

DIRECTORATE OF RESEARCH SERVICES
NANAJI DESHMUKH VETERINARY SCIENCE UNIVERSITY
JABALPUR

The Directorate of Research Services was established on 3rd November, 2009, as a constituent unit along with the inception of Nanaji Deshmukh Veterinary Science University. The mission of Directorate is to undertake, coordinate and implement research activities to enhance productivity and sustainability of livestock, poultry and fisheries for the benefit of rural livelihood in the state of Madhya Pradesh.

Mandates

- To design and develop research schemes for formulation of need-based and field oriented research projects in various disciplines of Veterinary and Animal Sciences.
- To plan, coordinate and implement the research programmes for the improvement of livestock, poultry and fisheries in Madhya Pradesh.
- To generate financial support from central and state funding agencies for development of infrastructure and implementation of research activities.
- To develop effective research linkages with State/ National/ International organizations for technology exchange and entrepreneurship development.

Directorate setup

Cader	Post/Position	Sanctioned	Filled
Technical	Director Research Services	1	0
	Deputy Director Research	2	2
	Technical Officer	1	1
Non-Technical	PS to DRS	1	0
	Junior Stenographer	1	1
	Steno-typist Grade III	2	2
	Peon	2	1
Total		10	7

Constituent colleges and Centre/School of the university

Colleges:

- College of Veterinary Science & Animal Husbandry, Jabalpur
- College of Veterinary Science & Animal Husbandry, Mhow
- College of Veterinary Science & Animal Husbandry, Rewa
- College of Fishery Sciences, Jabalpur

Centre/School:

- Animal Biotechnology Centre, Jabalpur
- School of Wildlife Forensic and Health, Jabalpur

Officers Posted at Directorate of Research Services

S. No.	Name	Designation
1.	Dr. Rajesh Kumar Sharma	I/c, Director Research Services
2.	Dr. Akshay Garg	Deputy Director Research/Associate Professor
3.	Dr. Poonam Shakya	Deputy Director Research/Associate Professor
4.	Dr. R. P. Singh	Technical Officer/ Assistant Professor

TOTAL FINANCIAL OUTLAY OF DIFFERENT PROJECTS

S.No.	Particulars	Number of Projects	Budget (In Lakh)
1.	Ongoing Research Projects	57	3657.84
2.	Institutional Research Projects	09	42.00

ONGOING RESEARCH PROJECTS

A total of **57** externally funded and **14** institutional research schemes with a financial outlay of **Rs. 3699.84 lakhs** are in operation at the university (2025-26).

List of Ongoing Research Projects

S No	Title of Project	Name of Funding agency	Name of PI	Budget (In Lakh)
1.	Establishment of AI training institute at the NDVSU	RGM	Dr. Akshay Garg	448.30
2.	Anatomical and radiographic study on freshwater turtles of M.P. region	PCCF (CAMPA)	Dr. Rakesh Kumar Barhaiya	10.30
3.	Strengthening the rescus facility for scheduled wild animals of M.P.	PCCF (CAMPA)	Dr. Amol Rokde	11.00
4.	Application of forensic entomology in death investigation of wild animal	PCCF (CAMPA)	Dr. K.P. Singh	22.10
5.	Screenin of morbid samples for canine distemper virus and canine adeno virus infection in wil carnivores	PCCF (CAMPA)	Dr. Nidhi Rajput	9.35
6.	Studies on the Health, welfare, human interface and population management of non-human primates	PCCF (CAMPA)	Dr. Somesh Singh	21.79

	(Duration 2 Years)			
7.	Monitoring the anthropogenic and environmental impacts on the status, health and ethology of wetland birds with special reference to restoration of wetland habitats (Duration 2 Years)	PCCF (CAMPAA)	Dr. Somesh Singh	9.68
8.	Optimizing Superior Buck use in Up-gradation of Non-Descript Goats with Seasonal Fertility Investigation and Semen Cryopreservation	NLM	Dr. G.K. Mishra	225.94
9.	Performance Appraisal of Large White Yorkshire Crossbred Pigs of Two Exotic Inheritance and Characterization of Local Pigs of Mahakaushal Region of Madhya Pradesh	NLM	Dr. Biswajit Roy	185.37
10.	Tick control practice and survey of Acaricide Resistance in cattle tick <i>Rhipicephalus</i> (Boophilus) <i>microplus</i> and <i>Hyalomma anatolicum</i> in selected areas of Rewa district of MP.	MPCST, Bhopal	Dr. Rinesh Kumar	5.48
11.	Screening of cattle and buffalo breeding bulls for A1/A2 variant of Beta casein gene in M.P. State of India	MPCST, Bhopal	Dr. Mohan Singh Thakur	8.60
12.	Evolving potential strategies for non-surgical contraception's in male dogs	MPCST, Bhopal	Dr. S.N. Shukla	9.95
13.	Study of Methicillin resistant <i>Staphylococcus aureus</i> in Bovine-Human Interface	MPCST, Bhopal	Dr. Neeraj Shrivastava	5.25
14.	Study of Antimicrobial Resistance and Alternative therapy against beta lactamase producing Enterobacteriaceae group of bacteria in broilers and bovines in Rewa	MPCST, Bhopal	Dr. Arpita Shrivastava	6.18
15.	Effect of herbal drugs on arsenic and mercury induced toxicity and cancer in Fishes	MPCST, Bhopal	Dr. Madhuri Sharma	6.70
16.	Use of traditional ingredients to improve the functional value of meat product developed from Kadaknath	MPCST, Bhopal	Dr. N. K. Nayak	8.60

17.	Epidemiological investigation of Brucellosis in Human and Animal population of Vindhya region of Madhya Pradesh	MPCST, Bhopal	Dr. Yogesh Chatur	9.80
18.	Surveillance, Molecular Detection and Development Of diagnostic for Lumpy Skin Disease virus	MPCST, Bhopal	Dr. Vandana Gupta	9.98
19.	Uncovering the genomic features and signatures of selection in Kadaknath poultry breed of Madhya Pradesh and its crosses Narmadanidhi and CARI-Shyama.	MPCST, Bhopal	Dr. Akansha Singh	7.95
20.	Experimental and clinical evaluation of stromal vascular fraction for the treatment of degenerative diseases in animals	MPCST, Bhopal	Dr. P.D.S. Raghuvanshi	9.68
21.	Milk micro RNA (miRNA) expression as a potential biomarker for early detection of bovine subclinical mastitis	MPCST, Bhopal	Dr. Aditya Mishra	8.00
22.	Targeted selective treatment of haemonchus contortus via ocular mucus membrane assessment for socioeconomic upliftment of farmers	MPCST, Bhopal	Dr. Vivek Agrawal	7.8
23.	Therapeutic efficacy of bacteriophage lysate cocktail as an alternate of antibiotics to control chronic mastitis in cattle	MPCST, Bhopal	Dr. Sanjay Shukla	6.8
24.	Comparative Osteo-morpho-metrical studies on the skull of Wild Life Animals as an Aid in Wildlife Forensic	MP Forest Department/ MP Tiger Foundation Society	Dr. Devendra Podhade	9.50
25.	Viral and Bacterial metagenomic analysis in feces of wild tigers of Madhya Pradesh	MP Forest Department/ MP Tiger Foundation Society	Dr. Kajal Jadav	9.00
26.	Surveillance of Infectious diseases of wild animals of Pench Tiger Reserve	MP Forest Department	Dr. K. P. Singh	9.00
27.	Centre for Wildlife Forensic & Health, NDVSU, Jabalpur	MP Forest Department	Director, SWF&H	413.25
28.	Establishment of Laboratory for embalming of ethically sourced animals and museum up gradation	MANDI Board, Bhopal	Dr. Rakhi Vaish	107.53

