

# DUVASU

Annual Report

वार्षिक प्रतिवेदन

2006-2007



उ. प्र. पंडित दीन दयाल उपाध्याय पशु चिकित्सा विज्ञान विश्वविद्यालय  
एवं गौ अनुसंधान संस्थान, मथुरा

UP. PT. DEEN DAYAL UPADHYAYA PASHU CHIKITSA VIGYAN  
VISHWAVIDYALAYA EVAM GO ANUSANDHAN SANSTHAN, (DUVASU)  
MATHURA-281001





**NEW ADMINISTRATIVE BLOCK**



**NEW COLLEGE OF ANIMAL BIOTECHNOLOGY**



2006 - 2007

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## FOREWORD

The foundation of this Veterinary University lies on erstwhile UP College of Veterinary Science and Animal Husbandry, Mathura which has its name and fame both in the arena of Veterinary Institutions in the country and has, in fact, made significant contributions in various fields of animal health and production. The strength for UP Veterinary University emanates from our commitment to impart quality education and generate well trained and competent veterinarians or scientists and improve animal health and production in the state and country. These goals are the basis of our growth and inspiration. Since establishment of the University, our efforts have been directed towards producing quality veterinarians and animal husbandry professionals for the livestock population, in improving the livelihood of poor and landless labourers, marginal farmers, and social empowerment of women through adoption of modern animal husbandry practices. Invaluable research and scientific contributions of this Institute continue to improve animal health and diminish sufferings of animals.



With a very limited teaching Faculty, on education front, we have been very successful in imparting real meaningful and quality education to our students who have been excelling in all spheres. In research too, University teachers have been doing very well and taking up not only need-based and region-specific research but also emerging and newer areas of concern for animal health and production. With in our limited human resource and finances, I commend my teachers, scientists and postgraduate students for the success and progress which we have made towards our commitment to the state and nation. On infrastructure development front, we synergized our efforts to achieve infrastructural capacity building including establishment of Central Instrumentation Laboratory. Facilities of this Laboratory will be available to all the scientists and students of different Faculties, SAUs and ICAR Institutes.

The Report briefly presents the salient achievements of this University in terms of education, research, extension, infrastructural development and administrative management. The University infrastructure which is over 58 years old has to a large extent crumbled over the last decade. With the support from external funding, chiefly from ICAR, the old structures are in the process of renovation and repair and other critical facilities have been added. Through a prioritization exercise, clinical equipments have been purchased, laboratories refurnished and student facilities augmented for better teaching and learning environment in the University. The much needed state support for faculty augmentation has grossly eluded the University so far. During the year, the University has got the 11<sup>th</sup> Five Year Plan document approved from the State Planning Board amounting to Rs. 196 crores for the next five years. Once the funds are made available, we will expect a sea change in the functioning of this University.

Ever since the coming up of this University, Indian Council of Agricultural Research, New Delhi has been considerate enough and continuously supporting this University. I sincerely thank Dr. Mangla Rai, DG ICAR and Secretary DARE, Govt. of India, Dr. S.P. Tiwari, DDG Education, and Dr. G.C. Tiwari, ADG (Education), Dr. Bajurbaruah, DDG (Animal Sciences) and Dr. P. Das, DDG (Extension) for the financial support to this University. I heartily compliment Dr. Satish K. Garg, Dr. R.P. Pandey and Dr. Sarvajeet Yadav for their efforts to bring out this University Annual Report.

**Prof. M.L. Madan**  
Vice Chancellor







## EXECUTIVE SUMMARY

✓ **UP Pt. Deen Dayal Upadhyaya Pashu-Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan Mathura**, was established on 25-10-2001 by Govt. of UP and the erstwhile UP College of Veterinary Science & A.H., Mathura became its main constituent College. University has having 782.34 acres land at Mathura and around 1400 acres at Madhurikund, about 20 km from the main campus. As envisaged in the Act of University, four other constituent Colleges, namely-College of Fisheries, College of Animal Biotechnology, College of Livestock Products Technology and College of Animal Industry and Business Management will be started in the University in near future. Directorate of Research and Directorate of Extension Education will also be established to give impetus to research and extension activities.

During the period under report, three meetings of Executive Council and five meetings of Academic Council were held.

✓ **Teaching:** Presently, College of Veterinary Science and Animal Husbandry has a total intake capacity of 80, 48 and 22 students in BVSc&AH, MVSc and PhD programmes each year. A total 66, 30 and 4 students respectively were admitted and a total of 49, 38 and 2 students completed their respective degrees during the year under report. Interns were given hands on training in Clinical and Preventive Medicine, Surgery, Gynaecology, Livestock production, Poultry Science, Semen Technology, Biological Production and Zoo Medicine and Management. Forty nine students completed their six months compulsory internship programme during 2006-07. Four BVSc&AH students, were awarded Junior Research Fellowship by ICAR during the year under report. At post-graduatel level, 38 students submitted their MVSc and two students their PhD theses which were accepted for the award of respective degrees.

