 to 3/2023

Lactation / Parity	N	AFC (Months)	SP (Days)	DP (Days)	CI (Days)
1	12	40.39±1.18	-	-	-
2	7	-	127.85±28.92	188.42±43.21	445.71±32.26
3	2	-	73±10	118.5±1.5	380.5±99.5
4	1	-	96	189	411
5th and above	5	-	131.6±27.27	134.8±17.01	438.2±27.96
Overall	**27**	**40.39±1.18**	**119.67±16.37**	**161.27±21.52**	**432.20±17.83**

9.14.1 Reproduction Performance Since inception of Network

Years	AFC (Months)	Service Period (days)	Dry Period (days)	Calving Interval (days)
2017-18	42.43 (18)	180.15 (34)	215.09 (34)	486.82 (34)
2018-19	40.27±1.80 (15)	168.02±30.10 (40)	238.37±33.20 (40)	475.57±30.31 (40)
2019-20	40.9±1.21 (18)	150.4±11.8 (53)	217±20.29 (53)	452.31±12.79 (53)
2020-21	40.3±2.2 (12)	109.6±10.9 (45)	183.6±5.9 (45)	417.9±3.8 (45)
2021-22	41.14±0.86 (21)	123.20±14.66 (45)	138.79±9.69 (45)	426.25±14.75 (45)
2022-23	40.54±1.15 (15)	120.87±12.69 (15)	209.87±22.13 (15)	429.13±11.89 (15)
2023-24	**40.39±1.18 (12)**	**119.67±16.37 (15)**	**161.27±21.52 (15)**	**432.20±17.83 (15)**

9.15. Month-wise milk production and disposal during the period 4/2023 to 3/2024

Month	Production	Disposal			
	Total milk produced (kg)	Liquid milk (kg)	Calf feeding (kg)	Experimental purposes (kg)	Milk lost in handling (kg)
April 2023	6957.80	6176	755	-	26.8
May	7270.60	6610	640.7	-	19.9
June	6389.80	5756	604.7	-	29.1
July	6479.40	5472	985.5	-	21.9
August	6469.40	5342	1101	-	26.4
September	7258.30	5978	1254	-	26.3
October	7212.70	6189	1002.7	-	21
November	7251.90	6117	1112.7	-	22.2
December	7496.80	6621	858.5	-	17.3
January 2024	7507.60	6811	678.5	-	18.1
February	7524.70	6907	592.7	-	25
March	7767.40	7069	674.2	-	24.2
Total	**85586.40**	**75048**	**10260.2**	**-**	**278.2**

9.15.1 Milk production and disposal during the period 4/2023 to 3/2024

Years	Production	Disposal			
	Total milk produced (kg)	Liquid milk (kg)	Calf feeding (kg)	Experimental purposes (kg)	Milk lost in handling (kg)
2017-18	88913.10	76025.0	12576.6	-	311.5
2018-19	97106.80	84574.0	12213.4	-	319.4
2019-20	85304.6	72319.0	12659.0	-	326.7
2020-21	100586.4	84412.0	15848.9	-	325.5
2021-22	80695.80	69312.0	11051.8	-	332.0
2022-23	78664.90	70117.0	8228.5	-	319.4
2023-24	85586.40	75048	10260.2	-	278.2

9.16 Feed and Fodder (Quintals) availability April 2023 – March 2024)

Quarter	Feed/fodder	Quantity produced at farm	Quantity purchased	Actually, fed to Nilli-Ravi buffaloes
I (April – June)	Green	3085.36		3085.36
	Dry		239.46	239.46
	Silage		586.97	586.97
	Concentrate		774.5	774.5
II (July – September)	Green	2737.55		2737.55
	Dry		277.58	277.58
	Silage		633.93	633.93
	Concentrate		806.5	806.5
III (October –December)	Green	2268.46		2268.46
	Dry		169.22	169.22
	Silage		622.88	622.88
	Concentrate		794.75	794.75
IV (January-March)	Green	2065.08		2065.08
	Dry		112.05	112.05
	Silage		629.37	629.37
	Concentrate		766.5	766.50
Total	Green	10156.45		10156.45
	Dry		798.31	798.31
	Silage		2473.15	2473.15
	Concentrate		3182.25	3182.25

9.17: Milk performance during April 23 to March 2024

Month	Buffaloes in Milk	Dry buffaloes	Total	% in Milk	Wet Av. (kg)	Herd Av. (kg)
April 2023	27	17	44	61.36	8.12	4.98
May	25	18	43	58.14	8.67	5.04
June	25	19	44	56.82	7.82	4.44
July	23	22	45	51.11	8.32	4.25
August	26	19	45	57.78	7.68	4.43
September	28	19	47	59.57	8.52	5.7
October	27	21	48	56.25	8.50	4.78
November	28	19	47	59.57	8.52	5.07
December	27	20	47	57.45	8.95	5.14
January 2024	29	18	47	61.70	8.26	5.09
February	30	17	47	63.83	8.41	5.37
March	27	20	47	57.45	8.97	5.15
Overall	**27**	**19**	**46**	**58.42**	**8.39**	**4.95**

9.17.1 Milking performance since inception

Year	No. of Animals in Milk	No. of Animals dry	Total Animals	% in Milk	Wet Av. (kg)	Herd Av. (kg)
2017-18	35	27.50	62.08	55.50	7.85	4.2
2018-19	33	32	65	50.69	7.97	4.12
2019-20	34	31	65	52.15	7.99	4.06
2020-21	37	20	57	66.33	7.49	4.98
2021-22	28	17	45	62.79	8.21	4.95
2022-23	26	20	46	56.06	8.26	4.64
2023-24	27	19	46	58.42	8.39	4.95

9.18: Bull wise daughters born (only numbers)

Bull No.	**Daughters born**	**Daughters Calved (1st calver)**	**Daughters Calved**	**Daughters completing 1st Lactation**
507	2	5	-	-
543	1	-	-	-
551	1	-	-	-
579	1	-	-	-
702	2	-	-	1
905	4	-	-	-
916	2	-	-	-
951	-	-	1	-
991	-	-	2	-
763 (3002)	4	-	-	-
352	-	3	-	-
359	-	1	-	-
1359	-	1	-	-
2463	-	-	1	-
2591	-	1	1	2
Tank	-	-	2	2
Nova	-	-	1	-
Raja	-	-	2	-
Diamond	-	-	-	2
NR27	-	-	-	1
PUR	-	-	4	2
OVERALL	**17**	**11**	**14**	**10**

9.19 Bull wise daughters completing 1ST lactation

Bull No.	Daughter No.	Date of birth	Date of calving	AFC (months)	Lact. Length (days)	TLMY (kg)	SLMY (kg)
27	3289	30-9-19	6-2-23	40.16	259	2109.2	2109.2
702	3273	05-8-19	23-9-22	37.54	278	1643.2	1643.2
2591	3345	14-11-19	16-7-23	43.93	238	1561.2	1561.2
2591	3350	15-3-20	16-11-22	32.0	341	2130.1	2066.4
Tank	3226	26-2-19	10-9-22	42.36	320	2674.3	2630
Tank	3243	25-3-19	15-12-22	44.62	129	759	759
Diamond	3338	5-2-20	3-3-23	36.78	152	541	541
Diamond	3334	27-1-20	3-6-23	40.09	79	343	343
PUR	108	24-5-18	25-8-22	50.95	295	2151.5	2151.5
PUR	3246	10-2-19	11-8-22	41.90	294	1947.5	1947.5

9.20 Breeding bulls Selected for current set

Sr. No	Bull No.	Date of Birth	Dam No.	Sire No.	Dam's best SLMY
1	3087 (935)	08-08-21	378	NR487	3533

9.20.1 PT Bulls for nominated mating

Bull No	Set No	Centre	Dams' best Yield	Sire Index	% Superiority
702	3rd	CIRB, Nabha	3421	2376.83	8.88
905	4th	CIRB, Nabha	3639	2561.40	15.29
916	4th	CIRB, Nabha	2961	2424.74	9.99
27	5th	CIRB, Nabha	3979	2488.10	6.79
03	5th	CIRB, Nabha	2866	2401.20	4.47
252	6th	CIRB, Nabha	3469	2616.82	5.93
254	6th	CIRB, Nabha	2811	2579.39	4.42

9.21 Target achieved during the year

Trait	Target	2019-20	2020-21	2021-22	2022-23	2023-24
Av. Age at first calving (months)	40	40.9 (18)	40.3 (12)	41.14 (21)	40.54 (15)	40.39 (12)
Av. Service period (days)	130	150 (35)	110 (45)	123 (45)	121 (15)	119.67 (15)
Calf mortality (0-3 months)	≤ 5 %	9.37%	7.69%	17.54 %	18.75 %	11.63%
Wet average (kg)	≥8.5 kg	7.99	7.49	8.21	8.26	8.39 Kg
Herd average (kg)	≥5.5 kg	4.06	4.98	4.95	4.64	4.95 Kg

10. Salient Research Achievements:

    A considerable progress has been made in achieving the targets of reduction in AFC and the Service Period. Similarly, Total lactation milk yield, 305 Day or less milk yield and peak yield improved significantly.

11. Publications: -
12. Constraints if any:
    - Very limited availability of true to breed quality animals.
    - Short lactation in animals.
    - High calf mortality due to shed renovation, space constrains due to more birth of animals at the calf shed.
13. Focus of work in the coming year: Enhance the herd strength of elite animals by introducing superior germplasm, apply effective strategy/measures to reduce calf mortality, effective disease control, improve production and reproduction, and production of superior germplasm.

Project Co-ordinator's observations on centre performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR Share as per R E	Expenditure as per AUC		Closing balance
Total	ICAR Share		ICAR Share	State Share	
30.00	22.50	22.50	22.50	7.50	Nil

Herd Performance

The herd strength of Nili-Ravi was 122, included 71 breedable buffaloes (> 2 years). A total 34 calves (19 male and 15 female), 6 abortions and 2 still birth were reported during 2023-24. The higher calf mortality (0-3 months) of 11.63 % was recorded. Conception rate of 43.44 percent was same as last year. During the report period 12645 frozen semen doses produced/received and 11726 doses disseminated. The closing balance of frozen semen doses as on 31-03-2024 was 7095.

A noticeable increase in annual average of total lactation milk yield and 305 or less day lactation milk yield from 2198 kg (25) and 2169 kg (25) in 2022-23 to 2702 kg (25) and 2623 kg (25) during the year, respectively. The wet average and herd average decreased from 8.97 kg and 5.15 kg to 8.39 kg and 4.95 kg, respectively. Overall, 58 % buffaloes remained in milk during the year 2023-24. The reproductive traits viz: age at first calving, service period, dry period and calving interval was 40.39 months (12), 120 days (15), 161 days (15) and 432 days (15), respectively.

Accomplishment and Targets Achieved

Trait	**Target**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Av. Age at first calving (months)	40	40.9 (18)	40.3 (12)	41.14 (21)	40.54 (15)	40.39 (12)
Av. Service period (days)	130	150 (35)	110 (45)	123 (45)	121 (15)	119.67 (15)
Calf mortality (0-3 months)	≤ 5 %	9.37%	7.69%	17.54 %	18.75 %	11.63%
Wet average (kg)	≥8.5 kg	7.99	7.49	8.21	8.26	8.39 Kg
Herd average (kg)	≥5.5 kg	4.06	4.98	4.95	4.64	4.95 Kg

Recommendations:

- Calf mortality rate has remained consistently high in the GADVASU Nili-Ravi herd for the last few years, which needs to be controlled within the limits of NPBI.
- There is a need to increase the herd size of Nili-Ravi buffalo in GADVASU to run the progeny testing scheme effectively.
- Although milk production performance of the herd is improving over the year, percentage of animals in milk needs to be increased.

NETWORK PROJECT ON BUFFALO IMPROVEMENT (FIELD UNITS)

Participating Units : **1. CIRB, Hisar**
2. GADVASU, Ludhiana
3. NDRI, Karnal

Date of start : 2001

INTRODUCTION:

Murrah is most important breed among milch buffaloes which draws maximum demand of its germplasm in the country. But the problem of non-availability of genetically superior and progeny tested bulls is acute to meet ever increasing demand for improvement of the country buffaloes. It is, therefore, essential to develop superior germplasm and test them efficiently on large organized herds as well as the ones available with the farmers. Progeny testing under institutional and field conditions besides providing superior bulls for use in developmental programme, helps in developing elite breeding herds. Buffalo herds available with various research institutions and those managed by the state/central government developmental agencies are too small in size to independently implement a worthwhile progeny testing programme for even a moderately accurate evaluation of bulls. It is more desirable to evaluate the bulls on the basis of their progeny performance raised in different environments at various associated organized as well as at the farmers herds.

OBJECTIVES:

To strengthen the ongoing sire evaluation programme of associated herd progeny testing by including field performance recording of the daughters of test bulls.

FIELD UNIT: CIRB HISAR

Name of the Institute : Central Institute for Research on Buffaloes, Hisar
Title of the project : Progeny testing of bulls under field conditions (FPT)
Principal Investigator : Dr A Bharadwaj, Principal Scientist (upto 31st Dec, 2023)
Dr. Sanjay Kumar, Sr Scientist

Technical programme: The use of semen of test bulls under Network Project on Buffalo Improvement on buffaloes in ten adopted villages of CIRB Hisar is undertaken. This has to be followed by pregnancy diagnosis, calving records, tagging and follow up of progenies till the completion of first lactation for milk records on the basis of monthly test day recording. Data on different aspects to be recorded as per specified format.

Report of the Project (April 2023– March 2024): Under field progeny testing program (FPT) semen of test bulls is used for artificial insemination in the field, followed by pregnancy diagnosis, calving records and follow up of progenies till the completion of first lactation for milk records on the basis of monthly test day recording. During the period from April 2023 to March 2024, 3898 artificial inseminations were performed using test bulls of 20th and 21st set. The use 20th set was initiated from Jan 2022 to June 2023 and 21st set was initiated from July 2023. The conception rate in the field was worked out to be 51.29%. In this period 1526 pregnancies were confirmed and 1641 calving (males 812, females 829) were recorded.

Besides, 166 daughters (51 of 17th, 112 of 18th and 3 of 19th set) with an average age at first calving of 41.12 months were also calved, out of which 129 completed the lactation and rest were sold before completion of lactation. The physical identification using ear tagging has been done in all female progenies born in the field till Dec 2023 and being done for progenies born thereafter. As on 31st March 2024, 1359 female progenies of 17th to 20th set of different age are standing at various field unit centres for future recordings.

F 1. Herd Strength of Registered females under field unit during 2023-24

Name of Village	OB	*Addition*	*Deduction*		CB
		New Reg. (Birth/ Purchase)	Sold	Death	
	--				

F 2. Status of Breedable females under field unit during 2023-24

Name of Village	Heifers >2 ½ years		*Buffalo (NP)*		*Buffalo Pregnant*	
	Total	Pregnant	In milk	Dry	In milk	Dry
	--					

F 3. Month-wise AI at Different Field Unit Centres during 4/2023 to 3/24

Month	Centre/ Village										Total
	Beed	Juglan	Dhiktana	Kheri	Jewra	Kirara/ Syamsukh	Sarsod	Bichpari	Bado	Bugana	
April 23	19	30	11	21	30	25	24	8	23	11	**202**
May	19	35	35	14	30	20	25	14	19	8	**219**
June	20	35	14	21	25	20	32	20	26	7	**220**
July	12	37	27	23	40	25	31	20	27	22	**264**
Aug	27	42	26	24	35	25	34	27	28	27	**295**
Sept	42	75	35	28	48	20	50	37	32	25	**392**
Oct	47	73	60	32	46	38	56	42	39	31	**464**
Nov	58	69	55	42	35	20	58	55	45	26	**463**
Dec	43	54	55	38	60	27	61	42	47	29	**456**
Jan 24	26	59	39	39	34	30	48	37	41	20	**373**
Feb	28	42	26	27	25	25	58	30	30	11	**302**
March	27	37	18	23	25	25	38	20	27	8	**248**
Total	**368**	**588**	**401**	**332**	**433**	**300**	**515**	**352**	**384**	**225**	**3898**

F 4. Bull-wise AI at Different Field Unit Centres during the Period 4/2023 to 3/2024

Months		Bull No.									
	19 XX	2793 XX	3004 XX	5427 XX	5481 XX	5500 XX	5505 XX	5511 XX	7584 XX	7649 XX	109 XXI
April 23	-	-	60	-	-	85	15	-	-	42	-
May	49	55	-	63	-	35	1	9	-	7	-
June	8	7	-	15	59	-	-	129	2	-	-
July	-	-	-	1	13	1	-	7	24	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-
Sept	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-
Jan 24	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	**146**
March	-	-	-	-	-	-	-	-	-	-	**20**
Total	**57**	**62**	**60**	**79**	**72**	**121**	**16**	**145**	**26**	**49**	**166**

Cont. F 4.

Months	Bull No.													Total
	112 XXI	297 XXI	2979 XXI	2990 XXI	3014 XXI	5414 XXI	5629 XXI	5638 XXI	5690 XXI	5764 XXI	7630 XXI	7768 XXI	7990 XXI	
April 23	-	-	-	-	-	-	-	-	-	-	-	-	-	**202**
May	-	-	-	-	-	-	-	-	-	-	-	-	-	**219**
June	-	-	-	-	-	-	-	-	-	-	-	-	-	**220**
July	-	-	-	-	78	-	140	-	-	-	-	-	-	**264**
Aug	-	-	-	-	61	87	-	-	-	-	-	147	-	**295**
Sept	-	-	92	-	-	35	118	17	-	-	-	130	-	**392**
Oct	-	-	137	-	-	164	-	163	-	-	-	-	-	**464**
Nov	-	-	37	-	-	120	-	71	113	-	-	122	-	**463**
Dec	-	-	-	142	71	19	-	121	-	-	103	-	-	**456**
Jan 24	-	48	-	6	146	-	-	-	-	-	40	-	133	**373**
Feb	12	99	-	-	-	-	-	-	-	-	-	-	45	**302**
March	137	26	-	-	-	-	-	-	-	-	-	-	65	**248**
Total	**149**	**173**	**266**	**148**	**356**	**425**	**258**	**372**	**113**	**-**	**143**	**399**	**243**	**3898**

F 5. Month-wise Conception at Different Field Unit Centres during 4/2023-3/2024

Months	Centre/ Village										Total
	Beed	Juglan	Dhiktana	Kheri	Jewra	Kirara/ Syamsukh	Sarsod	Bichpari	Baado	Bugana	
April 23	26	17	19	2	16	14	32	27	7	8	**168**
May	17	26	12	5	13	14	16	13	6	7	**129**
June	12	17	12	10	14	13	22	18	15	8	**141**
July	12	16	5	9	9	11	13	5	10	6	**96**
Aug	11	19	16	7	12	8	14	8	9	4	**108**
Sept	12	18	7	10	9	7	19	12	11	4	**109**
Oct	8	19	12	12	20	12	18	12	11	9	**133**
Nov	15	21	12	10	17	12	16	15	15	14	**147**
Dec	27	43	16	12	25	11	28	22	14	13	**211**
Jan 24	28	40	28	13	23	17	33	23	17	16	**238**
Feb	33	39	30	22	17	10	30	29	24	14	**248**
March	**23**	**32**	**23**	**18**	**28**	**13**	**34**	**24**	**26**	**15**	**236**
Total	**224**	**307**	**192**	**130**	**203**	**142**	**275**	**208**	**165**	**118**	**1964**

F 6. Bull-wise Conception at Different Field Unit Centres during the Period 4/2023 to 3/2024

Month	Bull No.										
	19 XX	**2793 XX**	**2838 XX**	**3004 XX**	**5427 XX**	**5481 XX**	**5500 XX**	**5505 XX**	**5511 XX**	**7584 XX**	**7649 XX**
April 23	-	6	78	-	-	-	11	73	-	-	-
May	-	58	2	-	-	41	-	28	-	-	-
June	-	8	-	25	-	49	-	57	2	-	-
July	-	-	-	26	-	-	44	4	-	-	22
Aug	25	23	-	-	36	-	20	-	3	-	1
Sept	3	2	-	-	5	37	-	-	61	1	-
Oct	-	-	-	-	-	9	1	-	3	13	-
Nov	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-
Jan 24	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-	-	-	-
Total	**28**	**97**	**80**	**51**	**41**	**136**	**76**	**162**	**69**	**14**	**23**

Cont…. F 6

Month	Bull No.									Total
	2979 XXI	**2990 XXI**	**3014 XXI**	**5414 XXI**	**5629 XXI**	**5638 XXI**	**5690 XXI**	**7630 XXI**	**7768 XXI**	
April 23	-	-	-	-	-	-	-	-	-	**168**
May	-	-	-	-	-	-	-	-	-	**129**
June	-	-	-	-	-	-	-	-	-	**141**
July	-	-	-	-	-	-	-	-	-	**96**
Aug	-	-	-	-	-	-	-	-	-	**108**
Sept	-	-	-	-	-	-	-	-	-	**109**
Oct	-	-	36	-	71	-	-	-	-	**133**
Nov	-	-	32	45	-	-	-	-	70	**147**
Dec	49	-	-	20	59	8	-	-	75	**211**
Jan 24	63	-	-	84	-	91	-	-	-	**238**
Feb	19	-	-	69	-	35	58	-	67	**248**
March	-	71	35	10	-	70	-	50	-	**236**
Total	**131**	**71**	**103**	**228**	**130**	**204**	**58**	**50**	**212**	**1964**

F 7. Month-wise Calving at Different Field Unit Centres during 2023-24

Month	Centre/Village																				Total	
	Beed		Juglan		Dhiktna		Kheri		Jewra		Kirara/ Syamsukh		Sarsod		Bichpari		Bado		Bugana			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
April 23	4	2	4	6	4	4	1	2	9	7	3	7	4	5	7	7	1	1	2	1	**39**	**42**
May	5	5	9	7	6	4	5	4	6	5	2	2	5	3	6	6	4	4	4	5	**52**	**45**
June	8	9	11	9	4	5	8	7	5	10	5	7	8	10	4	6	4	4	1	1	**58**	**68**
July	12	11	13	12	11	10	7	7	10	7	4	6	8	10	12	12	3	5	7	6	**87**	**86**
Aug	13	12	17	12	16	15	6	7	9	11	7	6	12	15	14	13	3	3	6	6	**103**	**100**
Sept	12	12	26	24	14	10	5	6	8	11	8	6	17	15	10	10	5	5	4	3	**109**	**102**
Oct	18	21	19	19	10	9	7	8	10	9	7	8	18	18	10	9	6	6	5	3	**110**	**110**
Nov	13	10	5	9	9	10	1	0	7	6	6	5	12	14	10	13	1	3	3	5	**67**	**75**
Dec	7	8	11	12	5	7	1	3	5	6	4	6	6	8	6	6	3	2	3	4	**51**	**62**
Jan 24	3	7	8	8	7	5	4	3	3	8	3	6	8	10	8	7	6	5	4	3	**54**	**62**
Feb	6	6	7	7	3	2	2	5	4	4	3	4	5	5	2	2	3	5	3	3	**38**	**43**
March	3	5	7	7	5	2	4	3	5	5	4	2	7	4	4	2	4	4	1	0	**44**	**34**
Total	**104**	**108**	**137**	**132**	**94**	**83**	**51**	**55**	**81**	**89**	**56**	**65**	**110**	**117**	**93**	**93**	**43**	**47**	**43**	**40**	**812**	**829**

F 8. Bull-wise Calving at Different Field Unit Centres during the Period 4/2023 to 3/2024

Months	Bull No.																												Total	
	19 XX		1454 XX		2793 XX		2831 XX		2838 XX		2850 XX		3004 XX		5427 XX		5481 XX		5500 XX		5505 XX		5511 XX		5588 XX		7584 XX		7649 XX			
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
April 23	-	-	24	25	-	-	-	-	-	-	4	4	2	3	-	-	-	-	-	-	-	-	-	-	9	10	-	-	-	-	**39**	**42**
May	-	-	-	-	18	14	-	-	-	-	34	30	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**52**	**45**
June	25	25	-	-	4	4	-	-	-	-	3	1	-	-	-	-	24	36	2	2	-	-	-	-	-	-	-	-	-	-	**58**	**68**
July	0	1	28	24	-	-	28	28	-	-	7	9	-	-	-	-	4	3	20	21	-	-	-	-	-	-	-	-	-	-	**87**	**86**
Aug	3	3	8	4	-	-	3	1	12	7	17	26	26	27	-	-	-	-	-	-	-	-	-	-	-	-	34	32	-	-	**103**	**100**
Sept	29	24	25	28	-	-	31	33	22	17	-	-	1	0	-	-	-	-	-	-	-	-	1	0	-	-	-	-	-	-	**109**	**102**
Oct	-	-	2	2	-	-	5	7	6	5	-	-	-	-	-	-	-	-	28	28	-	-	36	32	-	-	-	-	33	36	**110**	**110**
Nov	-	-	-	-	4	1	-	-	30	35	-	-	-	-	-	-	-	-	4	6	29	33	-	-	-	-		-	-	-	**67**	**75**
Dec	-	-	-	-	22	28	-	-	2	0	-	-	-	-	-	-	18	18	-	-	9	16	-	-	-	-	-	-	-	-	**51**	**62**
Jan 24	-	-	-	-	2	4	-	-	-	-	-	-	9	12	-	-	20	23	-	-	23	22	0	1	-	-	-	-	-	-	**54**	**62**
Feb	-	-	-	-	-	-	-	-	-	-	-	-	8	13	-	-	-	-	18	20	2	1	-	-	-	-	-	-	10	9	**38**	**43**
March	9	6	-	-	7	7	-	-	-	-	-	-	-	-	18	10	-	-	10	8	-	-	0	3	-	-	-	-	-	-	**44**	**34**
Total	**66**	**59**	**87**	**83**	**57**	**58**	**67**	**69**	**72**	**64**	**65**	**70**	**46**	**56**	**18**	**10**	**66**	**80**	**82**	**85**	**63**	**72**	**37**	**36**	**9**	**10**	**34**	**32**	**43**	**45**	**812**	**829**

F 9. Bull-wise Live Female Progeny at Different Field Unit Centers (0-6month) as on 3/2024

Bull No. Centres	19 XX	1454 XX	2793 XX	2831 XX	2838 XX	3004 XX	5427 XX	5481 XX	5500 XX	5505 XX	5511 XX	7649 XX	Total
Beed	1	-	3	1	2	1	1	2	5	6	2	3	**27**
Juglan	-	1	3	1	1	1	3	2	4	8	1	5	**30**
Dhiktana	-	-	4	-	4	-	-	1	4	2	1	2	**18**
Kheri	-	-	-	2	-	2	1	1	-	2	4	4	**16**
Jewra	-	-	3	-	-	2	-	1	3	5	2	2	**18**
Kirara	-	-	3	-	2	-	-	2	4	2	3	1	**17**
Sarsod	1	-	3	1	5	-	1	3	9	5	7	3	**38**
Bichpari	-	-	1	1	7	-	-	5	2	5	3	2	**26**
Bado Patti	-	-	-	3	-	2	-	-	6	3	1	4	**19**
Bugana	-	-	2	-	1	2	-	-	-	5	1	3	**14**
Total	**2**	**1**	**22**	**9**	**22**	**10**	**6**	**17**	**37**	**43**	**25**	**29**	**223**

F 10. Bull-wise Live Female Progeny at Different Field Unit Centers (6-12month) as on 3/2024

Bull No. Centres	19 XX	1454 XX	2793 XX	2831 XX	2838 XX	2850 XX	3004 XX	5427 XX	5481 XX	5500 XX	5588 XX	7584 XX	Total
Beed	3	2	-	6	-	5	-	-	4	2	1	5	**28**
Juglan	7	4	-	4	2	5	-	-	5	3	-	3	**33**
Dhiktana	-	5	1	1	5	5	4	-	3	2	2	1	**29**
Kheri	4	4	1	4	-	9	1	1	1	-	-	-	**25**
Jewra	1	9	1	-	3	-	3	-	2	3	1	4	**27**
Kirara	2	2	-	-	1	1	1	-	1	4	1	1	**14**
Sarsod	4	5	1	8	1	3	2	-	6	-	-	3	**33**
Bichpari	4	7	2	6	1	4	5	-	1	-	-	2	**32**
Bado Patti	2	3	1	1	1	6	-	-	2	1	1	-	**18**
Bugana	1	4	2	1	-	2	1	-	-	2	-	1	**14**
Total	**28**	**45**	**9**	**31**	**14**	**40**	**17**	**1**	**25**	**17**	**6**	**20**	**253**

F 11. Bull-wise Live Female Progeny at Different Field Unit Centers (1-3 years) as on 3/2024

Bull No. Centres	1208 XVIII	1219 XVIII	2689 XVIII	7147 XVIII	7227 XVIII	Total	1315 XIX	2674 XIX	2737 XIX	2759 XIX	5181 XIX	5232 XIX	5246 XIX	5310 XIX	5320 XIX	5333 XIX	5374 XIX	7604 XIX	Total
Beed	-	1	1	-	-	**2**	11	7	9	11	1	9	12	8	5	12	11	2	**98**
Juglan	1	-	-	-	-	**1**	9	12	8	10	5	10	5	9	8	10	7	11	**104**
Dhiktana	-	-	-	-	-	**-**	2	3	8	-	3	1	-	2	2	1	1	2	**25**
Kheri	2	1	1	-	1	**5**	10	3	4	5	3	2	4	3	3	10	2	2	**51**
Jewra	-	-	-	-	-	**-**	5	2	7	3	6	12	7	7	13	13	14	11	**100**
Kirara	-	-	-	-	-	**-**	3	3	1	2	1	2	3	2	2	5	4	4	**32**
Sarsod	-	3	-	-	2	**5**	5	6	14	6	8	8	10	6	9	10	7	8	**97**
Bichpari	-	2	-	1	-	**3**	10	6	7	5	6	6	8	7	11	8	6	13	**93**
Bado Patti	-	-	-	1	-	**1**	2	5	6	5	3	2	3	4	3	3	1	4	**41**
Bugana	-	-	-	1	-	**1**	1	1	-	-	-	1	2	-	2	-	1	1	**9**
Total	**3**	**7**	**2**	**3**	**3**	**18**	**58**	**48**	**64**	**47**	**36**	**53**	**54**	**48**	**58**	**72**	**54**	**58**	**650**

Cont…. F 11

Bull No. Centres	2848 XX	3004 XX	5427 XX	5588 XX	7584 XX	7649 XX	Total
Beed	4	2	5	-	4	1	**16**
Juglan	2	1	4	2	5	1	**15**
Dhiktana	1	-	4	-	-	1	**6**
Kheri	1	1	7	-	1	2	**12**
Jewra	1	-	3	1	2	1	**8**
Kirara	-	1	2	1	1	1	**6**
Sarsod	4	2	4	2	1	1	**14**
Bichpari	3	3	5	1	1	1	**14**
Bado Patti	-	-	5	-	-	1	**6**
Bugana	1	-	-	-	-	-	**1**
Total	**17**	**10**	**39**	**7**	**15**	**10**	**98**

F 12. Bull-wise Live Female Progeny at Different Field Unit Centers (> 3 years) as on 3/2024

Bull No. Centres	Dara XVII	2594 XVII	1150 XVIII	1208 XVIII	1209 XVIII	1219 XVIII	2645 XVIII	2676 XVIII	2677 XVIII	2689 XVIII	4905 XVIII	4995 XVIII	5147 XVIII	7094 XVIII	7147 XVIII	7227 XVIII	7263 XVIII	**Total**
Beed	1	-	2	**6**	**1**	**2**	**-**	**2**	**2**	4	4	4	1	1	**2**	**3**	**-**	**35**
Juglan	-	1	1	2	1	1	1	1	-	1	1	-	2	1	-	**1**	-	**14**
Dhiktana	-	-	-	1	-	-	1	-	1	1	-	-	-	1	-	-	-	**5**
Kheri	-	-	-	1	-	-	-	-	-	-	1	-	-	-	**1**	-	-	**3**
Jewra	-	-	1	1	1	1	2	1	1	1	1	1	1	-	**3**	**1**	**1**	**17**
Kirara	-	-	1	1	-	-	-	-	-	2	1	2	-	1	-	-	-	**8**
Sarsod	-	-	1	1	-	-	3	-	2	-	4	2	2	-	-	**2**	-	**17**
Bichpari	-	-	1	-	1	3	1	2	1	-	-	1	1	1	-	-	-	**12**
Bado Patti	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	**1**	**3**
Bugana	-	-	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-	**3**
Total	**1**	**1**	**7**	**14**	**5**	**7**	**9**	**6**	**8**	**10**	**12**	**10**	**7**	**5**	**6**	**7**	**2**	**117**

F 13. Bull-wise Daughters Calved at Different Field Units during 2023-2024

Bull No. Centres	1148 XVII	2558 XVII	2565 XVII	2594 XVII	2607 XVII	4733 XVII	4837 XVII	6942 XVII	7010 XVII	B1-330 XVII	Dara XVII	M-53 XVII	Siknder XVII	**Total**
Beed	-	1	-	-	-	-	1	1	3	2	1	-	1	**10**
Juglan	1	1	-	-	-	1	1	1	-	-	2	-	-	**7**
Dhiktana	-	-	-	-	-	-	-	-	-	-	1	1	-	**2**
Kheri	-	-	1	-	1	-	-	-	-	-	-	-	-	**2**
Jewra	-	-	-	1	1	-	1	-	2	-	3	-	-	**8**
Kirara	-	-	-	-	-	-	-	-	-	-	-	-	1	**1**
Sarsod	1	-	1	3	-	-	-	1	1	-	-	2	2	**11**
Bichpari	1	-	-	-	1	-	-	-	-	-	-	1	1	**4**
Bado Patti	-	-	-	-	-	-	-	2	-	-	-	-	-	**2**
Bugana	-	1	-	1	-	-	1	-	-	-	1	-	-	**4**
Total	**3**	**3**	**2**	**5**	**3**	**1**	**4**	**5**	**6**	**2**	**8**	**4**	**5**	**51**