29.	Establishment of Diagnostic Facility for control of Infertility in farm animals	MANDI Board, Bhopal	Dr. G.K. Mishra	205.00
30.	Establishment of Advance Diagnostic Toxicological Centre	MANDI Board, Bhopal	Dr. SM Tripathi	255.00
31.	Limb Prosthesis in Indigenous Cattle of Madhya Pradesh	MANDI Board, Bhopal	Dr. Shobha Jawre	217.99
32.	Formulation of Area Specific micronutrient supplements for prevention of common reproductive and metabolic disorders in dairy animals of Malwa region of M.P.	MANDI Board, Bhopal	Dr. Ashok Patil	114.00
33.	Milk and Milk Product quality testing laboratory to ensure safety of Public health	MANDI Board, Bhopal	Dr. R.V. Singh	215.00
34.	Optimizing the reproductive efficiency of dairy animals in Vindhya region of Madhya Pradesh by strengthening infrastructure for training on Artificial Insemination	MANDI Board, Bhopal	Dr. Deepak Ningwal	164.50
35.	Establishment of Biosafety Level-2 Laboratory and Lab Animal Suite	MANDI Board, Bhopal	Dr. Neeraj Shrivastava	324.80
36.	Strengthening of Veterinary Clinical Complex for Animal Disease Diagnosis and Treatment with Empowerment of Field Veterinary Professionals of the Madhya Pradesh	MANDI Board, Bhopal	Dr. Dhermandra Kumar	137.50
37.	Survey, documentation of ITK and Phenotypic characterization of Non-descript breed of cattle in Narmadapuram division of M.P.	M.P. Biodiversity Board, Bhopal	Dr. Mohan Singh Thakur	10.08
38.	Survey, Evaluation and Characterization of local goat of Vindhya Region	M.P. Biodiversity Board, Bhopal	Dr. Amit Kumar Jha	9.20
39.	Molecular characterization of Mulki cattle of betul district of MP	M.P. Biodiversity Board, Bhopal	Dr. Mohan Singh Thakur	8.89
40.	TSP- Socio-economic up-liftment of tribal population of Jabalpur Division of Madhya Pradesh by sustainable livestock production	ICAR, New Delhi	Dr. Hari R.	8.00

	system			
41.	Farmers Empowerment through improved, integrated farming practices (Farmer's First)	ICAR, New Delhi	Dr. Hari R.	12.00
42.	Outreach Programme on Monitoring of drug residues and environmental Pollutants	ICAR, New Delhi	Dr. K. Shrman	0.95
43.	Outreach Programme on Ethno Veterinary Medicine	ICAR, New Delhi	Dr. Vidhi Gautam	3.00
44.	AICRP on Development of suitable colour variety of birds for rural poultry production.	ICAR, New Delhi	Dr. Girraj Goyal	92.52
45.	All India Co-ordinated Research Project on Pigs	ICAR, New Delhi	Dr. Biswajit Roy	44.56
46.	Study on phenotypic characterization, Biometry and Management of local Goat population in M.P. districts of Seoni, Chhindwada and Balaghat	DST, SERB	Dr. Rajesh Vandre	11.11
47.	Deciphering the functional role of TGF-beta superfamily members in corpus luteum of goat applying CRISPER cas9 in cultured caprine luteal cells.	DST, SERB	Dr. Tripti jain	29.78
48.	Study to understand the effect of selective pressure under various growth conditions on the of antibiotic resistance pattern in reference to its reversal or increase in poultry isolate of ceftriaxone resistant non typhoid Salmonella (CR-NTS) mediated by plasmid mediated AmpC and ESBL genes	DST, SERB	Dr. Baleshwari Dixit	28.00
49.	Development and validation of CRISPR/CAS12a-based point-of-care diagnostic platform for detecting Theileria annulata and Theileria orientalis in bovines and their tick vectors	DST- ANRF	Dr. Rupesh Verma	46.35
50.	Creating awareness in PVTGs about the risk of zoonotic tuberculosis impacting the health of human and animals	DST	Dr. Yamini Verma	51.85
51.	The combined effect of Quercetin	DBT	Dr. Anil Gattani	5.00

	and Platelet Rich Plasma in semen extender for improved antibacterial efficacy and membranes repairing potential of cryopreserved buck semen			
52.	Development of nucleic acid based nano biosensors for multiplexed point of care testing (xPOCT) of bacterial reproductive diseases in breeding cattle	DBT	Dr. Tripti jain	22.24
53.	Identification and Engineering of Immunodominant Capsid Epitopes of Inclusion Body Hepatitis Virus for the Development of ELISA and Lateral Flow–Based Diagnostic Assays	MPCST	Dr. Mohan Singh Thakur	9.60
54.	Gastrointestinal parasitic survey including subclinical parasitism and Novel use of anthelmintics in Gaushalas in around rewa, m.p.	MPCST	Dr. Alok Kumar Singh	8.52
55.	Development and evaluation of area-specific mineral mixture for improving health and productivity of Nimari Cows	MPCST	Dr. Ashok Kumar Patil	9.50
56.	A study to explore Animal fat based on Cardio-Metabolic parameters to suggest at fat source for Sustainable Health	MPCST	Dr. Pradeep Kumar Singh	6.85
57.	Inegrated comparative analysis of gross morphology ,histomorphology and molecular profiles of muscles relating to meat quality in Kadaknath and white leghorn chickens	MPCST	Dr. Yogita Pandey	9.73
Total Outlay				3657.84

INSTITUTIONAL RESEARCH PROJECTS (Year 2025-26 to till date)

S No	Title of Project	Name of Funding agency	Name of PI	Budget (In Lakh)
1.	Leveraging ICT-Enabled, Local-Specific Audio-Visual Vlogs to address Knowledge gaps among livestock farmers	Institutional (NDVSU)	Dr. Ruchi Singh	3.00
2.	Development of nucleic acid-based nano biosensors for point-of-care detection of bovine citrullinemia carriers in breeding cattle	Institutional (NDVSU)	Dr. Asit Jain	3.00
3.	Field validation of a revolutionary colourimetric LAMP assay: Breaking diagnostic barriers to tackle the multi-billion rupee burden of caprine theileriosis	Institutional (NDVSU)	Dr. Vivek Agrawal	3.00
4.	Exploration of neurotropic factors from animal by-products and their characterization	Institutional (NDVSU)	Dr. Serlene Tomar	3.00
5.	Elucidating the effect of heat stress on expression profile of early implantation related molecules in in-vitro cultured caprine uterine epithelial cells isolated using cytobrush technique	Institutional (NDVSU)	Dr. Sriti Pandey	3.00
6.	Haemato-biochemical and mineral profiling in cattle and buffaloes and its correlation with fodder and soil mineral composition in the Vindhya region of MP	Institutional (NDVSU)	Dr. Aditya Agrawal	3.00
7.	Surveillance and detection of a neglected zoonotic disease Q fever etiological agent <i>Coxiella burnetii</i> in bovines, goat and dogs	Institutional (NDVSU)	Dr. Anju Nayak	3.00

8.	Development of a point-of-care recombinase polymerase amplification (RPA) assay for detection of anaplasma marginale in bovines	Institutional (NDVSU)	Dr. Suman Kumar	3.00
9.	Diagnostic algorithms of canine cognitive dysfunction syndrome and its intersection with animal welfare	Institutional (NDVSU)	Dr. Amita Tiwari	3.00
10.	Development and Evaluation of a Disposable vulvar protective barrier sheath to reduce contamination during artificial insemination in dairy animals (NDVUS Repro shield)	Institutional (NDVSU)	Dr. Pushkar Sharma	3.00
11.	Environmental Surveillance of Antimicrobial Resistance Genes (ARGs) in Veterinary and Animal Husbandry, Effluents.	Institutional (NDVSU)	Dr. Revindra S. Tayde	3.00
12.	Development and evaluation of Ery Gene based PCR and real time PCR for DIVA diagnosis of Brucellosis in Rewa district	Institutional (NDVSU)	Dr Ankush Kiran Niranjan	3.00
13.	Patho-epidemiology and molecular characterization of porcine picorna viruses for effective management of piglet mortality	Institutional (NDVSU)	Dr Shailesh Kumar Patel	3.00
14.	Preliminary development of isothermal amplification assays for inclusion body hepatitis virus detection in poultry	Institutional (NDVSU)	Dr. Bikash Ranjan Prusty	3.00
Total amount (Rs. in Lacs)				42.00