✓ University Library has comfortable sitting space for 120 persons and has CD Rom, Internet, and on-line database facilities for readers and visitors. Data entry, bar coding and cataloging of six thousands books, 1500 journals, one thousand five hundred thesis, nine thousand computerized catalogue cards and computerized reader cards have been completed successfully. University library has highly specialized collection of about 30000 documents in the field of veterinary sciences, animal husbandry, poultry science and other allied subjects including books, theses, periodicals and journals.

✓ In view of the revolutionary advancements in information technology and to provide rapid and free access to the scientific world, Agriculture Research Information System (ARIS) Cell and cordless internet and Local Area Network (LAN) facility has been established in the University with the financial assistance from ICAR, New Delhi.

✗ Several campus interviews were conducted on the request and demand from private entrepreneurs and agencies. During the year under report, all the passing out students were suitably placed in different organizations including Pharmaceutical and Biotech sectors.

**Clinical activities:** The Veterinary Clinical Activities at the University are managed by collaborative efforts of the clinical departments of College of Veterinary Science. The quality services provided at the Veterinary Hospital at this University attract very large number of new and referred clinical cases from all over the state of Uttar Pradesh and adjoining districts of Madhya Pradesh, Rajasthan, Haryana and Delhi. A total of 3347 cases were treated during the period under report.

During the period under report, with the financial assistance from ICAR, Veterinary Hospital has recently been equipped with state-of-the-art facilities like ultrasound machine, minimally invasive diagnostic endoscopy equipments, 500 mA x-ray machine and a mobile 100 mA single phase machine, 9" C-arm image intensifier, inhalation anaesthesia, pulse oxymeter, haematology analyzer, auto-analyzer for blood biochemicals, ophthalmic surgery instruments and ECG and solid state surgical diathermy for diagnosis and treatment of animal diseases. In addition to this, a computer assisted teaching hall for a full batch of 70 students is built.



The renovation and modification of old hospital building is still going on in order to develop it as a multidisciplinary veterinary clinical facility. In the hospital, the students are trained in diagnostic imaging techniques, clinical procedures and laboratory diagnostic work relevant to their curricular requirements. Large animal ambulatory clinical service is also run by the hospital.







**Sports and extra-curricular activities:** University organized its annual sports meet along with the cultural programmes on March 23-24, 2007. Our students participated in the Zonal elocution competition on the topic "Science for livelihood security" and in All India Veterinary Colleges badminton and TT competition held at GBUA&T, Pantnagar. A contingent of twelve students also participated in several events in All India Agricultural Universities Youth Festival held at Maharana Pratap University of Agriculture and Technology, Udaipur from September 22 to 26, 2007.

During the year under report, 100 students enrolled in NCC, 28 cadets qualified "B certificate examination" and two qualified "C Certificate Examination" The unit /SQN has cent-percent result in certificate examinations. Eight students of this SQN also participated in National Integration Camp held at Agra and Bangalore.

**Research:** Six outside funded research projects, two from ICAR, two UPCAR and two from DST are currently running in the University. Additional, six University research projects have also been approved by the University Research Council.

Highlights of the results of academic research and work under externally funded projects are briefly presented here. Molecular diagnosis of fowl cholera was done and its vaccination strategy developed. Vitamin C (ascorbic acid) supplementation to commercial broiler chick ration @ 200 ppm was found beneficial during stress period. It was found that *Calotropis procera*, *Moringa oleifera* and *Trachyspermum ammi* possess promising anthelmintic potential. *Moringa* flower was found to have very good potential as an oxytocic agent. *Ocimum sanctum* aqueous leaves extract significantly enhanced the secretion of IL-2 in mitogen-stimulated splenocytes culture. Cloning and characterization of goat enteric  $\alpha$ -defensin was done. The molecular characterization of PPRV was done using RT-PCR. It was found that sero-monitoring for PPR in vaccinated and non-vaccinated sheep and goat populations can be done with high sensitivity and precision using synthetic peptide antigen from nucleocapsid protein of PPR virus. Seven species of *Mycoplasma* were isolated from dogs.

During the period under report, 17 research papers have been published in National and International Journals of repute and 32 papers presented in various Conferences/Symposia. Apart from this, five invited guest lectures were also delivered by our faculty members during the period under report.

Sixteen faculty members attended 19 scientific seminars, symposia or workshops during 2006-07. In the training programme on "Semen technology and fertility management" a total number of 101 veterinary officers from 6 commissionaries completed their training.