Cont.. F 13

Bull No. **Centres**	2645 XVIII	2676 XVIII	2677 XVIII	2689 XVIII	4905 XVIII	4995 XVIII	5147 XVIII	1150 XVIII	1208 XVIII	1209 XVIII	1219 XVIII	7094 XVIII	7147 XVIII	7227 XVIII	7263 XVIII	5181 XIX	5232 XIX	**Total**
Beed	2	2	2	-	1	2	-	2	-	1	1	1	-	-	-	-	-	**14**
Juglan	3	2	1	1	1	5	2	2	3	-	2	2	-	-	1	-	-	**25**
Dhiktana	-	-	1	3	-	-	-	2	-	-	-	3	-	-	-	-	-	**9**
Kheri	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-	**3**
Jewra	-	-	1	1	1	1	1	2	-	-	-	-	-	-	-	1	-	**8**
Kirara	-	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	**3**
Sarsod	3	4	2	-	-	3	2	5	1	-	1	-	-	2	-	-	-	**23**
Bichpari	3	-	1	1	-	3	3	-	3	1	1	2	-	-	-	-	2	**20**
Bado Patti	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**
Bugana	-	3	1	1	-	-	2	1	-	-	-	1	-	-	-	-	-	**9**
Total	**11**	**13**	**9**	**7**	**3**	**14**	**11**	**15**	**9**	**2**	**5**	**9**	**1**	**2**	**1**	**1**	**2**	**115**

F 14. Bull-wise Daughters Recorded at Different Field Units Centres during the Period 4/2023 to 3/2024

Field Units	**Bull No.**	**Dgtr No.**	**Date of Birth**	**Date of Calving**	**Monthly Milk Records**																	
					M	**E**	**M**	**E**	**M**	**E**	**M**	**E**	**M**	**E**	**M**	**E**	**M**	**E**	**M**	**E**	**M**	**E**
Beed																						
	2607 XVII	995	24/10/19	21/06/22	4.0	4.0	4.0	4.0	4.3	4.0	3.8	3.7	3.8	3.8	3.5	3.5	3.5	3.5	3.0	3.0	5.0	0.0	4.0	0.0
	6942 XVII	952	13/08/19	26/06/22	4.0	4.0	5.0	5.0	4.5	4.5	4.3	4.2	4.0	4.0	4.0	4.0	3.3	3.2	3.0	3.0	2.5	2.5	4.0	0.0
	4733 XVII	859	09/10/18	11/07/22	5.0	5.0	5.3	5.2	5.0	5.0	5.0	5.0	5.0	5.0	4.5	4.5	3.8	3.7	3.5	3.5	3.0	3.0	2.5	2.5
	4715 XVII	815	22/07/18	24/07/22	4.0	4.0	4.3	4.2	4.5	4.5	4.3	4.2	4.0	4.0	3.8	3.7	3.5	3.5	3.0	3.0	3.0	3.0	3.0	0.0
	6379 XVI	786	31/03/18	27/7/22	4.0	4.0	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.0	2.5	2.5	4.0	0.0		
	4905 XVIII	1009	24/11/19	28/07/22	5.0	5.0	5.0	5.0	5.5	5.5	5.3	5.2	5.0	5.0	4.8	4.7	4.3	4.2	4.0	4.0	3.5	3.5	3.0	2.0
	4715 XVII	817	25/07/18	26/08/22	4.0	4.0	4.5	4.5	4.0	4.0	4.3	4.2	4.0	4.0	4.0	4.0	3.3	3.2	3.0	3.0	2.5	2.5	4.0	0.0
	4687 XVII	837	04/09/18	14/09/22	3.5	3.5	4.0	4.0	4.3	4.2	4.0	4.0	4.0	4.0	4.3	4.2	4.0	4.0	3.8	3.7	3.5	3.5	2.5	2.5
	4687 XVII	834	27/08/18	24/09/22	3.5	3.5	4.0	4.0	4.5	4.5	4.8	4.7	4.5	4.5	4.3	4.2	4.0	4.0	3.0	3.0	2.5	2.5	4.0	0.0
	4733 XVII	866	26/10/18	26/09/22	3.0	3.0	3.8	3.7	4.5	4.5	4.3	4.2	4.0	4.0	3.3	3.2	3.0	3.0	3.0	3.0	4.0	0.0	3.0	0.0
	2565 XVII	841	18/09/18	29/09/22	3.5	3.5	4.5	4.5	4.7	4.8	5.0	5.0	4.5	4.5	4.3	4.2	4.0	4.0	3.5	3.5	2.5	2.5	4.0	0.0
	4687 XVII	831	25/08/18	08/10/22	3.3	3.2	4.0	4.0	4.3	4.2	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	3.8	3.7	3.5	3.0	3.0	3.0
	Siknder XVII	942	24/07/19	10/10/22	4.0	4.0	4.5	4.5	5.0	5.0	5.0	5.0	5.5	5.5	5.0	5.0	4.8	4.7	4.0	4.0	4.0	4.0	3.8	3.7
	2594 XVII	893	04/01/19	11/10/22	3.5	3.5	4.0	4.0	4.5	4.5	4.8	4.7	5.0	5.0	4.5	4.5	4.3	4.2	3.5	3.5	3.3	3.2	3.0	3.0
	2594 XVII	857	10/10/18	17/10/22	3.5	3.5	4.3	4.2	4.5	4.5	5.0	5.0	5.3	5.2	4.5	4.5	4.0	4.0	3.8	3.7	3.0	3.0	2.5	2.5
	2594 XVII	979	25/09/19	26/10/22	3.8	3.7	4.3	4.2	4.5	4.5	5.0	5.0	4.3	4.2	4.0	4.0	3.5	3.5	3.5	3.5	3.3	3.2	4.0	0.0
	4733 XVII	869	10/11/18	28/10/22	4.0	4.0	4.5	4.5	4.5	4.5	4.8	4.7	4.5	4.5	4.3	4.2	4.0	4.0	3.3	3.2	3.0	3.0	2.5	2.5
	7010 XVII	887	11/12/18	24/11/22	4.3	4.2	4.5	4.5	5.0	5.0	4.8	4.7	5.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	2.8	2.7	4	0.0
	330 XVII	914	23/04/19	02/12/22	4.0	4.0	5.0	5.0	5.3	5.2	5.0	5.0	4.8	4.7	4.3	4.2	4.0	4.0	3.8	3.7	3.0	3.0	2.5	2.5
	2558 XVII	993	20/10/19	26/12/22	3.8	3.7	4.5	4.5	4.0	4.0	4.5	4.5	4.5	4.5	4.3	4.2	3.5	3.5	3.3	3.2	3.0	3.0	4.0	0.0
	2565 XVII	839	07/09/18	28/12/22	3.5	3.5	4.0	4.0	4.0	4.0	4.8	4.7	4.5	4.5	3.8	3.7	3.3	3.2	5.0	0.0	4.0	0.0	4.0	0.0
	4687 XVII	832	23/08/18	14/02/23	4.3	4.2	4.5	4.5	5.0	5.0	5.0	5.5	5.0	5.0	4.3	4.2	4.0	4.0	3.8	3.7	3.0	3.0	4.0	0.0
	1209 XVIII	1045	28/04/20	16/03/23	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.5	3.5	3.0	3.0	5.0	0.0
	330 XVII	944	02/08/19	30/03/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2676 XVIII	1030	28/01/20	08/04/23	3.8	3.7	4.5	4.5	4.5	4.5	4.5	4.5	4.3	4.2	3.8	3.7	3.5	3.5	3.5	3.0	3.0	3.0	4.0	0.0
	330 XVII	908	22/03/19	24/06/23	4.0	4.0	4.3	4.2	4.5	4.5	4.5	4.5	4.0	4.0	3.8	3.7	3.0	3.0	5.0	0.0	4.0	0.0		
	4995 XVIII	1100	29/09/20	25/06/23	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.8	3.7	3.0	2.0	5.5	0.0	3.0	0.0		

	7010 XVII	915	18/04/19	28/06/23	3.5	3.5	4.5	4.5	4.3	4.2	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x
	7010 XVII	953	24/08/19	02/08/23	3.5	3.5	4.0	4.0	4.8	4.7	4.5	4.5	4.0	4.0	3.8	3.7	3.5	3.0	3.0	3.0				
	7094 XVIII	1023	06/01/20	08/08/23	4.0	4.0	4.5	4.5	5.0	5.0	4.8	4.7	4.3	4.2	3.5	3.5	3.0	3.0	2.5	2.5				
	2645 XVIII	1044	25/04/20	26/08/23	4.8	4.7	5.3	5.2	5.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0						
	Siknder XVII	976	25/09/19	06/09/23	4.5	4.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	4.5	4.5						
	330 XVII	916	25/04/19	08/09/23	3.8	3.7	4.0	4.0	4.0	4.0	4.3	4.2	4.0	4.0	4.0	4.0	4.0	4.0						
	4905 XVIII	1027	10/01/20	24/09/23	3.8	3.7	4.8	4.7	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	6942 XVII	948	08/08/19	28/09/23	3.0	3.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2645 XVIII	1032	05/02/20	02/10/23	3.5	3.5	4.5	4.5	4.8	4.7	5.0	5.0	4.8	4.7	4.5	4.5								
	1219 XVIII	1071	12/08/20	02/10/23	4.0	4.0	4.5	4.5	4.5	4.5	5.3	5.2	5.0	5.0	5.0	5.0								
	7010 XVII	875	20/11/18	03/10/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	1150 XVIII	1131	02/11/20	08/10/23	3.5	3.5	4.3	4.2	5.0	5.0	5.5	5.5	4.8	4.7	Sold	x	x	x	x	x	x	x	x	x
	1209 XVIII	1042	02/04/20	25/10/23	3.8	3.7	4.5	4.5	5.0	5.0	4.3	4.2	4.0	4.0										
	4995 XVIII	1109	04/10/20	06/11/23	4.0	4.0	5.0	5.0	5.5	5.5	5.3	5.2	5.0	5.0										
	Dara XVII	947	01/08/19	09/11/23	3.3	3.2	4.0	4.0	4.5	4.5	4.5	4.5	4.3	4.2										
	4837 XVII	983	11/10/19	24/11/23	4.0	4.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2676 XVIII	1088	12/09/20	05/12/23	3.5	3.5	4.3	4.2	4.5	4.5	5.0	5.0												
	1150 XVIII	1134	12/11/20	28/12/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2558 XVII	972	17/09/19	03/02/24	3.5	3.5	4.0	4.0																
	2677 XVIII	1060	05/07/20	18/02/24	4.0	4.0	6.0	6.0																
	2677 XVIII	1158	25/12/20	16/03/24	3.5	3.5																		
Juglan																								
	6942 XVII	1515	04/07/19	22/07/22	3.5	3.5	4.8	4.7	4.5	4.5	4.5	4.5	4.0	4.0	3.8	3.7	3.5	3.5	3.0	3.0	5.0	0.0	3.0	0.0
	4995 XVIII	1601	11/12/19	27/07/22	4.0	4.0	5.5	5.5	5.0	5.0	4.8	4.7	4.5	4.5	4.0	4.0	4.0	4.0	3.5	3.5	3.0	3.0	3.0	0.0
	4715 XVII	1419	22/08/18	03/08/22	4.3	4.2	5.3	5.2	4.8	4.7	4.5	4.5	4.3	4.2	4.0	4.0	4.0	4.0	3.5	3.5	3.3	3.2	3.5	0.0
	1148 XVII	1487	02/03/19	14/08/22	4.0	4.0	5.5	5.0	5.5	5.5	5.5	5.5	5.0	5.0	4.5	4.5	4.3	4.2	4.0	4.0	4.0	4.0	3.0	3.5
	4837 XVII	1564	05/10/19	18/08/22	3.5	3.5	5.0	5.0	6.0	6.0	5.8	5.7	5.5	5.5	5.0	5.0	4.8	4.7	4.3	4.2	3.8	3.7	2.0	2.0
	Dara XVII	1585	04/11/19	09/09/22	3.5	3.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.3	4.2	4.0	4.0	3.0	3.0	4.0	0.0
	2558 XVII	1462	18/11/18	11/09/22	4.3	4.2	4.8	4.7	5.0	5.0	5.5	5.5	5.8	5.7	5.0	5.0	4.5	4.5	4.3	4.2	3.5	3.5	2.5	2.5
	M-53 XVII	1430	15/09/18	18/09/22	4.0	4.0	4.3	4.2	4.5	4.5	4.5	4.5	4.3	4.2	4.5	4.5	4.3	4.2	4.0	4.0	3.3	3.2	4.0	0.0
	7010 XVII	1541	24/08/19	22/09/22	4.0	4.0	4.3	4.2	4.0	4.0	4.0	4.0	4.3	4.5	4.0	4.0	3.8	3.7	3.0	3.0	3.0	2.0	4.0	0.0
	4687 XVII	1486	04/03/19	23/09/22	3.5	3.5	4.0	4.0	4.3	4.2	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.3	3.2	2.3	2.2	3.5	0.0
	Dara XVII	1576	20/10/19	24/09/22	4.0	4.0	4.8	4.7	5.0	5.0	5.0	5.0	5.5	5.5	5.0	5.0	4.5	4.5	3.8	3.7	3.0	3.0	2.5	2.5
	4733 XVII	1421	01/09/18	25/09/22	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.8	3.7	3.5	3.5	3.0	3.0	4.0	0.0	3.0	0.0
	330 XVII	1506	15/06/19	26/09/22	4.0	4.0	4.5	4.5	4.5	4.5	4.3	4.2	4.0	4.0	3.5	3.5	3.5	3.5	3.0	3.0	2.5	2.0	4.0	0.0
	Dara XVII	1517	13/07/19	27/09/22	4.3	4.2	5.0	5.0	6.0	6.0	5.5	5.5	5.3	5.2	4.8	4.7	4.5	4.5	4.5	4.5	3.5	3.5	3.0	3.0
	2607 XVII	1574	29/10/19	28/09/22	4.0	4.0	5.5	5.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.0	5.0	4.0	4.0	4.0	4.0
	1150 XVIII	1596	27/11/19	29/09/22	3.8	3.7	4.5	4.5	4.8	4.7	5.0	5.0	5.3	5.2	5.0	5.0	4.8	4.7	4.0	4.0	3.3	3.2	3.0	3.0
	Dara XVII	1528	26/07/19	02/10/22	4.0	4.0	4.5	4.5	4.5	4.5	4.5	4.5	5.0	5.0	4.5	4.5	4.0	4.0	3.8	3.7	3.0	3.0	2.5	2.5
	7010 XVII	1456	13/11/18	03/10/22	5.0	5.0	6.0	6.0	6.5	6.5	7.0	7.0	7.0	7.0	6.8	6.7	6.3	6.2	5.5	5.5	4.5	4.5	4.0	4.0
	330 XVII	1496	26/04/19	03/10/22	4.0	4.0	4.5	4.5	5.0	5.0	5.5	5.5	5.5	5.5	5.0	5.0	5.0	5.0	5.0	5.0	4.3	4.2	4.0	4.0
	Dara XVII	1442	20/10/18	11/10/22	4.0	4.0	4.5	4.5	5.0	5.0	4.5	4.5	4.8	4.7	4.5	4.5	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0
	2565 XVII	1543	18/08/19	18/11/22	4.0	4.0	4.0	4.0	5.5	5.5	6.0	6.0	5.8	5.7	5.5	5.5	4.5	4.5	4.0	4.0	3.8	3.7	3.0	3.0
	M-53 XVII	1584	06/11/19	22/11/22	3.5	3.5	4.0	4.0	4.3	4.2	4.0	4.0	4.0	4.0	4.0	4.0	3.8	3.7	3.5	3.5	3.3	3.2	4.0	0.0
	4837 XVII	1550	10/09/19	28/11/22	4.0	4.0	4.5	4.5	5.0	5.0	5.0	5.0	4.8	4.7	4.5	4.5	4.0	4.0	4.0	4.0	3.5	3.5	2.5	2.5
	330 XVII	1492	15/04/19	18/12/22	3.5	3.5	4.5	4.5	4.8	4.7	5.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.5	35	3.0	3.0	4.0	0.0
	2565 XVII	1410	10/08/18	22/12/22	6.0	6.0	6.0	6.0	5.5	5.5	6.0	6.0	5.0	5.0	4.3	4.2	3.8	3.7	3.5	3.5	3.0	3.0	4.0	0.0
	4905 XVIII	1589	16/11/19	23/12/22	4.5	4.5	5.5	5.5	5.3	5.2	5.5	5.5	5.3	5.2	4.5	4.5	4.0	4.0	3.3	3.2	2.5	2.5	2.5	2.0
	4837 XVII	1454	05/11/19	27/12/22	4.0	4.0	5.0	5.0	5.0	5.0	5.8	5.7	5.0	5.0	4.3	4.2	3.8	3.7	2.8	2.7	4.1	0.0	3.0	0.0
	6942 XVII	1518	15/07/19	27/12/22	4.3	4.2	5.5	5.5	5.3	5.2	5.5	5.5	5.5	5.5	5.0	5.0	4.5	4.5	3.5	3.5	3.0	3.0	2.5	2.5
	2645 XVIII	1616	06/02/20	28/01/23	4.0	4.0	4.5	4.5	5.0	5.0	4.8	4.7	4.3	4.2	4.0	4.0	4.0	4.0	3.3	3.5	3.0	3.0	5.0	0.0
	2565 XVII	1546	23/08/19	02/03/23	4.0	4.0	5.3	5.2	5.0	5.0	5.0	5.0	4.8	4.7	4.5	4.5	4.0	4.0	4.0	4.0	3.3	3.2	5.0	0.0
	4837 XVII	1563	01/10/19	26/03/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	Dara XVII	1566	08/10/19	11/04/23	4.5	4.5	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	1208 XVIII	1662	02/08/20	18/05/23	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	4.3	4.2	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	5.0	0.0
	Dara XVII	1508	18/06/19	02/06/23	3.5	3.5	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	1148 XVII	1489	05/03/19	03/07/23	4.0	4.0	5.5	5.5	5.5	5.5	6.0	6.0	5.5	5.5	5.0	5.0	4.3	4.2	4.0	4.0	3.5	3.5		

	2645 XVIII	1681	26/08/20	05/07/23	4.3	4.2	4.8	4.7	5.0	5.0	6.5	5.0	5.0	5.0	Sold	x	x	x	x	x	x	x	x	x
	4733 XVII	1533	06/08/19	15/07/23	3.5	3.5	4.3	4.2	4.5	4.5	5.0	5.0	4.8	4.7	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0		
	2558 XVII	1554	13/09/19	27/07/23	4.0	4.0	5.0	5.0	5.5	5.5	5.0	5.0	4.5	4.5	4.3	4.2	4.0	4.0	3.5	3.5				
	2676 XVIII	1690	06/09/20	03/08/23	3.5	3.5	4.0	4.0	4.5	4.5	4.5	4.5	4.3	4.2	4.0	4.0	3.5	3.0	3.0	3.0				
	1219 XVIII	1638	04/05/20	11/08/23	4.0	4.0	4.8	4.7	5.0	5.0	5.3	5.2	5.0	5.0	4.8	4.7	3.8	3.7	3.3	3.2				
	7094 XVIII	1657	08/07/20	18/08/23	4.3	4.2	5.0	5.0	6.0	6.0	6.0	6.0	5.5	5.5	5.0	5.0	4.5	4.5	4.0	4.0				
	5147 XVIII	1716	28/10/20	19/08/23	3.5	3.5	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2645 XVIII	1631	25/04/20	25/08/23	4.0	4.0	5.0	5.0	5.8	5.7	5.5	5.5	4.5	4.5	4.5	4.5	4.3	4.2						
	7263 XVIII	1663	15/07/20	26/08/23	3.5	3.5	4.3	4.2	4.5	4.5	4.5	4.5	4.3	4.2	4.0	4.0	Sold	x	x	x	x	x	x	x
	1219 XVIII	1649	15/06/20	30/08/23	4.0	4.0	5.0	5.0	5.3	5.2	5.5	5.5	5.0	5.0	4.5	4.5	4.5	4.5						
	4995 XVIII	1704	08/10/20	30/08/23	3.5	3.5	5.3	5.2	5.5	5.5	5.3	5.2	4.8	4.7	4.5	4.5	4.3	4.2						
	4995 XVIII	1651	24/06/20	03/09/23	3.8	3.7	4.0	4.0	4.8	4.7	4.5	4.5	4.3	4.2	4.0	4.0	4.0	4.0						
	2645 XVIII	1679	18/08/20	12/09/23	4.0	4.0	4.5	4.5	5.0	5.0	4.8	4.7	5.0	5.0	4.8	4.7	4.5	4.5						
	1208 XVIII	1682	20/08/20	14/09/23	3.5	3.5	4.8	4.7	5.5	5.5	5.3	5.2	4.8	4.7	4.5	4.5	4.5	4.5						
	4995 XVIII	1698	30/09/20	24/09/23	4.0	4.0	4.5	4.5	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	6942 XVII	1592	10/11/19	26/09/23	3.5	3.5	5.3	5.2	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0								
	2689 XVIII	1723	16/11/20	26/09/23	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.8	4.7								
	4837 XVII	1560	28/09/19	21/10/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	1150XVIII	1614	26/01/20	22/10/23	3.5	3.5	4.5	4.5	5.3	5.2	4.8	4.7	4.5	4.5										
	7094 XVIII	1658	15/07/20	24/10/23	4.3	4.2	5.0	5.0	5.5	5.5	5.5	5.5	Sold	x	x	x	x	x	x	x	x	x	x	x
	5147 XVIII	1713	20/10/20	02/11/23	4.0	4.0	4.8	4.7	5.0	5.0	5.5	5.5	5.0	5.0										
	1208 XVIII	1669	03/08/20	23/11/23	4.0	4.0	4.5	4.5	5.0	5.0	5.0	5.0												
	4905 XVIII	1594	22/11/19	02/12/23	4.3	4.2	5.0	5.0	6.0	6.0	6.0	6.0												
	4995 XVIII	1696	27/09/20	04/12/23	4.0	4.0	4.8	4.7	5.0	5.0	5.5	5.5												
	2677 XVIII	1742	18/12/20	10/12/23	3.5	3.5	4.5	4.5	5.5	5.0	5.5	5.0												
	2676 XVIII	1689	04/09/20	25/12/23	4.0	4.0	6.0	6.0	6.0	6.0														
	1150 XVIII	1590	28/11/19	01/03/24	3.0	3.0																		
	4995 XVIII	1699	27/09/20	04/03/24	3.5	3.5																		
Dhikatana																								
	M-53 XVII	916	19/04/19	12/07/22	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0	3.0	3.0	2.0	2.0	2.0	0.0
	Dara XVII	888	12/10/18	14/07/22	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	2.0	2.0	1.5
	M-53 XVII	969	22/10/19	18/07/22	3.0	2.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
	1148 XVII	914	21/03/19	05/08/22	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
	M-51 XVI	860	18/07/18	16/08/22	6.0	5.0	6.0	5.0	6.0	5.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	3.0	3.0	3.0	3.0	1.5	2.0	1.5
	4837 XVII	965	07/10/19	16/08/22	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	3.0	2.0	2.0	2.0	3.0	0.0	2.0	0.0
	330 XVII	950	04/08/19	21/08/22	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0	3.0	3.0	3.0	1.5	1.5	1.5	Dry	x
	330 XVII	948	19/07/19	22/08/22	5.0	4.0	4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	2.0	2.0	2.0	2.0	0.0	Dry	x
	2565 XVII	967	24/10/19	18/09/22	4.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0
	4733 XVII	854	17/06/18	21/09/22	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0	0.0	2.0	0.0
	Dara XVII	946	11/07/19	21/09/22	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	3.0	3.0	2.5	2.0	1.5	2.0	0.0	Dry	x
	1148 XVII	907	28/02/19	27/09/22	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	3.0	3.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0
	330 XVII	926	17/05/19	30/09/22	5.0	4.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	2.0	3.0	2.0	2.0	1.0	2.0	0.0	2.0	0.0
	4837 XVII	956	28/08/19	01/10/22	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	3.5	3.5	3.0	2.5	2.5	2.5	2.5
	1148 XVII	945	10/07/19	21/10/22	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	2.0	2.0	1.5	2.0	0.0	2.0	0.0	Dry	x
	Dara XVII	924	13/05/19	22/10/22	5.0	4.0	5.0	4.0	5.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	2.0	2.0	1.5	1.5	1.5	1.5	1.5	1.5
	4837 XVII	957	01/09/19	30/10/22	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	3.5	2.0	2.0	2.0	0.0	2.0	0.0	2.0	0.0
	1150 XVIII	980	01/01/20	10/11/22	3.0	2.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.0	2.5	2.0	1.5	1.5	
	Dara XVII	929	24/05/19	23/11/22	6.0	6.0	6.0	6.0	5.0	5.0	5.0	4.0	5.0	3.5	4.0	3.5	3.5	3.0	3.5	3.0	2.5	2.5	3.0	0.0
	2645 XVIII	993	11/04/20	24/01/23	5.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	2.5	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Dara XVII	961	03/10/19	21/07/23	7.0	7.0	7.0	7.0	6.5	6.5	6.5	6.5	6.0	5.0	Sold	x	x	x	x	x	x	x	x	x
	M-53 XVII	923	08/05/19	22/07/23	7.0	6.0	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0	4.0	3.0	4.0	3.0	3.5	3.0				
	2677 XVIII	1008	19/07/20	23/07/23	6.0	5.0	6.5	5.5	6.5	5.5	6.5	5.5	5.5	5.5	5.5	5.5	5.5	5.0	3.7	3.2				
	2689 XVIII	995	02/05/20	24/07/23	6.0	6.0	5.5	5.5	5.5	5.5	5.5	5.0	5.0	5.0	4.0	4.0	4.0	3.0	3.4	3.0				
	1150 XVIII	1004	25/06/20	19/08/23	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.5	5.0	4.0	4.0	3.0	4.0	3.0	3.8	3.3				
	7094 XVIII	1011	27/07/20	20/08/23	6.0	5.0	6.0	5.0	6.0	5.0	6.0	5.5	5.5	5.0	5.0	4.0	5.0	4.0	3.5	3.0				
	7094 XVIII	1026	08/10/20	17/09/23	5.0	5.0	5.0	5.0	5.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.4	4.0						
	2689 XVIII	1032	22/11/20	06/10/23	5.5	5.5	5.5	5.5	5.0	5.0	4.0	4.0	4.0	4.0	3.8	3.5								

	2689 XVIII	1033	24/11/20	28/11/23	5.5	5.0	4.0	4.0	4.0	4.0	5.3	4.9												
	7094 XVIII	1007	13/07/20	29/11/23	5.0	5.0	5.0	5.0	5.0	5.0	5.5	5.0												
	1150 XVIII	1030	15/11/20	07/12/23	6.5	5.0	5.0	5.0	5.0	5.0	5.3	5.0												
Kheri																								
	4687 XVII	763	18/07/18	13/07/22	4.5	4.0	5.0	4.5	5.0	5.0	4.0	3.5	4.0	3.5	3.5	3.0	4.0	3.0	3.5	3.0	3.2	3.0	2.5	2.0
	4592 XVI	762	15/07/18	14/09/22	5.0	4.5	5.0	5.0	5.5	5.0	5.5	5.0	5.0	4.5	4.5	4.0	4.4	3.8	4.0	3.5	3.5	3.0	3.5	2.3
	2607 XVII	797	12/11/18	06/10/22	4.0	4.5	4.5	4.0	5.0	4.5	5.0	5.0	5.0	4.5	4.8	4.3	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5
	4705 XVI	738	28/03/18	11/10/22	5.0	4.5	4.0	4.5	5.0	4.5	5.0	4.5	4.5	4.0	4.2	3.8	4.0	3.5	3.5	3.0	3.0	2.5	2.5	2.0
	6942 XVII	843	04/08/19	11/10/22	5.0	5.0	5.5	5.0	5.0	5.0	5.0	4.0	4.5	4.0	4.3	3.8	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5
	2594 XVII	853	13/09/19	15/10/22	4.0	3.5	4.0	3.5	5.0	4.5	5.0	5.0	5.0	4.5	4.8	4.3	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5
	2558 XVII	803	04/12/18	28/10/22	5.0	5.0	4.5	4.0	5.0	4.0	4.5	4.0	4.2	3.8	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	2.5	2.0
	4592 XVI	756	28/06/18	13/11/22	4.5	4.0	5.0	4.5	5.0	5.0	5.0	4.5	4.9	4.2	5.0	4.5	4.5	4.0	4.0	3.5	4.0	3.5	3.5	3.0
	2607 XVII	820	14/03/19	17/11/22	4.5	4.5	5.0	5.0	4.5	4.0	4.0	4.0	4.1	3.8	4.5	4.0	4.0	3.5	3.5	3.0	3.5	3.0	3.0	2.5
	330 XVII	833	18/06/19	21/11/22	4.5	4.0	4.5	4.0	4.0	4.5	4.0	4.3	4.5	4.0	4.5	4.0	4.0	3.5	3.5	3.0	3.5	3.0	3.0	2.5
	7010 XVII	825	26/04/19	02/12/22	5.0	5.0	5.0	5.0	5.5	5.0	5.2	4.9	5.5	5.0	5.5	5.0	5.0	4.5	4.0	3.5	3.5	3.0	3.0	2.5
	2607 XVII	785	30/09/18	16/05/23	5.0	4.5	5.0	4.5	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5	2.5	2.0	2.0	1.5	3.0	0.0
	2565 XVII	860	23/10/19	12/05/23	5.5	5.0	5.5	5.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5	2.5	2.0	2.0	1.5	1.5	1.0
	1208 XVIII	878	25/07/20	13/08/23	5.5	5.0	5.5	5.0	5.5	5.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5				
	7147 XVIII	871	12/03/20	29/08/23	5.0	4.5	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5	2.5	2.0						
	1208 XVIII	882	01/08/20	11/09/23	6.0	5.5	6.5	6.0	6.0	5.5	5.5	5.0	5.0	4.5	4.5	4.0	4.0	3.5						
Jewra																								
	M-53 XVII	1171	10/11/18	10/07/22	4.0	3.5	4.0	4.0	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.0	3.0	3.0	Dry	x
	4687 XVII	1131	15/08/18	14/07/22	3.5	3.5	3.5	3.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.0	3.0	3.0	2.0	2.0
	Sikander XVII	1203	14/08/19	28/07/22	4.0	3.5	4.0	3.5	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.0	2.5	2.5	Dry	x
	4715 XVII	1123	30/07/18	18/08/22	4.0	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.5	Sold	x
	4733 XVII	1148	26/09/18	30/09/22	3.5	3.5	4.0	3.5	4.0	4.0	4.0	3.5	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.0	3.0	3.0	Dry	x
	M-53 XVII	1189	23/04/19	02/10/22	4.0	3.5	4.0	4.0	4.5	4.0	4.5	4.5	4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	3.7	3.8
	Sikander XVII	1187	29/04/19	21/10/22	4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.5	5.0	4.5	4.5	4.5	4.5	4.0	4.5	3.5	3.0	3.0	Dry	x
	1148 XVII	1200	19/07/19	16/12/22	4.0	4.0	4.5	4.0	4.5	4.5	5.0	4.5	5.0	5.0	4.5	4.5	4.5	4.0	3.5	3.0	2.5	2.5	Dry	x
	330 XVII	1190	24/04/19	22/12/22	4.0	4.0	4.5	4.0	4.0	4.0	4.5	4.0	4.0	4.0	3.5	3.5	3.5	3.0	2.0	2.0	Dry	x	x	x
	4905 XVIII	1235	24/11/19	14/01/23	4.5	4.0	4.5	4.0	4.5	4.5	5.0	4.5	4.5	4.5	4.5	4.0	4.0	4.0	3.5	3.5	3.0	3.0	2.0	2.0
	M-53 XVII	1191	23/05/19	16/01/23	4.0	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	3.5	3.5	3.5	3.0	3.0	3.0	2.0	2.0
	7010 XVII	1207	24/08/19	11/02/23	4.0	4.0	4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.0	4.0	4.0	3.5	3.5	2.5	2.0	Dry	x
	M-53 XVII	1195	07/07/19	12/03/23	3.5	3.5	4.5	4.0	4.5	4.5	5.0	4.5	5.0	5.0	5.0	4.5	4.5	4.5	3.5	3.0	Dry	x	x	x
	2607 XVII	1226	24/10/19	19/03/23	3.0	3.0	4.0	3.5	4.0	4.0	3.5	3.5	4.0	4.0	3.5	3.5	4.0	3.5	3.5	3.5	Dry	x	x	x
	Dara XVII	1223	17/10/19	04/05/23	5.0	5.0	5.5	5.0	5.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0	3.0	3.0	Dry	x	x	x	x	x
	4837 XVII	1218	16/10/19	13/06/23	3.5	3.5	4.0	4.0	4.5	4.0	4.5	4.5	5.0	5.0	4.5	4.5	4.5	4.0	3.5	3.5	3.0	3.0	Dry	x
	7010 XVII	1211	28/08/19	16/06/23	4.0	3.5	4.5	4.0	4.5	4.5	5.0	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	3.5	3.5	3.0	Dry	x
	Dara XVII	1221	12/10/19	01/07/23	3.0	3.0	4.0	4.0	4.5	4.0	5.5	5.0	5.5	5.5	5.0	5.0	5.0	4.5	4.5	4.0	3.5	3.5		
	Dara XVII	1209	05/09/19	11/07/23	3.5	3.0	3.5	3.5	4.0	3.5	5.5	5.0	5.0	5.0	5.5	4.0	4.5	4.5	4.0	4.0	3.5	3.5		
	1150 XVIII	1240	19/12/19	11/07/23	3.0	3.0	4.0	4.0	4.5	4.0	5.0	4.5	5.0	4.5	4.5	4.5	4.5	4.0	4.0	3.5	3.5	3.0		
	7010 XVII	1212	30/08/19	26/07/23	3.5	3.5	4.0	4.0	5.0	4.5	4.5	4.5	Sold	x	x	x	x	x	x	x	x	x	x	x
	4905 XVIII	1231	25/11/19	03/08/23	3.5	3.0	3.5	3.5	5.5	5.0	5.5	5.5	5.5	5.0	5.5	5.5	5.0	5.0	4.5	4.5				
	2607 XVII	1225	20/10/19	13/10/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2594 XVII	1219	14/10/19	17/11/23	3.5	3.0	4.0	4.0	5.0	4.5	5.0	5.0	5.5	5.5										
	2677 XVIII	1282	28/12/20	01/12/23	4.0	4.0	4.5	4.5	5.0	4.5	5.0	5.0												
	2689 XVIII	1274	16/10/20	07/01/24	3.5	3.0	4.0	4.0	4.5	4.5														
	1150 XVIII	1239	27/11/19	10/01/24	3.0	3.0	4.5	4.0	5.0	5.0														
	5147 XVIII	1252	23/04/20	13/01/24	3.5	3.0	4.0	3.5	4.5	4.5														
	5181 XIX	1312	15/06/21	14/01/24	3.5	3.5	4.0	4.0	4.5	4.5														
	4995 XVIII	1261	18/06/20	14/02/24	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Kirara																								
	2558 XVII	492	11/09/18	14/09/22	4.0	4.0	4.5	4.0	4.5	4.5	4.5	4.0	4.0	4.0	4.0	3.5	3.5	3.5	4.0	3.5	3.5	3.5	3.5	3.0
	2676 XVIII	508	28/12/19	14/06/23	3.5	3.5	4.5	4.0	4.5	4.5	5.0	5.0	4.5	4.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0	Dry	x
	Sikander XVII	504	23/09/19	05/08/23	3.0	3.0	3.5	3.5	5.0	5.0	5.5	5.0	5.0	5.0	5.5	5.5	5.0	5.0	4.5	4.0				
	1150 XVIII	506	11/11/19	26/09/23	5.5	5.0	5.5	5.5	5.5	5.5	5.5	5.0	5.5	5.5	4.5	4.5								
	5147 XVIII	518	27/10/20	17/02/24	3.5	3.0	4.0	4.0																