COMPLETED RESEARCH PROJECTS SINCE INCEPTION, NDVSU, JABALPUR

Sr. No.	Title of the Project	Funding Agency
1	Scheme on Goat pox and contagious pustular dermatitis	ICAR, New Delhi
2	AICRP On Poultry evaluation and improvement of the kadaknath breed of chicken and to maintain as a pure line	ICAR- DPR, Hyderabad
3	Investigation in to immunology of schistosome infection with a view of evolving a vaccine	ICAR, New Delhi
4	Studies on A Flatoxicosis	ICAR, New Delhi
5	Utilization of agricultural by-product and industrial waste material for evolving economic ration for live stock	ICAR, New Delhi
6	Estamation and predication of energy values for feed of ruminants	UGC, New Delhi
7	Superficial and deep mycosis in domestic animals.	ICAR, New Delhi
8	Studies on distribution of aflatoxin in tissue of grower and layer birds and in eggs	ICAR, New Delhi
9	Zoonotic potentials, zooprophyllaxis, serodiagnosis and quick identification of some mammalian schistosomes of Indian origin	ICMR, Bhopal
10	Complete energy metabolism in poultry	ICAR, New Delhi
11	Studies on Sarcocystis and Sarcocystosis in goats	ICAR, New Delhi
12	Study the effect of mic on reproductive performance and general health of buffalo and Poultry	ICAR, New Delhi
13	Physiological adaptation of different genotypes of crossbred cattle	ICAR, New Delhi
14	Nutritional requirements and nutritional crossbred efficiency of different genotypes of cattle for growth and milk production	ICAR, New Delhi
15	Studies On Clinico-Biochemical And Histochemical Changes Inavian Spirochaetosis	MPCST, Bhopal
16	All India coordinated research project on Poultry Nutrition	ICAR, New Delhi
17	Development of Schistosoma spindale and S. indicum in the laboratory and their diagnosis in final hosts	ICMR, Bhopal

18	National Agriculture Research Project on Parasitic Diseases	ICAR, New Delhi
19	Diagnosis of bacterial and viral diseases particularly in cross breed animals.	NARP (World Bank)
20	Evolving economic rations for lactating growing and working animals	NARP (World Bank)
21	To study the toxic effect of acaricides on goats	MPCST, Bhopal
22	Studies On The Pathology Of Avian Inflammation	ICAR, New Delhi
23	Nutritional and pharmacological qualities of horse gram	MPCST, Bhopal
24	Development for complete feed system for ruminants in tribal areas	MPCST, Bhopal
25	Epidemiology of Gastrointestinal parasites of dairy animals in and around Jabalpur	NDDDB. Karnal Hariyana
26	Ad- Hoc project on nutritional requirements and nutritional efficiency of different genotypes in crossbred cattle	ICAR, New Delhi
27	Indian Wildlife Health Co-operative programme	Indo- US collaborative project
28	Network programme on micronutrients in nutrition and production	ICAR, New Delhi
29	Retrospective survey of diseases In free range and captivity wild animals of central india	Wildlife Institute of india Dehradun
30	NF Project on Studies on strain Identification, Epidemiology, Diagnosis, Chemotherapy and Zoonotic Potentials of Indian Schistosomes	ICAR, New Delhi
31	Phase III Clinical Trials of CDRI Compound 81-470	CDRI, Lucknow
32	Contagious respiratory disease in poultry.	MPCST, Bhopal
33	Survey evaluation and conservation of malvi breed of madhya pradesh	ICAR, New Delhi
34	Genetic evaluation and characterization of nimari cattle through survey of quantitative and qualitative traits and cytogenetic, immunogenetics and biochemical polymorphic markers in m.p.	ICAR, New Delhi
35	Development of complete feed system for crossbred cattle	ICAR, New Delhi

36	Wildlife Health Monitoring disease diagnosis and research cell	State Forest Department, Govt. of Bhopal
37	Studies on The Pathology of Inflammation In Buffalo	ICAR, New Delhi
38	All India Coordinated Research Project on Gastro intestinal Parasitism	ICAR, New Delhi
39	NATP (MM) Diagnosis of Parasitic Diseases of Domestic Animals (Schistosomiasis)	ICAR, New Delhi
40	National Agricultural Technology Project On Weather Based Animal Disease Forecasts	ICAR, New Delhi
41	Utilization of coarse cereals and by products of oilseed based cropping system for poultry production	NATP
42	Systematic Survey And Genetic Characterization Of Kadaknath Breed Of Poultry Using Specific Microsatellite Dna Markers	ICAR, New Delhi
43	AICRP on- improvement of feed resources and nutrient utilization for raising animal production	ICAR, New Delhi
44	Surveillance of infectious and parasitic diseases of native wild animals of Pench Tiger Reserve	State Forest Department, Govt. of Bhopal
45	All India Network programme on “Improvement of Feed Resources and Nutrient Utilization in Raising Animal Production”	ICAR, New Delhi
46	Evaluation of draughtability and related physio-biochemical changes in malvi and nimari bullock of M. P.	ICAR, New Delhi
47	Genetic characterization of four indigenous cattle breeds found in M.P. Using molecular markers	DBT, New Delhi
48	Ad- Hoc project on studies on utilization of soybean straw in crossbred lactating Cow	ICAR, New Delhi
49	Survey, evaluation and characterization of kenkatha breed of cattle	ICAR, New Delhi
50	Investigation of infectious causes of death in goat's cattle and poultry reared in tribal areas of MP.	M.P. Rural Livelihood Project, Govt. of Bhopal
51	Molecular probing of infectious cause of death in neonatal calves.	MPCST, Bhopal

52	Development of goat having knocked down mytosin gene through RNA interface technology to enhance	ICAR, New Delhi
53	Identification And Validation Of Indigenous Medicinal Plants For Anthelmintic Efficacy In Livestock And Poultry In Tribal Areas Of Madhya Pradesh	M.P. Rural Livelihood Project, Govt. of Bhopal
54	Studies on antistress, hepatoprotective and anti-diabetic activity of Noni (<i>Morinda citrifolia</i>) in experimental animals	World Noni Research Foundation, Chennai, Tamil Nadu
55	Clinical Trials Of Ayurvedic Preparation In Dogs For Antidandruff Activity	Central council for research in Ayurveda and Siddha, New Delhi
56	Surveillance and documentation of itk practices in tribal arias of hoshangabad district of mp	National Innovation Foundation, Ahmedabad
57	All india network programme on ethno-veterinary medicine	ICAR, New Delhi
58	Icar network project on livestock and poultry product safety	ICAR, New Delhi
59	Establishment of Advance Tuberculosis Diagnostic Centre for Domestic and Wildlife Animals of Madhya Pradesh	RKVY, Bhopal
60	Development of impromised vaccine for prevention of bacterial diseases of dairy animals in Madhya Pradesh	RKVY, Bhopal
61	Studies on prevalence chromosomal aberrations and their effects on reproductive performance of cattle and buffaloes in Madhya Pradesh	RKVY, Bhopal
62	Evaluation of immuno-modullatory activity and safety of Panchagavya ghrita.	Central council for research in Ayurveda and Siddha, New Delhi
63	Exploration, Validation, Production and Marketing of Herbal Veterinary products in tribal areas of Madhya Pradesh.	RKVY, Bhopal
64	Association of IL-8 receptor gene polymorphism with subclinical and clinical mastitis in dairy cattle.	RKVY, Bhopal
65	In Vitro Anthelmintic Validation Of Indigenous Plants Against Gastro-Intestinal Parasites	National Innovation Foundation, Ahmedabad

66	Strengthening of facilities for development of improvised vaccines against bacterial diseases of dairy animals in M.P.	RKVY, Bhopal
67	Strengthening facilities for consevation and scientfic evaluation of kadaknath breed of fowl	RKVY, Bhopal
68	Seroprevlence and molecular diagnosis of leptospira in animals & humans	MPCST, Bhopal
69	Evaluation of antibacterial and immuno-modulatory activity of Cow urine with wheat grass and aloe-vera in poultry	MPCST, Bhopal
70	Development of therapeutic strategies for the management of anoestrus in dairy buffaloes of Jabalpur district	MPCST, Bhopal
71	Molecular diagnosis of infectious bronchitis of poultry and development of database	DBT, New Delhi
72	Conservation and scientific evaluation of Kadaknath breed of fowl.	RKVY, Bhopal
73	Sero-surveillance and molecular diagnosis of leptospira in animals and humans	MPCST, Bhopal
74	Imporving livelihood of tribal people of madhya pradesh through goat farming practices	MPCST, Bhopal
75	Establishment and notification of advanced animal feed quality testing laboratory in Madhya Pradesh	RKVY, Bhopal
76	Developmental potency of Parthenogenetic goat embryos	ICAR, New Delhi
77	Establishment of model Herbal Garden and popularization of scientific practices for cultivation of medicinal plants among farmers of Rewa	MP Biodiversity Board, Bhopal
78	Niche Area of Excellence on Wildlife Forensic & Health	ICAR, New Delhi
79	Upgrading the local non-descript goat population using Sirohi and Barbari breeds of goat in Jabalpur and Mandla District of Madhya Pradesh	RKVY, Bhopal
80	Formulation of Area Specific micronutrient supplements for prevention of common reproductive and metabolic disorders in dairy animals of Malwa region of M.P.	MPCST, Bhopal
81	Surveillance of Tuberculosis on Captive Felids of Madhya Pradesh	State Forest Department, Govt. of Bhopal