**Extension:** During the period under report, University through the Directorate of Extension put its made best efforts to promote extension activities and arranged trainings, demonstrations, Kisaan mela and Kisaan goshties. Krishi Vigyan Kendra (KVK) organized Front Line Demonstration (FLD), On Farm Testing (OFT) and demonstrations other than FLD were also conducted successfully. KVK also organized a Kisan Mela and seed distribution programme.

With financial assistance from ICAR, a Soil Testing Laboratory has been established at KVK Campus. The work for fencing of the farm, repair /maintenance of tube wells, irrigation channels is in progress. A vermi-compost Unit has also been established at KVK Farm.

**University Farms:** Out of a total area of 1396 acre at Madhurikund farm, 770 acre is under crop production, 123 acres is under social forestry, 80 acres is under roads and buildings while rest is covered by Vilayati Babool and salt affected barren soil. Irrigation of the land is through canal water only. Wheat, barley, mustard, oats, berseem and taramira are grown at the farm to produce certified seed for National Seed Corporation. In addition to above, a herd of dry cows of the University is also being maintained on the farm.

**Dairy Demonstration Farm:** Dairy Demonstration Farm (DD Farm) established in the year 1947 is maintaining pure Haryana cows, Haryana X Friesian cross cows and Murrah buffaloes and their male and female calves. Recently, University has also added Bhadawari buffalo bulls into the University herd as a part of the programme to conserve indigenous germplasm. This farm also provides study material to different departments. About 110 acres agricultural land is also there with the dairy farm for fodder production.

Poultry farm has all the facilities for maintaining chicken broilers, layers and also quails. Experimental flock is maintained by PG students of Poultry Science Department at the poultry farm.

**Finance and Budget:** During the period under report, from the state government the university received under non-plan head Rs. 640.75 lakhs for salary and contingency, and under plan head Rs. 9.54 lakhs for Salary and Contingency and Rs. 631.19 lakhs for Capital Expenditure. From Indian Council of Agricultural Research, Strengthening and development (S&D)







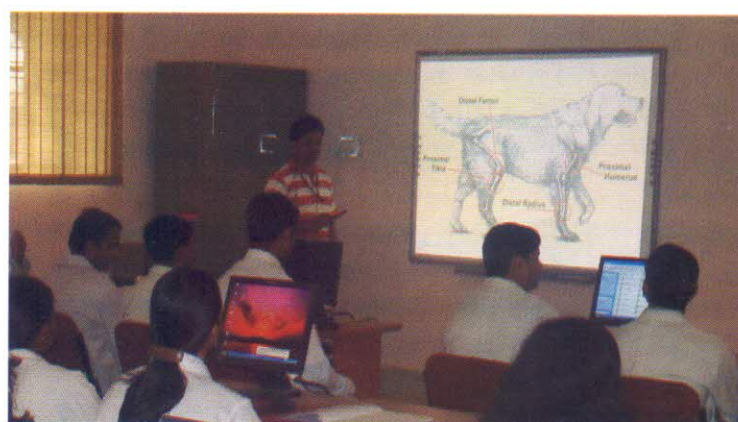
head the university received Rs. 400.00 lakhs. The expenditure against these respective receipt heads was Rs. 640.75, 9.53, 631.19 and 373.75 lakhs. The total receipt under non plan and plan head was 853.42 and 1040.73 lakhs against which the total expenditure was 894.17 and 383.28 lakhs respectively.

**New Infrastructure added:** With the financial assistance from UP State Govt., buildings for four new faculties are in the final stages of completion and as per the mandate and Act of the University, College of Fisheries, College of Animal Biotechnology, College of Animal Industry and Business Management, College of Livestock Products Technology are likely to be started in the University from the academic session 2008-09 to give a fillip to the requirement of trained human resource in these newer and emerging fields of importance.

During the period under report, to give hands on training to all the post-graduate students, state of art Central Instrumentation Laboratory has been established. This

laboratory is equipped with HPLC, Atomic absorption spectrophotometer, data-acquisition system based physiograph, CO<sub>2</sub>-incubator, ultra-low freezer, refrigerated centrifuge, UP Spectrophotometer, ELISA reader, sonicator, bio-safety cabinet etc. Apart from this, fluorescent inverted microscope, computer assisted semen analyzer (CASA) has been purchased and installed in Hi-Tech Lab for bovine fertility. Real time PCR, DNA sequencer, Ultracentrifuge and Gel documentation system has also been purchased for a research project. Health Club with gym facilities, musical instruments and music teacher has also been started for the benefit of students and teachers.

With the financial assistance from ICAR, New Delhi, one Farmers Hostel is also coming up and is likely to be completed soon. Small Laboratory Animals House of the erstwhile UP Veterinary College was in a dilapidated state; the same has been renovated and converted to a modern Animal House.