Sarsod																							
	7010 XVII	664	25/04/19	22/06/22	5.5	5.0	5.5	5.0	5.5	5.0	6.0	5.5	5.0	4.5	5.0	4.5	3.5	3.0	3.0	2.5	4.0	3.5	4.0	0.0
	2565 XVII	756	18/10/19	26/06/22	4.5	4.0	5.5	5.0	5.0	4.5	4.5	4.0	5.5	5.0	4.5	4.0	4.5	4.0	4.5	4.0	3.5	3.0	2.5	2.0
	4733 XVII	557	11/07/18	02/07/22	5.5	5.0	6.0	5.5	6.5	6.0	5.5	5.0	5.0	4.5	5.0	4.5	4.0	3.5	3.5	3.0	4.5	4.0	3.0	0.0
	2594 XVII	730	16/09/19	07/07/22	4.5	4.0	5.0	4.5	4.0	3.5	5.0	4.5	4.5	4.0	4.5	4.0	3.5	3.0	3.0	2.5	3.5	3.0	2.0	1.5
	330 XVII	681	10/06/19	27/07/22	5.0	4.5	5.0	4.5	5.5	5.0	4.5	4.0	5.5	5.0	4.0	3.5	4.0	3.5	3.0	2.5	Dry	x	x	x
	4837 XVII	716	09/09/19	30/07/22	5.5	5.0	5.5	5.0	5.0	4.5	5.0	4.5	4.5	4.0	3.0	2.5	2.5	2.0	3.5	3.0	2.0	1.5	2.0	0.0
	4687 XVII	571	13/08/18	06/08/22	6.0	5.5	5.0	4.5	5.0	4.5	5.0	4.5	4.5	4.0	4.5	4.0	3.5	3.0	3.5	3.0	3.0	2.5	2.5	2.0
	4733 XVII	742	04/10/19	06/08/22	6.0	5.5	5.5	5.0	6.0	5.0	4.0	3.5	5.0	4.5	4.0	3.5	3.5	3.0	3.5	3.0	3.5	3.0	3.0	2.5
	M-53 XVII	735	23/09/19	09/08/22	5.0	4.5	5.5	5.0	5.5	5.0	5.0	4.5	5.0	5.0	3.5	3.0	3.0	2.5	4.0	3.5	3.5	3.0	3.0	2.5
	Dara XVII	694	01/08/19	10/08/22	5.0	4.5	5.0	4.5	5.5	5.0	5.5	5.0	4.5	4.0	5.0	4.5	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0
	330 XVII	678	05/06/19	11/08/22	5.5	5.0	5.0	4.5	5.0	4.5	5.0	4.5	5.0	4.5	4.0	3.5	3.5	3.0	4.0	3.5	2.5	2.0	2.5	2.0
	2594 XVII	724	09/09/19	21/08/22	3.5	3.0	3.5	3.0	4.5	4.0	3.5	3.0	3.5	3.0	3.0	0.0	2.5	2.0	3.5	3.0	2.0	1.5	2.0	1.5
	4715 XVII	655	10/02/19	22/08/22	5.5	5.0	3.5	3.0	4.0	3.5	5.0	4.5	4.0	3.5	4.0	3.5	3.5	3.0	3.5	3.0	2.5	2.0	2.0	0.0
	2565 XVII	715	30/08/19	27/08/22	4.5	4.0	4.5	4.0	4.5	4.0	3.5	3.0	4.5	4.0	4.5	4.0	2.5	2.0	2.5	2.0	Dry	x	x	x
	Sikander XVII	711	30/08/19	30/08/22	4.5	4.0	4.5	4.0	3.5	3.0	3.5	3.0	3.5	3.0	3.0	2.5	3.0	0.0	2.0	1.5	2.5	2.0	Dry	x
	6942 XVII	700	18/08/19	01/09/22	3.5	3.0	4.0	3.5	4.0	3.5	4.0	3.5	4.0	3.5	4.0	3.5	4.5	4.0	2.5	2.0	2.5	2.0	2.5	2.0
	2558 XVII	762	26/10/19	09/09/22	5.0	4.5	5.5	5.0	5.5	5.0	5.5	5.0	5.0	4.5	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5
	4837 XVII	616	02/11/18	15/09/22	5.5	5.0	6.0	5.5	5.5	5.0	4.5	4.0	4.5	4.0	4.5	4.0	4.0	3.5	3.5	3.0	3.5	3.0	3.5	30
	2565 XVII	714	29/08/19	17/09/22	5.0	4.5	5.0	4.5	4.0	4.5	5.5	5.0	5.5	5.0	5.0	4.5	4.5	4.0	4.5	4.0	4.0	3.5	Dry	x
	M-51 XVI	640	15/12/18	19/09/22	4.5	4.0	4.5	4.0	4.5	4.0	5.0	4.5	5.0	4.5	4.5	4.0	5.0	4.5	3.5	3.0	3.0	2.5	3.5	3.0
	7010 XVII	707	22/08/19	21/09/22	5.0	4.5	5.0	4.5	5.0	4.5	5.0	4.5	4.5	4.0	3.5	3.0	3.0	2.5	3.0	2.5	Dry	x	x	x
	7010 XVII	709	28/08/19	28/09/22	4.5	4.0	5.5	5.0	4.5	4.0	4.5	4.0	5.0	4.5	5.0	4.5	4.0	3.5	4.0	3.5	3.0	2.5	2.0	0.0
	2676 XVIII	793	23/01/20	30/09/22	5.5	5.0	5.5	5.0	4.5	4.0	5.0	4.5	5.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	3.5	3.0	2.0	1.5
	2565 XVII	627	06/11/18	05/10/22	5.5	5.0	5.0	4.5	6.0	5.5	4.5	4.0	4.0	3.5	4.0	3.5	3.5	3.0	2.5	2.0	4.0	3.5	3.0	2.5
	1209 XVIII	809	10/05/20	12/10/22	6.0	5.5	6.5	6.0	5.0	4.5	5.0	4.5	4.5	4.0	5.0	4.5	5.5	5.0	5.0	4.5	3.5	3.0	2.5	2.0
	2645 XVIII	797	06/02/20	13/10/22	4.0	3.5	5.0	4.5	4.5	4.0	5.0	4.5	4.5	4.0	4.0	3.5	4.5	4.0	4.0	3.5	2.5	2.0	3.5	3.0
	Dara XVII	743	14/10/19	15/10/22	6.0	5.5	6.5	6.0	6.5	6.0	6.0	5.5	6.0	5.5	5.5	5.0	5.5	5.0	5.5	5.0	4.5	4.0	3.0	0.0
	Sikander XVII	706	20/08/19	25/10/22	5.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.0	3.5	4.0	3.5	3.5	3.0	Dry	x	x	x
	Dara XVII	750	18/10/19	31/10/22	4.5	4.0	3.5	3.0	3.5	3.0	3.0	2.5	3.5	3.0	Dry	x	x	x	x	x	x	x	x	x
	2607 XVII	570	12/08/18	08/11/22	5.0	4.5	5.5	5.0	5.0	4.5	5.5	5.0	4.5	4.0	4.5	4.0	5.0	4.5	4.0	3.5	5.0	4.5	3.0	2.5
	2565 XVII	759	26/10/19	27/11/22	5.0	4.5	5.0	4.5	5.0	5.5	5.0	4.5	5.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.0	3.5	3.5	3.0
	1148 XVII	773	15/11/19	28/03/23	4.0	3.5	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	7010 XVII	713	29/09/19	12/04/23	5.5	5.0	5.5	5.0	5.5	5.0	5.0	5.0	5.0	4.5	Sold	x	x	x	x	x	x	x	x	x
	1148 XVII	687	08/07/19	06/06/23	6.0	5.5	6.5	6.0	6.0	5.5	5.5	5.0	3.5	3.0	3.5	3.0	2.0	2.5	2.0	0.0	2.0	1.5	2.0	0.0
	2676 XVIII	799	08/02/20	07/06/23	5.5	5.0	4.5	4.0	5.0	4.5	4.5	4.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	Dry	x	x	x
	2645 XVIII	847	12/08/20	08/06/23	4.5	4.0	4.0	3.5	4.5	4.0	3.5	3.0	3.0	2.5	3.5	3.0	3.0	2.5	Sold	x	x	x	x	x
	4995 XVIII	825	26/06/20	10/06/23	4.5	4.0	5.0	4.5	5.0	4.5	4.5	4.0	4.5	4.0	4.0	3.5	3.5	3.0	3.5	3.0	2.0	0.0	Dry	x
	1150 XVIII	909	27/11/20	17/06/23	5.5	5.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2594 XVII	718	10/09/19	27/06/23	5.5	5.0	4.5	4.0	5.0	4.5	5.5	5.0	4.5	4.0	4.5	4.0	4.0	3.5	3.0	2.5	2.5	2.0		
	2677 XVIII	831	07/07/20	05/07/23	5.0	4.5	5.0	4.5	5.5	5.0	5.0	4.5	4.0	3.5	3.5	3.0	4.5	4.0	3.0	2.5	2.5	2.0		
	2594 XVII	721	12/09/19	10/07/23	4.0	3.5	5.5	5.0	5.0	4.5	5.0	4.5	4.0	3.5	5.0	4.5	4.0	3.5	3.5	3.0	3.0	2.5		
	2594 XVII	726	18/09/19	01/08/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2645 XVIII	795	01/02/20	02/08/23	5.5	5.0	4.5	4.0	5.0	4.5	6.0	5.5	5.5	5.0	5.0	5.0	5.0	4.5	4.0	3.5				
	2677 XVIII	829	01/07/20	05/08/23	6.0	5.5	6.0	5.5	6.0	5.5	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x
	M-53 XVII	763	30/10/19	12/08/23	4.5	4.0	4.0	3.5	3.5	3.0	5.0	4.5	5.0	4.5	4.5	4.0	3.5	3.0	4.0	3.5				
	2676 XVIII	865	14/09/20	24/08/23	5.5	5.0	5.5	5.0	6.0	5.5	6.0	5.5	5.0	4.5	4.5	4.0	4.0	3.5						
	2676 XVIII	863	17/09/20	06/09/23	5.0	4.5	6.0	5.5	5.0	4.5	5.5	5.0	4.0	3.5	4.0	3.5	2.5	2.0						
	1150 XVIII	904	03/11/20	06/09/23	6.5	6.0	6.5	6.0	5.5	5.0	6.5	6.0	6.5	5.5	5.5	5.0	5.5	5.0						
	Sikander XVII	729	10/09/19	07/09/23	6.0	5.5	6.0	5.5	6.0	5.5	6.0	5.5	5.0	4.5	5.5	5.0	4.5	4.0						
	2565 XVII	760	28/10/19	08/09/23	5.5	5.0	5.0	4.5	5.5	5.0	6.0	5.5	Sold	x	x	x	x	x	x	x	x	x	x	x
	2645 XVIII	870	26/09/20	08/09/23	3.5	3.0	3.5	3.0	6.0	5.5	3.5	3.0	3.5	3.0	3.0	2.2	2.5	2.0						
	1150 XVIII	783	12/12/19	10/09/23	4.5	4.0	5.5	5.0	5.0	5.0	6.0	5.5	5.5	5.0	4.0	3.5	4.5	4.0						
	Sikander XVII	747	18/10/19	11/09/23	4.0	3.5	5.0	4.5	5.0	4.5	4.0	3.5	4.0	3.5	4.5	4.0	4.0	3.5						
	1150 XVIII	908	20/11/20	12/09/23	4.5	4.0	6.0	5.5	4.5	4.0	5.5	5.0	5.0	4.5	4.5	4.0	3.5	3.0						
	1208 XVIII	855	26/08/20	16/09/23	4.0	3.5	5.0	4.5	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	4995 XVIII	823	16/06/20	17/09/23	5.0	4.5	6.0	5.5	5.5	5.0	4.5	4.0	4.5	4.0	4.0	3.5	3.0	2.5						

	6942 XVII	766	04/11/19	18/09/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	M-53 XVII	734	26/09/19	21/10/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	4995 XVIII	883	14/10/20	21/10/23	4.5	4.0	4.0	3.5	5.5	5.0	5.0	4.5	5.5	5.0										
	2676 XVIII	864	05/09/20	23/10/23	5.0	4.5	5.5	5.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	7227 XVIII	872	16/09/20	25/10/23	5.5	5.0	6.0	5.5	5.5	5.0	5.0	4.5	4.5	4.0										
	5147 XVIII	897	29/10/20	25/10/23	5.5	5.5	5.5	5.0	6.0	5.5	5.5	5.0	5.5	5.0										
	7227 XVIII	888	19/10/20	04/11/23	5.0	4.5	5.0	4.5	5.0	4.5	4.0	4.5	5.0	4.5										
	5147 XVIII	815	30/04/20	05/11/23	5.5	5.0	5.0	4.5	6.5	6.0	5.0	4.5	5.0	4.5										
	1150 XVIII	910	26/11/20	08/11/23	4.5	4.0	5.0	4.5	4.5	4.0	4.5	4.0	5.0	4.5										
	1219 XVIII	845	12/08/20	29/12/23	5.0	4.5	6.0	5.5	5.0	4.5														
Bichpari																								
	4837 XVII	613	02/10/19	24/07/22	5.5	5.0	5.5	5.0	6.0	5.5	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	2.0	1.5	2.0	1.5	2.0	0.0
	m-53 XVII	571	06/05/19	26/07/22	5.5	5.0	5.0	4.5	6.5	6.0	4.0	3.5	5.5	5.0	5.0	4.5	4.0	3.5	3.5	3.0	2.0	1.5	1.5	0.0
	M-53 XVII	607	11/09/19	30/07/22	5.5	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.0	4.5	4.5	4.0	3.5	3.0	3.5	3.0	2.5	2.0	Dry	x
	6942 XVII	597	14/08/19	11/08/22	3.5	3.0	4.5	4.0	3.5	3.0	3.5	3.0	3.5	3.0	3.0	2.5	5.0	4.5	2.0	1.5	Dry	x	x	x
	1148 XVII	560	22/03/19	15/08/22	5.5	5.0	5.5	5.0	6.0	5.5	5.5	5.0	4.5	4.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5
	2594 XVII	530	26/09/18	25/08/22	4.5	4.0	4.5	4.0	4.5	4.0	3.0	2.5	4.5	4.0	3.5	3.0	3.0	3.5	3.5	3.0	Dry	x	x	x
	M-53 XVII	614	24/09/19	28/08/22	5.0	4.5	5.5	5.0	5.0	4.5	5.0	4.5	5.0	4.5	3.5	3.0	3.0	2.5	2.5	2.0	3.5	3.0	3.0	0.0
	Dara XVII	539	22/10/18	02/09/22	5.5	5.0	5.5	5.0	4.5	4.0	6.0	5.5	6.0	5.5	4.0	3.5	4.5	4.0	4.5	4.0	4.0	3.5	2.5	2.0
	2594 XVII	611	24/09/19	22/09/22	4.5	4.0	5.0	4.5	3.5	3.0	4.0	3.5	3.5	3.0	3.5	3.0	2.5	2.0	2.5	2.0	2.5	2.0	2.5	2.0
	2565 XVII	517	13/08/18	15/10/22	4.0	3.5	5.5	5.0	6.0	5.5	6.0	5.5	5.5	5.0	6.0	5.5	4.0	3.5	3.5	3.0	3.5	3.0	3.0	2.5
	2689 XVIII	674	26/04/20	25/10/22	5.5	5.0	5.5	5.0	5.5	5.0	5.0	4.5	3.5	3.0	4.0	3.5	4.0	3.5	2.5	2.0	Sold	x	x	x
	2607 XVII	632	27/10/19	12/12/22	4.5	4.0	5.5	5.0	5.0	4.5	5.5	5.0	4.5	4.0	3.5	3.0	4.0	3.5	3.5	3.0	3.0	2.5	3.0	2.5
	Siknder XVII	622	12/10/19	05/01/23	5.0	4.5	6.5	6.0	6.0	5.5	5.0	4.5	5.5	5.0	4.5	4.0	4.5	4.0	2.5	2.0	3.0	2.5	2.0	0.0
	7227 XVIII	706	16/09/20	21/03/23	6.0	5.5	5.5	5.0	5.0	4.5	4.5	4.0	4.5	4.0	3.5	3.0	3.5	3.0	2.5	2.0	Dry	x	x	x
	5147 XVIII	672	21/04/20	04/05/23	4.0	3.5	5.5	5.0	4.0	3.5	5.5	5.0	6.0	5.5	5.0	5.0	4.5	4.0	4.5	4.0	Sold	x	x	x
	1148 XVII	582	16/07/19	19/05/23	3.5	3.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	5147 XVIII	685	21/06/20	02/06/23	5.5	5.0	4.5	4.0	6.0	5.5	4.5	4.0	4.5	4.0	6.0	5.5	3.5	3.0	2.0	0.0	Dry	x	x	x
	2645 XVIII	667	06/04/20	05/06/23	4.0	3.5	5.0	4.5	4.0	3.5	3.5	3.0	3.0	2.5	3.5	3.0	3.5	3.0	3.0	2.5	2.5	2.0	2.5	2.0
	4995 XVIII	641	04/12/19	10/06/23	4.5	4.0	4.5	4.0	5.0	4.5	4.5	4.0	3.5	3.0	3.5	3.0	4.0	3.5	3.5	3.0	2.5	2.0	3.0	2.5
	4995 XVIII	643	01/12/19	16/06/23	4.0	3.5	5.5	5.0	5.0	4.5	4.0	3.5	3.0	2.5	3.0	2.5	3.5	3.0	3.0	2.5	Dry	x	x	x
	1209 XVIII	661	02/04/20	11/07/23	5.0	4.5	6.0	5.5	6.5	6.0	6.0	5.5	5.5	5.0	5.5	5.0	5.0	4.5	4.0	3.5	3.0	2.2		
	Siknder XVII	587	26/07/19	14/07/23	5.5	5.0	5.5	5.0	5.0	4.5	5.0	4.5	3.5	3.0	4.0	0.0	4.5	4.0	2.5	2.0	2.5	2.0		
	7094 XVIII	649	02/01/20	16/07/23	6.5	6.0	5.0	4.5	5.5	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.0	4.5	4.0	3.5	3.5	3.0		
	2645 XVIII	668	14/04/20	16/07/23	5.5	5.0	5.5	5.0	5.0	4.5	4.5	4.0	5.0	4.5	5.0	4.5	4.5	4.0	4.5	4.0	3.5	3.0		
	2677 XVIII	688	06/07/20	18/07/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	7094 XVIII	712	28/09/20	22/07/23	5.0	4.5	4.5	4.0	4.5	4.0	4.5	4.0	4.5	4.0	3.5	3.0	3.5	3.0	3.0	2.5				
	5147 XVIII	669	23/04/20	01/08/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	1208 XVIII	700	28/08/20	12/08/23	5.0	4.5	6.5	6.0	6.5	5.5	5.0	4.5	5.0	4.5	5.5	5.0	4.5	4.0	2.5	2.0				
	M-53 XVII	626	07/10/19	20/08/23	4.5	4.0	5.5	5.0	5.5	5.0	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x
	1208 XVIII	725	11/12/20	23/08/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	1208 XVIII	701	26/08/20	05/09/23	4.5	4.0	5.5	5.0	5.5	5.0	6.0	5.5	5.0	4.5	4.0	3.5	5.5	5.0						
	2607 XVII	631	27/10/19	23/09/23	6.0	5.5	6.0	5.5	4.0	3.5	4.5	4.0	5.0	4.5	4.5	4.0								
	1219 XVIII	680	11/06/20	29/10/23	5.5	5.0	5.5	5.0	5.5	5.0	4.0	3.5	5.5	5.0										
	4995 XVIII	715	23/10/20	12/11/23	4.0	3.5	5.0	4.5	5.5	5.0	5.5	5.0	5.5	5.0										
	2689 XVIII	679	28/05/20	05/12/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2645 XVIII	696	29/08/20	25/12/23	6.5	6.0	6.5	6.0	6.0	5.5														
	5232 XIX	779	28/08/21	05/03/24	5.5	5.0																		
	5232 XIX	771	05/08/21	09/03/24	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Bado Patti																								
	1053 XVI	265	29/04/17	11/08/22	4.5	4.0	4.0	3.5	4.0	3.0	4.0	3.5	4.0	3.5	4.0	3.5	3.5	3.0	3.5	3.2	3.0	2.5	2.5	2.0
	2594 XVII	344	01/11/18	16/08/22	5.0	4.5	5.0	4.5	5.0	4.0	4.5	4.0	4.5	4.0	4.0	4.0	4.0	3.5	3.5	3.2	3.0	2.5	2.5	2.0
	330 XVII	366	09/05/19	18/08/22	5.0	4.5	5.5	5.0	5.0	4.5	5.0	4.0	4.5	4.0	3.5	4.0	3.5	3.0	3.0	3.2	2.5	2.0	2.0	1.5
	4592 XVI	323	23/07/18	28/08/22	4.5	4.0	5.0	4.0	5.0	4.5	5.0	5.0	4.0	4.0	4.0	3.5	3.7	3.2	3.5	3.0	3.0	2.5	3.0	2.0
	4687 XVII	321	16/07/18	07/10/22	5.5	4.5	5.0	5.0	5.0	4.5	5.0	4.5	4.5	4.5	4.3	4.2	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5
	M-53 XVII	368	23/05/19	28/11/22	5.5	5.0	5.0	5.0	5.0	5.0	5.2	5.0	5.5	5.0	5.0	4.5	4.5	4.0	3.5	3.0	3.0	2.5	2.5	2.0
	Siknder XVII	384	17/09/19	25/3/23	6.5	6.0	6.0	5.5	5.5	5.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5	2.5	2.0	2.0	1.5

	6942 XVII	392	28/10/19	11/05/23	5.5	5.0	5.5	5.0	5.0	4.5	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5	2.5	2.0	2.0	1.5
	2676 XVIII	406	22/09/20	08/10/23	4.5	4.0	4.5	4.0	4.0	3.5	3.5	3.0	3.0	2.5	2.5	2.0								
	6942 XVII	391	28/10/19	06/11/23	5.5	5.0	5.0	4.5	4.5	4.0	4.0	3.5	3.5	3.0										
Bugana																								
	1209 XVIII	254	11/03/20	11/10/22	6.0	5.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0	3.5	3.0	2.0	2.0	2.0	2.0	2.0
	6942 XVII	217	30/06/19	21/10/22	5.0	5.0	5.0	4.0	5.0	4.0	4.0	4.0	4.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
	2558 XVII	185	16/09/18	08/11/22	5.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.5	4.0	3.5	3.5	3.0	3.5	2.0	2.0	2.0
	5147 XVIII	261	31/05/20	06/04/23	5.0	5.0	5.0	5.0	5.5	5.0	6.0	5.5	6.0	5.0	5.0	4.0	4.0	4.0	4.0	3.0	3.0	2.0	3.0	0.0
	4837 XVII	233	04/09/19	08/04/23	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0	4.0	4.5	4.0	4.5	3.5	3.5	3.5	3.0	2.0	5.0	0.0
	2558 XVII	186	03/09/18	25/04/23	4.0	3.5	4.0	4.0	5.0	4.0	5.0	4.0	4.0	4.0	3.5	3.5	3.0	3.0	Sold	x	x	x	x	x
	2594 XVII	236	02/10/19	02/05/23	2.0	1.5	3.5	3.0	5.5	5.0	5.5	5.0	5.5	5.0	5.5	4.5	5.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
	2677 XVIII	273	05/08/20	03/07/23	5.0	5.0	6.0	5.0	5.5	5.0	5.5	5.0	5.5	5.0	5.0	4.0	4.0	4.0	4.0	4.0	Sold	x	x	x
	1150 XVIII	250	02/02/20	19/08/23	6.0	5.0	5.5	5.5	5.5	5.5	5.5	4.5	5.0	4.0	5.0	4.0	5.0	4.0	3.6	3.2				
	7094 XVIII	266	13/07/20	07/09/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2676 XVIII	260	20/05/20	16/09/23	5.5	5.0	5.5	5.0	5.5	4.5	5.0	4.0	5.0	4.0	4.0	4.0	3.8	3.4						
	Dara XVII	238	20/10/19	17/09/23	6.0	5.5	6.5	5.5	5.5	5.5	5.0	5.0	5.0	4.0	4.0	4.0	3.7	3.2						
	5147 XVIII	262	06/06/20	17/09/23	5.0	5.0	5.0	5.0	5.5	5.0	5.5	4.0	5.0	5.0	5.0	5.0	4.5	4.0						
	2689 XVIII	290	17/10/20	18/11/23	Sold	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	2676 XVIII	279	03/09/20	29/11/23	6.5	5.0	5.0	5.0	5.0	5.0	5.4	5.0												
	2676 XVIII	280	01/09/20	30/11/23	6.0	6.0	5.5	5.0	5.0	5.0	5.3	4.9												

Milk Recording & Calving till March 2024

F 15. Set-wise AI, Conception and daughters retained

Set No.	Duration	Bulls (n)	AI	Preg	Calving		Progenies				
					Total	F	Calved (n)	Av. AFC (month)	Complete Recording	Av. Milk Yield (kg/day)	Available (n)
VIII	Jan 2004 to July 2005	17	1679	737	440	199	23	40.84	18	6.89	-
IX	Aug 2005 to Jan 2007	14	3418	1744	1222	556	89	44.45	58	7.88	-
X	Jan 2007 to Oct 2008	13	3400	1795	1252	600	100	42.23	78	7.49	-
XI	Oct 2008 to March 2010	14	4058	2066	1825	892	128	42.39	88	7.10	-
XII	March 2010 to Sept 2011	12	4569	2356	1119	538	142	42.13	101	7.43	-
XIII	Sept 2011 to March 2013	9	6251	3197	1989	937	272	42.75	203	7.77	-
XIV	March 2013 to July 2014	10	4693	2271	1325	638	162	41.63	132	8.00	-
XV	July 2014 to Dec 2015	15	6955	3762	2732	1286	299	40.42	229	8.10	-
XVI	Jan 2016 to July 2017	15	6116	3218	2485	1251	276	40.89	225	7.93	-
XVII	July 2017 to March 2019	15	6053	3382	2636	1254	343#	40.42	233	7.88	2
XVIII	Jan 2019 to July 2020	15	5287	2839	2192	1000	131#	37.68	108	8.78	133
XIX	July 2020 to Dec 2021	12	5568	3139	2420	1216	-	-	-	-	650
XX	Jan 2022 to July 2023	14	4968	2650	2033*	1024*	-	-	-	-	574
XXI	July 2023 to Dec. 2024	15	3211 July 23 to March 24	1187*							
# Calving and milk recording of progenies of XVIIth and XVIIIth set is in progress *Pregnancies, calving and female born of XX set till 31 March 2023											1359

F 16. Performance of FPT Programme on Farmer's Buffaloes

Duration	AI	Pregnancies	CR%	Progenies		Progenies				
				Total	Females	Calved (n)	Av. AFC (months)	Complete Recording	Av. Milk Yield (kg/day)	Daughters Available for Future Recording
2001-02	139	25	17.98	15	7	-	-	-	-	-
2002-03	540	236	43.70	147	73	12	42.06	11	7.28	-
2003-04	1001	356	35.56	237	129	15	46.84	12	6.42	-
2004-05	1298	566	43.61	361	173	21	39.66	18	6.54	-
2005-06	1999	1009	50.48	744	345	55	43.80	36	7.75	-
2006-07	2102	1139	54.19	650	305	48	44.40	34	8.09	-
2007-08	2132	1104	51.78	694	341	58	42.77	45	7.60	-
2008-09	2176	1086	49.91	955	477	72	41.44	52	7.04	-
2009-10	2803	1450	51.73	1276	627	90	42.95	60	7.16	-
2010-11	3433	1743	50.77	787	377	97	42.40	72	7.31	-
2011-12	3308	1756	53.08	1103	557	157	43.26	112	7.62	-
2012-13	4204	2104	50.05	1247	553	163	41.94	129	7.88	-
2013-14	3962	1903	48.03	1079	517	135	41.54	133	7.96	-
2014-15	4129	2218	53.72	1614	776	183	40.17	147	8.20	-

2015-16	4434	2326	52.46	1693	806	174	40.66	133	8.00	-
2016-17	3807	2063	54.19	1591	802	182	41.15	145	7.92	-
2017-18	4093	2248	54.92	1724	845	220	40.79	181	7.72	-
2018-19	3977	2214	55.67	1748	798	206	40.22	160	8.09	-
2019-20	3957	2140	54.08	1530	702	107	36.98	87	8.92	8
2020-21	3480	1901	54.63	1401	722	-	-	-	-	109
2021-22	3167	1815	57.31	1458	702	-	-	-	-	373
2022-23	3766	2013	53.45	1628	828	-	-	-	-	393
2023-24	3898	1526*	51.29	-	-	-	-	-	-	476
Overall	67805	34941	51.12	21958	11462	1995	41.84	1567	7.64	1359

*Up to March 2024

Project Co-ordinator's observations on field unit performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR Share as per R E	Expenditure as per AUC	
Total	ICAR Share		ICAR Share	Balance
13.50	13.50	13.50	13.50	0.00

- During the period from April 2023 to March 2024, 3898 artificial inseminations were performed using test bulls of 20th and 21st set. The conception rate in the field was worked out to be 51.29%.
- In this period 1964 pregnancies were confirmed and 1641 calving (males 812, females 829) were recorded. 115 daughters were also calved and monthly test day milk yield were recorded.
- The average age at first calving for these 115 daughters was 41.12 months
- The ear tagging has been done in all female progenies born in the field.
- As on 31st March 2024, 1359 female progenies of 17th to 20th set of different age are standing at various field unit centres for future recordings.

Recommendations:

- To meet out the target of 4500 inseminations in FPT villages, more efforts should be done.
- More awareness should be created among farmers for active participation in FPT programme.

FIELD UNIT: GADVASU, LUDHIANA

(i) Nodal agency : Coordinating unit CIRB HISAR

(ii) Participating Units : 1. CIRB, Hisar
2. GADVASU, Ludhiana
3. NDRI, Karnal

Date of start : November, 2001

OBJECTIVES:

To strengthen the ongoing sire evaluation programme of associated herd progeny testing by including field performance recording of the daughters of test bulls.

