

Research:

1. List of Research Projects: Completed & Ongoing

Sr. No.	Title of the Project	Name of PI/ Major Advisor/ Research Worker	Funding Agency	Total Cost of the project (Rs in Lakh)	Extra-mural (Funding agency)/ Intra-mural	Status (Completed/Ongoing)	Durat ion
1	“Establishment of Central Computer Laboratory” under FIST scheme was completed in the year 2004 Department. The main objective of this scheme was to create ‘Networking & Computational Facilities’ including Internet Facility for the college students.	Dr. S. G. Narayankhedkar	The scheme was sponsored by Department of Science and Technology (DST), Govt. of India	12 Lakhs	Extra-mural	Completed	2002-2004
2	Molecular Characterization of Dangi and Khillar Cattle	<u>PI – Dr. U.D.Umrikar</u> <u>Asso. Scientists</u> Dr.M.P. Sawane, Dr. V.D.Pawar, Dr. A.Y. Doiphode	Maharashtra Livestock Development Board, Akola	06.00 Lakhs	Extra-mural	Completed	2010-2011
3	Establishment of Genetic Investigation Laboratory	<u>PI – Dr. U.D.Umrikar</u> <u>CO PI- Dr.M.P. Sawane,</u> <u>Dr. V.D.Pawar,</u> <u>Dr. A.Y. Doiphode</u>	Rashtriya Krishi Vikas Yojana (RKVY)	178.00 Lakhs	Extra-mural	Completed	2010-2012
4	Characterization and genotyping of the genes influencing ovulation in the Osmanabadi breed of goat	PI – Dr. A.Y. Doiphode	Department of Science and technology (SERB)	25.00 lakhs	Extra-mural	Completed	2012-2015

5	Molecular characterization of the genes and analysis of the genotypes affecting growth rate in the Osmanabadi breed of goat	PI – Dr. A.Y. Doiphode	Department of Science and technology (SERB)	12.00 Lakhs	Extra-mural	Completed	2013-2015
6	Providing Regular Genetic Testing Services to the MS through the Genetic Investigation Laboratory	PI – Dr. U.D.Umrikar CO PI- Dr.M.P. Sawane, Dr. V.D.Pawar, Dr. A.Y. Doiphode	Department of Animal husbandry, Dairying and Fisheries M.S. Government of Maharashtra.	38.00 Lakhs	Extra-mural	Completed	2012-2016

2. Research Priorities:

Sr. No.	Research Area	Aim	Objective	Benefits of Farmers
1	Identification and selection of elite germplasm in livestock of Konkan region through MAS approach	Establishment of Elite herd of indigenous cattle	<ul style="list-style-type: none"> • Selection of elite animals • Genotyping of the animals 	Availability of high yielding animals
2	Cytogenetic Characterization	Find out cytogenetic abnormality in breeding animals	<ul style="list-style-type: none"> • To produce healthy population • To prevent further spread 	Prevent economic losses in term of production and reproduction
3	Genetic disorders in canine	To find out common genetic disorders in dogs	<ul style="list-style-type: none"> • Identify the common genetic disorders 	Make awareness in dog breeders

3. Thesis:

Master (M.V.Sc):

Sr. No.	Name of the Student	Title of Thesis	Year of Completion	Name of the Advisor
1	K.G.Joshi	Physical characters and estimation of some of the economic character of Deoni cattle.	1963	Dr.S.G.Kshirsagar
2	S.Moharshingh	A study of some of the production traits of Murrah Buffalo Cows.	1963	Dr.S.G.Kshirsagar
3	G.D.Patil	Genetic composition of colour pattern of Dangi cattle.	1963	Dr.S.G.Kshirsagar
4	K.V.Reddy	Observation on the growth rate of Murrah buffalo calves.	1963	Dr.S.G.Kshirsagar
5	N.S.Tadpatrikar	Cattle blood groups.	1965	Dr. S. G. Kshirsagar
6	G.Shriniwasan	Evaluation of some quantitative traits of 2 Gir herds of Bombay.	1965	Dr. S. G. Kshirsagar
7	K.Venkatshwar Rao	A study of physical and some economic characters of Marathwada buffalo.	1965	Dr.S.G.Kshirsagar
8	M. D. Chauhan	Estimation of sire index and lactation correction factors for Murrah buffalo.	1965	Dr. S. G. Kshirsagar
9	S.K.Deokule	A preliminary study of physical and some	1967	Dr.S.G.Kshirsagar