## कार्यकारी सारांश

**उत्तर प्रदेश पंडित दीनदयाल उपाध्याय पशुचिकित्सा विज्ञान विश्वविद्यालय एवं गो अनुसंधान संस्थान** की स्थापना 25-10-2001 के उत्तर प्रदेश सरकार द्वारा की गई। पूर्वकालिक उत्तर प्रदेश पशुचिकित्सा विज्ञान एवं पशुपालन महाविद्यालय इसकी प्रमुख संघटक ईकाई है। विश्वविद्यालय के पास इसके मथुरा प्रांगण पर कुल 782.34 एकड़ व मथुरा से 20 कि.मी. दूर स्थित माधुरीकुंड नामक स्थान पर 1400 एकड़ भूमि उपलब्ध है। जैसा कि विश्वविद्यालय के एक्ट में निहित हैं चार नये संघटक कालेज - कालेज ऑफ फिशरीज, कालेज ऑफ बायोटेक्नॉलाजी, कालेज ऑफ लाईवस्टॉक प्रोडक्ट्स टेक्नॉलाजी व कालेज ऑफ एनिमल इंडस्ट्री एंड बिजनेस मैनेजमेंट निकट भविष्य में प्रारम्भ हो रहे हैं। विश्वविद्यालय में प्रसार व शोध कार्य को गति प्रदान करने के लिए प्रसार व शोध निदेशालय भी कार्यरत हैं।

रिपोर्ट अवधि में विश्वविद्यालय के कार्य परिषद् की बैठक तीन बार व शिक्षा परिषद् की बैठक कुल पांच बार संपन्न हुई।

**शिक्षण:** वर्तमान में विश्वविद्यालय में एकमात्र पशुचिकित्सा विज्ञान एवं पशुपालन महाविद्यालय ही संघटक विद्यालय के रूप में कार्यरत है व चार नये संकायों को शीघ्र प्रारम्भ किया जाना अपेक्षित है। बी. वी.एस-सी. एंड ए.एच., एम.वी.एस-सी. तथा पी.एच-डी. के लिए कमशः कुल भर्ती क्षमता 80, 48 व 22 के सापेक्ष कमशः 66, 30 व 4 छात्रों की भर्ती हुई व 49, 38 व 2 छात्रों ने अपनी उपाधि पूरी की। ईटर्नशिप छात्रों को उनके प्रशिक्षण अवधि में क्लीनिकल व प्रीवेंटिव मेडिसिन, सर्जरी, गायनीकोलॉजी, लाईवस्टॉक प्रोडक्शन, पोल्ट्री साइंस, सीमेन टेक्नॉलाजी, बायलॉजिकल प्रोडक्शन व वन्यजीव औषधि विज्ञान व प्रबंधन पर गहन प्रशिक्षण प्रदान किया गया। वर्ष 2006-07 में कुल 49 छात्रों द्वारा छः माह की आवश्यक ईटर्नशिप ट्रेनिंग पूरी की गई। बी.वी.एस-सी. एंड ए.एच. के चार छात्रों को भारतीय कृषि अनुसंधान परिषद् द्वारा जूनियर रिसर्च फ़ैलोशिप प्रदान की गई। स्नातकोत्तर शोध के आधार पर वर्ष 2006-07 के दौरान 38 एम.वी.एस-सी. तथा दो पी.एच-डी. शोधार्थियों ने अपना शोधकार्य पूरा कर प्रबंध प्रस्तुत किये व उन्हें विश्वविद्यालय द्वारा उपाधि प्रदान की गई।

विश्वविद्यालय पुस्तकालय में 120 व्यक्तियों के बैठने के लिए पर्याप्त स्थान है जहां पर शिक्षार्थी व आगंतुक सी.डी. रॉम व ऑनलाईन डाटाबेस एक्सेस की सुविधा प्राप्त कर सकते हैं। रिपोर्ट अवधि में डॉटा एन्ट्री, बार कोडिंग, तथा 6000 पुस्तकों, 1500 शोध पत्रिकाओं, 1500 शोध प्रबंधों और 9000 क्रेडिटिंग व रीडर कार्ड के कम्प्यूटरीकरण का कार्य पूरा किया जा चुका है। विश्वविद्यालय पुस्तकालय में पशुचिकित्सा व तत्संबंधी विषयों पर प्रायः 30000 पुस्तकें, शोध प्रबंध, पत्रिकायें आदि उपलब्ध हैं।

सूचना व संचार तकनीक में विगत वर्षों में हुये कांतिकारी परिवर्तन के अनुरूप कार्य करते हुये विश्वविद्यालय में भारतीय कृषि अनुसंधान परिषद् की वित्तीय सहायता से एक कृषि शोध सूचना तंत्र कोष्ठ स्थापित किया गया। इसके अंतर्गत वायरलैस नेटवर्क व

लोकल एरिया नेटवर्क से विभिन्न विभागों अनुभागों को जोड़ा गया व ईटर्नेट की सुविधा भी सुलभ कराई गई।