Financial Statement for the year 2023-24 (Rs in Lakhs)

	Budget Sanctioned (Rs.)	**Amount Spent (Rs.)**
Pay & allowances	-	-
T.A.		
Contingencies		
Recurring	24,00,000	24,00,000
Equipments	2,00,000	2,00,000
Total	**26,00,000**	**26,00,000**

Staff and Infrastructure Buildup during the year:

Staff in position:

Principal Investigator : **Dr. Puneet Malhotra (Professor)**

F 1. Herd Strength of Registered females at Different Field Centers during 2023-24

Centers/ Village	**OB**	**Addition**			**Deduction**		**Closing Birth**
		New Reg.	**Birth**	**Purchase/ Traced**	**Sold/**	**Death/ AB**	
Aitiana	372	41			28	1	384
Barsal	208	0			15	5	188
Batha Dhua	377	0			5	0	372
Bharowal Kalan 1 (Bharowal Khurd)	141	38			28	8	143
Bhundri (Gorahoor), Bhundri dairy	465	0			2	0	463
Boparai Kalan	37	0			15	2	20
Chimna	477	46			22	14	487
Chowkiman	294	60			15	2	337
Dhat	14	0			3	0	11
Bharowal Kalan 2 (GKB)	332	25			9	6	342
Gurusar Kaunke	160	0			0	0	160
Gidharpindi	132	51			48	19	116
Hans Kalan	201	29			34	9	187
Jandi	95	37			24	7	101
Jassowal	794	98			85	40	767
Kailpur	363	0			0	0	363
Kehra Bet	415	42			14	2	441
Khudai Chak	339	80			32	7	380
Noorpur Bet	0	20			7	2	11
Ponna	129	0			3	6	120
Raqba	41	0			7	0	34
Sadarpura	240	31			26	9	236
Sawaddi Kalan (Majri)	34	0			0	0	34

Sawaddi Khurd	341	30			17	7	347
Sidhwana Bet/Leelan	130	8			4	2	132
Talwandi Khurd	345	50			17	7	371
Walipur Kalan	326	25			17	6	328
Walipur Khurd	288	20			10	0	298
Chhajjawal	66	29			32	6	57
Thakanbad	29	77			13	9	84
Sibian	1	0			0	0	1
Sohian	0	24			16	2	6
Total	**7186**	**861**	**0**	**0**	**548**	**178**	**7321**

F2. Status of breedable females at different field unit centers during 2023-24

Centers/ Village	**Heifers >3 years**		Buffalo (NP)		Buffalo Pregnant	
	Total	**Pregnant**	**In milk**	**Dry**	**In milk**	**Dry**
Aitiana	90	35	22	18	8	10
Barsal	75	25	11	13	7	8
Bhatha Dhua	90	28	13	14	12	13
Bharowal Kalan 1 & 2 GKB	160	27	10	8	4	7
Bhundri 1 & 2 Gorahoor	150	75	25	28	20	5
Boparai Kalan	120	45	10	5	5	4
Chimna	125	140	20	20	7	5
Dhatt	82	20	5	4	5	5
Walipur Kalan	130	40	20	15	7	7
Gurusar	180	33	12	12	15	7
Jandi	175	40	12	10	7	8
Kailpur	100	82	10	11	10	8
Kehra Bet	95	60	33	42	10	9
Khudai Chak	100	75	12	15	15	5
Pandori	40	25	5	3	5	5
Raqba	90	40	5	5	5	2
Sawaddi Khurd	150	70	32	28	8	9
Walipur Khurd 1 & 2	190	90	25	22	18	8
Chowkiman	215	45	18	15	12	10
Sadarpura	205	70	25	15	14	10
Jasowal	250	130	28	38	32	14
Mandiani	42	8	25	3	5	4
Talwandi Khurd	150	80	30	24	15	8
Sidhwan bet	140	45	25	20	7	6
Thakanbad	130	90	38	32	18	8
Gidarpindi	105	85	32	30	35	7
Sibian	95	75	30	28	12	8
Hans kalan	90	90	20	18	12	12
Total	**3564**	**1668**	**553**	**496**	**330**	**212**

F3. Monthly A.I.'s at different field unit centers during the period from 4/2023 to 3/2024

Centre/ month	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug -23**	**Sep -23**	**Oct-23**	**Nov-23**	**Dec-23**	**Jan-24**	**Feb-24**	**Mar-24**	**Grand Total**
Aitiana	25	38	10	25	20	25	25	45	50	30	50	35	378
Barsal	7	10	5	10	17	25	5	10	15		10	10	124
Bharowal Khurd	38	35	10	20	25	25	13	25	10	25	20	20	266
Bhatha Dhua	15	10	5	10	10	5	7	5	10	8	16	10	111
Bhundry Dairy	5	5	5	5		5	5	5	5	5	5		50
Boparai Kalan	5	17	15	10	10	16	13	10	20	15	12	13	156
Chhajjawal	20	14	10	15	15	40	15	15	20	25	30	25	244
Chimna	35	35	20	40	20	35	30	25	40	40	35	25	380
Chowkiman	15	10	10	15	10	15	10	10	25	10	20	19	169
Chur Chak	14	31	17	30	30	20	25	25	16	0	20	0	228
Dhat	0	5	0	5	8	5	0	0	5	7	5	0	40
Giderpindi	45	40	25	42	20	35	30	15	40	25	50	20	387
Gkb	13	21	10	18	15	24	37	25	26	10	15	13	227

Gurusar	10	20	5	10	10	10		10	15	10	0	0	100
Hans Kalan	15	31	10	15	25	38	35	10	15	25	30	22	271
Jandi	20	15	10	5	15	30	15	15	20	20	40	20	225
Jassowal	70	67	15	50	75	90	75	90	80	58	70	85	825
Kailpur	0	0	0	0	30	35	25	0	0	0	0	0	90
Khera Bet	35	35	40	43	30	35	31	45	40	40	45	40	459
Khudai Chak	25	35	30	20	40	30	30	30	50	35	45	50	420
Noorpur Bet	15	25	20	25	25	16	15	25	25	25	30	18	264
Ponna	10	15	10	15	10	25	20	5	10	0	0	0	120
Raqba	5	5	5	10	5	8	5	0	0	0	5	8	56
Rasoolpur	0	0	0	0	0	0	0	0	0	20	0	0	20
Sadarpura	25	25	20	18	18	25	25	25	40	50	20	25	316
Sawaddi Khurd	15	12	15	15	15	15	5	20	30	20	30	40	232
Sibian	15	15	15	20	15		10	10	10	20	10	10	150
Sohian	10	5	2	10	15	10	10	10	20	10	10	10	122
Talwandi Khurd	41	45	35	25	25	35	25	30	45	50	50	40	446
Thakanbad	17	51	34	35	45	18	55	55	92	103	73	94	672
Walipur Kalan	50	20	20	30	30	32	30	35	60	35	40	30	412
Walipur Khurd	10	10	10	10	20	10	10	10	20	10	10	10	140
Grand Total	**625**	**702**	**438**	**601**	**648**	**737**	**636**	**640**	**854**	**731**	**796**	**692**	**8100**

F4. Bull-wise A.I's. at different field unit centers during the period from4/2023 to 3/2024

Bull No.	Set no.	Apr -23	May -23	Jun-23	Jul-23	Aug -23	Sep-23	Oct-23	Nov -23	Dec-23	Jan-24	Feb-24	Mar-24	Grand Total
1994	9					1			1					2
4354	15								20	49	86	18	15	188
1454	20									5				5
2793	20	61												61
2831	20	13	55	160	78									306
2838	20	31	34											65
3004	20	48	1	5	3									57
5427	20	87	70											157
5481	20		263	64										327
5500	20	195	136	9										340
5505	20	25	63	103	20									211
5511	20	160	80	97										337
19M	20	5												5
109	21												87	87
2979	21				30	232	168	197	30	20				677
2990	21									13				13
3014	21					5	32	9		5				51
5414	21							163	243	115	148	121	20	810
5629	21				470	225	104	90	6					895
5638	21								335	323			133	791
5690	21									218	427	70		715
5723	21												130	130
5764	21												82	82
7630	21						101	93	5	106		200	113	618
7768	21					185	332	84				155	38	794
7990	21										70	232	74	376
GRAND TOTAL		**625**	**702**	**438**	**601**	**648**	**737**	**636**	**640**	**854**	**731**	**796**	**692**	**8100**

F5: Month –wise Conception at different field unit centers for period from 12/2022 to 11/2023

Centre	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-22	Grand Total
Aitiana	13	18	18	21	13	20	5	13	10	13	13	22	179
Barsal	4	5	5	5	4	5	3	5	9	13	3	5	66
Bharowal Khurd	10	10	14	16	19	18	6	10	14	13	7	13	150
Bhatha Dhua	7	5	2	4	7	4	2	4	5	2	3	2	47
Bhundry Dairy	2	2	2	3	2	2	2	2		2	2	2	23
Boparai Kalan	8	4	8	8	3	9	8	5	5	8	7	5	78

Chhajjawal	10	15	13	15	10	8	5	8	8	21	8	8	129
Chimna	14	22	21	16	16	14	9	19	8	16	14	11	180
Chowkiman	9	8	8	8	8	5	5	8	5	8	5	6	83
Chur Chak	15	16	12	5	6	13	8	13	14	9	12	10	133
Dhat	3	2	3			3		3	4	3			21
Giderpindi	31	24	23	23	23	19	13	20	10	17	15	8	226
Gkb	11	11	13	15	6	9	4	9	7	11	16	12	124
Gurusar	4	7	7	6	4	8	2	4	4	4		4	54
Hans Kalan	28	10	15	6	8	16	5	8	13	19	18	6	152
Jandi	11	13	6	10	10	7	6	2	7	13	8	8	101
Jassowal	45	50	40	44	35	35	8	25	38	50	38	45	453
Kailpur									15	12	10		37
Khera Bet	17	24	17	16	17	17	17	15	16	16	16	17	205
Khudai Chak	12	15	19	16	13	19	13	9	20	15	15	15	181
Noorpur Bet	10	12	13	10	8	12	8	10	12	7	7	8	117
Ponna	7	5	4	9	4	7	4	7	4	11	8	2	72
Raqba	3	3	3	3	3	3	3	5	3	4	3		36
Sadarpura	12	10	16	13	13	11	10	9	10	13	13	13	143
Sawaddi Khurd	6	6	6	9	8	5	8	7	7	8	3	11	84
Sibian	16	14	15	8	7	8	8	10	8		6	6	106
Sohian	13			8	5	3	1	5	8	5	5	5	58
Talwandi Khurd	18	22	22	20	16	19	15	12	13	16	13	14	200
Thakanbad	29	17	15	19	8	24	16	16	21	8	31	31	235
Walipur Kalan	20	18	18	22	25	9	8	14	14	14	14	15	191
Walipur Khurd	5	10	7	7	5	5	5	4	8	4	5	5	70
Grand Total	**393**	**378**	**365**	**365**	**306**	**337**	**207**	**281**	**320**	**355**	**318**	**309**	**3934**

F6: Month –wise Calving at different field unit centers during the period from 4/2023 to 3/2024

Month	Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		Total	
CENTRE	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**
Aitiana	4	4	3	6	4	4	5	5	5	5	7	7	11	10	5	6	6	7	7	7	10	9	7	6	74	76
Barsal	2	2	2	2	3	3	5	4	4	4	2	2	4	4	2	2	2	2	2	2	2	2	2	2	32	31
Bharowal Khurd	6	5	3	3	6	5	3	2	4	4	4	4	6	4	3	4	3	4	5	6	6	7	7	8	56	56
Bhatha Dhau	2	2	2	1	2	2	1	1	1	1	2	2	2	2	3	3	3	2	1	1	2	2	3	3	24	22
Bhuundry Dairy	1	1	1	1	1	2	1	1	0	2	2	2	1	1	1	1	1	1	1	1	1	2	1	1	12	16
Boparai Kalan	4	3	3	3	4	3	2	2	2	2	4	3	3	3	2	2	2	2	3	3	3	3	1	1	33	30
Chhajjawal	5	5	4	4	5	4	5	5	5	5	6	6	3	4	4	4	4	6	5	5	5	6	3	4	54	58
Chimna	5	6	5	4	6	7	5	6	5	8	5	9	4	6	5	7	7	8	7	12	4	8	5	8	63	89
Chowkiman	3	2	2	2	4	3	5	3	3	3	6	5	4	4	4	4	3	3	4	3	3	3	2	2	43	37
Chur Chak									6	10	7	10	8	11	4	8	5	8	6	5	2	3	2	3	40	58
Dhat	1	1	1	1					1	1	2	1	1	1	1	1	1	1	2	1					10	8
Giderpindi	7	6	7	8	7	8	7	8	6	7	8	9	6	7	10	12	7	9	8	10	7	9	8	9	88	102
Gkb	2	3	2	1	3	4	2	1	3	4	5	7	2	3	4	6	5	5	5	7	6	7	2	3	41	51
Gorahoor	3	2			2	2																			5	4
Gurusar	3	5	2	2	3	5	2	2	3	4	1	1	2	3	1	2	2	4	2	3	1	4	1	2	23	37
Hans Kalan	5	5	5	5	8	7	8	5	4	4	3	3	5	5	9	9	3	3	5	5	2	2	3	3	60	56
Jandi	3	4	4	3	3	4	4	5	3	4	5	7	5	6	4	4	5	6	2	2	4	3	3	4	45	52
Jassowal	7	7	9	9	10	10	13	12	11	11	10	10	9	9	14	14	15	20	14	14	15	15	10	15	137	146
Khera Bet	9	7	6	8	6	5	6	6	8	8	9	9	9	10	8	7	11	12	7	9	6	8	9	7	94	96
Khudai Chak	3	3	4	3	4	4	5	6	4	5	7	9	5	6	4	5	6	6	6	7	6	6	5	4	59	64
Leelan/Sidhwan Bet	2	3	2	3	2	3	2	2																	8	11
Noorpur Bet	3	3	4	3	4	4	4	3	3	3	4	6	5	6	4	5	5	7	6	6	5	4	3	3	50	53
Ponna	4	3	3	4	2	4	2	2	1	3	2	3	2	3	3	3	2	2	1	3	3	5	1	2	26	37
Raqba			1	1	2	1			2	2	2	1	2	2	1	1	2	1	2	1	1	1	1	1	16	12
Sadarpura	4	4	4	4	5	5	3	2	3	2	5	7	5	3	3	5	3	4	6	7	4	6	5	6	50	55
Sawaddi Khurd	3	2	4	5	4	5	2	2	3	2	4	5	5	4	2	3	2	3	2	3	3	4	3	3	37	41
Sibiana	4	3	4	3	3	3	3	2	3	4	3	4	5	7	5	6	5	6	5	6	3	3	2	3	45	50
Sohiana			2	2	5	5	4	4	4	4	6	4	8	8	5	5					2	2	2	2	38	36
Talwandi Khurd	5	6	6	6	8	7	5	6	8	7	7	6	9	6	7	9	9	10	9	11	8	9	7	8	88	91
Thakanbad	8	10	5	7	6	7	15	12	8	12	10	15	16	23	16	12	12	4	7	6	10	9	3	4	116	121
Walipur Kalan	10	10	7	8	8	7	7	7	7	7	8	9	7	10	9	9	8	8	7	9	10	10	10	10	98	104
Walipur Khurd	5	6	5	5	5	4	4	5	5	6	5	5	5	6	2	3	4	5	3	3	3	4	2	3	48	55
Grand Total	**123**	**123**	**112**	**117**	**135**	**137**	**130**	**121**	**125**	**144**	**151**	**171**	**159**	**177**	**145**	**162**	**143**	**159**	**140**	**158**	**137**	**156**	**113**	**130**	**1613**	**1755**

F= Female M = Male

F7: Bull–wise Conception at different field unit centers during the period from 12/2023 to 11/2024

BULL NO	SET NO	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Grand Total
1994	9	2			0					1			0	3
2269	13	1		1										2
4354	15												9	9
1454	20	55	39											94
2793	20		62	103	122	29								316
2831	20	8	6	3	28	7	29	73	36					190
2838	20	58	179	73	81	14	15							420
2847	20	18												18
2850	20	3												3
3004	20	2	2	9	32	23	1	3	2					74
5427	20				12	45	35							92
5481	20						122	32						154
5500	20	141	9			99	64	4						317
5505	20	10				11	32	48	9					110
5511	20	16			32	76	39	47						210
7584	20		50	17										67
7649	20			39	18									57
19M	20	79	31	120	40	2								272
2979	21								15	116	79	96	17	323
3014	21									3	18	5		26
5414	21											87	114	201
5629	21								219	109	47	45	5	425
5638	21												162	162
7630	21										49	46	2	97
7768	21									91	162	39		292
Grand Total		**393**	**378**	**365**	**365**	**306**	**337**	**207**	**281**	**320**	**355**	**318**	**309**	**3934**

F8: Bull–wise calving at different field unit centers during the period from 4/2023 to 3/2024

Month		Apr-23		May-23		Jun-23		Jul-23		Aug-23		Sep-23		Oct-23		Nov-23		Dec-23		Jan-24		Feb-24		Mar-24		**Total**	
Bull No.	**Set No.**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**
1994	9													0	3	1	1					0	0			1	4
2269	13									0	0					0	1			1	0					1	1
1454	20					56	57	6	4			39	42	27	25	20	21	13	16							161	165
2793	20																	21	23	41	46	45	55	12	12	119	136
2831	20	8	10	5	7			7	5	6	8			3	8	6	2	6	0	2	1	14	12	3	3	60	56
2838	20			34	35	2	1									20	23	63	80	25	34	27	31	5	7	176	211
2847	20													18	20	7	8									25	28
2848	20	5	5																							5	5
2850	20													14	13	2	1									16	14
3004	20			2	1	5	4	1	1	3	3					1	1	2	0	4	4	14	12	9	8	41	34
5427	20	32	32	39	39	4	5															4	5	18	21	97	102
5481	20	3	2							32	38	5	6													40	46
5500	20					37	40	25	23					39	41	47	58	3	5					34	41	185	208
5505	20							44	42	15	19	2	2	3	4	3	4							3	5	70	76
5511	20													7	9	5	6					10	14	28	32	50	61
5588	20									12	14	69	80	28	31											109	125
5592	20							43	40	41	43	19	21													103	104
7584	20	22	23															19	22	7	8					48	53
7649	20	53	51	5	5															16	18	7	9			81	83
19M	20			27	30	31	30	4	6	16	19	17	20	20	23	33	36	16	13	44	47	16	18	1	1	225	243
Grand Total		**123**	**123**	**112**	**117**	**135**	**137**	**130**	**121**	**125**	**144**	**151**	**171**	**159**	**177**	**145**	**162**	**143**	**159**	**140**	**158**	**137**	**156**	**113**	**130**	**1613**	**1755**

F = Female M = Male

F9. Live female progeny at field unit centers from (0 to ≤ 6 mo.) as on 3/2024.

317 live female progenies (0 to ≤ 6 month.) available in the field unit centres.

F10. Live female progeny at different field unit centers from (>6 to ≤ 12mo.) as on 3/2024

548 live female progenies (>6 to ≤ 12month) available in the field unit centres.

F11: Live female progeny at different field unit centers (>1 to ≤3 years) as on 3/2024

2096 live female progeny (>1 to ≤3 years) available in the field unit centres.

F12: Live female progeny at different field unit centers (>3 years) as on 3/2024

5103 live female progenies (>3 years) available in the field unit centres.

F13: Daughters calved at different field unit centers during 2023-2024

375 daughters calved during the report period at different field unit centres.

F14: Daughters recorded at different field units during 2023-2024

Test day milk recording of 370 daughters completed at different field unit during the period and 305 days average milk yield was 2549.65 kg

F15. Bull-wise A.I., Conception, Calving and Daughter's retained till completion of milk recording

Bull No.	Set No.	A.I.	P.D.	Calving		Daughters retained up to			Calving	Complete
				Total	Female	1 year	2 years	3 years		
1667	6	159	56	18	7	0	0	2	2	2
1706	6	421	141	130	61	0	0	4	4	4
1713	6	423	208	121	54	0	0	0	0	0
1717	6	497	168	145	65	0	0	4	4	4
1933	6	27	11	5	3	0	0	0	0	0
1944	6	25	11	5	2	0	0	0	0	0
4506	6	210	76	49	21	0	0	1	1	1
4523	6	117	82	65	30	0	0	4	4	4
4619	6	99	52	26	11	0	0	0	0	0
4637	6	124	48	30	12	0	0	3	3	3
4640	6	221	90	75	34	0	0	6	6	6
1727	7	301	109	88	42	0	0	5	5	5
1746	7	594	219	132	67	0	0	9	9	9
1749	7	314	110	84	39	0	0	0	0	0
1796	7	200	80	45	17	0	0	1	1	1
2121	7	85	34	13	6	0	0	0	0	0
2133	7	103	32	26	12	0	0	3	3	3
2184	7	36	28	27	13	0	0	0	0	0
2331	7	61	19	13	7	0	0	2	2	2
2363	7	61	20	8	3	0	0	0	0	0
1492	8	134	43	40	18	0	0	1	1	1
1509	8	101	30	26	13	0	0	1	1	1
1867	8	604	202	173	78	0	0	9	9	9
1868	8	520	199	169	85	0	0	8	8	8
1875	8	980	366	236	105	0	0	7	7	7
1893	8	342	110	88	41	0	0	1	1	1
2250	8	84	33	27	14	0	0	0	0	0
2308	8	136	48	27	12	0	0	3	3	3
2396	8	60	22	16	6	0	0	0	0	0

Bull No.	Set No.	A.I.	P.D.	Calving		Daughters retained up to			Calving	Complete
				Total	Female	1 year	2 years	3 years		
2422	8	63	30	22	10	0	0	0	0	0
2479	8	81	38	27	13	0	0	1	1	1
2522	8	77	35	28	14	0	0	2	2	2
4813	8	21	12	5	2	0	0	1	1	1
4865	8	103	51	37	20	0	0	0	0	0
5049	8	88	34	23	10	0	0	0	0	0
5054	8	73	25	10	6	0	0	0	0	0
5083	8	75	40	28	14	0	0	0	0	0
1575	9	76	29	19	9	0	0	1	1	1
1903	9	785	299	219	97	0	0	14	14	14
1913	9	571	224	146	66	0	0	7	7	7
1940	9	1107	427	272	121	0	0	18	18	18
1964	9	1014	378	267	118	0	0	14	14	14
1994	9	868	307	214	93	1	0	15	15	15
2582	9	165	72	48	26	0	0	6	6	6
2592	9	146	58	35	13	0	0	2	2	2
2720	9	105	39	17	6	0	0	0	0	0
2910	9	54	22	12	6	0	0	0	0	0
5112	9	95	54	40	18	0	0	5	5	5
5197	9	33	13	10	4	0	0	1	1	1
5218	9	76	27	19	9	0	0	0	0	0
5258	9	36	13	6	3	0	0	0	0	0
5312	9	37	14	12	6	0	0	0	0	0
1693	10	52	19	15	6	0	0	0	0	0
2045	10	1431	555	425	187	0	0	43	43	43
2062	10	1190	481	354	162	0	0	33	33	33
2073	10	1022	388	279	129	0	0	23	23	23
2074	10	945	347	253	111	0	0	16	16	16
2083	10	497	195	145	66	0	0	15	15	15
2084	10	10	3	2	1	0	0	0	0	0
2990	10	50	20	13	5	0	0	1	1	1
3103	10	101	47	28	12	0	0	1	1	1
3631	10	70	28	19	8	0	0	1	1	1
5396	10	28	11	9	3	0	0	0	0	0
2133	11	3263	1202	759	379	0	0	59	59	59
2148	11	2905	1068	706	338	0	0	77	77	77
2154	11	2558	975	647	322	0	0	66	66	66
3226	11	76	32	23	13	0	0	1	1	1
3255	11	220	104	67	32	0	0	8	8	8
3267	11	53	37	11	5	0	0	2	2	2
3591	11	46	17	12	7	0	0	2	2	2
5496	11	45	18	10	5	0	0	0	0	0
5516	11	35	14	10	5	0	0	0	0	0
HAU12	11	217	91	65	33	0	0	3	3	3
ND6	11	23	8	4	2	0	0	1	1	1
ND8	11	37	13	12	6	0	0	0	0	0
2176	12	2980	1159	913	429	0	0	73	73	73

Bull No.	Set No.	A.I.	P.D.	Calving		Daughters retained up to			Calving	Complete
				Total	Female	1 year	2 years	3 years		
2177	12	2520	956	672	315	0	0	85	85	85
2185	12	2420	893	626	293	0	0	74	74	74
3598	12	104	36	26	13	0	0	3	3	3
HAU183	12	80	29	17	9	0	0	2	2	2
HAU220	12	35	13	9	5	0	0	0	0	0
KHURANA	12	2	1	0	0	0	0	0	0	0
REDHU11	12	71	23	17	9	0	0	1	1	1
2234	13	5060	2129	1651	749	0	0	199	182	173
2269	13	3353	1447	1160	537	0	0	103	97	92
2304	13	6134	2631	2115	985	0	0	250	238	222
3964	13	131	52	45	25	0	0	11	10	10
4059	13	214	85	69	32	0	0	13	11	11
5943	13	31	13	10	5	0	0	1	1	1
2357	14	1640	701	578	262	0	0	74	64	60
2369	14	5454	2323	2001	973	0	0	177	150	144
4093	14	253	109	91	42	0	0	18	14	11
4100	14	110	48	45	24	0	0	15	12	10
4196	14	143	60	73	50	0	0	6	6	6
4439	14	214	87	76	35	0	0	22	22	19
6014	14	146	63	60	31	0	0	18	15	14
6044	14	166	70	68	33	0	0	13	10	8
6136	14	202	89	85	42	0	0	31	26	24
2371	15	854	378	297	137	0	0	98	56	54
2412	15	820	367	304	139	0	0	70	51	50
2417	15	1605	707	592	284	0	0	163	107	101
2429	15	991	430	358	171	0	0	109	52	51
2459	15	917	383	352	158	0	0	54	34	33
4324	15	1121	505	419	193	0	0	65	46	41
4328	15	701	314	265	125	0	0	60	37	35
4354	15	1257	470	369	168	0	0	102	56	52
4363	15	588	257	202	98	0	0	58	37	35
4403	15	624	272	215	97	0	0	55	29	27
4438	15	564	257	211	96	0	0	54	35	33
6007	15	579	247	213	97	0	0	29	12	12
6139	15	407	183	147	71	0	0	40	24	23
6290	15	371	159	129	59	0	0	30	22	20
6405	15	411	180	142	63	0	0	35	23	23
1027	16	425	190	161	74	0	0	26	18	18
1053	16	278	127	108	48	0	0	18	14	13
1064	16	0	0	0	0	0	0	0	0	0
2383	16	1069	471	386	177	0	0	112	67	65
2467	16	856	383	306	146	0	0	71	53	51
2501	16	1161	520	419	199	1	1	129	72	67
4592	16	386	173	136	61	0	0	23	19	16
4623	16	0	0	0	0	0	0	0	0	0
4705	16	1074	476	392	188	0	0	117	75	62
4889	16	888	403	330	157	0	0	84	56	50

Bull No.	Set No.	A.I.	P.D.	Calving		Daughters retained up to			Calving	Complete
				Total	Female	1 year	2 years	3 years		
6379	16	174	82	66	33	0	0	11	8	8
6409	16	260	117	95	42	0	0	21	10	9
6646	16	341	154	132	63	0	0	39	24	23
6753	16	52	24	18	7	0	0	0	0	0
29M	16	489	222	175	82	0	0	44	23	21
1148	17	674	327	285	128	0	0	43	24	2
2558	17	1308	604	511	237	0	0	146	72	32
2565	17	1192	545	460	215	1	5	115	70	38
2594	17	1335	609	536	259	0	0	162	86	35
2607	17	1291	610	525	252	0	0	174	97	30
4687	17	857	392	328	166	0	0	129	73	39
4715	17	741	336	288	142	0	0	91	56	22
4733	17	454	209	176	86	0	0	50	22	6
4837	17	584	237	197	98	0	0	67	19	9
7010	17	286	132	110	56	0	0	29	26	18
6942	17	381	190	157	76	0	0	44	7	0
51M	17	890	411	299	123	0	0	103	39	21
53M	17	362	173	201	119	0	0	33	11	0
B-1-330	17	368	171	151	69	0	0	33	18	0
Sikander	17	207	96	83	41	0	0	25	10	3
Dara	17	147	78	69	33	0	0	17	7	0
4905	18	977	472	427	211	0	0	129	15	1
4928	18	0	0	0	0	0	0	0	0	0
4995	18	803	415	372	188	0	0	92	10	0
5031	18	0	0	0	0	0	0	0	0	0
1150	18	689	331	306	160	0	0	92	18	0
1198	18	0	0	0	0	0	0	0	0	0
1208	18	761	382	318	148	0	82	105	0	0
1209	18	763	389	356	176	0	0	106	9	0
1219	18	952	489	421	210	0	21	152	5	0
2645	18	1540	762	644	305	0	34	152	16	0
2676	18	1416	684	602	284	0	21	169	16	0
2677	18	685	328	293	145	0	0	81	15	0
2689	18	743	370	317	151	0	2	60	5	0
7094	18	582	294	248	115	0	0	70	7	0
7147	18	748	382	334	163	0	4	89	7	0
7227	18	763	392	337	163	0	2	100	8	0
7263	18	563	298	246	110	0	8	61	2	0
5147	18	1051	541	451	208	0	53	146	0	0
1315	19	940	442	371	184	126	126	0	0	0
2674	19	1205	580	496	247	73	173	100	1	0
2737	19	1070	533	452	217	8	137	129	0	0
2759	19	1495	724	644	312	98	206	113	0	0
2767	19	0	0	0	0	0	0	0	0	0
2781	19	0	0	0	0	0	0	0	0	0
5181	19	833	391	334	156	8	92	84	0	0
5232	19	839	410	352	163	5	99	94	0	0
5246	19	885	420	372	179	0	133	133	0	0

Bull No.	Set No.	A.I.	P.D.	Calving		Daughters retained up to			Calving	Complete
				Total	Female	1 year	2 years	3 years		
5310	19	922	437	367	166	36	112	78	0	0
5320	19	1038	487	409	197	92	135	43	0	0
5333	19	1004	469	381	187	97	143	46	0	0
5374	19	745	363	296	143	35	100	65	0	0
5375	19	0	0	0	0	0	0	0	0	0
7604	19	977	464	383	185	119	119	0	0	0
1454	20	1020	500	399	196	108	0	0	0	0
2793	20	911	455	372	173	23	6	0	0	0
3004	20	225	115	94	51	15	3	0	0	0
5481	20	735	355	165	77	27	4	0	0	0
5427	20	1008	496	376	183	84	60	0	0	0
5588	20	713	356	291	137	85	0	0	0	0
7584	20	1059	515	421	205	65	66	0	0	0
7649	20	1012	490	406	203	78	89	0	0	0
2831	20	548	264	116	60	33	0	0	0	0
2838	20	1056	507	387	176	74	0	0	0	0
2847	20	125	63	53	25	23	0	0	0	0
2848	20	25	12	10	5	0	3	0	0	0
2850	20	56	32	30	16	13	0	0	0	0
5500	20	1150	571	393	185	104	0	0	0	0
5505	20	557	271	146	70	59	0	0	0	0
5511	20	473	230	111	50	5	0	0	0	0
5592	20	502	252	207	103	66	0	0	0	0
19M	20	1133	568	468	225	101	0	0	0	0
109	21	87	0	0	0	0	0	0	0	0
112	21	0	0	0	0	0	0	0	0	0
297	21	0	0	0	0	0	0	0	0	0
2979	21	677	323	0	0	0	0	0	0	0
2990	21	13	0	0	0	0	0	0	0	0
3014	21	51	26	0	0	0	0	0	0	0
5414	21	810	201	0	0	0	0	0	0	0
5629	21	895	425	0	0	0	0	0	0	0
5638	21	791	162	0	0	0	0	0	0	0
5690	21	715	0	0	0	0	0	0	0	0
5723	21	130	0	0	0	0	0	0	0	0
5764	21	82	0	0	0	0	0	0	0	0
7630	21	618	97	0	0	0	0	0	0	0
7768	21	794	292	0	0	0	0	0	0	0
7990	21	376	0	0	0	0	0	0	0	0
TOTAL		**132801**	**56976**	**43987**	**20843**	**1663**	**2039**	**7169**	**3440**	**2805**

F.16 Performance of FPT Programme since Inception

Duration	A.I.	Pregnancies	CR%	Calvings	Females born	Daughters recorded	Av. AFC (Mo.)	Av. Milk Yield (kg./days)	Daughters available for recording
2001-02	493	184	37.3	-	-	3	56.1	7.9	-
2002-03	1908	723	37.9	229	135	20	49.7	7.8	-
2003-04	1858	629	33.9	472	245	26	51.1	8.0	-
2004-05	2435	726	29.8	466	215	14	46.1	8.0	-
2005-06	2822	967	34.3	699	333	55	49.7	8.0	-
2006-07	3313	1178	35.6	755	357	50	48.0	8.4	-
2007-08	4015	1438	35.8	870	368	82	47.9	8.3	-
2008-09	4147	1622	39.1	1149	491	85	49.7	8.1	-
2009-10	5415	1878	34.7	1140	538	155	49.7	8.2	-
2010-11	6846	2289	33.4	1274	603	183	49.2	8.1	-
2011-12	7298	2814	38.6	1800	853	172	49.0	8.1	
2012-13	8517	3463	40.7	2497	1155	257	47.5	7.9	
2013-14	8014	3380	42.2	2831	1303	208	47.1	8.1	
2014-15	8316	3810	45.8	2958	1447	68	42.5	8.2	
2015-16	6325	3054	48.3	3013	1383	1	34.9	8.0	
2016-17	5289	2464	46.6	2236	1049		0	0	
2017-18	6344	2579	40.7	1933	899		0	0	
2018-19	7779	3299	42.4	2468	1192		0	0	
2019-20	8690	4307	49.6	3235	1555		0	0	
2020-21	7991	4277	53.6	3878	1883	353	0	8.3	
2021-22	8543	3815	44.6	3309	1565	381	54.1	8.2	
2022-23	8343	4146	49.7	3407	1661	370	52.3	8.2	
2023-24	**8100**	**3934**	**48.6**	**3368**	**1613**	**347**	**45.4**	**8.1**	1070
Overall	**132801**	**56976**	**42.9**	**43987**	**20843**	**2805**	**48.6**	**8.1**	**1070**

A.I., Conception, Calvings and Daughters Retained –13th Set

Bull No.	2234	2269	2304	3964	4059	5943	Total
AI	5060	3353	6134	131	214	31	**14923**
Pregnancies	2129	1447	2631	52	85	13	**6357**
Daughter Born	749	537	985	25	32	5	**2333**
Daughters available	199	103	250	11	13	1	**577**
Daughter Calved	182	97	238	10	11	1	**539**
Daughters Complete Recorded	173	92	222	10	11	1	**509**
Daughters to be recorded	26	11	28	1	2	0	**68**

A.I., Conception, Calvings and Daughters Retained –14th Set

Bull No.	2357	2369	4093	4100	4196	4439	6014	6044	6136	Total
AI	1640	5454	253	110	143	214	146	166	202	**8328**
Pregnancies	701	2323	109	48	60	87	63	70	89	**3550**
Daughter Born	262	973	42	24	50	35	31	33	42	**1492**
Daughters available	74	177	18	15	6	22	18	13	31	**374**
Daughter Calved	64	150	14	12	6	22	15	10	26	**319**
Complete Recorded	60	144	11	10	6	19	14	8	24	**296**
Daughters to be recorded	14	33	7	5	0	3	4	5	7	**78**

A.I., Conception, Calvings and Daughters Retained –15th Set

Bull No.	2371	2412	2417	2429	2459	4324	4328	4354	4363	4403	4438	6007	6139	6290	6405	Total
AI	854	820	1605	991	917	1121	701	1257	588	624	564	579	407	371	411	**11810**
Pregnancies	378	367	707	430	383	505	314	470	257	272	257	247	183	159	180	**5109**
Daughter Born	137	139	284	171	158	193	125	168	98	97	96	97	71	59	63	**1956**
Daughters available	98	70	163	109	54	65	60	102	58	55	54	29	40	30	35	**1022**
Daughter Calved	56	51	107	52	34	46	37	56	37	29	35	12	24	22	23	**621**
Daughters Complete Recorded	54	50	101	51	33	41	35	52	35	27	33	12	23	20	23	**590**
Daughters to be recorded	44	20	62	58	21	24	25	50	23	28	21	17	17	10	12	**432**

A.I., Conception, Calvings and Daughters Retained –16th Set

Bull No.	1027	1053	1064	2383	2467	2501	4592	4623	4705	4889	6379	6409	6646	6753	29M	TOTAL
AI	425	278	0	1069	856	1161	386	0	1074	888	174	260	341	52	489	**7453**
Pregnancies	190	127	0	471	383	520	173	0	476	403	82	117	154	24	222	**3342**
Daughter Born	74	48	0	177	146	199	61	0	188	157	33	42	63	7	82	**1277**
Daughters available	26	18	0	112	71	130	23	0	117	84	11	21	39	0	44	**696**
Daughter Calved	18	14	0	67	53	72	19	0	75	56	8	10	24	0	23	**439**
Daughters Complete Recorded	18	13	0	65	51	67	16	0	62	50	8	9	23	0	21	**403**
Daughters to be recorded	8	5	0	47	20	63	7	0	55	34	3	12	16	0	23	**293**