		economic characters of Rathi cattle inBombay.		
10	G.S.Korane	Production of reagent and studies on some aspect of blood groups in Dangi cattle.	1967	Dr.S.G.Kshirsagar
11	G.Mallikarjun	A study of physical and economic characters of Ongole cattle.	1967	Dr.S.G.Kshirsagar
12	B.R.Mangurkar	A study of some of the economic characters of Gir with particular reference to its suitability for up grading the nondescript cattle at Ahmadnagar.	1967	Dr.S.G.Kshirsagar
13	K.K.Reddy	Surface antigenicity of Ram Spermatozoa.	1969	Dr.S.G.Kshirsagar
14	S.S.Burkule	Studies of genotypic and phenotypic parameters of certain important economic traits of Gir herd at Bhojapur Goshala,Poona.	1969	Dr.S.G.Kshirsagar
15	D.M.Khare	Studies sire evaluation is Murrah Buffalo herds at Adarsh Dugdhalaya Malad and Palghar.	1969	Dr.S.G.Kshirsagar
16	Iswara Suryaprakashrao	Estimation of Nucleic Acid (DNA & RNA) & the effect of storage on Nucleic acids contain of Murrah Buffalo bulls.	1969	Dr.S.G.Kshirsagar
17	A.D.Deshpande	Studies on sheep Hemoglobin.	1971	Dr.S.G.Kshirsagar

18	B.A.Pathak	Study of colour pattern skin pigmentation and thickness and some of the body measurements of the Molebred Holstein Friesian and Jersey calves.	1971	Dr.S.G.Kshirsagar
19	M.G.Jatkar	Study of some wool attributes of Deccani sheep and its crosses with Rambouillet.	1974	Dr.N.S.Tadpatrikar
20	V.R.Hingane	Comparative study of growth and age at first calving in Gir and crossbred animals.	1975	
21	A.N.Manikpure	Developmental Haemoglobin in sheep and goat and Haemoglobin Polymorphism in cattle.	1975	
22	A.T.Kakade	A study of some economic characters and evaluation of sires of the Gir herd at Ahmadnagar.	1975	Dr.N.S.Tadpatrikar
23	P.T.Patil	Evaluation of some economic characters of Gir cattle at Kandivali.	1976	
24	B.Z.Bhansali	Comparative study of Growth rate in different crossbred female calves at Dapchari.	1977	Dr.N.S.Tadpatrikar
25	G.B.Sidhiqui	Evaluation of some economic characters of Rathi X Jersey and Rathi X Holstein friesian cows at Bombay.	1977	Dr.G.S.Korane

26	A.M.Ambulgakar	A study of the performance of purebred Jersey cattle in Maharashtra state.	1979	
27	R.L.Ingle	A study of some economic traits of Murrah Buffaloes.	1979	Dr.M.D.Chauhan
28	G.H.Saxena	Comparative study on some of the economic traits in purebred. Gir and Gir crosses.	1979	Dr.N.S.Tadpatrikar
29	P.B.Patil	Study of growth and production characters in crossbred at Military dairy Farm, Deolali.	1980	Dr.N.S.Tadpatrikar
30	A.B.Borkar	Serum Alkaline phosphatase (AKP) polymorphism and Association of AKP Phenotypes with some of the economic traits in poultry.	1980	Dr.G.S.Korane
31	D.B.Nikam	Study of comparative performance Gir X Ayrshire, Rathi X Ayrshire crosses purebred Gir and Rathi at Induri Farm.	1981	Dr.N.S.Tadpatrikar
32	A.B.Patil	Studies on part lactation yield in crosses of Gir and Rathi with Ayrshire.	1981	Dr.G.S.Korane
33	P.D.Jadhav	Comparative study on some of the economic traits in Gir and Gir crosses with Holstein Friesian and Jersey.	1982	Dr.M.D.Chauhan

34	P.S.Deshmukh	Inheritance of Breeding efficiency and its relationship with other economic traits in crossbreds.	1982	Dr.S.G. Narayankhedkar
35	D.G.Mhaisekar	Chromosomal abnormalities in relation with infertility.	1983	Dr.S.G. Narayankhedkar
36	S.P.Govekar	Studies on economic traits of Zebu crosses with Jersey andHolsteinfriesian.	1983	Dr.M.D.Chauhan
37	S.B.Nehete	A study of part time lactation and breeding efficiency in cross breeds at Aarey Milk Colony.	1983	Dr.N.S. Tadpatrikar
38	P.B.Patil	Chromosomal studies in breeding bulls.	1984	Dr.S.G. Narayankhedkar
39	A.I.Sharar	Chromosomal studies in Murrah buffalo (Bos-Bubbles).	1985	Dr.S.G. Narayankhedkar
40	M.S.Vaidya	Studies on economic traits of crossbreds with different levels of exotic inheritance.	1985	Dr.V.R.Hingane
41	S.K.Borse	Studies on part lactation yield economic traits in Murrah buffalo.	1986	Dr.M.D.Chauhan
42	A.S.Umap	Studies on lactation persistency and some of the economic traits in halfbred cows and association between them.	1987	Dr.M.D.Chauhan
43	S.D.Kulkarni	Karyotyping in sheep.	1988	Dr.S.G.