82	Establishment of indigenous cattle research centre for development of panchgavya products	RKVY, Bhopal
83	Strengthening of animal biotechnology centre for improvement of livestock in Madhya Pradesh	RKVY, Bhopal
84	Studies on Anti-inflammatory Antibacterial and Immuno-modulatory activity of Noni (Morinda citrifolia) in experimental animals.	World Noni Research Foundation, Chennai, Tamil Nadu
85	Molecular diagnosis and therapeutic strategies against Contagious Caprine Pleuropneumonia (CCPP) in goats	MPCST, Bhopal
86	Analysis of heat shock proteins (HSP70) expression during cyclic heat stress in Broiler chickens and amelioration of heat stress by Ascorbic acid supplementation	MPCST, Bhopal
87	Studies on disease prevalence and haemato-biochemical parameters of Gharial	State Forest Department, Govt. of Bhopal
88	Investigation On Infectious And Non-Infectious Causes Of Calf Mortality	RKVY, Bhopal
89	Special programme for dairy development (protein supplementation)	RKVY, Bhopal
90	All India Coordinated Research Project on Blue tongue	ICAR, New Delhi
91	Production of high quality embryos by OPS-IVF improving productivity and conservation of indigenous breeds of cattle and buffalo	RKVY, Bhopal
92	Establishment of Disease diagnostic Laboratory for Birds of Madhya Pradesh	MANDI Board, Bhopal
93	Surveillance of diseases of Tigers along with nutritional and microbial quality of meat fed to tigers.	State Forest Department, Govt. of Bhopal
94	Augmentation of fracture healing in goat using regenerative medicine and bone substitute	MPCST, Bhopal
95	Improving livelihood of tribal people of Madhya Pradesh through goat farming practices	MPCST, Bhopal
96	Relationship of MHC gene Polymorphism in with Coccidial resistance in Chicken	MPCST, Bhopal
97	Bacteriological examination of animal origin food products to ascertain the food safety	MPCST, Bhopal
98	Isolation, identification and molecular characterization Ornithobacterium rhinotracheale in poultry	MPCST, Bhopal

99	Surveillance of diseases in Native Wild Animals of Panna Tiger Reserve	State Forest Department, Govt. of Bhopal
100	Reference Laboratory for monitoring of Caprine Mastitis in M.P.	MANDI Board, Bhopal
101	Bacteriological examination of animal origin food products to ascertain the food safety	MPCST, Bhopal
102	Characterization Of Acute Phase Response In Pneumonic Pasteurellosis	MPCST, Bhopal
103	Surveillance of diseases in Native Wild Animals of Pench Tiger Reserve	State Forest Department, Govt. of Bhopal
104	Establishment of super specialty centre for large animal Orthopaedics	MANDI Board, Bhopal
105	Comparative studies on organoleptic and nutritional effects on kadaknath birds in different agroclimatic zones	MP Biodiversity Board, Bhopal
106	Isolation Identification and Molecular characterization of ornithobacterium rhinotracheale in poultry	MPCST, Bhopal
107	Experiential Learning Programme on “Setting up of Hatchery Unit for Commercial Broiler Production”	ICAR, New Delhi
108	Prevalence and molecular diagnosis of subclinical and clinical Para-tuberculosis in goat	MPCST, Bhopal
109	Study the prevalence of canine parvo virus canine distemper virus and canine adeno infection in feral dogs of villages of the buffer zone of Panna Tiger Reserve	State Forest Department, Govt. of Bhopal
110	Star college for upgrading under graduate study	DBT, New Delhi
111	Development of species specific probes for species identification to reduce the reporting time required for forensic samples	MP Forest Department/APCCF
112	Studies on lantana toxicity in small herbivores of Pench Tiger Reserve	State Forest Department, Govt. of Bhopal
113	State of the art and CPCSEA compliance Laboratory animal house	MANDI Board, Bhopal
114	Species identification of wild herbivores based on molecular, microscopic and ultrastructural characterization of hair sample	DBT, New Delhi
115	Effect of organic Trace minerals supplementation on expression of some immune regulatory genes and antioxidant defence system in broilers	MPCST, Bhopal

116	Effect of herbal drugs on arsenic and mercury induced toxicity and cancer in Fishes	MPCST, Bhopal
117	Evolving potential strategies for non-surgical contraception's in male dogs	MPCST, Bhopal
118	Use of traditional ingredients to improve the functional value of meat product developed from Kadaknath	MPCST, Bhopal
119	Development of therapeutic strategies for the management of anoestrus	MPCST, Bhopal
120	Prevalence and molecular diagnosis paratuberculosis in goat	MPCST, Bhopal
121	Evaluation of fertility response using indigenous medications in postpartum anoestrus buffaloes	DST, New Delhi
122	Evaluation of kadaknath, desi and broiler chicken meat for histidine containing dipeptides.	NBAGR Institutional Project
123	Characterization of cattle and buffalo populations	NBAGR Institutional Project
124	NAHEP	ICAR, New Delhi
125	Establishment of an advanced histopathology and Immuno-histochemistry laboratory	MANDI Board, Bhopal
126	Surveillance, Molecular Detection and Development Of diagnostic for Lumpy Skin Disease virus	MPCST, Bhopal
127	Formulation of Area Specific micronutrient supplements for prevention of common reproductive and metabolic disorders in dairy animals of Malwa region of M.P.	MANDI Board, Bhopal
128	Development, validation and application of pregnancy diagnosis protocol in female tigers (<i>Panthera tigris</i>) through non-invasive techniques	MP Forest Department/APCCF
129	Comparative oestimorphometrical studies on the skull of wild animals as an aid in wildlife forensics	State Forest Department, Govt. of Bhopal
130	Study on phenotypic characterization, Biometry and Management of local Goat population in M.P. districts of Seoni, Chhindwada and Balaghat	DST, New Delhi
131	Design and Efficacy of peptides and recombinant glycosyltransferase protein of <i>Campylobacter jejuni</i> for protection against heat labile toxins of ETEC origin.	DBT, New Delhi
132	Innovation grant under National agricultural higher education project for strengthening of College of Fishery Science NDVSU	ICAR, New Delhi

133	Viral and bacterial metagenomic analysis in faeces of wild tigers of M. P.	State Forest Department, Govt. of Bhopal
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Contribution in Academic Programme

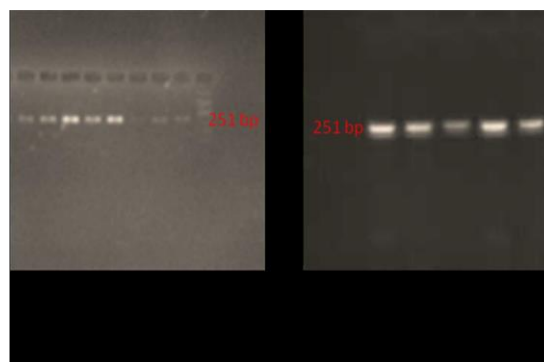
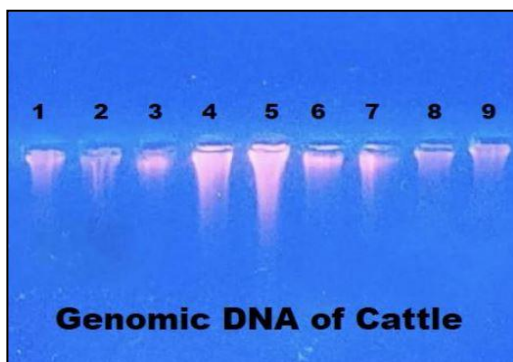
Well equipped and modern laboratories have been established in different departments from the funds available from various externally funded research projects. This provides assistance in conducting quality research at post graduate and at doctoral level. Many of the students are conducting their masters and doctoral thesis under research projects sanctioned by the externally funded projects and the article published from these research has contribute to the academic biodata of master students as well as faculty members.