A.I., Conception, Calvings and Daughters Retained –17th Set

Bull No.	1148	2558	2565	2594	2607	4687	4715	4733	4837	6942	7010	51M	53M	B-1-330	Dara	Sikander	Total
AI	674	1308	1192	1335	1291	857	741	454	584	381	286	890	362	368	147	207	**11077**
Pregnancies	327	604	545	609	610	392	336	209	237	190	132	411	173	171	78	96	**5120**
Daughter Born	128	237	215	259	252	166	142	86	98	76	56	123	119	69	33	41	**2100**
Daughters available	43	146	116	162	174	129	91	50	67	29	44	103	33	33	17	25	**1262**
Daughter Calved	24	72	70	86	97	73	56	22	19	7	26	39	11	18	7	10	**637**
Daughters Complete Recorded	2	32	38	35	30	39	22	6	9	0	18	21	0	0	0	3	**255**
Daughters to be recorded	41	114	78	127	144	90	69	44	58	29	26	82	33	33	17	22	**1010**

A.I., Conception, Calvings and Daughters Retained –18th Set

Bull No.	1150	1198	1208	1209	1219	2645	2676	2677	2689	4905	4928	4995	5031	7094	7147	7227	7263	5147	Total
AI	689	0	761	763	952	1540	1416	685	743	977	0	803	0	582	748	763	563	**1051**	**13036**
Pregnancies	331	0	382	389	489	762	684	328	370	472	0	415	0	294	382	392	298	541	**6529**
Daughter Born	160	0	148	176	210	305	284	145	151	211	0	188	0	115	163	163	110	208	**2737**

Daughters available	92	0	105	106	152	152	169	81	60	129	0	92	0	70	89	100	61	146	**1604**
Daughter Calved	18	0	0	9	5	16	16	15	5	15	0	10	0	7	7	8	2	0	**133**
Complete Recorded	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	**1**
Daughters to be recorded	92	0	105	106	152	152	169	81	60	128	0	92	0	70	89	100	61	146	**1603**

A.I., Conception, Calvings and Daughters Retained –19th Set

Bull No.	**1315**	**2674**	**2737**	**2759**	**2767**	**2781**	**5181**	**5232**	**5246**	**5310**	**5320**	**5333**	**5374**	**5375**	**7604**	**Total**
AI	940	1205	1070	1495	0	0	833	839	885	922	1038	1004	745	0	977	**11953**
Pregnancies	442	580	533	724	0	0	391	410	420	437	487	469	363	0	464	**5720**
Daughter Born	184	247	217	312	0	0	156	163	179	166	197	187	143	0	185	**2336**
Daughters available	126	173	137	209	0	0	92	99	133	113	135	143	100	0	119	**1579**
Daughter Calved	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**
Complete Recorded	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Daughters to be recorded	126	173	137	209	0	0	92	99	133	113	135	143	100	0	119	**1579**

A.I., Conception, Calvings and Daughters Retained –20th Set

Bull No.	2793	2814	2831	2838	2847	2848	2850	3004	5427	7584	7649	5481	1454	5588	5500	5505	5511	5592	19M	**TOTAL**
AI	911	0	548	1056	125	25	56	225	1008	1059	1012	735	1020	713	1150	557	473	502	1133	**12308**
Pregnancies	455	0	264	507	63	12	32	115	496	515	490	355	500	356	571	271	230	252	568	**6052**
Daughter Born	173	0	60	176	25	5	16	51	183	205	203	77	196	137	185	70	50	103	225	**2140**
Daughters available	23	0	33	74	23	3	13	15	99	82	103	31	109	85	104	59	5	66	101	**1028**
Daughter Calved	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Complete Recorded	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Daughters to be recorded	23	0	33	74	23	3	13	15	99	82	103	31	109	85	104	59	5	66	101	**1028**

A.I., Conception, Calvings and Daughters Retained –9th Set (Nominated Mating in field)

Bull No.	**1994**	**1575**	**1903**	**1913**	**1940**	**1964**	**2582**	**2592**	**2720**	**2910**	**5112**	**5197**	**5218**	**5258**	**5312**	**TOTAL**
AI	868	76	785	571	1107	1014	165	146	105	54	95	33	76	36	37	**5168**
Pregnancies	307	29	299	224	427	378	72	58	39	22	54	13	27	13	14	**1976**
Daughter Born	93	9	97	66	121	118	26	13	6	6	18	4	9	3	6	**595**
Daughters available	15	1	14	7	18	14	6	2	0	0	5	1	0	0	0	**83**
Daughter Calved	15	1	14	7	18	14	6	2	0	0	5	1	0	0	0	**83**
Daughters Complete Recorded	15	1	14	7	18	14	6	2	0	0	5	1	0	0	0	**83**
Daughters to be recorded	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**

A.I., Conception, Calvings and Daughters Retained –21th Set

Bull No.	109	2979	2990	3014	5414	5629	5638	5690	5723	5764	7630	7768	7990	112	297	TOTAL
AI	87	677	13	51	810	895	791	715	130	82	618	794	376	0	0	**6039**
Pregnancies	0	323	0	26	201	425	162	0	0	0	97	292	0	0	0	**1526**
Daughter Born	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Daughters available	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Daughter Calved	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Daughters Complete Recorded	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Daughters to be recorded	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**

Set-wise AI, Conception and daughters retained

Set no.	No. of Bulls used	AI	Preg.	Calving		Daughters Retained			Daughters Recorded	Av. AFC (Mo.)	Av. Milk Yield (kg)	Daughters to be recorded
				Total	Female	Up to 1Year	Up to 2 Year	3 Year & above				
6th	11	2323	943	669	300	0	0	24	24	52.0	7.9	0
7th	9	1755	651	436	206	0	0	20	20	49.4	8.0	0
8th	17	3542	1318	982	461	0	0	34	34	50.3	8.1	0
9th	15	5168	1976	1336	595	1	0	83	83	47.6	8.2	0
10th	11	5396	2094	1542	690	0	0	133	133	48.1	8.3	0
11th	12	9478	3579	2326	1147	0	0	219	219	50.4	8.1	0
12th	8	8212	3110	2280	1073	0	0	238	238	49.4	8.1	0
13th	6	14923	6357	5050	2333	0	0	577	509	75.5	7.6	1
14th	9	8328	3550	3077	1492	0	0	374	296	76.0	7.8	0
15th	15	11810	5109	4215	1956	0	0	1022	590	42.2	8.5	0
16th	15	7453	3342	2724	1277	1	1	695	403	45.9	8.1	8
17th	16	11077	5120	4376	2100	1	5	1261	255	45.2	8.0	307
18th	17	13036	6529	5672	2737	0	227	1604	1	29.4	8	754
19th	15	11953	5720	4857	2336	697	1575	885	0	0	0	0
20th	18	12308	6052	4445	2140	963	231	0	0	0	0	0
21st	15	6039	1526								0	0
Total	**209**	**132801**	**56976**	**43987**	**20843**	**1663**	**2039**	**7169**	**2805**	**45.4**	**8.1**	**1070**

Bull- wise additional daughters completing 1st lactation from 15th set

Bull No.	Daughter No	Date of birth	Date of calving	Age at 1st calving (days)	Lact length	Lact. Yield
2371	B6293	18-May-18	13-Apr-22	1426	305	2098.1
2371	6500	10-Dec-18	15-Aug-22	1344	305	2805.8
2371	6907	5-Dec-18	13-Aug-22	1347	305	2156.6
2371	B6400	4-Jan-19	18-Oct-22	1383	305	2205.5
2417	7603	3-Jan-19	13-Jun-22	1257	305	2868.6
2417	7570	2-Jun-18	15-Jun-22	1474	305	2897.4
2429	7152	5-Apr-18	05-Apr-22	1461	305	2714.4
2429	6711	1-Apr-18	08-Oct-22	1651	305	2989.7
2429	6546	24-Sep-18	12-Dec-22	1540	305	2789.9
2459	7279	25-Mar-19	03-Apr-22	1105	305	2966.0
4354	B6527	26-Mar-19	15-Jun-22	1177	305	2846.0
6007	6626	27-Mar-19	18-Dec-22	1362	305	2395.0
6139	B6328	28-Oct-18	18-Jun-22	1329	305	2458.7
6139	6816	11-Dec-18	10-Dec-22	1460	305	2485.0

Bull- wise additional daughters completing 1st lactation from 16th Set

Bull No.	Daughter No	Date of birth	Date of calving	Age at 1st calving (days)	Lact length	Lact. Yield
1027	6737	5-Dec-18	05-Jul-22	1308	305	2790.7
1027	7438	28-May-18	15-Jul-22	1509	305	2147.2
1053	7245	8-Jun-18	27-Aug-22	1541	305	2577.2
1053	6733	8-Aug-18	10-Jun-22	1402	305	2891.0
2383	7599	7-Feb-18	25-Aug-22	1660	305	2592.8
2383	7515	15-Dec-18	22-Oct-22	1407	305	2568.5
2383	7610	27-Dec-18	19-Oct-22	1392	305	2633.9
2383	7523	28-Dec-18	18-Nov-22	1421	305	2508.3
2383	7294	1-Jan-18	03-Jan-23	1828	305	2757.3
2383	7296	5-Jan-18	20-Jan-23	1841	305	2706.5
2383	7499	7-Jan-18	13-Oct-22	1740	305	2283.7
2383	7552	1-Feb-18	15-Apr-22	1534	305	2829.6
2383	7587	5-Feb-18	17-Sep-22	1685	305	2661.0
2383	7614	5-Feb-18	29-Oct-22	1727	305	2741.3
2383	7285	20-Feb-18	05-Aug-22	1627	305	2660.9
2383	7254	25-Feb-18	08-Nov-22	1717	305	2180.8
2383	7733	11-Mar-18	10-Apr-22	1491	305	2834.2
2383	7612	10-Apr-19	15-Jun-22	1162	305	2849.8
2467	6874	10-Nov-18	20-Jun-22	1318	305	2251.4
2467	6717	8-May-18	11-Jun-22	1495	305	2892.1
2467	7242	15-May-18	12-Jun-22	1489	305	2287.3
2467	7500	7-Aug-18	16-Apr-22	1348	305	2420.7
2467	7090	14-Aug-18	10-May-22	1365	305	2224.6
2467	7099	20-Aug-18	13-Jul-22	1423	305	2283.1
2467	7467	6-Nov-18	10-May-22	1281	305	2094.9
2467	7461	8-Nov-18	14-Apr-22	1253	305	2234.0
2467	7524	10-Nov-18	20-Sep-22	1410	305	2325.1
2467	7456	12-Nov-18	15-Nov-22	1464	305	1719.2
2467	7455	14-Nov-18	14-Apr-22	1247	305	2240.1
2467	7476	17-Nov-18	16-Oct-22	1429	305	2280.5
2467	7507	19-Nov-18	20-May-22	1278	305	2537.7
2467	7465	19-Dec-18	17-Apr-22	1215	305	2306.0
2467	7584	16-Feb-18	20-Aug-22	1646	305	2726.5
2467	7959	14-Mar-19	05-Jan-23	1393	305	2739.7
2467	7667/1575	15-Mar-19	10-Sep-22	1275	305	2839.7
2501	6772	21-Jan-18	16-Apr-22	1546	305	2169.0
2501	7155	24-Feb-18	10-Aug-22	1628	305	2740.0

2501	7077	14-Aug-18	13-May-22	1368	305	2146.8
2501	7421	15-Sep-18	17-Jun-22	1371	305	2251.1
2501	7102	17-Sep-18	15-Apr-22	1306	305	2290.0
2501	7057	20-Sep-18	10-Apr-22	1298	305	2237.8
2501	7097	27-Sep-18	16-Jul-22	1388	305	2345.1
2501	7316	2-Oct-18	18-Jul-22	1385	305	1999.6
2501	7070	5-Nov-18	18-Sep-22	1413	305	2244.8
2501	7313	6-Nov-18	08-Aug-22	1371	305	2921.7
2501	7553	20-Jan-18	13-Sep-22	1697	305	2328.4
2501	7835	20-Mar-18	13-Jun-22	1546	305	2434.4
2501	7837	20-Mar-19	06-Jan-23	1388	305	2312.3
2501	8095	25-Mar-19	17-Nov-22	1333	305	1955.0
2501	7628	28-Mar-19	17-May-22	1146	305	2827.1
2501	7632	2-Apr-19	12-Jul-22	1197	305	2742.8
2501	8135	14-Apr-19	10-Sep-22	1245	305	2824.1
2501	7739	17-Apr-19	07-Oct-22	1269	305	2912.9
2501	7825	20-Apr-19	17-Jun-22	1154	305	2294.6
2501	7997	20-Apr-19	07-Jan-23	1358	305	2705.5
2501	7737	18-Jun-19	05-Sep-22	1175	305	2743.5
2501	7990	20-Aug-18	15-Apr-22	1334	305	2726.2
2501	8357	8-Sep-18	19-Feb-23	1625	305	2637.8
4592	6578	7-Mar-18	18-May-22	1533	305	2794.8
4592	6761	17-Apr-18	13-Nov-22	1671	305	2723.0
4592	6845	17-Jul-18	18-Jan-23	1646	305	2238.0
4592	7443	10-Feb-18	13-Dec-22	1767	305	2318.9
4592	7551	23-Feb-18	02-Jul-22	1590	305	2877.6
4592	7262	19-Mar-19	10-Apr-22	1118	305	2846.9
4705	6778	12-Jan-18	01-May-22	1570	305	2733.5
4705	6905	31-Jan-18	10-May-22	1560	305	2646.4
4705	6937	25-Mar-18	10-Apr-22	1477	305	2490.0
4705	8087	10-Apr-19	15-Nov-22	1315	305	2748.2
4705	8088	12-Apr-19	12-Jan-23	1371	305	2396.0
4705	8084	15-Apr-19	15-Apr-22	1096	305	1901.4
4705	7755	15-Apr-19	16-Sep-22	1250	305	2160.6
4705	8025	20-Apr-19	15-Nov-22	1305	305	2604.5
4705	7788	20-Apr-19	13-Jan-23	1364	305	2314.2
4705	7559	23-Apr-19	17-Oct-22	1273	305	2709.6
4705	7993	30-Apr-19	03-Dec-22	1313	305	2740.2
4705	7634	30-Apr-19	23-Jan-23	1364	305	2362.5
4705	7999	10-May-19	08-Feb-23	1370	305	2688.2
4705	7768	11-May-19	13-Jul-22	1159	305	2602.8
4705	7985	13-May-19	10-Oct-22	1246	305	2399.0
4705	7780	13-May-19	08-Jan-23	1336	305	2252.9
4705	7830	15-May-19	16-Jul-22	1158	305	2265.1
4705	8082	15-May-19	10-Sep-22	1214	305	2293.7
4705	7986	15-May-19	07-Nov-22	1272	305	2683.4
4705	7976	17-May-19	07-Dec-22	1300	305	1637.1
4705	7987	20-May-19	05-Dec-22	1295	305	2776.9
4705	7668	27-May-19	07-Jun-22	1107	305	2913.2
4705	8207	28-May-19	10-Jun-22	1109	305	2459.6
4705	8246	28-May-19	10-Nov-22	1262	305	2546.3
4705	7603	17-Jun-19	25-Sep-22	1196	305	2589.6
4705	7670	17-Jun-19	18-Oct-22	1219	305	2805.5
4705	7651	20-Jun-19	10-Nov-22	1239	305	2694.9
4705	7792	28-Jun-19	17-Dec-22	1268	305	2512.7
4889	6736	9-Jan-18	12-Nov-22	1768	305	2742.4
4889	7163	22-Jun-18	12-Sep-22	1543	305	2614.1

4889	7364	22-Jun-18	04-Jan-23	1657	305	2515.1
4889	7639	30-Jan-18	07-Dec-22	1772	305	2636.2
4889	7786	10-Mar-18	18-Jun-22	1561	305	2281.3
4889	7626	10-Mar-18	21-Oct-22	1686	305	2547.2
4889	7292	14-Mar-19	18-Apr-22	1131	305	2839.8
4889	7267	17-Mar-19	02-May-22	1142	305	2518.3
4889	7436	26-Mar-19	12-Apr-22	1113	305	2521.8
4889	7735	27-Mar-19	12-Jun-22	1173	305	2732.6
4889	7742	15-Apr-19	20-Jun-22	1162	305	2416.7
4889	8235	18-Apr-19	13-Feb-23	1397	305	2455.8
4889	8076	2-May-19	22-Aug-22	1208	305	2217.5
4889	8081	4-May-19	16-Nov-22	1292	305	2782.4
4889	7735	11-May-19	15-Sep-22	1223	305	2344.4
4889	8086	26-May-19	15-Sep-22	1208	305	1943.0
4889	7965	4-Oct-18	01-Feb-23	1581	305	2655.2
4889	7087	1-Dec-18	15-Mar-23	1565	305	2282.6
6379	7117	16-Aug-18	15-Sep-22	1491	305	2421.7
6379	7122	22-Aug-18	15-Oct-22	1515	305	2542.5
6409	7233	20-Aug-18	16-Apr-22	1335	305	2339.6
6409	7145	5-Sep-18	20-Nov-22	1537	305	2509.4
6646	7162	25-Aug-18	14-Aug-22	1450	305	2481.9
6646	7154	25-Aug-18	22-Nov-22	1550	305	2617.0
M29	7183	15-Sep-18	10-Sep-22	1456	305	2656.1
M29	7066	23-Sep-18	15-Aug-22	1422	305	2499.7
M29	7143	25-Sep-18	09-Apr-22	1292	305	2478.0
M29	7199	28-Sep-18	05-May-22	1315	305	2883.2
M29	7069	30-Sep-18	05-Jan-23	1558	305	2462.9
M29	7430	13-Dec-18	04-Oct-22	1391	305	2618.5

Bull- wise additional daughters completing 1st lactation from 17th Set

Bull No.	Daughter No.	Date of Birth	Date of Calving	Age at 1st Calving	Lact. Lenght	Lactation Yield
1148	8795	27-Jun-19	10-Feb-23	1324	305	2158.9
1148	9028	18-Oct-19	08-Mar-23	1237	305	2599.2
2558	8639	14-Jan-18	05-May-22	1572	305	2542.6
2558	8231	4-Oct-18	07-Jun-22	1342	305	2337.4
2558	8688	6-Oct-18	20-Aug-22	1414	305	2435.4
2558	8321	6-Oct-18	10-Jan-23	1557	305	2477.3
2558	8407	13-Oct-18	15-Jan-23	1555	305	2196.2
2558	8392	14-Oct-18	09-Aug-22	1395	305	2136.1
2558	8393	15-Oct-18	14-Jun-22	1338	305	2341.7
2558	8416	15-Oct-18	15-Jul-22	1369	305	2279.4
2558	8694	16-Oct-18	25-Jan-23	1562	305	2363.8
2558	8609	20-Oct-18	19-Jun-22	1338	305	2383.6
2558	8500	20-Oct-18	28-Mar-23	1620	305	2513.6
2558	8477	22-Oct-18	15-Jun-22	1332	305	2064.0
2558	8671	23-Oct-18	20-Dec-22	1519	305	2389.6
2558	8685	25-Oct-18	09-Sep-22	1415	305	2588.3
2558	8187	25-Oct-18	12-Mar-23	1599	305	2503.1
2558	8422	26-Oct-18	17-Jul-22	1360	305	2358.5
2558	7689	6-Nov-18	03-Feb-23	1550	305	2537.1
2558	8203	9-Nov-18	07-Jul-22	1336	305	2921.4
2558	8630	11-Nov-18	16-Jul-22	1343	305	2928.0
2558	8282	14-Nov-18	04-Dec-22	1481	305	2812.0
2558	8154	18-Nov-18	12-Dec-22	1485	305	2400.1
2558	8697	20-Nov-18	13-Aug-22	1362	305	2668.7

2558	8290	20-Nov-18	01-Aug-22	1350	305	2806.5
2558	8201	20-Nov-18	07-Mar-23	1568	305	2733.6
2558	8675	22-Nov-18	01-Oct-22	1409	305	2429.3
2558	8280	28-Nov-18	20-Jan-23	1514	305	2609.9
2558	8528	15-Dec-18	16-Aug-22	1340	305	2813.6
2558	8678	16-Dec-18	02-Nov-22	1417	305	2508.9
2558	8278	15-Jan-19	15-Nov-22	1400	305	2729.2
2558	8742	12-Jun-19	17-Feb-23	1346	305	2295.8
2565	7870	4-Jun-19	18-Mar-23	1383	305	2324.2
2565	7929	10-Jun-19	15-Jun-22	1101	305	2044.6
2565	7910	12-Jun-19	10-Jan-23	1308	305	2346.6
2565	7873	17-Jun-19	15-Jun-22	1094	305	2230.0
2565	7616	23-Jun-19	10-Dec-22	1266	305	2726.0
2565	7913	15-Jul-19	20-Apr-22	1010	305	2398.0
2565	7849	20-Jul-19	09-Dec-22	1238	305	2361.4
2565	7923	10-Aug-19	12-Sep-22	1129	305	2522.4
2565	7918	20-Aug-18	17-May-22	1366	305	2224.0
2565	8366	25-Aug-18	01-Apr-22	1315	305	2197.5
2565	7912	28-Aug-18	20-Jul-22	1422	305	2414.7
2565	7748	10-Sep-18	20-Jan-23	1593	305	2548.5
2565	8097	10-Sep-18	13-Feb-23	1617	305	2356.5
2565	7810	11-Sep-18	17-Apr-22	1314	305	2508.5
2565	7879	13-Sep-18	21-Oct-22	1499	305	2528.2
2565	7808	14-Sep-18	14-Dec-22	1552	305	2477.8
2565	7831	15-Sep-18	15-Jun-22	1369	305	2348.4
2565	8090	15-Sep-18	13-Sep-22	1459	305	2190.6
2565	7962	15-Sep-18	05-Oct-22	1481	305	2891.1
2565	7901	17-Sep-18	13-May-22	1334	305	2362.5
2565	7897	20-Sep-18	15-Mar-23	1637	305	2372.3
2565	7826	20-Sep-18	17-Mar-23	1639	305	2630.9
2565	7704	2-Oct-18	28-Jun-22	1365	305	2801.6
2565	7822	4-Oct-18	12-Feb-23	1592	305	2384.6
2565	7889	5-Oct-18	12-Jun-22	1346	305	2014.7
2565	7885	5-Oct-18	15-Jan-23	1563	305	2079.8
2565	7877	7-Oct-18	13-Nov-22	1498	305	2064.9
2565	8543	13-Oct-18	01-Jan-23	1541	305	2729.7
2565	8542	15-Oct-18	05-Oct-22	1451	305	2971.9
2565	8553	17-Oct-18	02-Sep-22	1416	305	2284.8
2565	7850	25-Oct-18	15-Jun-22	1329	305	2665.9
2565	8298	3-Nov-18	05-Jul-22	1340	305	2816.1
2565	8265	3-Nov-18	16-Feb-23	1566	305	2676.9
2565	8586	15-Nov-18	04-Mar-23	1570	305	2588.8
2565	9071	11-Jul-19	07-Mar-23	1335	305	2738.9
2594	8247	15-Jun-19	14-Dec-22	1278	305	2473.5
2594	7762	17-Jun-19	22-Aug-22	1162	305	2429.9
2594	7834	20-Jun-19	17-May-22	1062	305	2262.4
2594	8213	25-Jun-19	11-Aug-22	1143	305	2501.0
2594	8078	28-Jun-19	12-Jun-22	1080	305	2318.3
2594	7964	30-Jun-19	05-Jul-22	1101	305	2857.7
2594	7666	1-Jul-19	10-Apr-22	1014	305	2759.4
2594	7691	10-Jul-19	24-Jun-22	1080	305	2468.3
2594	7988	12-Jul-19	01-May-22	1024	305	2859.0
2594	7969	16-Jul-19	03-Jan-23	1267	305	2625.6
2594	7702	19-Jul-19	19-Mar-23	1339	305	2864.2

2594	7956	24-Jul-19	07-Aug-22	1110	305	2679.5
2594	7961	29-Jul-19	10-Oct-22	1169	305	2887.3
2594	7995/1673	28-Aug-18	07-Sep-22	1471	305	2724.3
2594	8469	15-Nov-18	05-Feb-23	1543	305	2567.5
2594	8526	16-Nov-18	01-Jul-22	1323	305	2820.4
2594	8106	16-Nov-18	19-Aug-22	1372	305	2151.4
2594	8539	19-Nov-18	17-Jan-23	1520	305	2524.7
2594	8378	20-Nov-18	14-Jul-22	1332	305	1968.4
2594	8690	24-Nov-18	11-Aug-22	1356	305	2524.5
2594	8432	25-Nov-18	15-Aug-22	1359	305	2227.7
2594	8349	30-Nov-18	15-Oct-22	1415	305	2720.6
2594	8522	30-Nov-18	15-Mar-23	1566	305	2801.9
2594	8520	5-Dec-18	14-Aug-22	1348	305	2900.1
2594	8039	18-Dec-18	20-Aug-22	1341	305	2446.7
2594	8438	20-Dec-18	09-Sep-22	1359	305	2452.9
2594	8610	20-Dec-18	13-Sep-22	1363	305	2318.6
2594	8310	23-Dec-18	25-Aug-22	1341	305	2372.5
2594	8316	26-Dec-18	19-Aug-22	1332	305	2452.4
2594	8307	5-Jan-19	10-Sep-22	1344	305	2485.2
2607	8091	5-Jul-19	10-Feb-23	1316	305	2325.6
2607	7904	14-Jul-19	20-Mar-23	1345	305	2458.1
2607	7662	5-Aug-19	08-Aug-22	1099	305	2753.1
2607	7655	5-Sep-18	15-May-22	1348	305	2661.6
2607	8363	25-Sep-18	18-Oct-22	1484	305	2228.7
2607	8426	15-Oct-18	13-Dec-22	1520	305	2479.3
2607	8693	18-Oct-18	15-Sep-22	1428	305	2785.5
2607	8584	18-Oct-18	16-Mar-23	1610	305	2538.8
2607	7824	28-Oct-18	13-Jul-22	1354	305	2393.9
2607	8431	30-Oct-18	18-Dec-22	1510	305	2301.7
2607	8600	5-Nov-18	14-Feb-23	1562	305	2479.5
2607	8567	5-Nov-18	14-Mar-23	1590	305	2601.6
2607	8485	6-Nov-18	10-Oct-22	1434	305	2795.4
2607	8653	7-Nov-18	10-Aug-22	1372	305	2308.0
2607	8673	10-Nov-18	18-Nov-22	1469	305	2440.8
2607	8376	11-Nov-18	14-Mar-23	1584	305	2461.7
2607	8518	18-Nov-18	10-Jul-22	1330	305	2854.3
2607	8524	30-Nov-18	05-Nov-22	1436	305	2753.7
2607	8398	12-Dec-18	15-Aug-22	1342	305	2226.4
2607	8433	15-Dec-18	11-Aug-22	1335	305	2026.9
2607	8499	15-Dec-18	01-Dec-22	1447	305	2529.7
2607	8374	20-Dec-18	20-May-22	1247	305	2490.4
2607	8179	25-Dec-18	15-Jan-23	1482	305	2360.9
2607	8408	11-Jan-19	12-Oct-22	1370	305	2209.5
2607	8442	18-Jan-19	10-Feb-23	1484	305	2399.9
2607	8719	26-Jun-19	12-Feb-23	1327	305	2406.2
2607	8507	11-Jul-19	01-Mar-23	1329	305	2667.2
4687	8217	20-May-19	09-May-22	1085	305	2077.7
4687	7643	7-Jun-19	09-Nov-22	1251	305	2601.8
4687	7998/169	12-Jun-19	20-Sep-22	1196	305	2557.1
4687	7997	15-Jun-19	09-Oct-22	1212	305	2997.1
4687	7619	16-Jun-19	14-Sep-22	1186	305	2529.9
4687	7679	17-Jun-19	10-Jul-22	1119	305	2795.9
4687	7731	18-Jun-19	10-Aug-22	1149	305	2251.3
4687	7823	19-Jun-19	09-Jul-22	1116	305	2375.9

4687	7841	25-Jun-19	20-Oct-22	1213	305	2548.3
4687	7794	25-Jun-19	18-Jan-23	1303	305	2358.4
4687	7883	15-Jul-19	07-Apr-22	997	305	2398.1
4687	8219	29-Jul-19	23-Mar-23	1333	305	2519.6
4687	7957	8-Aug-19	01-Apr-22	967	305	2849.6
4687	8260	15-Aug-19	07-Apr-22	966	305	2712.1
4687	7774	10-Sep-18	10-Jun-22	1369	305	2879.4
4687	8570	10-Sep-18	10-Sep-22	1461	305	2112.8
4687	7652	11-Sep-18	05-Oct-22	1485	305	2262.7
4687	7670	13-Sep-18	12-May-22	1337	305	2772.3
4687	7663	15-Sep-18	20-May-22	1343	305	2731.9
4687	7657	15-Sep-18	10-Feb-23	1609	305	2608.6
4687	7752	20-Sep-18	14-Jul-22	1393	305	2363.0
4687	7664	2-Oct-18	20-Sep-22	1449	305	1908.2
4687	8621	25-Nov-18	17-Jul-22	1330	305	2282.5
4687	8361	25-Dec-18	16-Jan-23	1483	305	2362.8
4687	8137	14-Jan-19	15-Feb-23	1493	305	2233.9
4687	8391	19-Jan-19	13-Mar-23	1514	305	2358.2
4687	8398	22-Jan-19	15-Sep-22	1332	305	2104.3
4687	8417	25-Jan-19	10-Oct-22	1354	305	2273.6
4687	8623	7-Feb-19	05-Feb-23	1459	305	2362.3
4687	8454	11-Feb-19	02-Oct-22	1329	305	2338.1
4687	8494	16-Feb-19	08-Oct-22	1330	305	2243.8
4687	8731	4-May-19	26-Mar-23	1422	305	2711.2
4715	7714	15-May-19	25-Feb-23	1382	305	2658.9
4715	7751	15-Aug-19	21-May-22	1010	305	2482.7
4715	7972	16-Aug-18	02-Nov-22	1539	305	2117.2
4715	7728	20-Aug-18	01-Jan-23	1595	305	2618.6
4715	8252	4-Sep-18	04-May-22	1338	305	2261.9
4715	8000	8-Oct-18	01-Feb-23	1577	305	2816.0
4715	8161	14-Jan-19	15-Sep-22	1340	305	2518.8
4715	8107	28-Jan-19	20-Sep-22	1331	305	2785.1
4715	8601	5-Feb-19	19-Feb-23	1475	305	2348.2
4715	8342	10-Feb-19	14-Oct-22	1342	305	2780.3
4715	8559	10-Feb-19	17-Mar-23	1496	305	2601.0
4715	8608	15-Feb-19	15-Mar-23	1489	305	2516.3
4715	8466	20-Feb-19	18-Mar-23	1487	305	2752.1
4715	8414	22-Feb-19	20-Dec-22	1397	305	2341.9
4715	8446	5-Mar-19	10-Mar-23	1466	305	2587.0
4715	8413	5-Mar-19	12-Mar-23	1468	305	2294.3
4715	8519	12-Mar-19	04-Feb-23	1425	305	2713.0
4715	8468	12-Mar-19	15-Mar-23	1464	305	2899.9
4715	8594	24-Mar-19	12-Nov-22	1329	305	2628.5
4715	8261	30-Mar-19	05-Mar-23	1436	305	2647.1
4733	7882	20-Jul-19	20-Sep-22	1158	305	2440.1
4733	8722	18-Apr-19	18-Dec-22	1340	305	3640.4
4733	8282	22-Apr-19	20-Dec-22	1338	305	3662.3
4733	8746	24-Apr-19	13-Dec-22	1329	305	2517.7
4837	8684	5-Mar-18	20-Dec-22	1751	305	2617.5
4837	8311	22-Oct-18	15-Dec-22	1515	305	2422.2
4837	8450	27-Oct-18	20-Nov-22	1485	305	2508.9
4837	8515	10-Nov-18	04-Jan-23	1516	305	2751.2
4837	8388	10-Mar-19	17-Mar-23	1468	305	2279.0
4837	8724	18-Apr-19	17-Dec-22	1339	305	2475.2

4837	8735	30-Apr-19	24-Jan-23	1365	305	2466.1
7010	8681	24-Jan-18	09-Dec-22	1780	305	2472.1
7010	8691	5-Mar-18	16-Dec-22	1747	305	2564.9
7010	8662	8-Mar-18	04-Jul-22	1579	305	2609.4
7010	8699	26-Mar-19	21-Jun-22	1183	305	2517.3
7010	8660	31-Oct-18	16-Mar-23	1597	305	2095.6
7010	8042	25-Aug-18	14-May-22	1358	305	2548.0
7010	8220	30-Aug-18	10-May-22	1349	305	2350.1
7010	8478	17-Jan-19	03-Oct-22	1355	305	2601.3
7010	8523	19-Jan-19	04-Feb-23	1477	305	2673.7
7010	8337	25-Jan-19	10-Nov-22	1385	305	2542.4
7010	8243	7-Mar-19	29-Nov-22	1363	305	2443.1
M51	7303/1644	11-Aug-18	12-Sep-22	1493	305	2834.4
M51	7210	5-Sep-18	28-May-22	1361	305	2599.6
M51	7648	4-Jun-19	20-Apr-22	1051	305	2356.8
M51	8035	30-Jun-19	15-Jun-22	1081	305	2964.9
M51	8299	15-Nov-18	01-Jul-22	1324	305	2842.6
M51	8272	19-Jan-19	04-Nov-22	1385	305	2930.3
M51	8461	19-Jan-19	25-Jan-23	1467	305	2543.8
M51	8843	20-May-19	04-Jan-23	1325	305	2336.9
M51	8856	28-Jun-19	12-Feb-23	1325	305	2244.3
SK	7641	15-Oct-18	29-Oct-22	1475	305	2448.7
SK	7694	24-Oct-18	10-Jan-23	1539	305	2742.7
SK	7764	1-Nov-18	28-Nov-22	1488	305	2449.9

Bull- wise additional daughters completing 1st lactation from 18th Set

Bull No.	Daughter No.	Date of Birth	Date of Calving	Age at 1st Calving	Lact. Lenght	Lactation Yield
4905	9595	23-March-20	10-SEP-22	897	305	2366.5

Project Co-ordinator's observations on Field Unit performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned as per R E 2023-24		Released ICAR	Expenditure as per AUC		Balance
Total	ICAR Share	Share as per R E	ICAR Share	State Share	(ICAR Share)
26.00	19.50	19.50	19.50	6.50	0.00

- Total 8100 AI's were performed and 3934 buffalos conceived using bulls from 15th set PT bull and 20th and 21st test mating set during report period. The conception rate reported 48.6 %.
- 3368 no. of calving reported during the period out of which 1755 male and 1613 were female.
- At various centers 8893 female progenies of different age groups are standing for future recording
- During the year 528 daughters calved and 347 daughters recorded for lactation.