				Narayankhedkar
44	S.D.Deshpande	A study of some the economic traits in Jersey cattle.	1988	Dr.V.R.Hingane
45	S.S.Pawar	Chromosomal studies in Goat (<i>Capra hircua</i>).	1990	Dr.S.G. Narayankhedkar
46	Miss V.V.Kadam	Studies on economic traits of Dangi and its crosses.	1989	Dr.V.R.Hingane
47	R.S.Langhe	Chromosomal studies in buffalo (<i>Bos Bubalis</i>).	1993	Dr.S.G.Narayankhedkar
48	A.G.Poharkar	A study on inter-se mating.	1993	Dr.S.B.Nehete
49	R.D.Sankhe	Study of economic traits and their correlation in Indian crossbred cows.	1994	Dr.S.B.Nehete
50	M.P.Sawane	Karyological evaluation in breeding bulls.	1994	Dr.S.G. Narayankhedkar
51	A.S.Shinde	Cytogenetic studies in buffalo.	1996	Dr.S.B.Nehete
52	A.S.Bhand	Cytogenetic studies in goat	1996	Dr.S.B.Nehete
53	P.D.Choudhary	Evaluation of growth parameters in desi goats and their crosses with Sirohi, Alpine and Toggenburg under field conditions.	1998	Dr.S.G. Narayankhedkar
54	N.R.Bangar	Study on lactation curve in Gir, Gir X Holstein Friesian and Gir X Jersey cattle.	1998	Dr.S.G. Narayankhedkar

55	Miss.Sujata D. Gaikwad-Inamdar	Studies on breeding efficiencies in cross bred cows	1999	Dr.S.G.Narayankhedkar
56	U.D.Bhosale	Study on influence of service period on lactation milk yield & lactation length in Gir, Gir X Holstein Friesian & Gir X Jersey cattle	1999	Dr. S. B. Nehete
57	V.D.Pawar	Correlation of first lactation milk yield with part performance in cross bred cows.	2002	Dr.S.G. Narayankhedkar
58	S.G.Waghmale	Study of relationship between productive performance and disposal pattern in crossbred cows.	2001	Dr.S.B.Nehete
59	D.D.Sawalkar	Studies on genetic and phenotypic performance of some important economic traits and its relationship with breeding efficiency in crossbred cows.	2001	Dr.S.G. Narayankhedkar
60	H.L.Kanadkhedkar	Cytogenetic studies in domestic pig	2002	Dr.S.B.Nehete
61	A.R.Suryawanshi	Cytogenetic studies in domestic dog and wild jackal	2001	Dr.U.D.Umrikar
62	Sacheen Bhosale	Karyological studies of the tiger and lion species.	2002	Dr.U.D.Umrikar
63	S.C.Karkhele	A study on inter-se mating in cattle	2002	Dr.S.G.Narayankhedkar

64	D.C.Sharma	Study on growth characters of Kadaknath, Rhode Island Red and White Leghorn Breeds of poultry, their crosses and reciprocal crosses in a trial involving diallel mating.	2002	Dr.S.G.Narayankhedkar
65	M.G.Bangar	Study on breeding value ad production efficiency in cattle.	2003	Dr.S.B.Nehete
66	Miss.Shabeena Hassan	DNA Fingerprinting of native and exotic chicken breeds using RAPD-PCR.	2003	Dr.S.G.Narayankhedkar
67	M. S. Pingle	Cytogenetic study of chicken embryo	2004	Dr. U. D. Umrikar
68	M. P. Patil	Cytogenetic Study Of Domestic Rabbit	2004	Dr. U. D. Umrikar
69	R. S. Deshmukh	Cytogenetic study of domestic dog cancers.	2005	Dr. U. D. Umrikar
70	S. N. Chilgunde	PCR-RFLP of growth hormone gene in Riverine buffalo.	2005	Dr. M. P. Sawane
71	C. S. Asalkar	PCR-RFLP of growth hormone gene in Deoni Cattle	2005	Dr. M. P. Sawane
72	A. Y. Doiphode	PCR-RFLP of growth hormone gene in Crossbred Cattle (GIR X HF)	2005	Dr. M. P. Sawane
73	T.C.Shende	Genotyping of Pandharpuri and Murrah buffloes for K-casein genepolymorphism.	2006	Dr. M. P. Sawane

74	P.S.Waghmode	Study of traits of economic importance in Madgyal Sheep	2006	Dr. M. P. Sawane
75	Pawar A. B.	Cytogenetic studies in Horse	2006	Dr .M .P.Sawane.
76	Magadum V. V.	Karyological studies in infertile Buffalo	2007	Dr .M .P.Sawane.
77	Patil P.A.	PCR-RFLP of leptene gene in Pandharpuri buffalo	2008	Dr .M .P.Sawane.
78	Mandanwar V.S	Genotyping of prolactin gene in Pandharpuri buffalo by PCR-RFLP	2008	Dr .M .P.Sawane.
79	Unaune K. P.	Genotyping of Murrah Buffalo for DGAT1 Gene Using PCR-RFLP	2009	Dr .M .P.Sawane.
80	Biradar S. M.	Study Of Prolactin Gene Polymorphism in Murrah Buffalo	2009	Dr.U.D. Umrikar
81	Faske S. D.	Karyological Evaluation of Dangi Cattle	2009	Dr. U.D.Umrikar
82	Miss.Bhagat S.B.	Karyological Evaluation of Sangamneri goat	2010	Dr. U.D.Umrikar
83	Miss. Mhatre P.S.	p53 gene mutation analysis in canine soft tissue sarcomas	2010	Dr. U.D.Umrikar
84	Miss.Patil S.V.	Genotyping of β defensin gene using PCR RFLP in HFx Gir crossbred cattle	2010	Dr. U.D.Umrikar