Technology Developed by NDVSU, Jabalpur and its Adoption:

The following technologies have been developed by the university from the year 2023 to 2026.

1. Determination of A1/A2 variants of β -casein gene in cattle and buffalo breeding bulls

A1/A2 variants of β -casein gene in cattle and buffalo breeding bulls have been determined. A total 335 semen samples of cattle (Gir-42, Sahiwal-61, Tharparkar-30, Jersey-33, HF-25, Crossbred-42 and buffalo (Murrah-64, Bhadawari-38) were collected from the Central Semen Station, Bhopal, Regional Semen Station, Jabalpur and AI Centres from different regions of M.P. The molecular characterization of β -casein gene for A1/A2 variants in cattle and buffalo bulls was done by PCR-RFLP technique using β -casein gene specific primer. All the screened samples of Gir, Sahiwal, Tharparkar, HF, crossbred, Jersey and Murrah buffalo showed monomorphic pattern of 251 bp (i.e. A2A2 genotype) with 100 per cent A2 allele, while A1 allele was found absent in the all screened samples of cattle and buffaloes.



2. Genetic Improvement of Indigenous cows of goshala through embryo transfer

For self sustainability of Goshalas, cows from goshalas were used as serogate mother for the production of Sahiwal calves of high genetic merit by implanting multiple ovulation and embryo transfer (MOET).

Donor Sahiwal animals were super ovulated and both donor as well as recipient animal were reproductively synchronized. Once the donor was super-ovulated they were inseminated with normal/sex sorted semen of bull of Sahiwal breed having high genetic merit obtained from ULDB, Uttarakhand. After insemination the donor animals, were flushed for collection of embryos, post 7 days of insemination. The flushed embryos were checked for the quality and graded in-vitro. Good quality and live embryos were then transferred to the recipient non-descript female animals obtained from Goshalas. The recipient animals were kept under constant observation and scientific rearing method. The pregnancy is checked after three months of embryos transfer. A total 10 calves comprising of 7 female and 03 male were born.



3. Improvement of the functional value of meat products developed from Kadaknath

University faculty has developed low fat functional Kadaknath cookies and low fat Kadaknath chicken nuggets have been developed using carrageenan as fat replacer. Low fat nuggets were prepared by incorporation of three different levels of carrageenan by replacing added fat. Results No significant ($P>0.05$) difference in the protein content of carrageenan added Kadaknath chicken nuggets was noticed. However, carrageenan added low fat Kadaknath chicken nuggets had significantly ($P<0.05$) lower fat content compared to control. Overall acceptability revealed that there was significant ($P<0.05$) variation among different carrageenan



incorporated low fat Kadaknath chicken nuggets. On the basis of physico-chemical properties, texture profile analysis and finally sensory evaluation, nuggets incorporated with 0.5 % carrageenan were found superior and most acceptable by the sensory panelists and finally selected as low fat Kadaknath chicken nuggets.

4. Development of prosthetic Limb for cattle

The investigators of the project surveyed the occurrence of musculoskeletal, neurological and other disabilities in cattle and prepared the prosthetics and orthotics module to restore the normal functional and productive health status of cattle by using the plaster moulds for prosthetic legs and took measurements of amputated limbs along with biomechanics of joint movements. Till now, six prosthetic legs have been prepared and used for two male calves, three heifers and one cow



5. Survey, documentation of ITK and Phenotypic Characterization of Non-Descript Breed of Cattle “Mulki” in Narmadapuram Division of Madhya Pradesh

The non-descript cattle population in the Narmadapuram division is commonly known as Mulki in all areas of the Betul district, and also as Khamli cow in the Kukru and Khamla areas of Bhainsdehi tehsil of the Betul district. In Harda and Narmadapuram divisions of Madhya Pradesh, it is known as desi or local. The animals of the non-descript cattle population have small size and compact body, the main coat colours of animals are red, light brown, and light grey but some mixed colours (i.e. roan) animals are also observed. The socioeconomic status of farmers is poor to average in most survey areas and animals mainly depend on grazing, bhusa, grass or local weeds are fed to the animals around the year, depending upon their availability. The average daily milk yield was 1.65 ± 0.13 kg, the peak milk yield was 1.75 ± 0.16 kg, and the total milk yield per lactation was 535.72 ± 6.42 kg. The lactation period was 242.50 ± 8.25 days, while the drying period was 165.80 ± 8.19 days. One of the important achievements of the project is that the breed descriptor and an application for registration of “Mulki Cattle” has been submitted to ICAR-NBAGR, Karnal.

6. Application of pregnancy diagnosis protocol in female tigers (*Panthera tigris*) through non-invasive techniques

A pregnancy diagnosis protocol has been standardized in female tigers (*Panthera tigris*) through non-invasive technique. A total number of forty-four tigers (*Panthera tigris*) housed at four different Zoo and National Park of Madhya Pradesh (Mukundpur White Tiger Safari, Satna, Van Vihar National Park Bhopal, Kamla Nehru Prani Sangrahalaya, Indore and Gandhi Prani Udhyan, Gwalior) were taken for investigation. The stereotypic behavior and faecal cortisol level in relation to biological factors in tigers provides a comprehensive analysis of the extent of stereotypic behavior in tigers, considering various biological factors within a sample size of 44.

The study suggested that captive tigers should be provided with multiple exploring and resting sites throughout the enclosure to maximize the total use of available space and to entice timid animals closer to public view. This may be especially important for older animals, which spend even more time at rest and an association was observed indicating a positive correlation between increased fecal cortisol levels and the occurrence of stereotypic behaviors in tigers. This implies a potential connection between the stress response, as gauged by cortisol levels and the manifestation of stereotypic behaviors in these animals. Keeper attitude is an important factor to reduce stereotypes and stress in tigers and thus keepers should be scientifically trained and counseled for better upkeep of tigers in captivity.

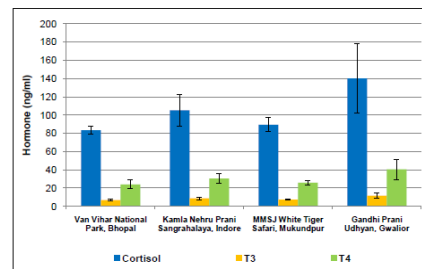
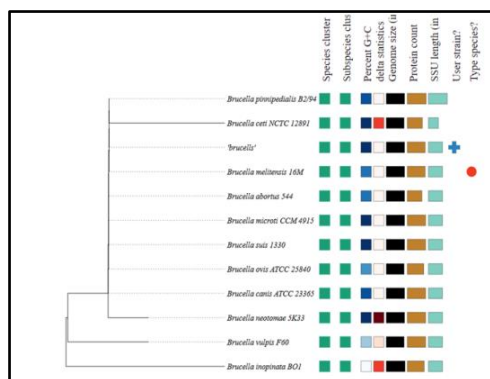


Fig. 03: Mean Faecal hormone concentration (ng/ml) of tigers at different zoo and national park

7. Epidemiological Investigation of Brucellosis in Human and Animal Population

The epidemiological investigation of Brucellosis in animal and human population of Vindhya region (District: Rewa, Satna, Sidhi, Shahdol) of Madhya Pradesh with conventional and rapid molecular tools was done by the the investigators. *Brucella melitensis* using PubMLST has been identified. Genome annotation using Prokka identified 28 contigs with total 3285451 bases. A total of 3128 complete DNA sequences were identified with 3rRNA, 49

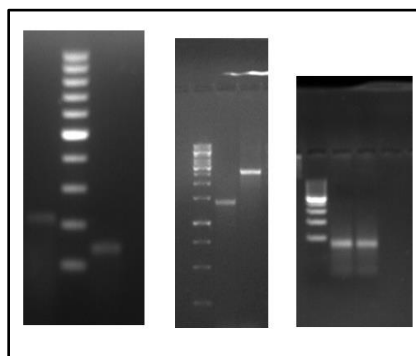
tRNA and 1tmRNA. The two chromosomes I and II were observed with 2109816 bp and 1182444 bp, respectively. Genome-based classification and identification using Type (strain) Genome Server identified the closest match with *Brucella melitensis* strain 16M. The WGS sequence of *Brucella melitensis* SVSG strain is the first sequence of *Brucella* spp. from Madhya Pradesh and submitted in NCBI with Accession no.: JBDLWR000000000



8. Deciphering the functional role of TGF- β superfamily members in corpus luteum of goat applying CRISPR cas 9 in cultured caprine luteal cells