रिपोर्ट अवधि में विभिन्न गैर सरकारी संस्थानों की मांग पर अनेकों साक्षात्कार प्रांगण में आयोजित हुये जिसके आधार पर सभी छात्रों की उपयुक्त पदस्थापना फार्मा व बायोटेक सहित विभिन्न संस्थानों में हो सकी।

**पशुचिकित्सा गतिविधियां:** विश्वविद्यालय में पशुचिकित्सा कार्य को विभिन्न क्लीनिकल विभागों के सहयोग से निष्पादित किया जाता है। प्रदान की जा रही उच्च गुणवत्ता की चिकित्सा सुविधा के कारण विश्वविद्यालय के पशुचिकित्सालय की प्रतिष्ठा एक 'बहुआयामी रेफरल' चिकित्सालय के रूप में बन चुकी है। यहां उत्तर प्रदेश के विभिन्न भागों से तथा मथुरा के सीमांत जनपद होने के कारण हरियाणा, राजस्थान, मध्य प्रदेश व दिल्ली से यहां बड़ी संख्या में उपचार के लिए पशु लाये जाते हैं। रिपोर्ट अवधि में विश्वविद्यालय पशुचिकित्सालय में कुल 3347 पशु चिकित्सा कार्य के लिए पंजीकृत हुये।

रिपोर्ट अवधि में ही भारतीय कृषि अनुसंधान परिषद् की वित्तीय सहायता से विश्वविद्यालय पशुचिकित्सालय को अल्ट्रासाउंड मशीन, मिनिमली इनवेसिव डायग्नोस्टिक एंडोस्कोप, 500 व 100 एम.ए. की एक्स रे मशीन, 9 इंच सी-आर्म इमेज इंटेसिफायर, निष्चेतन मशीन, पल्स ऑक्सीमीटर, हीमैटोलॉजी एनालायजर, बायोकेमिकल ऑटोएनालायजर, ई.सी.जी., नेत्र चिकित्सा उपकरण, सर्जिकल डायथर्मी उपकरण आदि से सुसज्जित किया गया है। नवसृजित सुविधाओं का उपयोग छात्रों के प्रशिक्षण व शायनिक कार्यों के लिए किया जायगा जिससे निकट भविष्य में चिकित्सा शिक्षण व चिकित्सा कार्य में गुणात्मक परिवर्तन होना अपेक्षित है। इसके अतिरिक्त चिकित्सालय के भवन का वृहत अनुरक्षण कार्य भी परिषद से प्राप्त वित्तीय सहायता से किया जा रहा है जिसके अंतर्गत 70 छात्रों के लिए उपयुक्त एक 'कम्प्यूटर असिस्टेड टीचिंग हॉल' भी विकसित किया है। चिकित्सालय के पुराने भवन का परिवर्तन व अनुरक्षण कार्य अभी जारी है।

**कीड़ा व अन्य शिक्षणोत्तर गतिविधियां:** विश्वविद्यालय के वार्षिक खेलकूद व सांस्कृतिक कार्यक्रमों का आयोजन 23-24 मार्च 2007 को किया गया। हमारे छात्रों ने गोविंद वल्लभ पंत कृषि विश्वविद्यालय, पंतनगर में आयोजित 'साइंस फॉर लिवलीहुड सिक्वोरिटी' विषय पर आयोजित क्षेत्रिय वक्तव्य प्रतियोगिता व अखिल भारतीय अंतर्पशुचिकित्सा विद्यालयी बैडमिंटन व टेबल टेनिस प्रतियोगिताओं में भी भाग लिया। माह सितम्बर 2007 में 12 छात्रों के एक दल ने महाराणा प्रताप कृषि एवं प्रौद्योगिक विश्वविद्यालय में आयोजित 'यूथ फेस्टिवल' के कई कार्यक्रमों में भाग लिया।

एन.सी.सी. के अंतर्गत रिपोर्ट अवधि में कुल 100 छात्र पंजीकृत किये गये व 28 एन.सी.सी. कैडेट्स ने 'बी' प्रमाणपत्र की परीक्षा में सफल हुये तथा दो कैडेट्स 'सी' प्रमाणपत्र के योग्य पाये गये।





परीक्षाओं में शत प्रतिशत परिणाम प्राप्त हुये। स्वचाइन के आठ छात्रों ने आगरा व बंगलोर में आयोजित 'नेशनल इंटीग्रेशन कैम्प' में भाग लिया।

**शोध:** विश्वविद्यालय में कुल छः वाह्य वित्त पोषित शोध परियोजनायें कार्यरत हैं जिनमें से दो भारतीय कृषि अनुसंधान परिषद् द्वारा, दो उत्तर प्रदेश कृषि अनुसंधान परिषद् द्वारा व दो भारत सरकार के विज्ञान व तकनीकी विभाग द्वारा वित्त पोषित हैं। इनके अतिरिक्त विश्वविद्यालय के शोध परिषद द्वारा अनुमोदित छः शोध परियोजनायें भी कार्यरत हैं।