85	Padve S.G.	Polymorphism of β defensin gene using PCR RFLP in dangi and Gir cattle	2010	Dr .M .P.Sawane
86	Chavhan S.S.	Genotyping of Holstein Friesian crossbred cattle for Bovine citrullinemia by using PCR-RFLP	2011	Dr. V. D. Pawar
87	Nakod N. N.	Karyological Study in Khillar Cattle	2012	Dr. U.D.Umrikar
88	Kini A.C.	Cytogenetic Study of Canine Mammary Tumor	2012	Dr. U.D. Umrikar
89	Khade A. S.	Genotyping of CD 18 gene in the HF crossbred Cattle using PCR-RFLP	2012	Dr. A.Y. Doiphode
90	Kad S. D.	Genotyping of DUMPS locus in HF crossbred cattle using PCR-RFLP	2012	Dr. Pawar V.D.
91	Ware P.R.	Cytogenetic Characterisation of Pandharpuri Bufalo	2012	Dr. U.D. Umrikar
92	Ms. D. D. Ghotage	Cytogenetic studies in domestic cats	2013	Dr.U.D.Umrikar
93	S. B. Khade	Genotyping OF HF crossbred cattle for CVM and FXI deficiency loci.	2013	Dr.V.D.Pawar
94	LalthansangaKhi angte	Sex determination of ornamental birds by using polymerase chain reaction.	2014	Dr.V.D.Pawar
95	Kaustubh .B. Bhave	Genotyping of Osmanabadi goat at FecX and FecB loci	2014	Dr.M.P.Sawane

96	Prabhakar. S.Ukale	Characterization of FecG loci of GDF-9 gene in the Osmanabadi goats	2014	Dr.A.Y.Doiphode
97	GwazenloTep	Polymorphism of IGFBP-3 and BMP-4 genes associated with growth rate in Osmanabadi goats	2015	Dr.A.Y.Doiphode
98	Ms. P. B. Vaidya	Cytogenetic analysis of breeding rams of NARI Suwarna genetic group	2015	Dr.M.P.Sawane
99	S. C. Kokani	Cytogenetic analysis of breeding bucks of Osmanabadi and Boer breeds	2016	Dr.V.D.Pawar
100	MorothungEzung	Comparative cytogenetic studies of mithun and mithun x cattle cross	2016	Dr.U.D.Umrikar
101	Akash Vaidya.	Mutational analysis of BRCA2 gene in canine mammary tumor	2017	Dr.M.P.Sawane
102	Swapnil Jadhav	Study of genes associated with milk proteins in Indian domestic camel (<i>Camelus dromedarius</i>)	2018	Dr.U.D.Umrikar
103	Ms.Trupti Kulkarni	Genotyping of cattle breeding bulls for A1/A2 variant of β -casein gene.	2018	Dr.M.P.Sawane
104	Rajshekhar S.	PCR-RFLP of IGFBP-3 gene in Madyal Sheep	2018	Dr.V.D.Pawar
105	Ms.Aditi Deepak. Gaitonde	Genotyping of MSTN and CAST gene in Deccani and	2018	Dr.V.D.Pawar

		Madgyal Sheep using PCR -RFLP		
106	Atole Ganesh Dnyandeo	Study of the genetic polymorphism of Myostatin (MSTN)gene in Osmanabadi and Boer goat breed	2018	Dr.R..S.Deshmukh
107	Ms.Manpreet Khajuriya	Genotyping of Cross bred cattle for SNP G22231T and SNP T250258 of BRACA1 gene and it's association with somatic cell count	2019	Dr.M.P.Sawane
108	Ms.S.M.Zinjurde	Myostatin (MSTN) gene polymorphism in Konkan Kanyal Goat Breed	2019	Dr.V.D.Pawar
109	A.V.Patil	Analysis of INSL3 gene polymorphism in canine cryptorchidism	2020	Dr.R..S.Deshmukh
110	S.M.Sonawane	Genotyping of Toll like receptors 4 gene and it's association with somatic cell count in Croddbred cows	2020	Dr.M.M.Chopade
111	S.V.Gujarmale	Bone morphogenetic protein 15 gene polymorphism and it's association with litter size in Konkan Kanyal goat	2020	Dr.V.D.Pawar
112	Lavanya K	Bovine lactoferrin gene polymorphism and it's association with milk traits in Gir and HF crossbred cows	2021	Dr.M.P.Sawane