University faculty has done the bioinformatics analysis of GDF-9 offers valuable insights into its structural and functional roles in goat reproduction. The subcellular localization predicted GDF-9 as an extracellular, soluble protein. Pro-mature and mature form TGF- β superfamily members protein expression in different stages of goat CL including different pregnant stages (<45 days) of CL, follicular stages, follicular fluids, different time points during CLC culture in cells as well as spent media corroborated the significance of TGFB signaling in goat corpus luteum. Evidence of BMP15 expression was further substantiated by immunolocalization of BMP15 in CLC culture. Progesterone concentration displayed a decreasing trend upto 6th day of culture during *in-vitro* culturing. Higher progesterone level was detected during LH supplemented CLC culture as compared to without LH media. Substantial expression of BMPR2, TGFBR1 and SMAD4 genes was displayed in corpus luteum of cyclic and pregnant goat inferring significance of TGF- β signaling in goat corpus luteum. Expression of TGF- β superfamily members, receptors and signaling molecule in same cell is indicative of autocrine signaling. Designing and validation of highly efficient gRNA constructs to study knockout effect of GDF-9 and BMP-15 in *in vitro* cell culture model in goat which will be applicable to study functional role of TGF- β members in luteal, granulosa cell and oocyte in goat as well as other ruminant species. Preparation of HDR donor for knockout enrichment experiment in GDF9 and BMP15. In vitro screening of SgRNAs (individually and paired SgRNA combination) revealed very high cleavage efficiency of all the 4 gRNAs designed 2 each for editing GDF9 and BMP15 gene. For GDF9 gene knockout paired gRNA as well as SgRNA G2 strategy worked well. GDF9 knockout displayed genomic cleavage in

GeneART genomic cleavage detection kit, indels on sequencing around cut site and decreased number of transcripts detection in real time PCR. For BMP15 KO, SgRNA B2L2 (1:2 Cas9-SgRNA molar ratio) displayed visible genomic cleavage and indels by sequencing to confirm CRISPR Cas9 mediated BMP15 editing in CLC. On transcriptome profiling, Raw data: 13,404,986 reads (4.05 Gb); post-filtering: 12,299,129 HQ reads (3.55 Gb, ~92% retention) were obtained. Mapping rate: 94.36%, indicated high-quality alignment for downstream analysis. Further analysis will be done after getting transcriptome profile data from control and other samples.



9. Serological and Molecular Investigation of Johne's Disease in Bovines

University faculty investigated and reported the John's disease in bovines. A total number of 203 milk samples of cows and buffaloes were collected for study in which 131 samples (64.53%) were positive for presence of antibodies against Paratuberculosis. The percent positivity for MAP infection was recorded higher in cows (69.90%) than buffaloes (59%). Higher positivity was found at unorganized farms (65.38%) as compared to organized farms (63.01%). A total of 21 samples (13 from cows and 8 from buffaloes) were stained by Ziehl–Neelsen staining. Milk samples detected positive for acid fast organisms in microscopy were further used in Paratuberculosis specific PCR.

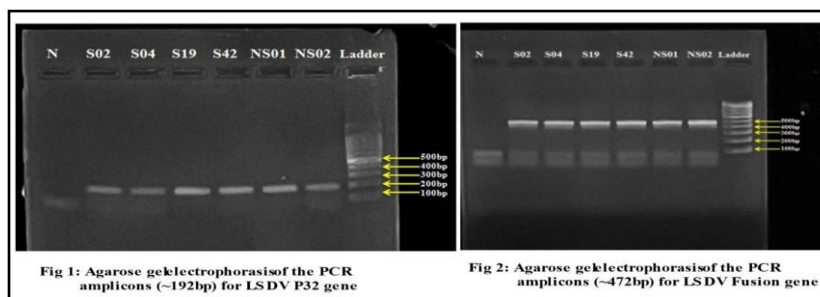
10. Study on phenotypic characterization, biometry and management of local Goat population in the Madhya Pradesh Districts of Seoni, Chhindwada, and Balaghat

The University faculty explored the phenotypic characterization, biometry and management of local goats in the targeted area of project i.e. Seoni, Chhindwada and Balaghat districts of Madhya Pradesh. The survey of Mahakaushali goat population has been conducted at the targeted area within all districts. White, black, light brown and mixed coat colour variants are found in Mahakaushali goat population. Mixed colour goats are found in the highest number. All animals in the Mahakaushali goat have medium-sized drooping (Vertical) ears. The Mahakaushali goat is not closely related to other documented breeds.



11. Surveillance, Molecular Detection and Development of diagnostics for Lumpy Skin Disease

The investigators have developed a method for detection of lumpy skin disease virus using singleplex PCR and its differentiation from related virus using multiplex PCR and determined the immune-dominant proteins of LSD Virus. Sample collection and screening of samples was done from different districts of Madhya Pradesh viz. Ratlam, Mandsaur and Jabalpur. Around 134 samples were collected which includes 56 blood samples, 56 serum samples, 13 swab samples and 09 tissue sample. Sequencing of 08 sample for P32 gene and 04 samples for Fusion gene was done. On molecular screening for P32 and Fusion Gene 09 samples were found positive with 11.53% positivity rate. LSDV was not detected from any of the blood samples.



12. Performance Appraisal of Large White Yorkshire Crossbred Pigs of Two Exotic Inheritance and Characterization of Local Pigs of Mahakaushal Region of Madhya Pradesh

The University purchased the purebred large white Yorkshire from TNUVAS. 75% crossbred of large white Yorkshire piglet production in going on. Characterization of local non-descript pigs –survey finished in two tribal districts of Mahakaushal region of Madhya Pradesh. Performance evaluation of 75% crossbred of large white Yorkshire pigs to be existing 50% white Best crossbred documented. local non- population exist in the region.

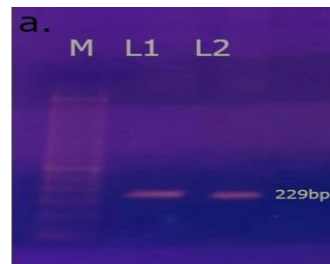


done along with crossbred of large Yorkshire pigs. performing pigs will be Characterization of descript pigs

13. Application of Forensic Entomology in Death Investigation of Wild Animals.

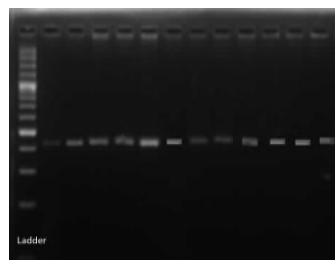
The investigators developed then standard protocols for routine diagnosis of maggots pertaining to identification and their role in calculation of elapse time of death of the animal, area

species and succession waves etc. Subsequently, DNA characterization of tegument of maggots collected in the Silica gel were analyzed through NCBI using COI gene expression to evaluate potentials of Entomology in wildlife forensics. Anterior and posterior spiracles and their advance stages were observed for identification of instars stage and their importance on species identifications. Molecular characterization showed at least 4-5 types of blow fly species are prevalent in and around the Tiger reserves of M.P. Even retrieval of host DNA was also encountered to ease the presence of animals feed upon carcass during elapse time calculation.