एकेडेमिक शोध व परियोजनांतरगत शोध के आधार पर कुछ महत्वपूर्ण कार्य हुआ व निष्कर्ष प्राप्त हुये। फाउल कॉलरा का मौलीक्यूलर तकनीक से निदान किया गया व वैक्सीनेशन की विधि विकसित की गई। यह ज्ञात किया गया कि कैलौटापिस प्रोसेरा, मोरिंगा ऑलीफेरा व ट्रेकीस्पर्मम एमी में कृमिरोधक गुण होते हैं। मोरिंगा के फूलों में आक्सीटोसिक गुण मिलने के भी पुष्ट प्रमाण प्राप्त हुये। माईटोजन प्ररित संवर्धित तिल्ली कोशिका में आई.एल.-2 के स्राव को बढ़ाने का गुण ऑजिमम सेंक्टम की पत्तियों के निचोड़ में पाया गया। बकरी में बीटा डिफेंसिन की क्लोनिंग व पहचान की गई। रीयल टाईम पी.सी.आर. द्वारा पी.पी.वी.आर. का मौलीक्यूलर केरेक्टराईजेशन किया गया। कुत्तों में रोगकारक माईकोप्लाज्मा की सात प्रजातियों का एकलन किया गया।

रिपोर्ट अवधि में राष्ट्रीय व अंतर्राष्ट्रीय शोध पत्रिकाओं में 17 शोध पत्र प्रकाशित किये गये व विभिन्न गोष्ठियों में 32 शोध पत्र प्रस्तुत किये गये। विश्वविद्यालय के 16 संकाय सदस्यों ने रिपोर्ट अवधि में कुल 19 वैज्ञानिक संगोष्ठियों / कार्यशालाओं में भाग लिया। विश्वविद्यालय में 'सीमेन टेक्नोलॉजी एंड फर्टिलिटी मैनेजमेंट' विषय पर चलाये जा रहे प्रशिक्षण कार्यक्रम में प्रदेश की 6 कमिश्नरी से आये कुल 101 पशुचिकित्सकों ने प्रशिक्षण प्राप्त किया।

**प्रसार:** रिपोर्ट अवधि में प्रसार कार्यक्रमों को गति प्रदान करने के लिए किसान मेले, गोष्ठी व प्रशिक्षण कार्यक्रम आयोजित कर महती प्रयास किये। कृषि विज्ञान केंद्र द्वारा फंट लाईन डिमांस्ट्रेशन, ऑन फार्म डिमांस्ट्रेशन, ऑन फार्म टेस्टिंग, बीज वितरण कार्यक्रम व मेले आयोजित किये गये। भारतीय कृषि अनुसंधान परिषद की वित्तीय सहायता से कृषि विज्ञान केंद्र पर एक मृदा परीक्षण प्रयोगशाला व एक वर्मी कम्पोस्ट ईकाई स्थापित की गई। फार्म पर बाड़ लगाने का कार्य, टयूबवेल अनुरक्षण, सिंचाई के चैनल बनाने का कार्य भी इसी वित्तीय सहायता से पूरा किया जा रहा है।

**विश्वविद्यालय प्रक्षेत्र:** विश्वविद्यालय के माधुरीकुंड स्थित प्रक्षेत्र पर उपलब्ध कुल 1400 एकड़ भूभाग का 770 एकड़ फसल उत्पादन के लिए उपयोग किया जाता है। कुल 123 एकड़ पर सामाजिक वानिकी के अंतर्गत वृक्षारोपण किया गया है तथा 80 एकड़ भाग पर भवन इत्यादि निर्मित है। शेष भाग विलायती बबूल से आच्छादित बंजर भूमि है। प्रक्षेत्र पर सिंचाई का एक मात्र साधन उपलब्ध नहर का जल ही है। इस प्रक्षेत्र पर गेहूँ, जौ, सरसों, बरसीम व तारामीरा फसलों का उत्पादन किया जाता है। उत्पादित बीज का प्रमाणीकरण राष्ट्रीय बीज निगम द्वारा कराया जाता है। उपरोक्त के अतिरिक्त इस प्रक्षेत्र पर शुष्क गायों के एक समूह को भी रखा जाता है।

जिला दुग्धशाला प्रदर्शन प्रक्षेत्र की स्थापना वर्ष 1947 में की गई। यहां पर हरियाना व हरियाना-फिजियन नस्ल की गायें व मुरा नस्ल की भैंसे रखी गई हैं। यह प्रक्षेत्र विभिन्न विभागों को शिक्षण व शोध सामग्री भी उपलब्ध कराता है। प्रक्षेत्र के साथ चारा उत्पादन के लिए 110 एकड़ का भूभाग भी उपलब्ध है।