113	Ms.Darshana Shingne	The association of Osteopontin gene with milk production traits in Gir and HF Crossbred cows	2021	Dr.V.D.Pawar
114	Ms.Shubhada More	Detection of DGAT1 gene polymorphism and it's association with milk constituents of Gir and HF crossbred cows	2021	Dr.R.S.Deshmukh
115	Shantanu Shinde	POU1F1`gene polymorphism and it's association with body weight in sangamneri goat.	2022	Dr.V.D.Pawar
116	Sumit Karwa	Osteopntin gene polymorphism and it's association with milk traits in Dangi cattle	2022	Dr.M.P.Sawane
117	Ankush Dhond	Assiciation study between Bovine Lactoferrin gene and milk traits in Dangi Cattle.	2022	Dr.M.P.Sawane
118	Akshada Shelar	Genotyping of Red Kandhari Cattle For Osteopontin Gene and its Association With Milk Trait	2023	Dr.V.D.Pawar
119	Mrunal Chaudhari	Genetic Polymorphism Of Lactoferrin Gene and its Association With Milk Traits in Red Kandhari Cattle	2023	Dr.V.D.Pawar
120	Jatin Tondare	POU1F1 Gene Polymorphism and its Association with Body Weight In Kokan Kanyal Goat	2023	Dr.M.P.Sawane

Doctoral:

Name of Department:				
Sr. No.	Name of the Student	Title of Thesis	Year of Completion	Name of the Advisor
1	Dr.S.B.Nehete	Studies on weight and gain from birth to maturity in Gir and crossbred animals	1996	Dr.S.G.Narankhedkar
2	Dr. R. M. Belsare .	Studies on IDS selection using Osborne index in Kadaknath breed of poultry	2005	Dr.S.G.Narayankhedkar
3	Dr.P.V.Nandedkar	Analysis of Growth Related Candidate Genes in Coloured Broiler and in-vitro silencing of myostatin gene through siRNA	2007	Dr.S.B.Nehete
4	Dr. M. P. Sawane	Investigation of genetic disorders in cattle and buffalo bulls of Maharashtra	2014	Dr.U.D.Umrikar
5	Dr.S. B. Khade	Molecular and Cytogenetic analysis of reproductive disorders in cattle.	2018	Dr.M.P.Sawane
6	Dr.V.D. Pawar	Characterization of growth related genes (POU1F1 and Leptin) in Osmanabadi Goat and Madgyal sheep	2018	Dr.M.P.Sawane
7	Dr.Amol Khade	Verification of cattle pedigrees through microsatellite markers	2019	Dr.M.P.Sawane
8	Dr.S.J.Komatwar	Cytogenetic and Molecular Investigations in Gaolao Cattle of Maharashtra	2021	Dr.M.P.Sawane
9	Dr.M.M.Chopade	Development of prediction model for length of productive life and lifetime milk yield in Frieswal cattle and it's association with type traits	2022	Dr.M.P.Sawane
10	Dr.B.S.Katkade	Genetic Diversity Analysis for economic traits in different genetic group of Gir crosses	2022	Dr.M.P.Sawane

4. Research Papers Published:

List of Research Publications:

Sr. No.	Authors	Year	Title of the Research Paper	Name of the Journal	Volume; Page Nos.	NAA S Rating

						g, if any
1	Umrikar ,U.D. and K.S. Deshpande	1985	Factors affecting milk yield per day of calving interval and productive life in Murrah buffaloes.	Indian J. Anim. Sci.,	55{9};782-785 .	
2	Umrikar ,U.D. and K.S. Deshpande	1985	Genetic studies on lactation length and dry period in Murrah buffaloes .	Indian J. Anim. Sci.,	55{ 10 }: 888-892 .	
3	Umrikar ,U.D. and K.S. Deshpande	1985	Studies on lactation milk yield per day Murrah buffaloes ..	Cherion ,	14{3} : 151-152	
4	Umrikar ,U.D. and K.S. Deshpande	1985	Factors affecting milk yield per day of age at second calving in Murrah buffaloes .	Indian J. Dairy Sci.,	38{4} :349-351	
5	Deshpande, K. S. and Umrikar , U.D.	1986	. Factors affecting breeding efficiency in Murrah buffaloes .	Indian J. Dairy Sci .,	39{1}: 76-79 .	
6	Deshpande, K. S. and Umrikar , U.D.. ,	1986	Factors affecting lifetime production in Murrah buffaloes .	Indian J. Dairy Sci	39 [4] ;478-480	
7	Umrikar ,U.D. , N. Natrajan, P. Thangaraju and P.S. Rahmathulla .	1990	Factors influencing performance traits of Gir and Jersy x crossbred cattle.	Cherion.	19{3}: 131-138.	
8	Umrikar ,U.D. , N. Natrajan, P.Kanakraj , P. Thangaraju .	1992	Influence of genetic groups and pregnancy on wool characters in sheep .	Indian Vet. J	69: 136-140.	
9	Umrikar ,U.D. , N. Natrajan, V. Thiagarajan , and A. R. Krishnan.	1994	Comparative assessment of media for chromosome studies in sheep and goats.	Cherion.	22 {2}:73-76	