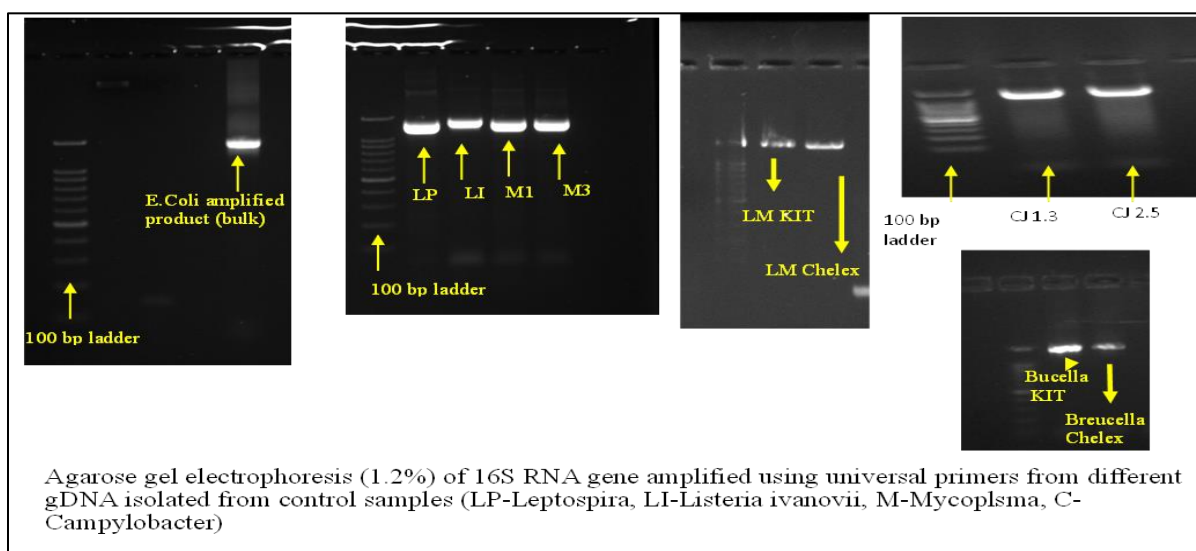
14. Uncovering the genomic features and signatures of selection in Kadaknath poultry breed of Madhya Pradesh and its crosses Narmada Nidhi and CARI-Shyama

The project is aimed to explore signatures of selection in Kadaknath, Narmada-Nidhi and CARI-Shyama. A total number of 15 Kadaknath, and 5 Narmada-Nidhi, were collected from the poultry farm, Nanaji Deshmukh Veterinary Science University, Jabalpur. 5 blood samples were collected from CARI-Shyama breed reared in Central Avian Research Centre, Bareilly, U.P. The genomic DNA for each sample was extracted using DNA isolation kit (Qiazen TM). The quantity of each sample was checked by Nanodrop and Spectrophotometer. The DNA samples will be amplified using PCR and was quality checked using agarose electrophoresis. The good quality DNA samples have been sent to Sci Genome Company for whole genome sequencing



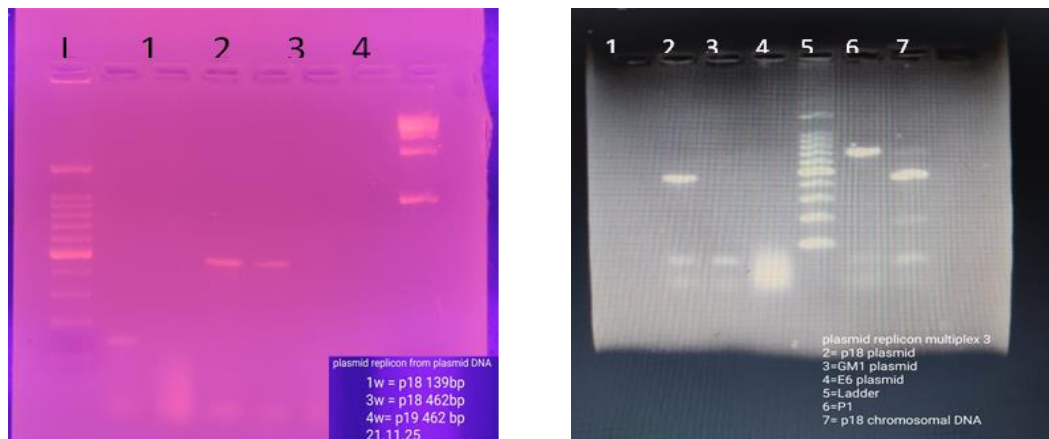
15. Development of nucleic acid based Nano biosensors for multiplexed point of care testing (xPOCT) of bacterial reproductive diseases in breeding cattle

The University researchers have identified the most appropriate 16S rRNA hypervariable regions for genus specific probes for *Leptospira*, *Listeria*, *Mycoplasma*, *Brucella* and *Campylobacter* on the way to develop nucleic acid based Nano biosensors for multiplexed point of care testing (xPOCT) of bacterial reproductive diseases in breeding Cattle. They have found Chelex based DNA extraction, which could be promising as a field applicable rapid nucleic acid extraction method and consistently performed with all the spiked biological sample (swab, semen, urine and placenta) resulting in successful amplification of 1.46kb long 16S rRNA gene suggesting integrity and good quality of DNA without any PCR inhibitors. Sequence analysis of 16S rRNA gene revealed existence of highly conserved, variable, and hypervariable regions having universal as well as genus- and/or species-specific signatures to enable accurate identification of major bacterial reproductive disease pathogens. **Universal and Brucella genus-specific primer sets for 16S rRNA gene** has been designed for integrity checks, recovery efficiency, and diagnostic assay development to check status of different biological samples for presence of bacteria.



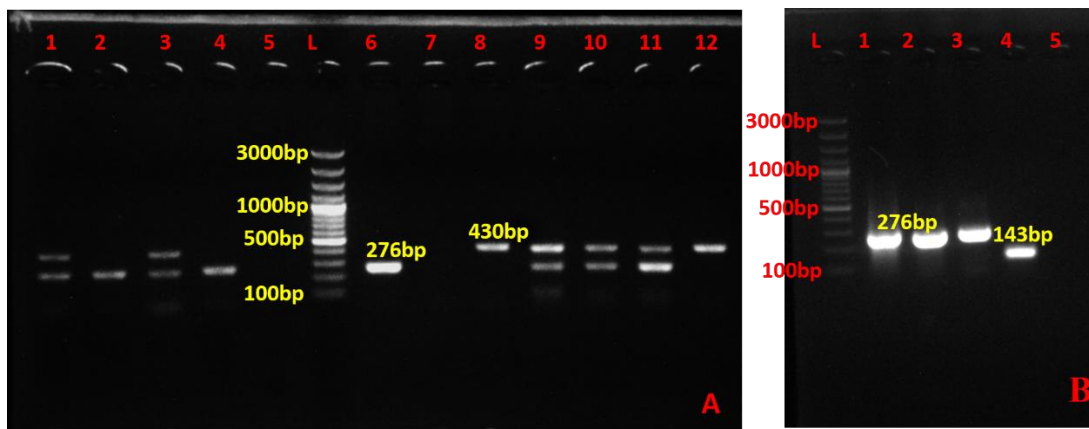
16. Study to understand the effect of selective pressure under various growth conditions on the of antibiotic resistance pattern in reference to its reversal or increase in poultry isolate of ceftriaxone resistance in non typhoid Salmonella (CR-NTS) mediated by plasmid mediated AmpC and ESBL gene

The faculty of University has detected the antibiotic sensitivity pattern of the *Salmonella* isolates to study the antibiotic resistance pattern in reference to its reversal or increase in poultry isolate of ceftriaxone resistance in non typhoid *Salmonella* (CR-NTS) mediated by plasmid mediated AmpC and ESBL gene. The study indicated that antibiotic tolerance or temporary resistance occurs on exposure to antibiotic in the absence of AMR gene it also varies in different strains as well as different environmental conditions, particularly the pH and bile salt concentration. Reversal of AMR was also detected in *Salmonella* on removal of antibiotics and other selection pressure conditions, while in *E.coli* we didn't detect any reversal.

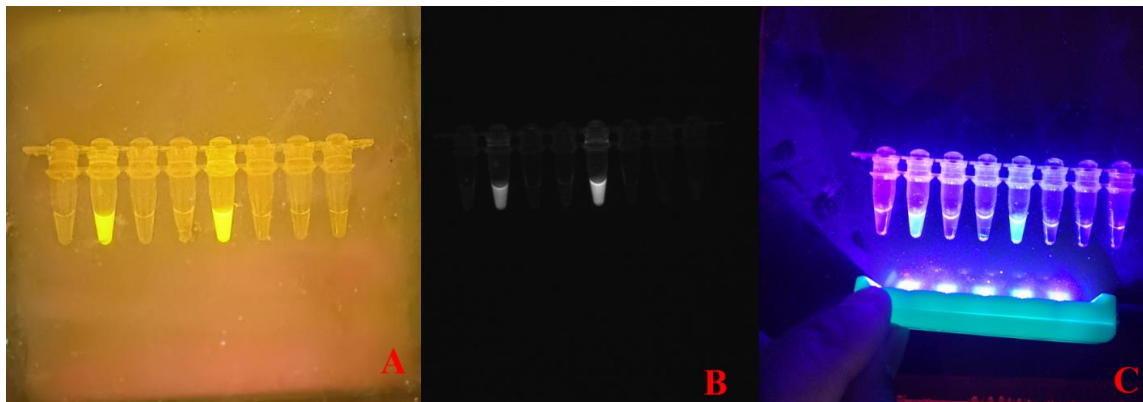


17. Development and validation of CRISPR/Cas12a-based point-of-care diagnostic platform for detecting *Theileria annulata* and *Theileria orientalis* in bovines and their tick vectors

The investigators developed a CRISPR/Cas12a-based rapid diagnostic platform for the detection of *Theileria annulata* and *Theileria orientalis* in bovines and their tick vectors. Molecular detection using PCR showed significantly higher sensitivity (62.54%) compared to microscopy (30.93%) for detection of bovine theileriosis. *Theileria orientalis* was found to be more prevalent (54.98%) than *T. annulata* (7.56%) in bovines of the Mahakaushal region of Madhya Pradesh. Duplex PCR assay was successfully standardized for simultaneous detection of both *T. annulata* and *T. orientalis*, reducing detection time from approximately 2 hours to 1 hour. A rapid NaOH-based DNA extraction method was evaluated and showed comparable performance to the commercial extraction kit, with processing time reduced to nearly 15 minutes. Preliminary RPA assay successfully amplified the target gene of *T. annulata* (276 bp), indicating its potential for development of a rapid field-level diagnostic assay.