कुक्कुट फार्म पर मुर्ग ब्रायलर व लेयर तथा बटेर पालने हेतु सुविधा उपलब्ध है। कुक्कुट विज्ञान विषय के स्नातकोत्तर छात्रों के लिए प्रायोगिक पक्षी भी यहीं रखे जाते हैं।

**वित्तीय दशा व बजट:** रिपोर्ट अवधि में विश्वविद्यालय को प्रदेश सरकार से नॉन प्लान मद में रु.630.75 लाख वेतन व कन्टिनजेंसी हेतु प्राप्त हुआ व प्लान मद में रु.9.54 लाख वेतन व कन्टिनजेंसी हेतु तथा रु.631.19 लाख पूंजीगत व्यय के लिए प्राप्त हुआ। भारतीय कृषि अनुसंधान परिषद से स्टैंथेनिंग एंड डेवलपमेंट मद में विश्वविद्यालय को रु.400.00 लाख प्राप्त हुये। इनके सापेक्ष कमषः रु.640.75, रु.9.53, रु.631.19 व रु.383.75 लाख व्यय किया गया।

**नवसृजित संसाधन:** विश्वविद्यालय को इसके एक्ट व उद्देश्य के अनुरूप स्वरूप प्रदान करने के लिये इसके अन्य संघटक संकायों कालेज ऑफ फिशरीज, कालेज ऑफ बायोटेक्नॉलाजी, कालेज ऑफ लाईवस्टॉक प्रोडक्टस् टेक्नॉलाजी व कालेज ऑफ एनिमल इंडस्ट्री एंड बिजनेस मैनेजमेंट वर्ष 2008-09 में शिक्षण कार्य प्रारम्भ करने के लिए तैयार हो चुके हैं जिनमें शीघ्र शिक्षण कार्य प्रारम्भ होगा। प्रदेश सरकार द्वारा उपलब्ध कराई गई वित्तीय सहायता से इनके भवन निर्माण का कार्य प्रायः पूर्ण हो चुका है।

स्नातक व स्नातकोत्तर छात्रों को प्रायोगिक अनुभव प्राप्त कर प्रशिक्षित करने के उद्देश्य की पूर्ति के लिए रिपोर्ट अवधि में विश्वविद्यालय में एक केन्द्रीय प्रयोगशाला की स्थापना की गई। यह प्रयोगशाला उच्च तकनीकी उपकरणों जिसमें एच.पी.एल.सी., एटॉमिक एब्जार्पशन स्पेक्ट्रोमीटर, डॉटा एक्विजिशन सिस्टम आधारित फिजियोग्राफ, कार्बन डाई आक्साईड इन्क्यूबेटर, अल्ट्रावायलेट स्पेक्ट्रोफोटोमीटर, अल्ट्रा लो फ्रीजर, रेफ्रिजरेटेड सेन्ट्रीफ्यूज, एलिसा रीडर, सोनीकेटर, बायो सेफ्टी कैबिनेट आदि से सुसज्जित है। इसके अतिरिक्त प्रजनन कार्यिकी की हाई-टेक प्रयोगशाला के लिए इन्वर्टेड फ्लोरोसेंट माईकोस्कोप व निश एरिया शोध परियोजना के लिए रीयल टाईम पी.सी.आर., डी.एन.ए. सीक्वेंसर, अल्ट्रासेंट्रीफ्यूज व जैल डॉक्यूमेंटेशन तंत्र भी क्रय कर स्थापित किया गया है।

छात्रों व शिक्षकों के व्यक्तित्व विकास के लिए प्रांगण पर एक व्यायाम व संगीत उपकरणों सहित हैल्थ सेन्टर भी स्थापित किया गया।

भारतीय कृषि अनुसंधान परिषद द्वारा प्रदत्त वित्तीय सहायता से एक किसान आवास का निर्माण भी कराया जा रहा है जिसके शीघ्र ही पूर्ण होने की आशा है साथ ही जीर्ण शीर्ण अवस्था में पड़े प्रायोगिक पशुगृह को भी अनुरक्षित कर कार्य के अनुरूप आवश्यक नवीन रूप प्रदान किया गया है।







## MISSION

University was established by UP Govt. in 2001 with the basic objective of imparting quality veterinary and allied education, undertake need-based and basic research, integrate education and research and offer efficient extension services.