10	Umrikar ,U.D., N. Natrajan,V.Thiagarajan ,and A.R. Krishnan .	1994	Chromosomal evaluation of a goat with atresia ani.	Indian Vet.J.	71 : 785 – 786	
11	Umrikar ,U.D., K.S. Deshpande, N. Natrajan, P.Thangaraju .	1993	Factors affecting Service period in Murrah buffaloes .	<i>Cherion</i>	22 (5), 195-200	
12	Sawane,M.P. and Narayankhedkar,S.G.	1994	Karyological Studies in breeding bulls.	Cherion	, 23 (2):58	
13	Sawane,M.P. and Narayankhedkar, S.G	1995	Numerical Chromosomal abnormalities in breeding bull.	Indian Vet.J.	72:595	
14	Umrikar ,U.D., N. Natrajan,V.T thiagarajan , S.G. Narayankhedkar ,and A.R. Krishnan	1995	C-and Q-banding based karyotyping of Indian domestic goat .	Indian .Vet J.,	72:1162- 1165.	
15	Umrikar, U.D., Cecilia Joseph, N. Natrajan,V.Thiagarajan , J. C.Daniel,K.Kumanan, S.G.Narayankhedkar and A.R. Krishnan.	1997	Cytogenetic study in intersex goat.	Indian Vet. J. ,	74 : 584- 586	
16	Umrikar ,U. D . , N . Natrajan , V . Thiagarajan , S . G. Narayankhedkar, and A.R.Krishnan.	1997	G-band patterns of chromosomes of Indian goat.,	Indian Vet . J	74: 448-490.	
17	Bhand, A.S.,Narayankhedkar S.G., Nehete	1997	Evalution of media for study of goat chromosomes ,	Indian Vet.J	74 : 811.	

	S.B., M.P. Sawane Umrikar,U.D.					
18	Shinde,A.S.,Nara yankhedkar S.G., Nehete S.B., M.P. Sawane, Umrikar,U.D.	1997	A study on Murrah buffalo chromosomes,.	Cherion	26 : 1-2	
19	Umrikar,U.D., S . G . Narayankhedkar .	1997	Chromosome analysis of Mandya sheep.	PKV Res. J.	{21} : 97 – 98 .	
20	Sankhe, R. D., S. B. Nehete, S. G. Narayankhedkar and U. D. Umrikar.	1998	Important economic characters and their association in dairy cattle crossbreds.	PKV Res. J..	22 (1) : 62-65	
21	Govekar, S. P., S. G. Narayankhedkar, S. B. Nehete, U. D. Umrikar, and M. P. Sawane.	1998	Studies on economic traits in zebu crosses with Jersey and Holstein Friesian.	PKV Res. J..	22 (2) : 198-200	
22	Umrikar , U . D . , N . Natrajan , V . Thiagarajan , S . G . Narayankhedkar , and A.R. Krishnan.	1998	Chromosome analysis of Indian domestic goat using high resolution GTG – banding technique .	Indian Vet. J	75 :171- 173	
23	Bhand, A.S.,Narayankhed kar S.G., Nehete S.B., M.P. Sawane, Umrikar,U.D.	1998	Analysis of goat chromosomes	Indian Vet. J	., 75 :32- 34.	
24	Nehete S.B., Narayankhedkar S.G., Umrikar,U.D.	1998	Studies on age at first calving in Friesian x Gir crosses.	. Indian Vet. J.,	75: 708 – 709.	

25	Borkar, A.B. ,G. S. Korane, Narayankhedkar S.G., M.P. Sawane, Umrikar, U.D..	1999	Association of alkaline phosphatase phenotypes with some of The economic traits in poultry	Indian Vet . J.	76 : 23 .	
26	Suryavanshi, A, Kanadkhedkar ,H. and Umrikar, U.D.	2004	Chromosome analysis of domestic dog	Indian Vet.. J,	81: 1071- 1073.	
27	Patil,M.P., Nehete,S.B., Pawar,V.D., Bangar,M.G., Pingle,M.S. and Umrikar,U.D.	2004	Chromosome analysis of domestic rabbit.	J. Bombay Vet. Coll.,	12(1& 2):28-29	
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List of Marathi and Popular articles published:

Sr. No.	Name of the author	Year	Title	Magazine	Volume & Pg. No.
1	सवाणे एम. पी., उमरीकर यु. डी., नारायणखेडकर एस. जी.	1996	गायी व म्हशीचे संगोपन त्यातील बारकावे	दोतकी व दोतकरी	613 ते 14
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3	सवाणे एम. पी., उमरीकर यु. डी., नारायणखेडकर एस. जी	1996	वराह पालन	ट्रॅम्बे प्रदोती पत्रिका 29;1द्व	10 ते 12
4	सवाणे एम. पी., उमरीकर यु. डी., नारायणखेडकर एस. जी.	1996	वराह पालन	ट्रॅम्बे प्रदोती पत्रिका 29;2द्व	5 ते 7
5	सवाणे एम. पी., नारायणखेडकर एस. जी.	1997	Importorance of Sire Evaluation in goat breeding”	दोतकी व दोतकरी	पान क्र 12 ते 13
7	सवाणे एम. पी., उमरीकर यु. डी., नारायणखेडकर एस. जी.	1997	दूधाळ जनावरांची खरेदी व घ्यावयाची काळजी	दोतकी व दोतकरी	5 ते 7
8	उमरीकर यु. डी., सवाणे एम. पी., नारायणखेडकर एस. जी.	1997	पद्धु अनुवंदा प्रदास्त्रचे काही प्रगत पद्धतीचे महत्व	दोतकी व दोतकरी	8 ते 12
9	उमरीकर यु. डी., नारायणखेडकर एस. जी.सवाणे एम. पी.,	1997	दुग्धव्यवसायासाठी गाई किंवा म्हदी	दोतकी व दोतकरी	9 ते 12
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11	उमरीकर यु. डी., सवाणे एम. पी., नारायणखेडकर एस. जी.	1997	दूग्धव्यवसायाकरिता वैरण 3	दोतकी व दोतकरी	13 ते 14

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14	सवाणे एम. पी., उमरीकर यु. डी., नारायणखेडकर एस. जी.	1998	मांसासाठी ससे पालन	ट्रॅम्बे पुढोती पत्रिका 3;	2 ते 4
15	नारायणखेडकर एस. जी., सवाणे एम. पी.	1998	“Goat farming is a tool for economical upliftment of farmers”	Kisanshakti,	
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21	डॉ. शंकर नारायणखेडकर डॉ. विक्रांत पवार	२००३	लाल क्रांती शेतकऱ्यांसाठी नवी दिशा	बळीराजा	मार्च २००३ : ३०-३८
22	डॉ. शंकर नारायणखेडकर डॉ. विक्रांत पवार	२००३	ससे पालन : शेकऱ्यांसाठी एक जोड धंदा.	बळीराजा	मार्च २००३ : ६८ -७२
23	डॉ. शंकर नारायणखेडकर डॉ. विक्रांत पवार	२००३	वराह पालन व्यवसाय : पशुसंवर्धनाला नवी दिशा	गोडवा	फेब्रुवारी २००३ : ३४ -३७
24	डॉ. शंकर नारायणखेडकर डॉ. विक्रांत पवार	२००३	दुधाळ जनावरे घेताना घ्यावयाची काळजी	अग्रदाता	एप्रिल -जून २०२३ : ७७ - ७९

25	डॉ. शंकर नारायणखेडकर डॉ. विक्रांत पवार	२००३	दुधाळ जनावरांचे उन्हाव्यातील व्यवस्थापन	धान्यलक्ष्मी	जुलै २००३: १५- १००
26	डॉ. शंकर नारायणखेडकर डॉ. विक्रांत पवार	२००४	दूध उत्पादनातील खाद्यावरचा खर्च कसा कमी करावा	बळीराजा	फेब्रुवारी २००४ : ८५ -९०
27	डॉ. विक्रांत पवार	२००४	अति पर्जन्य वृष्टीच्या भागात बंदिस्त शेळीपालन व्यवस्थापन	कृषीपणन मित्र	ऑगस्ट २००४ : १४-१७
28	डॉ. महेश इंगवले डॉ. विक्रांत पवार	२००७	फायदेशीर शेळी पालन व प्रजनन व्यवस्थापनाचे महत्व	कोकण विकास :	दिवाळी विशेषांक २००७ : १४-१७
29	डॉ. उदय उमरीकर, डॉ. विक्रांत पवार, डॉ. महादेव सवाणे, डॉ. साजिद अली	२०१०	शेळ्यांचे अनुवंशिक रोग,	आर. सी. एफ. कृषी पत्रिका	मार्च २०१०: १७-२०
30	डॉ. उदय उमरीकर, डॉ.आकाशाडोईफोडे डॉ. महादेव सवाणे, डॉ. विक्रांत पवार,	2014	अनुवंशिक अन्वेषण प्रयोगशाळेचे पद्धुधन विकास व दुग्धव्यवसाय क्षेत्रातील अर्थकारणात अनन्यसाधारण महत्व	Agrotech January	पान क्र 40
31	डॉ. उदय उमरीकर, डॉ. विक्रांत पवार, डॉ. महादेव सवाणे,	२०१५-१६	आनुवंशिक अन्वेषण प्रयोगशाळेचा पशुधन व दुग्ध व्यवसाय क्षेत्रातील अर्थकारणात मोलाचा सहभाग	एंग्रोटेक	२०१५-१६
32	डॉ. विक्रांत पवार, डॉ. महादेव सवाणे,	२०२०	संकरित गाईची उत्पादन वाढीची सूत्रे	एंग्रोवन	३०.०६.२०२०
33	डॉ. विक्रांत पवार, डॉ. महादेव सवाणे,	२०२१	गोवंश संकरीकरण सद्यास्थिती व धोरणात्मक बदल	गोडवा मासिक,	जानेवारी २०२१ : ५६-६१
44	डॉ. महादेव सवाणे, डॉ. विक्रांत पवार,	२०२१	गाई म्हशीतील व्यंथत्व व त्यांचे दुग्ध व्यवसायातील महत्व	गोडवा मासिक,	जानेवारी २०२१ : ५०-५२
35	डॉ. विक्रांत पवार, डॉ. महादेव सवाणे,	२०२१	शेळीपालन व्यवसाय अर्थशास्त्र व विपणन व्यवस्थापन	एंग्रोटेक मासिक,	मार्च-एप्रिल २०२१ : ५४-५७
36	डॉ. विक्रांत पवार, डॉ. महादेव सवाणे,	२०२२	दुधाळ गाई व म्हशींच्या प्रमुख जाती	मैत्री स्मरणिका :	२०२२: ५-१७
37	डॉ. विक्रांत पवार, डॉ. महादेव सवाणे,	२०२२	गोवंश संकरीकरण व अनुवंश सुधार	मैत्री स्मरणिका :	२०२२: १८-२२