(A) Duplex PCR showing amplification of 276 bp (*T. annulata*) and 430 bp (*T. orientalis*) fragments. (B) RPA amplification of a 276 bp fragment of *T. annulata* after product purification. Lanes 1–3: positive samples; Lane 4: kit positive control; Lane 5: negative control

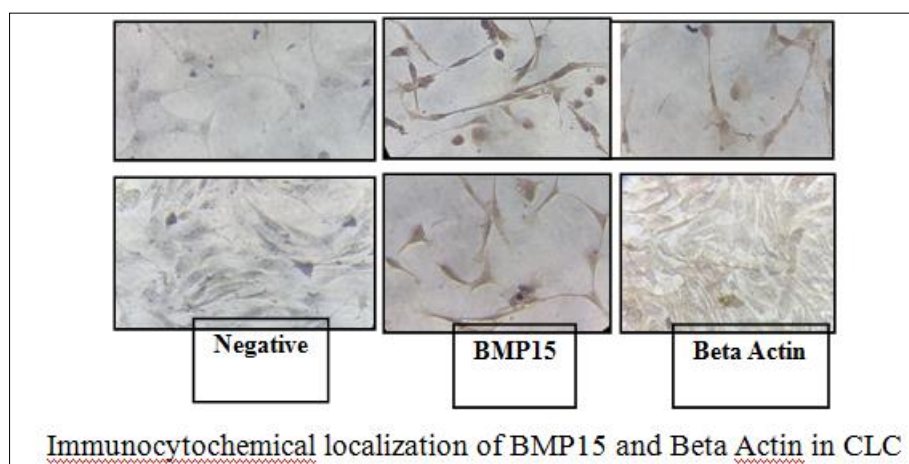


(A) Positive RPA tube of *T. annulata* samples showing green fluorescence under UV light using a standard gel documentation system. (B) Captured image using a standard gel documentation system. (C) Positive RPA tube visualized using a low-cost, in-house portable UV light system.

18. Deciphering the functional role of TGF- β superfamily members in corpus luteum of goat applying CRISPR cas 9 in cultured caprine luteal cells

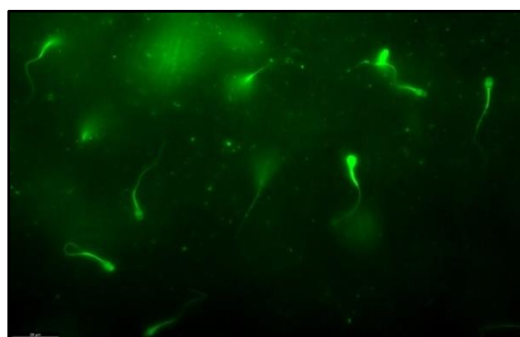
The University investigators studied the temporal expression profile of TGF- β superfamily members in corpus luteum and in caprine luteal cell culture. Bioinformatics analysis of GDF-9 offers valuable insights into its structural and functional roles in goat reproduction. The subcellular localization predicted GDF-9 as an extracellular, soluble protein. Pro-mature and mature form TGF- β superfamily members protein expression in different stages of goat CL including different pregnant stages (<45 days) of CL, follicular stages, follicular fluids, different time points during CLC culture in cells as well as spent media corroborated the significance of TGFB signaling in goat corpus luteum. Evidence of BMP15 expression was further substantiated by immunolocalization of BMP15 in CLC culture. Designing and validation of highly efficient gRNA constructs to study knockout effect of GDF-9 and BMP-15 in *in vitro* cell culture model in goat which will be applicable to study functional role of TGF- β members in luteal, granulosa cell and oocyte in goat as well as other ruminant species. On transcriptome profiling, Raw data: 13,404,986 reads (4.05 Gb); post-filtering: 12,299,129 HQ reads (3.55 Gb, ~92% retention) were obtained. Mapping rate: 94.36%, indicated high-quality alignment for downstream analysis.

Further analysis will be done after getting transcriptome profile data from control and other samples.



19. Optimizing superior buck use in up-gradation of non-descript goats with seasonal fertility investigation and semen cryopreservation.

The University scientists are conducting the research to optimize the superior buck use in up-gradation of non-descript goats with seasonal fertility investigation and semen cryopreservation. The HPLC results showed no peak at the standard retention time of the BGP-15 compound, indicating that the analyte was not detected in the Barbari and Jamnapari buck semen. The addition of 100 μ M and 80 μ M BGP-15 in TCEYG semen extender yielded the best results for freezability in Barbari and Jamnapari buck spermatozoa, respectively. Further, the addition of 100 μ M and 80 μ M BGP-15 in TCEYG semen extender was found to cause less cryodamage in Barbari and Jamnapari buck spermatozoa in post-thaw semen, respectively. There was no detectable concentration of capric acid present with the suitable solvent system (Chloroform: Methanol - 9:1) in Sirohi and Jamnapari buck semen. The addition of 500 μ M of capric acid in the TCEYG semen extender has found better freezability and cryo-survivability of Sirohi and Jamnapari buck spermatozoa due to less cryo-damage.



Photomicrograph of HOST-assessed Barbari spermatozoa at 1000X magnification



Capacitation status of spermatozoa by CTC assay (40X) in Sirohi buck semen

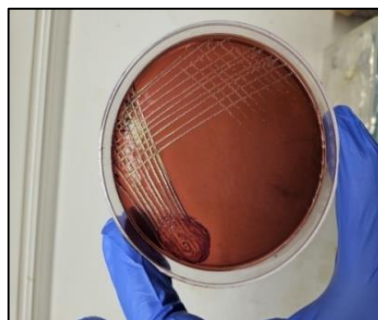
20. Risk of Zoonotic Tuberculosis Impacting the Health of Human and Animals

The principal investigators are conducting the survey to collect the data to identify tuberculosis cases among PVTGs, along with assessment of the health and socio-economic status of identified households in selected villages. A survey to identify PVTG households owning livestock, along with assessment of livestock health status in selected villages, is in progress. Collection of biological samples from representative livestock populations and preliminary screening for acid-fast bacilli (AFB)/Mycobacterium species is ongoing.



21. Therapeutic efficacy of Bacteriophage lysate cocktail as an alternate of antibiotics to control chronic mastitis in cattle

The University faculty is conducting research to evaluate the therapeutic efficacy of Bacteriophage lysate cocktail as an alternate of antibiotics to control chronic mastitis in cattle. Sewage samples were collected from piggery and dairy farms for the isolation of bacteriophage to prepare phage lysate. Milk samples were collected from various dairy farms for screening of mastitis in animals with the help of California mastitis test. Performed the culture and identification of some microbes isolated from milk sample associated with mastitis. Some bacteriophage lysates were recovered. Screening of milk samples were done for confirmation of mastitis. Culture of milk samples for detection of some bacterial organism were performed.



Collection of Sewage sample Bacterial growth on EMB Agar

PATENT GRANTED

Title of Patent: “Development of cost effective microtools for oocyte enucleation during SCNT embryo production”.

Patent No.: 297821

Technology Transfer Centre

Different technologies obtained by different Research projects is transferred to farmers level by Extension Department of different colleges by various means such as infertility camp, health and awareness camps etc.,