Recommendations:

- Emphasis should be given on more no. of daughters first lactation milk yield recording.
- For implementation of FPT project more effectively, awareness programmes should be organised among farmers in the form of female calf rallies, milk competitions and Kisan Gosthies.

FIELD UNIT: ICAR-NDRI, KARNAL

a. Research Evaluation Performa

1. Name of Center and year of initiation : ICAR-NDRI, Karnal (2001-02)
2. Name of project In-charge : Dr. Vikas Vohra, Principal Scientist, AG&B
3. Activities assigned and targets fixed: : As per technical programme of the FPT Murrah Enclosed Tables 1-15
4. Activities carried out during the period : AI, Milk recording, Deworming, Vaccination, Camps, Calf Rally, Farmer Visit.
5. Selection of Bull Set wise : Bulls selected for 22nd Set
6. Progeny test evaluation- set wise : As Specified
7. Technology developed / patent : Nil
8. Bulls for elite mating : As Specified
9. Feeding, Reproduction, Management study, if any: No
10. Gaps / Constraints / Shortfalls
    - A large movement of buffaloes due to sale-purchase in the villages.
    - The animals in the project, when tagged, fetch higher prices in the village hence frequently sold, leading to less number of daughters for recording.
    - Shortage of adequate funds to improve the coverage of AI and data recording the field
11. Further programme, activities, target : Enclosed

b. Financial Statement/ administrative evaluation Performa

1.	No. of Sanction posts and designation	Nil
2.	No. of posts filled	NA
3.	No. of posts vacant (vacant since when)	NA
4.	Funds released during the year	Rs. 20,50,000 /-
5.	Previous balance (refunded)	Rs. 2363/- (Refund to Co-Unit)
6.	Funds Utilised	Rs. 20,41,607 /- (99.86% utilized)
7.	Closing Balance	Rs. 8,393 /-

Research Achievements

A total of 5108 were performed in Murrah Buffaloes under field conditions during 2023-24 and as a result an overall conception rate of 46.20% was obtained. The highest conception rate was achieved in the month of June 2023 (47.97%) and the lowest was found for the month of December 2023 (44.19%), when recorded till January 2024. Across the villages, the highest conception rate was observed in Shekhpura (49.88%) village and lowest in Kamalpur (41.90%), when recorded village till January 2024. A total of 1625 (943 Male and 682 Female) Murrah buffalo calves were born in the farmers' herds and performance data on milk recording of 108 daughters have been recorded for evaluation of bulls under field conditions. The average lactation yield in the field was recorded as 2195.8 ± 33.62 kg daily milk yield in the recorded daughter were 7.43 kg/day. The total herd strength of registered females and the breedable females at different centers was 5965 and 4521 respectively. As many as 6 breeding bulls of belonging to the 20th Set and 15 breeding bulls of belonging to the 21th Set were used for AI during the year 2023-24.

Action Taken Report (20th ARM)

Recommendations	Action Taken Report
Numbers of daughters recorded need to be improved. Incentive may be given to farmers for complete recording of daughters	108 daughters were recorded at farmers herd, during the year 2023-24 as compared to 86 recorded last year, which is 25.58% higher than last year (2022-23).

Research Target: 4500 AI in the villages **Target Achieved :** 5108 AI (102.1%)

Other Activities

The AG&B Division, NDRI, under the Network Project on Buffalo Improvement (FPT Murrah Unit). Under this program the general-purpose medicines, spray and calcium supplement were distributed as support to about 90 dairy farmers belonging to the SC community from district Karnal. The dairy farmers were also upraised about the scientific breeding and management practices of dairy buffaloes, with special emphasis on the role of calcium supplementation in buffaloes.

F 1. Herd Strength of Registered females under field unit as on 31-03- 2024

Name of Centre	**OB**	**Addition**	**Deduction**		**Total**
		New Reg. (Birth/ Purchase)	**Sold**	**Death**	Closing Balance
Darar	1850	115	195	6	1764
Kheriman Singh	1297	63	172	5	1183
Rindal	1049	76	194	3	928
Sheikhpura	1205	80	102	5	1178
Kamalpur	901	110	95	4	912
Total	**6302**	**444**	**758**	**23**	**5965**

F2. Status of Breedable females under field unit as on 31-03- 2024

Name of Village	**Heifers >3 years**		**Buffalo (NP)**		**Buffalo Pregnant**	
	Total	**Pregnant**	**In milk**	**Dry**	**In milk**	**Dry**
Darar	250	140	295	54	148	60
Kheriman Singh	272	184	269	57	119	77
Rindal	204	149	161	43	181	43
Sheikhpura	370	171	192	54	128	58
Kamalpur	294	140	187	61	120	40
Total	**1390**	**784**	**1104**	**269**	**696**	**278**

F 3. Monthly AI under Field Unit during 01-04-2023 to 31-03-2024

Month	**Centre / Village**					**Total**
	Darar	**Kheriman Singh**	**Rindal**	**Shekhpura**	**Kamalpur**	
April 23	40	60	77	82	64	323
May	80	65	84	82	64	375
June	80	57	81	83	68	369
July	70	61	90	83	71	375
Aug.	80	102	88	90	80	440
Sept.	90	95	92	95	88	460
Oct.	103	102	97	85	92	479
Nov.	90	104	89	86	100	469
Dec.	102	102	84	83	102	473
Jan. 24	99	94	90	87	92	462
Feb.	103	85	84	80	94	446
March.	77	92	89	88	91	437
Total	**1014**	**1019**	**1045**	**1024**	**1006**	**5108**

F 4 Bullwise AI at Different Field Unit Centers during the Period 1-4-2023 to 31-03-2024

Set No	Bull No	April	May	June	July	Aug	Sept	Oct.	Nov.	Dec	Jan	Feb	March	Total
20	2838	62	82											**144**
20	M-19	181	9											**190**
20	5481		164	171	40									**375**
20	5500	60	30											**90**
20	5505		90	198	118									**406**
20	5511	20												**20**
21	2930					45	60							**105**
21	2979						109	95	146					**350**
21	2990									76	17			**93**
21	3014						231	118						**349**
21	5414				110	79	8				50			**247**
21	5629					80	15	54	76	40				**265**
21	5638							127	89					**216**
21	5690								95		49			**144**
21	5764										36	218	125	**379**
21	109												96	**96**
21	112											191	176	**367**
21	297												40	**40**
21	7768				107	236	37	85	59	26				**550**
21	7990								4	174	167	37		**382**
21	7630									157	143			**300**
Total		**323**	**375**	**369**	**375**	**440**	**460**	**479**	**469**	**473**	**462**	**446**	**437**	**5108**

F 5: Month – wise Conception at Different Field Units during the period 01-4-23 to 31/03/24

Month	Village / Centre							CR %
	Darar	Kherimann Singh	Rindal	Sheik hpura	Kamalpur	Total Conce.	Total AI	
April 23	20	26	34	41	29	150	323	**46.44**
May	40	30	39	40	25	174	375	**46.40**
June	39	26	42	41	29	177	369	**47.97**
July	35	28	40	42	31	176	375	**46.93**
Aug.	36	44	39	43	36	198	440	**45.00**
Sept.	38	47	44	48	35	212	460	**46.09**
Oct.	44	49	49	42	40	224	479	**46.76**
Nov.	40	49	43	42	43	217	469	**46.27**
Dec	42	48	39	41	39	209	473	**44.19**
Jan. 24	45	42	44	47	37	215	462	**46.54**
Feb.								
March								
Total	**379**	**389**	**413**	**427**	**344**	**1952**	**4225**	**46.20**
AI	**834**	**842**	**872**	**856**	**821**	**Av.CR=(1952/4225)*100=46.20%**		
CR%	**45.44**	**46.20**	**47.36**	**49.88**	**41.90**			

This Table No. 5 will be Updated in July-2024

F 6: Monthwise Calvings at Different Field Unit Centers During the Period 01-04-2023 to 3-2024

Month	**Darar**		**Kherimann Singh**		**Rindal**		**Sheikhpura**		**Kamalpur**		**Total**	
	M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Apr 23	11	9	13	12	9	8	16	10	14	9	**63**	**48**
May	14	13	17	16	5	4	15	12	19	11	**70**	**56**
June	16	14	19	15	8	6	18	8	17	12	**78**	**55**
July	12	11	24	20	7	12	18	12	21	16	**82**	**71**
Aug.	11	8	21	21	9	9	18	12	15	10	**74**	**60**

Sept.	30	22	22	20	12	10	17	12	27	15	**108**	**79**
Oct.	16	13	28	16	9	7	18	12	23	11	**94**	**59**
Nov.	10	9	24	19	12	10	19	8	21	11	**86**	**57**
Dec.	13	10	17	16	9	6	16	10	19	10	**74**	**52**
Jan 24	8	7	27	21	11	8	19	14	22	10	**87**	**60**
Feb	6	5	12	4	9	7	19	13	16	10	**62**	**39**
Mar	9	6	13	11	10	8	18	12	15	9	**65**	**46**
Total	**156**	**127**	**237**	**191**	**110**	**95**	**211**	**135**	**229**	**134**	**943**	**682**

M = Male: 943 F = Female: 682 Total = 1625

F 7. Bull wise Conception at different Field Unit Centers during 1-4-2023 to 31-03-2024

Set No	Bull No	April 23	May-23	Jun-23	Jul-23	Aug. 23	Sept. 23	Oct. 23	Nov. 23	Dec. 23	Jan. 2024	Feb. 24	Mar-24	Total
20	2838	30	40											70
20	M-19	84	3											87
20	5481		79	87	18									184
20	5500	26	13											39
20	5505		39	90	55									184
20	5511	10												10
21	2930					21	30							51
21	2979						43	46	67					156
21	2990									35	8			43
21	3014						110	57						167
21	5414				52	30	3				23			108
21	5629					38	7	24	34	20				123
21	5638							55	43					98
21	5690								45		22			67
21	7768				51	109	19	42	26	13				260
21	7990								2	73	78			153
21	7630									68	70			138
21	5764										14			14
Total		**150**	**174**	**177**	**176**	**198**	**212**	**224**	**217**	**209**	**215**	**0**	**0**	**1952**

This table will be updated in July-2024

F8. Bullwise Calving at Different Field Unit Centers during 1-4-2023 to 31-3-2024

Month		April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan	Feb	Mrch	**Total**
M-19/20	M									10	55	32	2	**99**
	F									5	35	22	2	**64**
1454/20	M	13	15	29	4	47	23							**131**
	F	10	10	21	4	37	17							**99**
2793/20	M	3												**3**
	F	1												**1**
2814/20	M		7	5			5							**17**
	F		6	6			4							**16**
2831/20	M	16	2				3	32	18	9	1			**81**
	F	12	2				3	17	13	6	1			**54**
2838/20	M									13	17	15	18	**63**
	F									12	12	10	12	**46**
2848/20	M	1				20								**21**
	F	1				17								**18**
2850/20	M		3	4			51	3	29					**90**
	F		2	2			37	3	24					**68**
3004/20	M						11	21		16				**48**
	F						6	13		14				**33**
5427/20	M	27	23	14	18									**82**
	F	21	19	6	19									**65**
5481/20	M												19	**19**
	F												14	**14**

5500/20	M			8	59			18	3	2	14	12	5	**121**
	F			6	46			13	2	2	12	4	4	**89**
5505/20	M												21	**21**
	F												14	**14**
5511/20	M							11	24	1		3		**39**
	F							7	14	0		3		**24**
5588/20	M		10	18	1									**29**
	F		9	14	2									**25**
5592/20	M		10			7								**17**
	F		8			6								**14**
7584/20	M	3					10		12	7				**32**
	F	3					9		4	3				**19**
7649/20	M						5	9		16				**30**
	F						3	6		10				**19**
TOTAL		**111**	**126**	**133**	**153**	**134**	**187**	**153**	**143**	**126**	**147**	**101**	**111**	**1625**

M = Male: 943 F = Female: 682 Total = 1625

F. 9 Bull wise female progeny at different Field Unit Centers (0-12 months) as on 31/3/24

Bull No	Darar	Kheriman Singh	Rindal	Sheikhpura	Kamalpur	**Total**
M-19/20	9		11	17	27	**64**
1454/20	14	26	17	14	28	**99**
2793/20	1					**1**
2814/20	16					**16**
2831/20	11	15	7	10	11	**54**
2838/20	3	18	3	22		**46**
2848/20	1	10	4		3	**18**
2850/20	15	18	15	12	8	**68**
3004/20	7	7	4	7	8	**33**
5427/20		28	12	13	12	**65**
5481/20	6		8			**14**
5500/20	11	40	6	14	18	**89**
5505/20		7			7	**14**
5511/20	8	5	4	4	3	**24**
5588/20	7	8	4		6	**25**
5592/20	6			8		**14**
7584/20	3	9		4	3	**19**
7649/20	9			10		**19**
Total	**127**	**191**	**95**	**135**	**134**	**682**

F. 10. Bull wise Live Female Progeny at different Field Unit s (1-2 yrs) as on 31/3/ 2024

Bull No	**Darar**	**Kheriman Singh**	**Rindal**	**Sheikhpura**	**Kamalpur**	**Total**
1315/19	19	25	10	18	14	**86**
2674/19		10	11	9	12	**42**
2737/19	13	7	5	5	6	**36**
2759/19	12		6	5	10	**33**
5246/19			5	7		**12**
5310/19		10	17	5	18	**50**
5320/19	20	26		4	17	**67**
5333/19	5	18	15	8	5	**51**
5374/19	8	20	6	18	10	**62**
7604/19	4					**4**
2793/20	3		4			**7**
2831/20		3				**3**
2848/20	6	9	5	5	6	**31**
3004/20	4	8		7		**19**
5427/20	15	28	7	17	10	**77**
7584/20	14	10	18	8	20	**70**
7649/20	21	22	10	9	14	**76**
Total	**144**	**196**	**119**	**125**	**142**	**726**

F. 11. Bull wise Live Female Progeny at different Field Unit s (2-3 yrs) as on 31/3/ 2024

Bull No	Darar	Kheriman Singh	Rindal	Sheikhpura	Kamalpur	Total
1150/18		5				**5**
1208/18				8		**8**
2645/18			8			**8**
2676/18				7	12	**19**
2677/18	10			7		**17**
4905/18			5		13	**18**
4995/18	5	8				**13**
5147/18		6				**6**
7147/18		20				**20**
7227/18	15		6	3		**24**
7263/18		12			14	**26**
2674/19	5	13	3		10	**31**
2737/19	6	8		5	6	**25**
2759/19	4	23	4	6		**37**
5181/19	14	15	20	12	8	**69**
5232/19	4	10	12	9	20	**55**
5246/19	18	21	9		17	**65**
5310/19	14	7		3		24
5320/19			14	5		19
5333/19					9	9
5374/19			3		1	4
7604/19	5	15	15	30	20	85
Total	**100**	**163**	**99**	**95**	**130**	**587**

F. 12. Bull wise Live Female Progeny at different Field Unit Centers (>3 Years) as on 31/3/2024

Bull No	Darar	Kheriman Singh	Rindal	Sheikhpura	Kamalpur	Total
1150/18	12	5	5		10	**32**
1208/18	7	10	6	5	5	**33**
1209/18			7			**7**
1219/18				1	10	**11**
2645/18	4	18	2	12	30	**66**
2676/18	5	20	10	7	6	**48**
2677/18	3	4	1	7	1	**16**
2689/18	14	15	6	11	18	**64**
5147/18	23	6	4	6	3	**42**
7147/18	6		7			**13**
7227/18				4	12	**16**
7263/18	8		1			**9**
4905/19		11		6		**17**
4995/19	9	1	3	10	2	**25**
Total	**91**	**90**	**52**	**69**	**97**	**399**

F 13. Bull wise daughters calved at different field unit centers during2023-24

Bull No/Set No.	Darar	Kheriman Singh	Rindal	Sheikhpura	Kamalpur	Total
M-29/16		1				**1**
2558/17		1		3		**4**
2594/17	3		2	2		**7**
2607/17	3	1		3		**7**
4687/17	8		2			**10**
4715/17	5		3	2	1	**11**
4733/17	3					**3**
4837/17		7	1			**8**
6942/17	3	4	2	1		**10**
7010/17	2		1			**3**
B-1 330/17				3		**3**

Dara/17		1		4		**5**
Sikander/17	3	3		5		**11**
M-51/17	2	1		1		**4**
M-53/17		4	1			**5**
1150/18				1		**1**
1208/18		2	3			**5**
1209/18			4			**4**
1219/18					2	**2**
2645/18		4				**4**
2676/18		1	3		3	**7**
2677/18					1	**1**
2689/18					4	**4**
4905/18		4				**4**
7094/18	1	1		1	5	**8**
7147/18			3		4	**7**
7227/18		2			5	**7**
7263/18			2			**2**
5310/19		1				**1**
Total	**33**	**38**	**27**	**26**	**25**	**149**

F. 14. Bull wise daughters recorded at different field units during2023-24

Bull No/Set No.	Darar	Kheriman Singh	Rindal	Sheikhpura	Kamalpur	Total
4324/15				1		**1**
1053/16			1	1		**2**
2383/16			3			**3**
2467/16	1		4			**5**
2501/16			1		2	**3**
4592/16	2	1				**3**
4705/16	1		1	1		**3**
6379/16			1			**1**
6409/16			4			**4**
6646/16	1					**1**
6753/16	2		1			**3**
M-29/16		2				**2**
2558/17		1		1		**2**
2565/17					1	**1**
2594/17	5			1		**6**
4687/17	7	2	3		5	**17**
4715/17	1	1		1	2	**5**
4733/17	3					**3**
4837/17		3		3		**6**
6942/17		4	1	2		**7**
7010/17	1	2	2	2		**7**
Dara/17		2		1		**3**
M-51/17		3	1	1		**5**
M-330/17				1	5	**6**
M-53/17			1			**1**
Sikander/17		1		4		**5**
7147/18			1		2	**3**
Total	**24**	**22**	**25**	**20**	**17**	**108**

F 15. Bull-wise AI, conception, calving and daughters retained till completion of milk recording as on 31/03/2024

Sr. no.	Set No	Bull No.	AI	Conc eptions	Calvings		Daughters retained upto				Complete Recording
					Total	Female	1 Year	2 Year	3 Year	Calving	
1	6	1836	28	15	6	3				0	0
2	6	4506	282	117	57	30				18	9

3	6	4523	317	158	127	62				12	10
4	6	4619	183	74	37	20				14	14
5	6	4637	156	60	50	15				6	6
6	6	4640	190	76	48	14				12	8
7	7	1419	241	86	40	25				10	10
8	7	1727	103	40	29	5				6	6
9	7	1746	112	57	48	19				9	9
10	7	1749	63	39	28	12				5	5
11	7	1796	95	53	24	10				4	4
12	7	2121	62	29	18	10				--	--
13	7	2133	282	171	94	49				13	14
14	7	2184	384	178	109	46				19	26
15	7	2331	270	92	70	32				12	10
16	7	2363	216	85	52	26				8	6
17	7	4807	82	42	17	14				8	7
18	7	4915	389	152	63	33				14	14
19	8	1492	146	46	17	8				4	4
20	8	1509	37	20	12	6				5	3
21	8	1867	27	15	5	2				1	1
22	8	1868	46	13	8	4				4	4
23	8	1875	101	48	27	16				8	7
24	8	1893	224	127	55	25				8	6
25	8	2250	217	99	79	34				18	6
26	8	2308	118	58	38	23				8	7
27	8	2422	163	63	38	19				5	5
28	8	2479	150	42	28	10				7	7
29	8	2522	71	25	8	7				1	1
30	8	4813	255	107	61	29				23	14
31	8	4865	325	109	55	25				12	10
32	8	5049	120	49	41	17				10	8
33	8	5054	435	200	107	45				21	20
34	9	1575	291	105	58	29				20	18
35	9	1903	82	34	17	9				3	5
36	9	1913	127	35	25	11				3	6
37	9	1940	101	50	37	23				12	11
38	9	1964	127	66	61	29				14	14
39	9	1994	57	24	19	11				3	3
40	9	2582	394	147	88	47				20	16
41	9	2592	301	124	86	38				19	25
42	9	2720	342	154	114	63				39	10
43	9	2910	202	79	46	25				22	8
44	9	5112	706	292	181	82				56	30
45	9	5197	176	89	72	42				33	11
46	9	5218	765	370	246	137				42	29
47	9	5312	64	23	16	6				1	--
48	10	ND-1	207	100	62	34				29	25
49	10	ND-2	105	50	36	15				7	7
50	10	ND-6	305	146	104	43				1	--
51	10	ND-8	217	94	92	48				18	13
52	10	507	187	86	45	23				14	10
53	10	1693	215	98	59	29				21	18
54	10	2045	221	81	52	19				2	4
55	10	2062	82	34	24	9				2	2
56	10	2073	310	132	128	57				42	25
57	10	2074	185	68	40	21				8	9
58	10	2083	184	74	36	13				3	8
59	10	2990	188	102	80	33				14	11

60	10	3103	309	135	94	44				31	17
61	10	3631	218	101	56	27				16	13
62	10	5396	200	93	73	33				26	14
63	11	H-10	190	100	88	41				21	10
64	11	H-12	482	230	192	95				24	16
65	11	2154	90	49	38	21				6	4
66	11	3226	553	211	140	60				19	18
67	11	3255	540	270	188	108				27	25
68	11	3267	497	243	164	93				16	11
69	11	3591	540	261	242	114				34	30
70	11	5414	515	176	173	96				54	48
71	11	5489	1313	598	483	215				73	60
72	11	5496	736	348	301	140				32	31
73	11	5516	966	429	314	162				38	29
74	12	R-10	34	19	11	7				2	--
75	12	R-11	36	17	8	6				1	1
76	12	5604	61	32	25	13				1	1
77	12	5710	746	364	338	170				21	14
78	12	5720	1057	567	417	212				72	55
79	13	851	301	154	139	69				11	10
80	13	858	223	122	90	37				16	14
81	13	2234	74	40	28	12				4	2
82	13	2269	139	73	58	27				7	9
83	13	2304	183	85	62	29				3	3
84	13	3964	512	289	208	103				22	15
85	13	4059	266	108	87	42				10	7
86	13	5943	563	244	193	84				24	12
87	14	2357	72	40	38	16				--	--
88	14	2369	108	64	59	29				7	8
89	14	4093	648	300	217	107				15	17
90	14	4100	417	208	171	87				6	7
91	14	4439	670	355	300	109				16	19
92	14	6014	1598	705	598	293				34	35
93	14	6044	791	344	302	139				32	22
94	14	6066	67	25	16	10				--	--
95	14	6136	1559	873	756	382				40	34
96	15	2371	640	221	50	24				22	17
97	15	2412	469	222	120	58				10	9
98	15	2417	435	239	129	53				19	16
99	15	2429	83	51	33	15				2	2
100	15	2459	50	36	35	18				--	--
101	15	4324	804	355	178	79				16	15
102	15	4328	582	263	171	83				19	19
103	15	4354	934	418	124	58				21	19
104	15	4363	551	122	102	49				13	23
105	15	4403	73	43	32	16				2	3
106	15	4438	450	200	116	53				10	10
107	15	6007	397	227	71	36				2	4
108	15	6139	742	386	144	71				24	18
109	15	6200	74	43	41	20				--	
110	15	6290	246	93	76	37				5	6
111	15	6405	406	125	31	15				7	8
112	16	M-29	652	422	212	98			6	11	14
113	16	1027	456	248	166	86				4	7
114	16	2383	148	88	64	29				5	7
115	16	2467	222	117	60	27				7	7
116	16	2501	388	183	105	48				11	11

117	16	4592	661	386	295	134				20	23
118	16	4623	229	104	89	38				5	7
119	16	4705	451	249	161	69				12	12
120	16	4889	370	173	143	59				7	8
121	16	6379	372	179	124	60				12	12
122	16	6409	440	212	141	60				15	12
123	16	1053	112	60	31	15				4	2
124	16	6646	275	150	83	37				1	1
125	16	6753	161	87	49	20				4	3
126	17	2565	147	68	60	27			9	1	1
127	17	2594	324	126	92	40			5	11	8
128	17	2607	245	114	76	35			15	7	
129	17	4687	479	208	181	82			30	20	19
130	17	4715	555	228	194	85			13	13	7
131	17	4733	202	100	93	38				5	5
132	17	4837	459	153	111	49			22	14	7
133	17	7010	447	201	176	78			11	9	9
134	17	Daara	253	86	73	29			5	6	4
135	17	M-51	407	187	158	62			13	10	6
136	17	6942	372	177	123	54			9	14	7
137	17	Sikander	235	105	78	34			2	12	5
138	17	M-53	345	163	95	41			13	5	1
139	17	2558	280	138	87	38			12	5	3
140	17	B 1 330	311	145	92	41			20	8	6
141	18	7094	757	356	273	115			50	8	
142	18	7147	983	410	304	132	25	39	78	7	3
143	18	7227	569	282	212	93	31	50	49	7	
144	18	4905	498	219	191	76	22	45	36	4	
145	18	1150	424	199	163	70	5	48	49	1	
146	18	7263	479	207	166	66	33	44	36	2	
147	18	1208	394	191	150	63	10	55	48	5	
148	18	1209	138	62	35	14		11	9	4	
149	18	1219	110	51	17	6		15	12	2	
150	18	2645	720	281	254	106	9	91	81	4	
151	18	2676	619	278	222	95	23	76	71	7	
152	18	2677	450	215	135	53	25	42	38	1	
153	18	2689	637	257	243	102		78	70	4	
154	18	4995	449	207	152	60	17	50	43		
155	18	5147	443	223	162	71	9	57	57		
156	19	5181	674	324	197	85	85	74	69		
157	19	5232	554	258	178	74	74	57	55		
158	19	5246	601	294	232	100	100	82	65		
159	19	7604	753	174	295	124	124	93	85		
160	19	2674	495	235	199	89	89	73	31		
161	19	2737	464	212	175	75	75	64	25		
162	19	2759	526	165	201	83	83	72	37		
163	19	5310	619	243	204	87	87	75	24	1	
164	19	5320	618	290	236	101	101	87	19		
165	19	5333	515	235	169	69	69	61	9		
166	19	5374	451	212	173	74	74	66	4		
167	19	1315	537	258	210	94	94	86			
168	20	2848	379	183	107	53	53	31			
169	20	5427	915	445	270	151	151	77			
170	20	7584	609	281	209	94	94	70			
171	20	7649	674	332	217	103	103	76			
172	20	3004	378	157	93	53	53	19			
173	20	2793	81	42	22	9	9	7			

174	20	2831	398	180	90	57	57	3			
175	20	1454	751	346	131	99	99				
176	20	2814	74	36	17	16	16				
178	20	2838	308	150	63	46	46				
179	20	2850	476	226	90	68	68				
180	20	5500	614	302	121	89	89				
181	20	5511	208	96	39	24	24				
182	20	5588	202	75	29	25	25				
183	20	5592	48	45	17	14	14				
184	20	M-19	502	234	99	64	64				
185	20	5581	375	184	19	14	14				
186	20	5505	406	184	21	14	14				
187	21	2930	105	51							
188	21	2979	350	156							
189	21	2990	93	43							
190	21	3014	349	167							
191	21	5414	247	108							
192	21	5629	265	123							
193	21	5638	216	98							
194	21	5690	144	67							
195	21	7768	550	260							
196	21	7990	382	153							
197	21	7630	300	138							
198	21	5764	379	14							
199	21	109	96	0							
200	21	112	367	0							
201	21	297	40	0							
Total			**71997**	**32549**	**21578**	**10154**	**2257**	**1874**	**1335**	**1979**	**1576**

* as on 31.03.2024

F 16. Performance of FPT Programme on Farmer's Buffaloes NDRI unit as on 31.03.2022

Duration	AI	Pregnancies	CR%	Calvings	Females Born	Daughters Recorded	Av. AFC (months)	Av. Milk Yield (kg/day)	Daughters Available for Recording
2004-05	2223	993	41.97	710	333	34	41.4	7.55	
2005-06	2224	994	42.97	875	400	45	45.4	6.11	
2006-07	2193	976	33.5	918	440	65	46.7	6.87	
2007-08	2594	1212	46.72	1140	517	109	46.8	7.29	
2008-09	2529	1190	47.05	1086	503	138	45.3	7.36	
2009-10	2739	1377	50.27	1159	569	211	45.3	7.08	
2010-11	2747	1399	50.92	1225	560	183	44.2	7.68	21
2011-12	2995	1600	53.42	1260	605	133	45.2	7.82	78
2012-13	2905	1422	48.95	1159	569	138	42.9	7.29	109
2013-14	4419	2242	51.27	1225	560	119	42.6	7.37	168
2014-15	3941	2033	51.58	1860	905	83	41.58	8.6	298
2015-16	3905	1994	51.06	1648	768	87	43.02	7.69	58
2016-17	3916	1975	50.43	1524	722	85	48.56	8.07	125
2017-18	3241	1605	49.52	1397	640	91	48.27	8.05	485
2018-19	4315	1995	46.23	1030	456	86	49.60	7.76	529
2019-20	4571	1999	46.96	1532	647	108	52.44	7.43	289
2020-21	4874	1928	47.76	1559	640				286
2021-22	5126	2467	48.13	1793	772				296
2022-23	4844	2317	47.83	1866	803				201
2023-24*	5108	1952	46.20	1625	682				399

Conception of March. 2024 will be added in July 2024

PROPOSED ACTION PLAN FOR 2024-25

- Thrust will be to bring more number of buffaloes under the AI coverage and to retain most of the female progeny up to the completion of their first lactation, more farms in the vicinity of project area having relatively large herd size (10-15 breedable buffaloes) will be identified and included in the project.
- Efforts will be made to improve the Age at first calving and conception rate by balanced feeding through supplementation of mineral mixture offered to farmers as an incentive and by timely heat detection and proper time AI.
- The work of identification of progeny born in the field by ear tagging will continue so that and the progenies born will be are properly identified. However, incase of tagging from state government can also be used for recording purpose.
- Organization for Infertility and Veterinary aid campaigns, deworming and tick control programmes on mass level, awareness programme for balanced feeding and mastitis control program will be a regular practice in various adopted village through Kisan Sangosthees and Scientific panel discussion with various buffalo breeder groups.
- Calf rallies will be given more emphasis to encourage the farmers for up-gradation of breeds and rearing progeny with improved dairy husbandry practices.
- Schedule for determining genetic improvement and enhancement in productivity at farmers' herd shall be developed to document the impact of the project. It will also cover animal health management as being undertaken a regular process while performing the breeding and sire evaluation activities.
- The performance recording in terms of monthly recording of milk yield of the daughters and their dams will continue. Finally, the data generated on AI's, conception rate, milk production and performance traits will be supplied to coordinating unit for analysis as per ICAR Test Day recording schedule.
- Elite buffaloes will be identified in the field and mated with proven bulls for production of young bulls.
- There is need to develop modalities for procuring superior young male calves for future breeding, and necessary funds may be provided to procure young males from the field / farmer's herd.

Project Co-ordinator's observations on field performance

Financial Statement for the year 2023-24 (Rs in Lakhs)

Sanctioned R E 2023-24		Released ICAR	Expenditure as per AUC		Balance
Total	ICAR Share	Share as per R E	ICAR Share	State Share	
20.50	20.50	20.50	20.41607	--	(±) 0.08393

- A total of 5108 AI was performed in adopted villages with the semen of bulls of 20th and 21st set for test mating during 2023-24. The conception rate was 46.20 %.
- Total 1625 calving (943 male and 682 female) recorded in the field.
- During the report period 149 daughters calved and 108 daughters recorded for first lactation milk yield.
- As on 31st March 2024: total 2394 daughters of various age groups (0-12 months: 682, 1-2 years: 726, 2-3 years: 587 and > 3 year: 399) are standing in field for future recording.

Recommendations:

- Recording of daughters first lactation milk yield should be emphasized for more accuracy in progeny testing programme.
- More number of awareness programmes should be organized for the farmers in the form of female calf rallies, milk competitions and Kisan Gosthies so that they can become more aware about benefits of FPT.

SUMMARY OF RESEARCH ACHIEVEMENTS AND PROGRESS OF THE PROJECT

Selection and use of Breeding Bulls for Murrah breed

From July 93 till date test mating from 20 sets of Murrah breeding test bulls have been completed and test mating of 21st is continuing from July 2023 and complete in Dec 2024. Brief summary of the duration, the number of bulls, average of the dam's best yield and highest dam's yield in each set is shown below.

Twenty sets of bulls used under Network Project on Buffalo since July 1993.