38	डॉ.संदीप कोमटवार डॉ. प्राजक्ता जाधव., डॉ. एम. पी. सवाने	2023	असाधारण रंगसूत्रामुळे जनावरामध्ये होणारे परिणाम व उपाय	अग्रोवन पेपर	पृष्ठ क्र.10
39	डॉ. प्राजक्ता जाधव, डॉ.संदीप कोमटवार	2023	शेळ्यातील पैदास पद्धतीचे तंत्र	अग्रोवन पेपर	पृष्ठ क्र. 12
40	डॉ. प्राजक्ता जाधव, डॉ.संदीप कोमटवार	2023	ओळख भारतातील श्वान प्रजातींची	अग्रोवन पेपर	पृष्ठ क्र .12

5. Research Recommendations

Sr. No.	3
Year	2014
Project Title	Establishment of Cytogenetic Investigation laboratory
Investigators	PI: Dr.U.D.Umrikar, CO-PI: Dr.M.P.Sawane, Dr.V.D.Pawar, Dr.A.Y. Doiphode
Recommendations	It is recommended that there is urgent need to establish a network of clinical cytogenetic laboratories/Referral Laboratories India with required manpower in strengthening National Livestock Development Programme.

Sr. No.	01
Year	2016
Project Title	Investigation of Genetic Disorders in Cattle and Buffalo Breeding Bulls of Maharashtra State
Investigators	Dr.M.P.Sawane., Dr.U.D.Umrikar
Recommendations	All the bull mothers and breeding bulls of cattle and buffalo used for AI or natural service be invariably checked for cytogenetic defects and molecular genetic disorders viz. BLAD, Bovine Citrullinemia, DUMPS and Factor XI_deficiency.

6. MOU signed by the Colleges

Sr. No.	MOUS Between	Date of signing	Place	Duration
	Party – I & Party - II			

8. Research Priorities / Thematic areas: Department Wise

- Identification and selection of elite germplasm in Livestock of Konkan region through MAS approach
- Preservation and development of Indigenous livestock breeds of Maharashtra state

9. Significant Research Achievement:

- **FISH** (Fluorescent in-situ Hybridization) techniques were successfully applied to confirm the new rt (8;29) using pacentromeric bovine FISH probes.
- Department has completed cytogenetic characterization of cattle, buffalo, sheep Goat, Poultry, Rabbit and wild animals.
- Recorded new Robertsonian translocation (8;29) in One Gaolao breeding bull and 12 progenies (9 male and 3 female calves) out of a total 27 progeny sired by him.
- Identified one carrier HF cross-breeding bull for BLAD, which was being used at Semen station in Mumbai for four years.
- Analyzed more than 1500 animals from the year 2012 to 2018 form AHD.MS, PLDB Punjab and Farmers.
- Identifying mutations in BRCA2 gene: Sequence analysis revealed 9 mutations (7 Missense and 2 Silent). (AAT→GAT i.e. N669D), (GAC→GAT i.e. D1322D), (TCA→TCT i.e. S1437S), (GAG→CAG i.e. R908T) were reported for the first time in canine BRCA2 gene.
- Identified polymorphism for the first time in Indian camel breeds at important milk protein loci viz. α -s1 casein, β -casein and k - casein. The association of the detected genetic variation in Indian dromedary breeds with the quality and concentration of specific proteins in general and milk proteins in particular would be of great help in giving this study a practical shape for the benefit of the camel farmers.

Polymorphisms Recorded in Growth Related Genes in Sheep and Goat:

- **Single Nucleotide Polymorphism (C>T)** in exon-3 of **POU1F1** gene and ***AhuI* PCR-RFLP polymorphism** at exon-6 and its flanking region were identified in Osmanabadi and Sangamneri goat, with a significant association between birth weight and observed polymorphism.
- PCR-RFLP analysis revealed **polymorphism** at exon1C/1D and intervening intron region of **CAST** gene in **Deccani and Madgyal sheep** responsible for desired carcass traits.
- PCR-RFLP analysis of Myostatine gene exon 1 revealed polymorphism in Osmanabadi breed.