Set No.	Duration	Centrewise No. of bulls						Total Bull	Av. Of 305 day or less dams best yield (kg)	Highest dam 305 day yield (kg)	305 day or less herd Average (kg)/N
		CIRB	NDRI	GADVAU	LUVAS	NDUAT	IVRI				
1	July, 1993 to Dec., 1994	2	9	0				11	3050	4114	1820/501
2	Jan., 1995 to June, 1996	4	5	6				15	3002	3898	1920/487
3	July, 1996 to Dec., 1997	8	5	2				15	2876	3275	2053/476
4	Jan., 1998 to June, 1999	5	4	5				14	2999	3401	1973/457
5	July, 1999 to Dec., 2000	6	5	4				15	3120	3898	1943/551
6	Jan., 2001 to June 2002	5	5	4	2			16	3055	3898	1972/562
7	July 2002 to Dec., 2003	5	2	4	1			12	2928	3544	2017/505
8	Jan., 2004 to June 2005	5	5	4	2			16	2928	3690	2056/511
9	July 2005 to Dec. 2006	4	5	5	1			15	2923	3336	2008/458
10	Jan., 2007 to June 2008	3	1	5	1	3	1	14	2829	3369	2130/509
11	July 2008 to Dec., 2009	4	4	3	1	1	1*	14	2792	3051	2046/483
12	Jan., 2010 to June 2011	1	3	3	1		3**	11	3362	5192	2115/384
13	July 2011 to Dec., 2012	2	1	3			2	8	3205	3805	2199/380
14	Jan., 2013 to June 2014	4	4	3			1	12	3451	4636	2356/288
15	July, 2014 to Dec., 2015	6	5	4				15	3350	4636	2361/335
16	Jan., 2016 to June 2017	5	4	3	3			15	3762	4636	2349/280
17	July, 2017 to Dec., 2018	10	2	4				16	3526	4668	2449/315
18	Jan., 2019 to June 2020	3	4	4	4			15	3284	3867	2586/333
19	July, 2020 to Dec., 2021	7	1	3	1	-	-	12	3435	4069	2607/374
20	Jan., 2022 to June 2023	5	2	5	2	-	-	14	3658	4814	2625/367
21	July, 2023 to Dec., 2024	5	3	3	2	-	1	14	3755	4420	2721/401

* bulls from Deedwadi ** Two from Redhu Farm

List of bull (Murrah) selected for test mating for 21st set (July 2023-Dec 2024)

Sr. no.	Bull no.	Location	D.O.B.	Dam No.	Sire No./ set No	Dam's All Lact Milk Yield (kg) (305 or less days)	Highest Yield/ Best Peak
1.	109	LUVAS	17/09/19	1068	M-53/ XVII	3128/3660/3432/3206	3660/16.3
2.	112	LUVAS	29/09/19	943	6942/ XVII	2735/3276/2919/4390/ 3720/2619	4390/17.2
3.	297	IVRI	08/08/17	869	4705/ XVI	2385/2922/2806/3234/ 3407	3407/17.5
4.	2979	GADVASU	26/11/20	3083	2689/ XVIII	2411/3440	3440/21.6
5.	2990	GADVASU	24/12/20	2741 P	1219/ XVIII	2104/3416/3723/2180	3723/21.2
6.	3014	GADVASU	06/10/20	Dhano	Birla/ Field	4420 (Estimated on PY)	PY: 24.56
7.	5414	CIRB	03/10/18	4593	4998/ NonSet	2708/3321/3025/3177/ 3183/3294	3321/21.0
8.	5629	CIRB	29/01/20	4613	2645/ XVIII	2475/3501/4043/4180	4180/20.2
9.	5638	CIRB	24/02/20	5223	2234PT/ XIII	3364/3691	3691/19.5
10.	5690	CIRB	02/08/20	5021	4905/ XVIII	3573/4029	4029/21.0
11.	5764	CIRB	22/11/20	4989	4905/ XVIII	2708/3616/2675/3644	3644/17.5
12.	7630	NDRI	05/09/18	6852	M-51/ XVII	3343/2147/2217/2341	3343/15.5
13.	7768	NDRI	04/02/19	6922	2607/ XVII	2862/3251/3323/2125	3323/16.5
14.	7990	NDRI	19/08/20	6626	183PT/ XII	3394/3991/3090/3109/ 3033	3991/18.0

Note: From each bull 8,000 semen doses are to be frozen.

Health Evaluation and Semen Quality Testing: During the period under report, apparently healthy buffalo breeding bulls of different centres (CIRB Hisar, NDRI Karnal, GADVASU Ludhiana and LUVAS Hisar) all of Murrah breed and proposed for XXI set for semen collection under Network Project on Buffalo were screened for TB, JD and Brucellasis etc.

Progeny Test Evaluation of Bulls: Data of 762 daughters born from the 16th set of bulls which completed 1st lactation was compiled and progeny test evaluated. Bull no. M-29 from CIRB Hisar, 1053 from LUVAS, Hisar and 2383 from GADVASU, Ludhiana ranked 1st, 2nd and 3rd with breeding value 2578.94 kg, 2567.15 kg and 2546.77 kg respectively.

Progeny Test evaluation of 16th set bulls (Murrah January 2016 to July, 2017)

Bull No	Location	Date of Birth	Dam No.	Sire No./ Set No	Dam's best lact. yield (305 or less days) kg	No of Daughters Completed 1st lact	Average Daughter FLMY (kg)	Daughter Maximum FLMY (kg)	Breeding Value	% Super-iority	Rank
M-29	**CIRB**	**16-10-05**	**4 P**	**P274**	**4600**	**60**	**2570.51**	**3191**	**2578.94**	**3.82**	**I**
1053	**LUVAS**	**17-12-13**	**683**	**M-29**	**3559**	**46**	**2561.37**	**3421**	**2567.15**	**3.35**	**II**
2383	**GADVASU**	**13-10-10**	**2489 P**	**3267PT/XI**	**4636**	**78**	**2553.09**	**3101**	**2546.77**	**2.53**	**III**
4889	CIRB	23-10-04	S-802	FT 245	4120	73	2535.38	3445	2532.68	1.96	IV
4592	CIRB	28-06-13	4353 P	Khali	3528	61	2511.76	3430	2518.33	1.38	V
1064	LUVAS	19-02-14	613	BI 330	3579	8	2499.18	3057	2482.85	-0.05	VI
6753	NDRI	13-07-13	470 P	858/XIII	3389	16	2442.56	2931	2471.15	-0.52	VII
6379	NDRI	17-10-11	402 P	4915PT/VII	3505	39	2468.03	3550	2469.65	-0.58	VIII
2467	GADVASU	01-04-12	2279 P	R-10/XII	3574	77	2444.15	3231	2456.79	-1.10	IX
4623	CIRB	01-09-13	4261 P	1875PT/VIII	3506	8	2362.54	3272	2451.66	-1.30	X
6646	NDRI	17-02-13	6627 P	NK	3533	40	2441.11	3013	2451.06	-1.33	XI
1027	LUVAS	28-09-13	603	PC 461	3763	47	2433.51	2895	2448.85	-1.41	XII
2501	GADVASU	10-10-12	1794 P	1875PT/VIII	3053	88	2440.47	2994	2440.90	-1.73	XIII
4705	CIRB	22-07-12	83 P	B 902	3990	78	2453.05	3152	2439.16	-1.80	XIV
6409	NDRI	09-01-12	490 P	4371PT/V	4090	43	2389.38	3265	2403.92	-3.22	XV

Herd first lactation 305 or less day average milk yield = 2483.99 kg based on 762 daughters

Progeny Tested bulls used under Network Project

The top ranking 25 % progeny tested bulls (2 to 3 bulls from each set) used for elite/ nominated matings from set I to set XVI as selected from the centres are listed below. The pedigree detail, sire index and availability of frozen semen doses from each bull are under.

List of Progeny Tested Bulls 1st to 16th Set (Murrah breed)

Sr No.	Bull No.	Location	Date of Birth	Dam No.	Sire No.	Dam's best lact. 305-day yield (kg)	% superiority	Rank
Set - I								
1.	392	CIRB	06.04.89	238	PQ1	2594	22.8	I
2.	3567	NDRI	07.09.89	2408	2304	2877	6.4	II
3.	896	CIRB	27.07.87	911	644	3003	5.5	III
Set – II								
1.	761	CIRB	20-11-90	474	366	2878	9.37	I
2.	93	CIRB	03-11-90	-	PQ-1	22.0*	3.96	II
3.	829	CIRB	04-07-91	597	766	2626	3.53	III
Set – III								
1.	1354	PAU	12-12-92	762	989	3088	13.11	I
2.	1153	CIRB	13-08-93	701	896 PT	2540	12.27	II
3.	1061	CIRB	24-09-92	769	896 PT	2846	9.50	III
Set – IV								
1.	1506	PAU	25-04-95	-	988	3018	18.81	I
2.	1451	PAU	10-08-94	-	3567 PT	3401	10.44	II
3.	1437	PAU	04-04-94	797	636	3127	8.11	III
Set – V								
1.	4393	NDRI	10-12-95	2762	1908	3898	22.29	I
2.	4371	NDRI	23-10-95	2984	988	3258	14.90	II
Set –VI								
1.	1153	HAU	29-09-96	618	759	2675	13.31	I
2.	4506	NDRI	31-10-96	3527	3551	3512	9.29	II
3.	1933	CIRB	01-10-97	208	988	2650	6.92	III
Set – VII								
1	4915	NDRI	28-10-99	3521	2921	3437	17.26	I
2	1796	PAU	10-02-00	1386	1506 PT	3170	15.81	II
Set – VIII								
1.	1875	GADVASU	20-08-01	1669	558	2714	24.89	I
2.	4813	NDRI	17-01-99	3818	3966	3016	12.59	II
3.	2422	CIRB	19-08-00	1194	4371 PT	3369	9.41	III
Set – IX								
1	1994	GADVASU	16-06-03	1884	392 PT	2938	11.73	I
2	5258	NDRI	01-08-02	4066	1706	3305	10.52	II
Set -X*								
1.	1693	LUVAS	27-10-03	1050	392 PT	3194	1.23	1
2.	2045	GADVASU	24-02-04	1835	3567 PT	3369	1.23	II
Set -XI*								
1.	3267	CIRB	27-09-04	2263	1419	2489	0.20	I
2.	3591	CIRB	29-05-06 (P)	3590		2598	0.14	II
3.	2133	GADVASU	09-11-05	2041	1354 PT	2844	0.09	III
Set -XII*								
1.	2185	GADVASU	23-11-06	1898	1354 PT	3423	0.94	I
2.	183	CCS HAU	03-06-07	1374	1354 PT	2824	0.75	II
Set -XIII								
1.	2234	GADVASU	06-03-08	2138	5396	3114	14.80	I
2.	2269	GADVASU	17-12-08	2295	3631	3617	13.86	II
Set -XIV*								
1.	2357	GADVASU	24-07-10	P2488	1933 PT	3559	2.78	I
2.	6044	NDRI	15-01-09	430	4371 PT	3567	2.43	II
3.	4196	CIRB	10-05-10	3586	1153 PT	3304	2.27	III

Set -XV*								
1.	4354	CIRB	05-09-11	4353 Pur	UK (P)	3528	1.67	I
2.	6007	NDRI	15-09-08	5231	5396	3260	1.61	II
3.	2459	GADVASU	22-12-11	2489	1796 PT	4636	1.58	III
Set -XVI*								
1.	M-29	CIRB	16-10-05	4 P	P274	4600	3.82	I
2.	1053	LUVAS	17-12-13	683	M-29	3559	3.35	II
3.	2383	GADVASU	13-10-10	2489 P	3267PT/XI	4636	2.53	III

* BLUP Model used for evaluation

Semen freezing and balance stock for bulls under test

Centre wise test bulls semen of Murrah breed as on 31-03-2024 at various centres

CIRB			NDRI			GADVASU		
Bull No.	**Set No**	**No of semen doses**	**Bull No.**	**Set No**	**Semen doses CIRB+NDRI**	**Bull No.**	**Set No**	**Semen doses GAD + CIRB+ NDRI**
M 29	XVI	6346	6379	XVI	2237+3000	2383	XVI	1771+1831+100
4592	XVI	5855	6409	XVI	2187+9000	2467	XVI	5030+1986+200
4705	XVI	6179	6646	XVI	2003+6000	2501	XVI	2715+2618+275
4889	XVI	6240	6753	XVI	2508+4000	2565	XVII	2566+439+100
1027	XVI	6926	7010	XVII	2180+7000	2558	XVII	13660+1194+0
1053	XVI	6412	6942	XVII	2625+14000	2607	XVII	4478+370+100
1064	XVI	5816	7094	XVIII	1948+8000	2594	XVII	8729+849+300
M 51	XVII	8349	7147	XVIII	2248+9000	2645	XVIII	7426+1794+300
4715	XVII	5983	7227	XVIII	498+1500	2676	XVIII	6210+2370+80
4733	XVII	6310	7263	XVIII	2080+5000	2677	XVIII	2104+2375+245
4687	XVII	3942	7604	XIX	1345+5000	2689	XVIII	4364+737+0
4837	XVII	7378	7584	XX	2090+3000	2674	XIX	1052+2612+200
M 53	XVII	7920	7649	XX	2930+8000	2737	XIX	5783+1060+250
Sikander	XVII	3823	7630	XXI	1290+853	2759	XIX	3744++2605+250
Dara	XVII	1635	7768	XXI	1880+1049	2814	XX	1240+0+0
B1-330	XVII	7853	7990	XXI	460+2000	2848	XX	2720+0+0
1148	XVII	7989				2850	XX	1340+1080+0
4905	XVIII	8000				3004	XX	1925+950+200
4995	XVIII	8000				2793	XX	8270+445+0
5147	XVIII	8000				2831	XX	3758+1830+300
1150	XVIII	8000				2930	XXI	345+0+85
1208	XVIII	8000				2979	XXI	340+3020+655
1209	XVIII	7485				2990	XXI	0+955+840
1219	XVIII	4230				3014	XXI	555++2025+545
5232	XIX	9635						
5181	XIX	8835						
5246	XIX	9240						
5310	XIX	8620						
5320	XIX	7961						
5333	XIX	8213						
5374	XIX	8203						
1315	XIX	6467						
19 (LUV)	XX	8010						
1454 (LUV)	XX	8065						
5427	XX	8090						
5500	XX	8350						
5505	XX	1688						
5511	XX	6376						
4354	PT XV	4246						

2459	PT XV	789						
6007	PT XV	1291						
5414	XXI	8254						
5629	XXI	8636						
5638	XXI	6122						
5647	XXI	1147						
5690	XXI	8377						
5764	XXI	146						
297	XXI	4055						
109	XXI	1743						
112	XXI	3961						
					30509+86402			90125+33145+5025
Sub Total		**262186**			**116911**			**128295**
Grand Total								**507392**

Germplasm dissemination for breeding purpose (Murrah breed)

Superior germplasm disseminated from various centers is presented below.

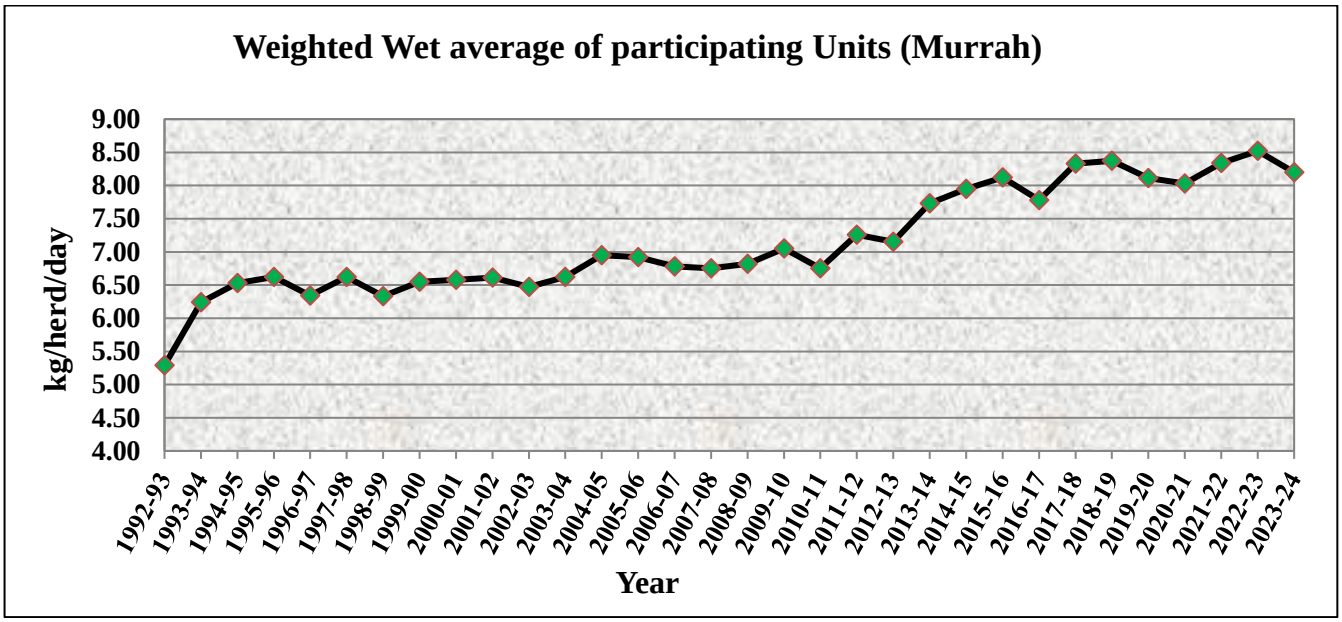
Year	CIRB		GADVASU		NDRI	
	Bulls	**Semen**	**Bulls**	**Semen**	**Bulls**	**Semen**
1998-99	32	50	10	6000	15	1740
1999-00	26	100	22	5847	11	1320
2000-01	16	70	33	3449	9	2230
2001-02	18	21648	18	8579	8	5030
2002-03	18	2270	8	3205	9	2655
2003-04	53	3300	17	3977	15	15614
2004-05	15	1534	10	19675	8	4579
2005-06	4	372	15	1763	17	4123
2006-07	18	04	8	2227	9	574
2007-08	5	140	6	1777	5	433
2008-09	2	6375	7	4053	3	1232
2009-10	0	63974	5	8181	0	9404
2010-11	0	59546	5	22383	0	22405
2011-12	0	129099	4	53131	16	18129
2012-13	4	80081	2	41276	9	23751
2013-14	6	68635	28	24784	5	62054
2014-15	38	57761	21	13510	9	11966
2015-16	57	41866	37	24529	22	12792
2016-17	64	54077	21	18909	3	14805
2017-18	52	76704	11	25398	20	14554
2018-19	49	97657	4	55758	4	11700
2019-20	37	138906	3	52268	0	15949
2020-21	19	94320	37	3808	30	5400
2021-22	42	131968	22	57730	10	7625
2022-23	48	101787	20	73976	11	14436
2023-24	52	162070	39	49540	9	15140
Total	**675**	**1394314**	**413**	**585733**	**257**	**299640**

Performance Characteristics

Herd performance with respect to various production and reproduction traits at different participating centers has been compiled and presented as under.

Milking average per buffalo at various participating herds since 1992-93

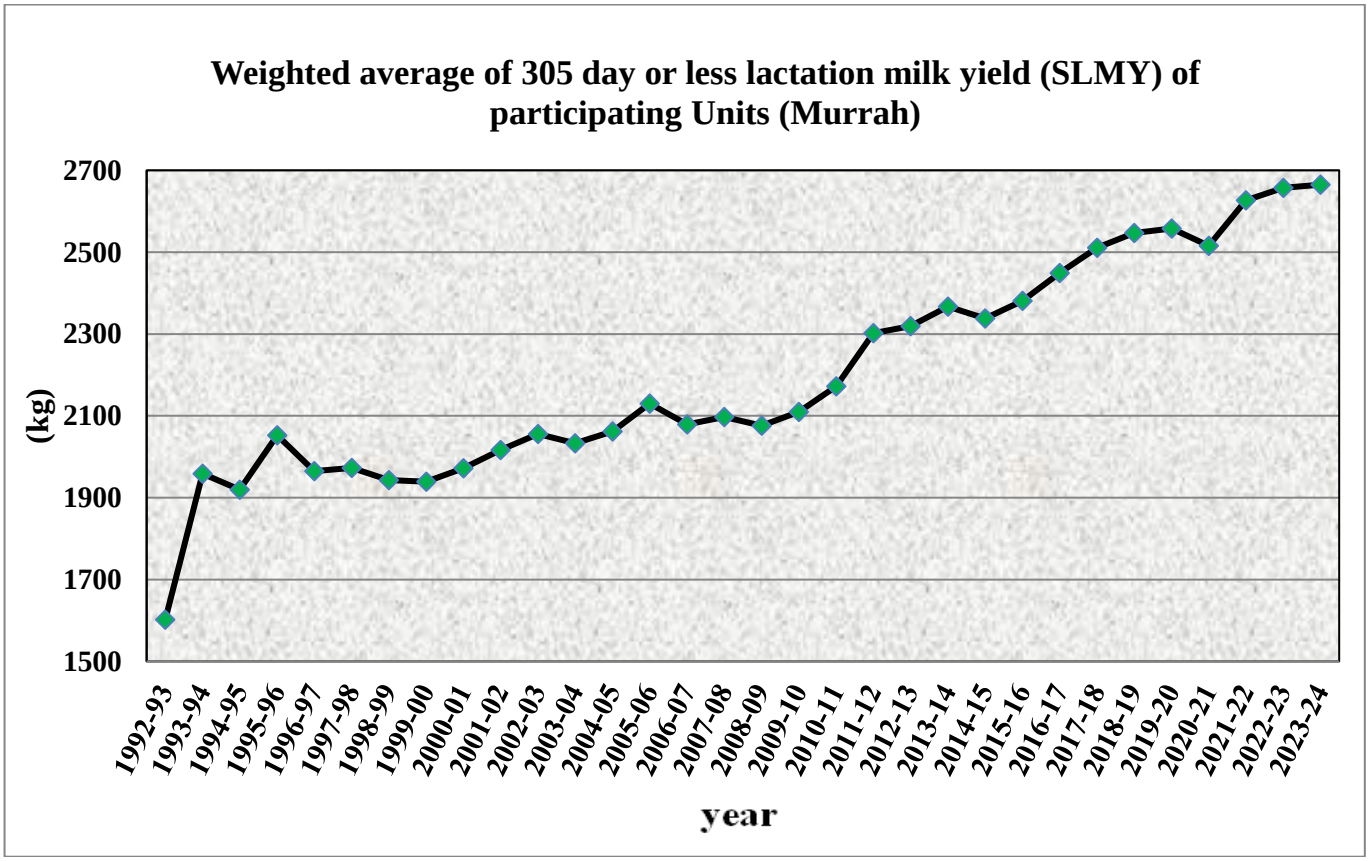
Year	CIRB	GADVASU	NDRI	LUVAS	IVRI	CCBF	NDUAT	Weighted average
1992-93	4.80 (165)	5.54 (149)			4.31 (22)	6.3 (65)		5.29 (403)
1993-94	5.65 (153)	6.20 (115)	7.80 (115)	6.3 (42)	4.62 (380	5.8 (62)		6.24 (525)
1994-95	6.09 (181)	6.09 (116)	8.39 (114)	7.2 (49)	3.90 (39)	6.3 (48)		6.53 (547)
1995-96	6.43 (1.53)	6.43 (123)	8.03 (109)	7.3 (54)	3.63 (29)	6.0 (82)		6.62 (550)
1996-97	5.62 (122)	6.17 (112)	7.90 (103)	7.0 (76)	3.63 (29)	5.7 (67)		6.34 (508)
1997-98	6.12 (121)	6.53 (116)	7.40 (119)	6.5 (68)	4.19 (28)	7.2 (58)		6.62 (509)
1998-99	6.77 (133)	6.26 (119)	5.93 (100)	6.2 (71)	5.79 (20)	6.5 (72)		6.33 (515)
1999-00	6.85 (137)	6.26 (109)	6.60 (90)	5.2 (60)	5.77 (23)	7.4 (98)		6.55 (521)
2000-01	6.68 (148)	6.70 (105)	6.65 (104)	6.7 (55)	5.42 (30)	6.5 (84)		6.58 (523)
2001-02	6.59 (147)	7.09 (94)	6.26 (90)	7.47 (48)	5.82 (32)	6.3 (81)		6.61 (492)
2002-03	6.27 (143)	7.22 (109)	6.23 (73)	7.5 (47)	4.94 (30)	5.9 (68)		6.47 (470)
2003-04	6.49 (151)	7.01 (108)	6.36 (80)	7.30 (68)	5.94 (37)	6.2 (57)		6.62 (501)
2004-05	6.39 (154)	7.33 (91)	7.39 (111)	7.70 (66)	5.99 (38)	6.70 (47)		6.95 (509)
2005-06	6.57 (151)	7.36 (74)	7.05 (107)	7.70 (63)	6.14 (46)	6.7 (39)		6.92 (479)
2006-07	6.45 (137)	7.03 (81)	6.70 (100)	7.8 (65)	6.15 (41)	6.8 (48)	6.52 (29)	6.78 (501)
2007-08	6.64 (146)	6.90 (70)	6.80 (104)	7.60 (66)	5.98 (62)		6.92 (22)	6.75 (470)
2008-09	6.50 (133)	7.07 (78)	7.09 (64)	7.10 (62)	6.69 (53)	6.4 (59)	6.66 (22)	6.82 (412)
2009-10	7.01 (106)	7.62 (83)	7.32 (91)	6.8 (69)	6.68 (45)		5.39 (27)	7.05 (421)
2010-11	7.45 (109)	7.21 (88)	5.83 (96)	7.3 (64)	5.88 (47)		5.60 (21)	6.75 (425)
2011-12	7.83 (110)	7.56 (88)	6.79 (66)		5.82 (41)	**KVASU**	**LRS Mamnoor**	7.26 (305)
2012-13	7.74 (109)	7.74 (78)	7.35 (90)		5.66 (39)	4.82 (13)	4.70 (17)	7.15 (346)
2013-14	8.01 (105)	7.98 (61)	7.80 (101)	9.40 (62)	5.85 (45)	5.54 (19)	5.25 (11)	7.73 (404)
2014-15	8.25 (110)	7.97 (54)	8.05 (115)	8.70 (64)	6.80 (43)	**RCER Patna**	5.90 (22)	7.95 (408)
2015-16	8.04 (114)	8.04 (54)	8.43 (132)	9.90 (72)	6.48 (44)	7.45 (14)	5.81 (32)	8.12 (462)
2016-17	8.08 (133)	7.92 (53)	8.39 (85)	9.7 (60)	6.00 (55)	6.39 (19)	5.67 (43)	7.78 (448)
2017-18	8.71 (115)	8.03 (49)	8.23 (99)	10.3 (81)	5.77 (51)	4.30 (12)	--	8.33 (407)
2018-19	8.92 (101)	8.40 (68)	7.40 (112)	11.0 (76)	6.43 (50)	4.85 (15)	--	8.37 (422)
2019-20	9.66 (124)	8.31 (67)	6.67 (115)	10.4 (78)	5.95 (64)	5.12 (27)	--	8.11 (475)
2020-21	9.91 (130)	8.22 (66)	6.6 (86)	9.6 (73)	5.84 (68)	4.42 (27)	--	8.03 (450)
2021-22	10.07 (132)	8.42 (72)	7.7 (85)	9.25 (82)	5.86 (72)	5.44 (26)	--	8.34 (469)
2022-23	10.20 (129)	8.45 (54)	7.8 (87)	9.4 (85)	5.99 (71)	6.77 (27)	--	8.52 (453)
2023-24	**10.20 (120)**	**8.69 (58)**	**7.6 (77)**	**8.6 (89)**	**5.45 (76)**	**6.48 (29)**	--	**8.20 (449)**



Average 305 day or less milk yield at various participating herds since 1992 – 93

Year	CIRB	GADV ASU	NDRI	LUVAS	IVRI	CCBF/ KVASU	NDUAT/ Mamnoor	Weighted average
1992-93	1508±34 (137)	1730 (138)			1458±48 (34)	1899.1		1602 (309)
1993-94	1686±46 (148)	1948 (144)	2351.8 (137)	1818.8	1537±49 (28)	1746.0		1959 (457)
1994-95	1787±0 (206)	1877 (121)	2270.1 (128)	1912.7	1536±40 (32)	1896.7		1920 (487)
1995-96	1855±42 (147)	2008 (126)	2576.1 (106)	1987.5	1457±51 (27)	1950.4		2053 (476)
1996-97	1775±45 (173)	1948 (125)	2423.1 (105)	1880.8	1629±76 (20)	1714.1		1965 (498)
1997-98	1688±37 (123)	1995 (98)	2191.2 (128)	2103.7	1715±95 (23)	2006.8		1973 (455)
1998-99	1702±33 (153)	2101 (125)	2032.7 (112)	1964.7	1980±97 (22)	2179.7		1943 (551)
F1999-00	2042±31 (141)	2041 (114)	1822.4 (102)	1688.7	2026±98 (18)	2134.9		1939 (439)
2000-01	1914±36 (173)	2032 (103)	2019 (126)	2183.1	1898±147 (20)	1875.0		1972 (562)
2001-02	1898±35 (152)	2175 (112)	1963±61 (91)	2119±46 (50)	2102±75 (19)	2000.0 (81)		2017 (505)
2002-03	1902±32 (148)	2144 (105)	2000.6 (81)	2522±13 (46)	2362.5 (55)	1789.1 (76)		2056 (511)
2003-04	1837±31 (148)	2233 (111)	1897 (29)	2162±42 (75)	2103±118 (26)	1881.9 (6)		2033 (395)
2004-05	1886±33 (167)	2270 (106)	2025 (98)	2134±44 (61)	2369±128 (10)	2114 (26)		2062 (494)
2005-06	1921±38 (149)	2327 (78)	2159 (142)	2252±47 (77)	2218±89 (32)	2085 (32)		2130 (509)
2006-07	1882±32 (170)	2235 (91)	2054 (111)	2261±44 (75)	2412±89 (27)	2139 (54)	1941±77 (27)	2079 (555)
2007-08	1891±34 (127)	2176±60 (67)	2094 (127)	2130±44 (80)	2525±109 (28)	--	1988±83 (24)	2097 (453)
2008-09	1926 (138)	2141±48 (88)	2256 (86)	2041±48 (76)	2209±106 (16)	1822 (57)	2078±89(22)	2076 (426)
F2009-10	1995 (102)	2271±53 (67)	2222 (84)	1858±33 (84)	2570±92 (26)		2153±107 (20)	2110 (383)

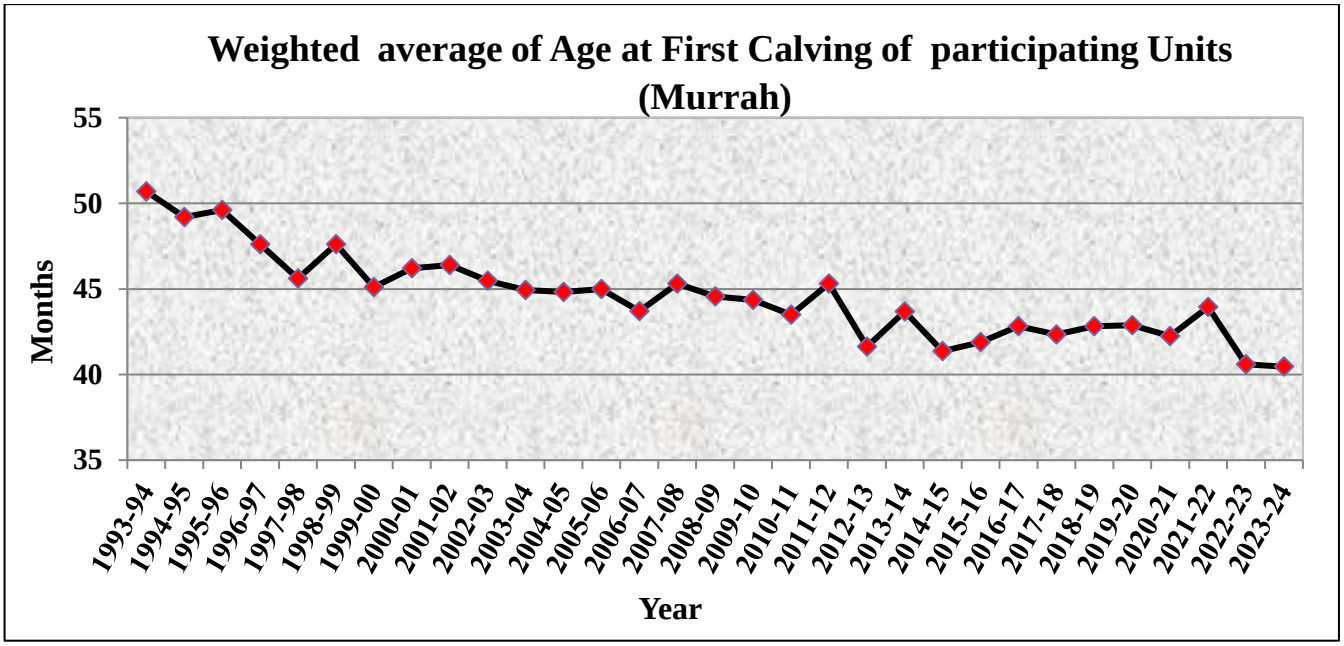
2010-11	2247 (113)	2470±68 (81)	2015 (130)	2042±48 (66)	2136±63 (56)		2092±54 (22)	2172 (468)
2011-12	2374 (116)	2306±72 (87)	2192 (67)		2277±83 (49)	KVASU	LRS Mamnoor	2302 (319)
2012-13	2335±45.71 (110)	2528±55 (75)	2256 (83)		2242±108 (20)	1698±219 (11)	1560 (5)	2319 (304)
2013-14	2291±58.25 (98)	2509±67 (55)	2431 (82)	2808±43 (65)	2038±62 (47)	1728±158 (17)	1753 (13)	2367 (377)
2014-15	2355±47.55 (110)	2674±82 (46)	2224 (124)	2584±49 (62)	2136±52 (53)	**RCER Patna**	1626 (11)	2338 (406)
2015-16	2336±33.36 (152)	2640±73 (45)	2523 (118)	2577±57 (78)	2302±65 (51)	1866±37 (18)	1843±31 (44)	2381 (506)
2016-17	2457±39.61 (133)	2561 (53)	2536 (87)	2967±64 (60)	2194±73 (55)	1736±21 (19)	2028±51 (43)	2449 (450)
2017-18	2424±48.86 (140)	2707 (54)	2387±44.8 (96)	3050±72.7 (69)	2129±56.25 (45)	1997±122.6 (12)	--	2511 (416)
2018-19	2567±49.21 (123)	2771 (62)	2319 (123)	3067±84.1 (66)	2205±68 (40)	1985±135 (16)	--	2547 (430)
2019-20	2648±52.53 (128)	2841 (73)	2184 (106)	3090±54.1 (60)	2307±51 (60)	2088±19.16 (20)	--	2558 (447)
2020-21	2730±41.52 (148)	2614 (50)	2199±41.48 (90)	2976±52.4 (65)	2224±37.11 (57)	1824±63.04 (31)	--	2516 (441)
2021-22	2852±48.96 (153)	2672±57 (62)	2436±58.10 (85)	2793±49.91 (101)	2273±44.35 (59)	1944±78.37 (25)	--	2627 (485)
2022-23	2861±52.78 (146)	2564±72 (31)	2454±55.86 (70)	2957±49.4 (92)	2221±41.52 (80)	2374±88.54 (19)	--	2657 (438)
2023-24	2949±52.99 (146)	**2718±68 (50)**	**2553±53.00 (64)**	**2658±102.4 (102)**	**2270±45.51 (65)**	**2239±114.14 (25)**	--	**2665 (452)**



Average Age at first calving at various participating herds

Year	CIRB	GADVASU	NDRI	LUVAS	IVRI	CCBF	NDUAT	Weighted average
1993-94	59.1±1.6 (48)	46.7 (24)	45.5 (44)	51.6	39.4±3.0 (7)	43.0		50.7 (123)
1994-95	55.3±1.3 (48)	47.5 (37)	46.0 (37)	51.3	38.3±1.7 (10)	48.0		49.2 (132)
1995-96	55.3±1.5 (22)	49.4 (43)	46.8 (27)	51.9 (26)	42.1±3.4 (14)	51.0		49.6 (132)
1996-97	47.6±1.6 (23)	49.4 (34)	46.8 (27)	47.3 (44)	42.1±3.4 (4)	51.0		47.6 (132)
1997-98	45.5±0.5 (49)	45.0 (45)	44.8 (34)	48.7 (28)	40.1±3.4 (6)	51.0		45.6 (162)
1998-99	50.0±0.01 (57)	47.0 (34)	46.2 (54)	47.3 (22)	43.4±2.3 (8)	54.0		47.6 (178)
1999-00	46.2±1.0 (54)	42.0 (54)	42.6 (29)	49.4 (15)	48.8±7.0 (6)	55.0 (10)		45.1 (168)
2000-01	46.2±1.2 (45)	44.4 (27)	42.4±0.7 (42)	50.6±2.0 (17)	42.4±2.8 (4)	60.5 (11)		46.2 (146)
2001-02	49.8±0.8 (51)	44.7±1.4 (32)	44.0±1.0 (34)	46.7±4.9 (14)	44.4±2.6 (11)	45.0 (12)		46.4 (154)
2002-03	47.83±0.5 (61)	40.2±1.1 (39)	44.0±1.5 (20)	47.0±41.2 (27)	41.2±2.9 (4)	50 (15)		45.47 (166)
2003-04	50.52±0.8 (77)	36.8±1.0 (23)	43.87 (62)	40.37±12.4 (40)	41.82±3.2 (8)	48 (11)		44.94 (221)
2004-05	48.18±0.8 (76)	41.7±1.7 (27)	43.40±0.9 (47)	40.0±3.6 (26)	42.5±1.7 (8)	46 (16)		44.83 (200)
2005-06	47.89±0.7 (76)	43.7±1.0 (35)	39.9±1.0 (36)	41.03±1.1 (31)	42.1 (10)	54 (18)		45.0 (206)
2006-07	46.9±1.06 (43)	43.3±1.2 (20)	41.4±1.5 (50)	41.8±1.8 (15)	41.9±2.3 (10)	45 (19)	47.2±0.4 (3)	43.7 (160)
2007-08	48.3±0.6 (77)	42.7±1.0 (30)	41.8±1.5 (42)	44.4±1.1 (30)	45.8±0.9 (28)		46.4±0.7 (10)	45.3 (217)
2008-09	47.7±0.97 (44)	42.5±0.7 (43)	40.7±1.8 (31)	48.4±1.1 (40)	39.7±1.8 (16)	54.0 (17)	43.8±0.97 (7)	44.56 (181)
2009-10	49.2±0.75 (51)	39.3±1.2 (29)	41.1±1.4 (25)	45.7±1.1 (27)	41.3±4.7 (15)		43.6±0.14 (14)	44.35 (161)
2010-11	49.9±1.0 (35)	39.1±1.4 (21)	41.26 (50)	45.8±1.8 (33)	39.6±1.2 (25)		43.7±0.44 (9)	43.49 (173)
2011-12	51.9 (37)	37.4 (22)	42.13 (24)		45.6±3.2 (20)			45.30 (103)
2012-13	44.5±1.4 (37)	38.9±3.5 (34)	41.6±5.7 (29)		39.7±2.8 (7)	**KVASU**	**LRS Mamnoor**	41.62 (107)
2013-14	45.6±0.8 (37)	42.3±1.6 (12)	41.8±3.8 (36)	46.6±1.4 (33)	38.2±2.2 (18)	59.2±7.4 (7)	--	43.68 (143)
2014-15	42.8±0.8 (61)	38.6±0.6 (23)	40.4±1.2 (35)	45.9±1.7 (17)	37.64±1.3 (18)	**RC ER Patna**	--	41.37 (154)
2015-16	44.96±1.2 (24)	40.2±0.7 (24)	39.3±1.3 (24)	41.7±1.28 (27)	40.2±2.6 (9)	--	54.0±1.19 (4)	41.88 (112)
2016-17	44.91±0.81 (38)	41.50 (27)	43.21 (29)	42.0±7.08 (34)	38.99±1.2 (19)	--	58.50±3.4 (3)	42.83 (150)
2017-18	43.58±0.67 (67)	41.28±1.19 (25)	42.29 (35)	42.2±0.87 (27)	38.64±1.16 (14)	--	--	42.34 (168)
2018-19	45.76±0.80 (31)	40.74±1.43 (39)	44.39 (41)	42.5±0.83 (21)	38.62±1.05 (16)	--	--	42.82 (148)
2019-20	43.62±0.80 (71)	40.42±1.05 (23)	44.52 (37)	43.5±0.49 (22)	39.24±2.11 (20)	--	--	42.87 (173)
2020-21	42.48±0.73 (71)	40.56±0.70 (34)	45.10 (26)	43.1±0.8 (27)	39.03±0.84 (23)	48.34±5.26 (3)	--	42.25 (184)

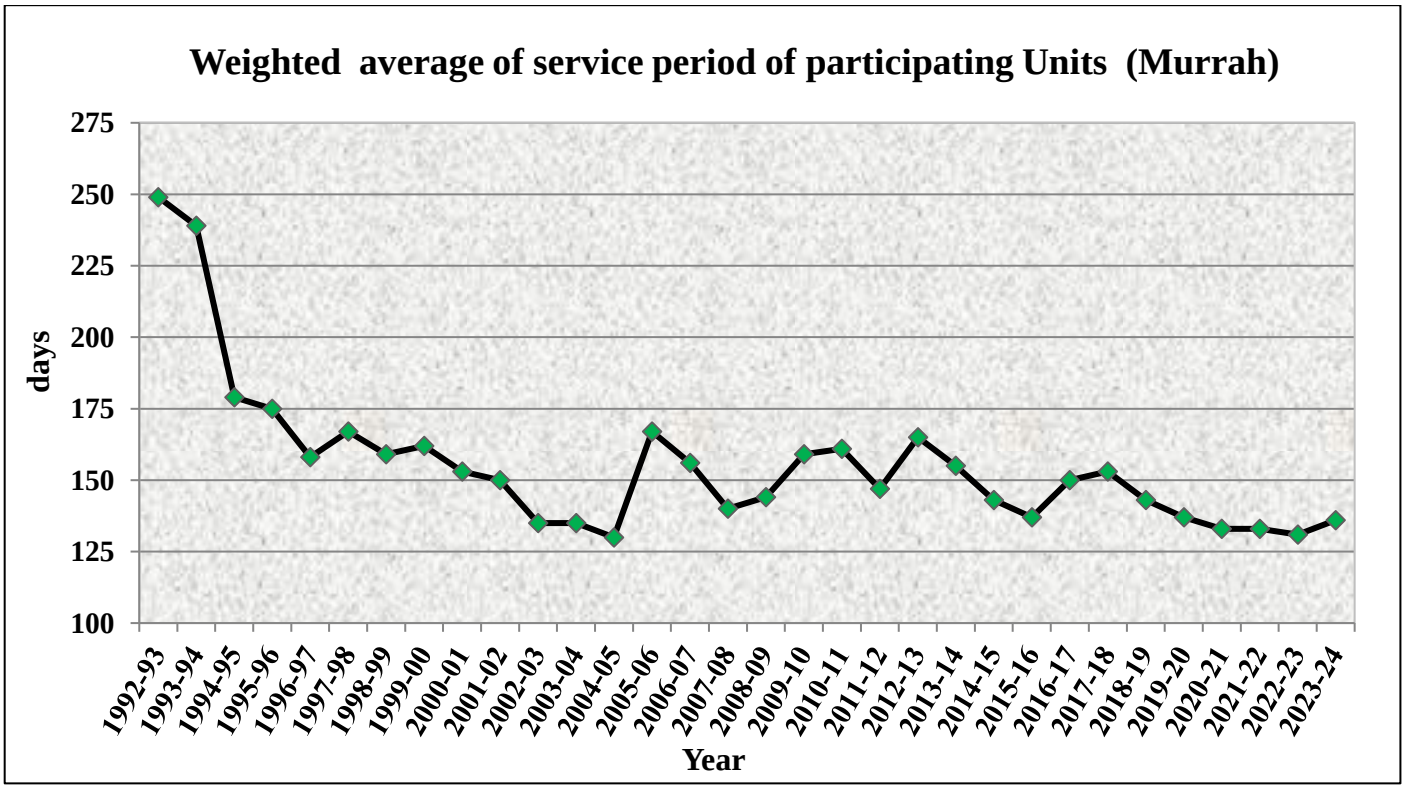
2021-22	38.61±0.82 (67)	40.93±0.56 (53)	58.7 (35)	46.5±0.8 (33)	39.38±1.30 (23)	51.35±12.4 (3)	--	43.95 (214)
2022-23	37.72±0.72 (60)	39.28±0.82 (31)	42.2 (40)	44.8±0.9 (40)	39.15±1.23 (23)	54.00 (1)	--	40.59 (195)
2023-24	**38.07± 0.59 (55)**	**39.78±0.89 (30)**	**43.97 (38)**	**39.9±1.1 (27)**	**40.57±1.12 (15)**	51.28±7.18 (3)	--	**40.46 (168)**



Average Service period at various participating herds

Year	CIRB	GADVASU	NDRI	LUVAS	IVRI	CCBF	NDUAT	Weighted average
1992-93	304±15 (96)	207 (100)			120±33 (8)	115		249 (204)
1993-94	312±158 (158)	228 (105)	148(97)	107.5	101±16 (10)	165		239 (370)
1994-95	202±15 (105)	206 (96)	119(70)	163.1	77±5 (9)	159		179 (280)
1995-96	193±10 (149)	218 (105)	115(72)	135.0	100±12 (12)	132		175 (391)
1996-97	182±10 (149)	196 (76)	114(66)	107.0	125±11 (7)	204		158 (361)
1997-98	175±14 (106)	248 (94)	97(59)	107.7	83±06 (11)	175		167 (325)
1998-99	137±09 (121)	232 (81)	118(63)	108.7	153±25 (11)	186		159 (323)
1999-00	138±09 (104)	213 (59)	159(82)	148.3	190±28 (16)	187		162 (310)
2000-01	146±09 (151)	197 (81)	107±14 (53)	146.0	165±22 (17)	163		153 (370)
2001-02	146±11 (125)	202±14 (83)	123±9 (77)	147±14 (31)	134±25 (12)	126 (69)		150 (397)
2002-03	133±9 (126)	133±9 (95)	141±12 (59)	165±11 (47)	405±96 (5)	102 (76)		135 (408)
2003-04	151±10 (142)	160 (107)	131.65 (117)	87.6±8.4 (42)	108±15.5 (19)	48(11)		135 (432)
2004-05	111±7 (100)	140 (80)	126±10 (93)	96±6.0 (52)	150±16 (30)	160 (87)		130 (442)
2005-06	184±12 (112)	143 (65)	149±12 (68)	148±8.5 (128)	180±28 (54)	253 (32)		167 (459)
2006-07	183±11 (113)	166±15 (69)	131±10 (80)	165±12 (60)	139±15 (40)	151 (37)	99±12.7 (22)	156 (421)
2007-08	159±11 (113)	147±12 (53)	119±11 (84)	165±16 (57)	115±7.5 (62)		109±15.6 (22)	140 (391)

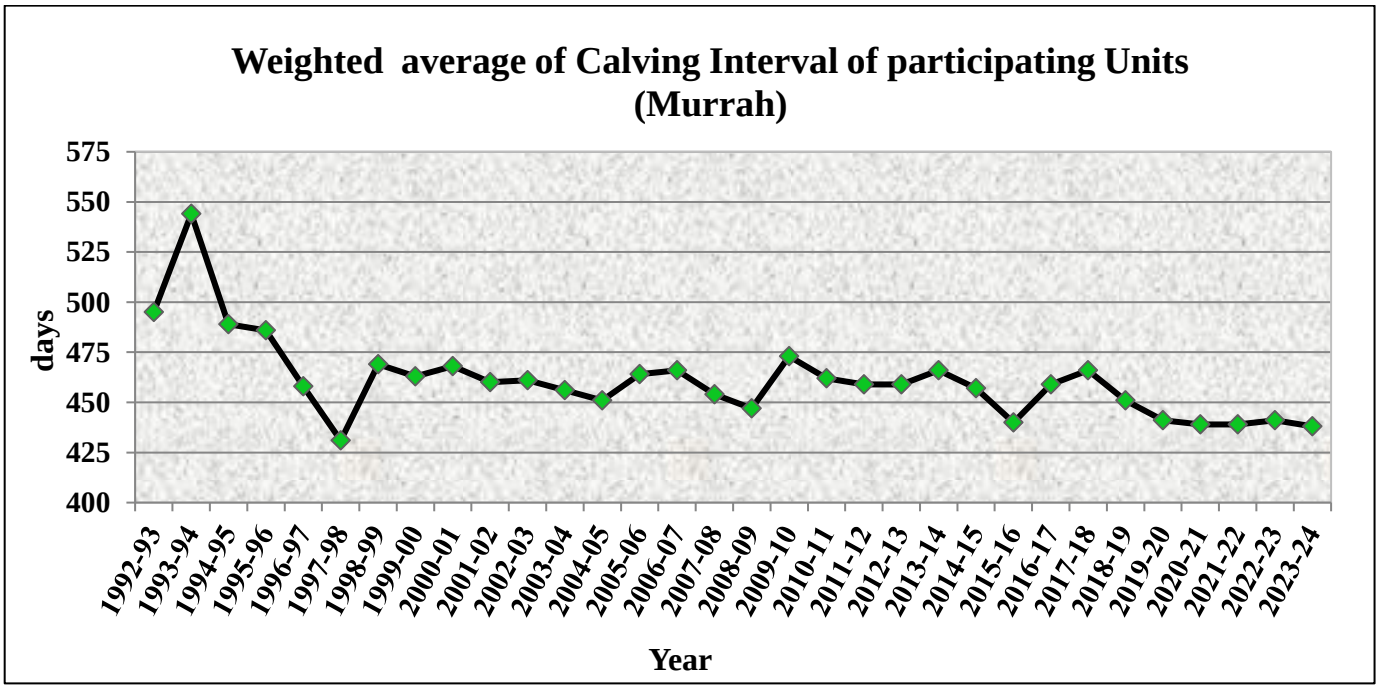
2008-09	171±12 (80)	142±9 (90)	131±22 (61)	139±13 (54)	152±12 (48)	191 (63)	91±17.5 (22)	144 (355)
2009-10	212±17 (77)	151±10 (76)	146±22 (62)	157±12 (68)	122±11 (59)		130±14.6 (17)	159 (359)
2010-11	186±14 (80)	154±12 (94)	145 (76)	155±12 (38)	175±16 (35)		140±3.9 (15)	161 (338)
2011-12	181 (80)	136 (65)	121 (87)		153±216 (29)	**KVASU**	**LRS Mamnoor**	147 (261)
2012-13	174±12 (72)	151±13 (53)	124±27 (69)		213±26 (30)	298±42 (11)	172 (9)	165 (244)
2013-14	190±11 (86)	159±11 (67)	128±11 (73)	118±9 (39)	140±13 (39)	322±115 (6)	143±11 (14)	155 (324)
2014-15	168±8 (88)	160±18 (40)	135±19 (71)	117±11 (52)	124±12 (55)	**RCER Patna**	141±17 (34)	143 (340)
2015-16	138±7 (111)	162±12 (26)	134±23 (92)	127±10 (58)	142±15 (51)	140±5 (12)	128±15 (27)	137 (377)
2016-17	148±9 (93)	184 (26)	132 (54)	129±9.6 (43)	146±10 (52)	183±6 (14)	184±18 (22)	150 (304)
2017-18	167±10 (101)	152±10 (41)	138±10 (49)	135±12 (46)	141±15 (35)	195±8 (12)	--	153 (284)
2018-19	136±7 (97)	136±10 (104)	139 (77)	145±11 (60)	169±16 (46)	157±9 (18)	--	143 (402)
2019-20	143±8 (90)	125±10 (82)	134 (60)	123±8 (64)	173±20 (47)	131±13 (20)	--	137 (363)
2020-21	127±7 (100)	138±12 (95)	140 (39)	127±9 (67)	137±11 (50)	130±11 (31)	--	133 (382)
2021-22	131±8 (99)	147±13 (55)	143 (27)	118±12 (68)	141±11 (46)	123±12 (25)	--	133 (320)
2022-23	126±6 (122)	128±9 (66)	119 (28)	145±9 (64)	140±10 (46)	132±15 (25)	--	131 (351)
2023-24	**135±7 (99)**	**124±9 (41)**	**143 (17)**	**140±25 (96)**	**140±11 (48)**	**129±23 (18)**	--	**136 (319)**



Average calving interval at various participating herds

Year	CIRB	GADVASU	NDRI	LUVAS	IVRI	CCBF	NDUAT	Weighted average
1992-93	489±16 (42)	510 (100)			404±22 (8)	498		495 (250)
1993-94	625±10 (161)	532 (106)	428 (98)		406±17 (3)	480		544 (368)
1994-95	527±10 (116)	512 (96)	428 (70)	459	377±08 (20)	523		489 (302)
1995-96	501±09 (152)	526 (105)	423 (72)	456 (40)	401±16 (7)	539		486 (376)
1996-97	473±09 (152)	510 (76)	423 (66)	408 (76)	424±23 (7)	510		458 (377)
1997-98	491±10 (118)	553 (94)	395 (60)	389 (55)	392±13 (11)	574		431 (338)
1998-99	455±10 (126)	553 (87)	424 (62)	417 (46)	438±15 (10)	522		469 (331)
1999-00	451±08 (120)	518 (63)	435 (52)	459±34 (49)	422±21 (11)	513		463 (295)
2000-01	454±09 (154)	511 (82)	408±21 (56)	479±33 (25)	411±13 (9)	491		468 (427)
2001-02	456±11 (135)	496±15 (84)	428±13 (43)	457±14 (31)	440±24 (12)	445 (69)		460 (374)
2002-03	440±9 (130)	463±13 (95)	406±16 (31)	472±11 (47)	585±69 (4)	501 (76)		461 (383)
2003-04	458±10 (151)	455 (93)	438 (17)	396.3±8.6 (42)	553±36 (29)	441 (10)		456 (342)
2004-05	426±7 (101)	478±13 (80)	428±20 (35)	402±6.2 (52)	481±28 (37)	480 (87)		451 (392)
2005-06	499±12 (112)	433±14.7 (60)	413±36 (54)	455±8.5 (126)	477 (37)	510 (32)		464 (421)
2006-07	495±11 (116)	437±12 (61)	419±11 (50)	473±12 (60)	452±21 (30)	502 (37)	444±4.6 (21)	466 (375)
2007-08	482±12 (117)	419±7 (58)	441±20 (55)	469±16 (57)	443±21 (43)		408±13 (21)	454 (351)
2008-09	469±12 (85)	438±8 (52)	424±14 (21)	444±13.4 (54)	452±11 (48)	503 (63)	402±17 (22)	447 (282)
2009-10	520±16 (77)	492±17 (72)	413±25 (30)	459±21.4 (68)	445±13 (63)		440±14 (17)	473 (327)
2010-11	492±14 (83)	457±105 (76)	442 (44)	462±12.2 (38)	449±16 (60)		426±6.7 (15)	462 (316)
2011-12	485 (81)	473 (85)	428 (56)		461±18 (39)	**KVASU**	**LRS Mamnoor**	459 (261)
2012-13	481±12 (73)	453±12 (59)	402±24 (55)		479±23 (31)	654±47 (6)	464±18 (22)	459 (246)
2013-14	495±12 (87)	471±11 (64)	424±24 (48)	423±29 (39)	471±14 (39)	599±48 (12)	398±5 (14)	466 (303)
2014-15	473±8 (88)	513±124 (41)	421±18 (40)	425±11 (52)	439±16 (44)	**RCER Patna**	462±21 (34)	457 (299)
2015-16	449±7 (111)	458±17 (25)	430±23 (92)	434±11 (58)	447±16 (49)	425±1.4 (12)	426±16 (27)	440 (374)
2016-17	458±9 (93)	472 (26)	428±12 (27)	434±10.1 (43)	457±15 (40)	481±7 (12)	530±27 (22)	459 (263)

2017-18	478±10 (101)	459±12 (41)	432±11 (33)	445±12 (46)	483±20 (35)	515±7 (12)	-	466 (268)
2018-19	446±7 (97)	441±10 (104)	446 (77)	454±11 (60)	496 ±19 (36)	463±22 (18)	-	451 (392)
2019-20	451±8 (90)	436±11 (82)	444 (60)	431±8 (64)	449±13 (47)	426±40 (20)	-	441 (363)
2020-21	437±7 (100)	434±11 (95)	440 (39)	437±9 (67)	434±12 (50)	468±24 (31)	-	439 (382)
2021-22	438±8 (99)	454±15 (55)	452 (27)	420±9 (68)	443±9 (46)	446±24 (25)	-	439 (320)
2022-23	435±6 (122)	437±9 (66)	427 (28)	454±9 (64)	456±12 (46)	438±24 (25)	-	441 (351)
2023-24	**445±67 (99)**	**435±9 (41)**	**444 (17)**	**426±23.5 (96)**	**448±11 (48)**	**434±28 (18)**	-	**438 (319)**



Average Fat % during the years

Murrah	CIRB	GADVASU	NDRI	LUVAS	IVRI	NDUAT	SVVU	KVASU	Overall
2006-07	7.01 (130)	7.57 (82)	8.07 (99)	7.6 (37)	7.55 (71)	8.17 (27)			7.55 (446)
2007-08	7.03 (136)	7.31 (71)	7.92 (101)	7.70 (30)	7.99 (111)	8.02 (24)			7.58 (473)
2008-09	7.82 (1436)	7.80 (78)	7.98 (787)	7.3 (652)	8.19 (1244)	7.96			7.88 (4197)
2009-10	7.70 (85)	7.54 (79)	8.11 (1083)	6.8 (65)	7.97 (1008)	7.92 (20)			7.98 (2340)
2010-11	7.81 (1257)	8.17 (87)	8.03 (1107)	6.9 (783)	8.01 (1080)	7.99	7.18 (546)		7.69 (4860)
2011-12	7.66 (1257)	7.99 (88)	8.19 (750)		8.08 (924)		**LRS Mamnoor**		7.93 (3019)
2012-13	7.66 (1240)	8.27 (83)	8.15 (1010)		7.88 (872)		7.56 (196)	8.95 (12)	7.88 (3413)
2013-14	8.44 (1194)	8.59 (61)	7.90 (101)	6.80 (61)	7.89 (82)		8.20 (133)	7.80 (2423)	8.00 (4055)
2014-15	8.46 (1168)	8.33 (61)	8.30 (116)	7.20 (64)	7.87 (363)	**RC ER Patna**	8.15 (268)	--	8.26 (2040)

2015-16	--	7.97 (54)	8.28 (1648)	7.4 (78)	7.91 (996)	7.35 (84)	8.00 (380)	--	8.08 (3240)
2016-17	--	7.46 (49)	7.99 (1240)	7.3 (84)	7.95 (970)	--	8.05 (380)	--	7.95 (2723)
2017-18	--	7.32 (49)	7.89 (1150)	7.3 (81)	7.96 (994)	7.42 (12)	--	--	7.89 (2286)
2018-19	--	7.35 (68)	7.69 (106)	7.1 (76)	7.76 (292)	--	--	--	7.60 (542)
2019-20	--	7.34 (67)	7.54 (111)	7.1 (78)	7.35 (364)	--	--	--	7.35 (620)
2020-21	--	7.42 (64)	7.97 (79)	6.8 (72)	7.03 (395)	--			
2021-22	7.92 (783)	7.64 (72)	8.19 (81)	6.97 (81)	7.14 (404)	7.48 (440)			7.61 (1861)
2022-23	**8.00 (948)**	**7.53 (54)**	**8.46 (79)**	**6.78 (85)**	**6.69 (399)**	**7.39 (300)**			**7.57 (1865)**
2023-24	**7.87 (1287)**	**7.58 (59)**	**8.31 (80)**	**7.1 (90)**	**6.53 (274)**	**7.37 (720)**			**7.56 (2510)**
Between breeds	**Murrah**	**Nili-Ravi**	**Bhadawari**	**Jaffarabadi**	**Pandharpuri**	**Surti**	**Godavari**	**Swamp**	
2006-07	7.55 (446)	6.8 (118)	7.65 (34)	8.21 (34)	8.01 (25)	7.12 (34)	7.38 (47)	8.38 (12)	
2007-08	7.58 (473)	6.70 (122)	8.09 (106)	8.25 (29)	8.03 (15)	7.25 (34)	7.00 (47)	7.67 (21)	
2008-09	7.88 (4197)	6.9 (108)	8.09 (604)	8.61 (260)	8.04 (180)	7.33 (446)		7.73 (16)	
2009-10	7.98 (2340)	6.9 (146)	8.02 (375)	8.02 (446)	8.04 (257)	7.5 (301)	7.64 (44)	8.52 (20)	
2010-11	7.69 (4860)	6.8 (98)	8.20 (309)	8.01 (364)	8.03 (203)	8.06 (267)		8.91 (159)	
2011-12	7.93 (3019)	7.3 (81)	8.03 (195)	8.03 (27)	8.03 (630)	7.93 (229)		9.23 (115)	
2012-13	7.88 (3413)	7.62 (123)	8.16 (242)	8.24 (1632)	8.01 (545)	7.96 (240)		8.04 (155)	
2013-14	8.00 (4055)	8.20 (109)	8.65 (309)	8.06 (34)	7.85 (187)	7.89 (226)		10.16 (184)	
2014-15	8.265 (2040)	7.86 (115)	8.12 (340)	8.46 (386)	8.02 (289)	7.58 (364)		8.45 (62)	
2015-16	8.08 (3240)	7.38 (110)	8.26 (28)	8.38 (403)	8.09 (137)	7.43 (187)		8.35 (82)	
2016-17	7.95 (2723)	7.23 (111)	--	8.38 (42)	8.03 (120)	7.18 (21)	**Nili-Ravi (GADVASU)**	8.62 (82)	
2017-18	7.89 (2286)	7.40 (108)	8.17 (294)	8.32 (495)	8.04 (83)	8.11 (248)	7.54 (33)	7.65 (80)	
2018-19	7.60 (542)	7.61 (113)	8.23 (187)	8.12 (781)	Center Closed	6.64 (288)	7.99 (33)	Center Closed	
2019-20	7.35 (620)	7.41 (N)	8.23 (309)	7.91 (773)	--	6.94 (270)	8.01 (34)	--	
2020-21		7.21 (115)	8.31 (462)	7.88 (721)	--	6.37 (186)	7.97 (37)	--	
2021-22	**7.61 (1861)**	**7.1 (102)**	**8.38 (339)**	**7.9 (58)**	--	**6.43 (171)**	**7.70 (28)**	--	
2022-23	**7.57 (1865)**	**7.6 (106)**	--	**8.1 (70)**	--	**7.05 (145)**	**7.36 (26)**	--	
2023-24	**7.56 (2510)**	**7.84 (1140)**	**8.23 (63)**	**8.0 (63)**	--	**6.83 (176)**	**7.47 (27)**	--	

Total AI, Calving, PD, Conception and daughter's milk recording in Field Units

Murrah Breed	AI	Pregnancy	Total calving	Daughters Born	Daughters Recorded
GADVASU, Ludhiana					
2001-02	493	184	-	-	1
2002-03	1908	723	229	135	5
2003-04	1858	629	472	245	5
2004-05	2435	726	466	215	10
2005-06	2822	967	699	333	10
2006-07	3313	1178	755	357	10
2007-08	4015	1438	870	368	8
2008-09	4147	1622	1149	491	4
2009-10	5415	1878	1140	538	10
2010-11	6846	2289	1274	603	15
2011-12	7298	2814	1800	853	42
2012-13	8517	3463	2497	1155	55
2013-14	8014	3380	2831	1303	98
2014-15	8316	3810	2958	1447	90
2015-16	6325	3054	3013	1383	146
2016-17	5289	2464	2236	1049	144
2017-18	6344	2579	1933	899	186
2018-19	7779	3299	2468	1192	270
2019-20	8690	4307	3235	1555	270
2020-21	7991	4277	3878	1883	353
2021-22	8543	3815	3309	1565	356
2022-23	8343	4146	3407	1661	370
2023-24	8100	3934	3368	1613	347
Sub Total	**132801**	**56976**	**43987**	**20843**	**2805**
CIRB, Hisar					
2001-02	139	25	15	7	-
2002-03	540	236	147	73	11
2003-04	1001	356	237	129	12
2004-05	1298	566	361	173	18
2005-06	1999	1009	744	345	36
2006-07	2102	1139	650	305	34
2007-08	2132	1104	694	341	45
2008-09	2176	1086	955	477	52
2009-10	2803	1450	1276	627	60
2010-11	3433	1743	787	377	72
2011-12	3308	1756	1103	557	112
2012-13	4204	2104	1247	553	129
2013-14	3962	1903	1079	517	133
2014-15	4129	2218	1614	776	147
2015-16	4434	2326	1693	806	133
2016-17	3807	2063	1591	802	145
2017-18	4093	2248	1724	845	181
2018-19	3977	2214	1748	798	160
2019-20	3957	2140	1530	702	87
2020-21	3480	1901	1401	722	-
2021-22	3167	1815	1458	702	-
2022-23	3766	2013	1628	828	-
2023-24*	3898	1526	1641	829	-
Sub Total	**67805**	**34941**	**23599**	**11446**	**1567**

NDRI, Karnal					
2004-05	2223	993	710	333	34
2005-06	2224	994	875	400	45
2006-07	2193	976	918	440	65
2007-08	2594	1212	1140	517	109
2008-09	2529	1190	1086	503	138
2009-10	2739	1377	1159	569	211
2010-11	2747	1399	1225	560	183
2011-12	2995	1600	1260	605	133
2012-13	2905	1422	1159	569	138
2013-14	4419	2242	1225	560	119
2014-15	3941	2033	1860	905	83
2015-16	3905	1994	1648	768	87
2016-17	3916	1975	1524	722	85
2017-18	3241	1605	1397	640	91
2018-19	4315	1995	1030	456	86
2019-20	4571	1999	1532	647	108
2020-21	4874	1928	1559	640	
2021-22	5126	2467	1793	772	
2022-23	4844	1930	1866	803	
2023-24*	5108	1952	1625	682	
Sub Total	**71409**	**33283**	**26591**	**12091**	**1715**
Grand Total	**272015**	**125200**	**92536**	**43551**	**6087**

* Conception of Jan 2024 will be added in July 2024

NDUAT Faizabad					
2006-07	482	57	222	103	-
2007-08	372	122	143	61	-
2008-09	-	-	-	-	-
2009-10	1178	416	275	122	-
2010-11	3695	427	328	164	Centre closed
Total	**5727**	**1022**	**968**	**450**	**-**
SVVU Venkataramangudam					
2010-11	**282**	**67**	**21**	**8**	Centre closed

OTHER BREEDS

	AI	**Pregnancy**	**Total Calving**	**Daughters Born**	**Daughters Recorded**
Jaffarabadi (KU, Junagadh)					
2005-06	15				-
2006-07	966				-
2007-08	2169	1196 (1907)	468	223	-
2008-09	2961	1141 (2065)	944	455	-
2009-10	3070	1563 (2676)	1429	694	-
2010-11	3457	1613 (2651)	1333	666	-
2011-12	3738	1603 (2918)	1538	729	-
2012-13	4067	1776 (3627)	1684	810	-
2013-14	4121	1957 (4021)	1688	801	-
2014-15	4781	2150 (4271)	1564	731	1
2015-16	3375	1719 (3691)	1892	867	15
2016-17	2971	1228 (3041)	1256	537	74
2017-18	2462	1032 (2436)	815	365	72
2018-19	2013	840 (1971)	803	347	89
2019-20	1962	776 (1894)	712	308	86
2020-21	2139	928 (1273)	800	374	76

2021-22	1931	842 (1910)	766	344	99
2022-23	1805	840 (1893)	784	422	104
2023-24	1531	728 (1629)	700	331	57
Total	**49534**	**21932 (43874)**	**19176**	**9004**	**673**
Surti (LRS, Vallabhnagar)					
Pre-2001					62
2001-02	2256	480	482	191	35
2002-03	1850	421	403	171	35
2003-04	1980	473	359	156	37
2004-05	1861	550	351	168	26
2005-06	1717	536	470	195	29
2006-07	1691	504	426	163	35
2007-08	1811	542	418	167	22
2008-09	1804	609	429	186	17
2009-10	1975	672	503	218	24
2010-11	2038	628	526	223	25
2011-12	2023	568	451	198	30
2012-13	1897	583	487	235	27
2013-14	1591	555	495	197	37
2014-15	1534	455	409	156	45
2015-16	1986	556	345	145	44
2016-17	1979	622	466	178	32
2017-18	1478	506	453	188	16
2018-19	1719	485	397	173	9
2019-20	1538	539	409	183	3
2020-21	1678	456	409	177	-
2021-22	1480	540	402	185	-
2022-23	1237	425	394	187	-
2023-24	1634	574	405	181	-
Total	**40,757**	**12,279**	**9,889**	**4,221**	**590**
Pandharpuri (MPKV, Kolhapur)					
2006-07	3969	1530	770	382	40
2007-08	5299	2001	1254	544	42
2008-09	9349	4402	1314	660	70
2009-10	25006	9622	4273	1902	80
2010-11	22602	10337	6093	2086	108
2011-12	21047	9263	5906	2619	105
2012-13	4081	2183	3520	1523	43
2013-14	3766	2202	2800	1301	152
2014-15	4329	2104	1165	514	61
2015-16	4607	2212	2039	949	-
2016-17	3642	1226	939	392	
2017-18	4286	1976	1438	635	Centre closed
Total	**111983**	**49058**	**31511**	**13507**	**701**
Godavari, SVVU, Venkataramanngudem					
2006-07	2167	530	271	124	
2007-08	1436	619	428	202	
2008-09					
2009-10	196	32	86	40	Centre closed
Total	**3799**	**1181**	**785**	**366**	
Grand Total	**206073**	**84450**	**61361**	**27098**	**1964**