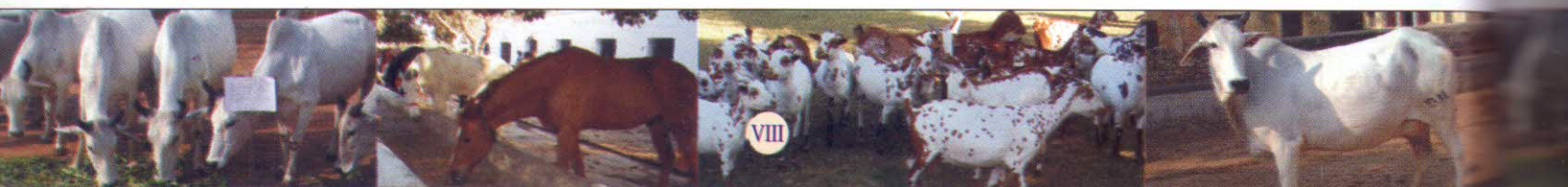
## VISION

- Produce competent and skilled human resource in the field of animal health and production and allied sectors who are socially sensitive and responsible professionals;
- Undertake region-based, need-based and basic research for improving animal health and productivity adopting modern technology including value addition;
- Validate indigenous traditional knowledge (ITK) on scientific basis;
- Provide efficient extension services at the door step of poor and marginal farmers and livestock owners and motivating them to adopt animal husbandry, poultry, fishery and related vocations as an engine of economic growth and social empowerment ;
- Empower women to become “knowledgeable livestock stake holders” giving them economic identity;
- Interface Industry and Stakeholders in the newer perspectives of open global market; and
- Ensure enhanced production from rural and urban livestock through effective disease surveillance and diagnosis, health care and vaccination programmes.

## MANDATE

University is the premier Veterinary and Animal Science Institution and is known for quality education and research on various aspects of animals health including disease diagnosis and providing advisory and extension services through scientific knowledge and expertise:

- Strengthening hands on training to students with special emphasis on capacity building;
- Providing opportunity to Faculty and staff to improve their scientific and working capacity and capability to make the University a vibrant organization;
- Undertaking need-based, applied and basic research;
- Bringing livestock owners, poor and marginal farmers and rural women to the Center of Technology Information System and catalyze them for continuous improvement in production and productivity of their livestock and economy;
- Collaborate with State Agriculture and Animal Husbandry functionaries, Indian Council of Agricultural Research Institutes related to animals health and production, Livestock Industry and NGO's in an attempt to develop resurgent, sustainable, profit-oriented market based production system for livestock, poultry, fishery and allied sectors.







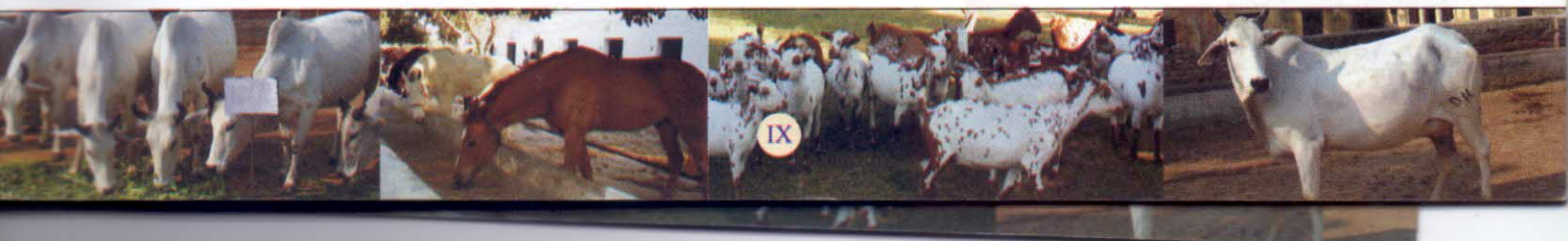
## CHALLENGES

Concept of integrated farming which includes agriculture, livestock, poultry and fishery has been recognized as “high power engine” for sustainable agricultural and rural economy. Therefore, to translate the idea into reality, it is imperative:

- To produce Veterinarians and other technocrats related to allied sectors who become “Job providers” not the “Job seekers”;
- To substantially raise the faculty strength to a level which commensurates with the minimum requirements as per the specifications of Veterinary Council of India for under-graduate teaching;
- To improve laboratory facilities for imparting quality education including training of post-graduate and doctoral degree program students in an attempt to make them capable enough to meet the current and emerging challenges;
- To re-establish and achieve at par research excellence through optimized internal and external research fund support from the State and Central Govt. agencies; and
- To muster sufficient financial support in conformity to what a Veterinary University needs under resurgent economy and global education and trade scenario.

## UNIVERSITY TARGETS

- Revamp teaching programmes and “Teaching Methodologies”, set up e-learning class-room, introduce net-based “virtual class-rooms” and promote e-teaching and learning;
- Set up “State of Art” Instructional Farms, Demonstration Units, Veterinary Clinical Complex, Disease Investigation and Research Laboratories;.
- To achieve at least 15 per cent increase per annum in the number of University graduate and postgraduate students qualifying for national competitive examinations;
- To produce competent and skilled clinicians, entrepreneurs and live stock business managers and team leaders;
- Faculty up-gradation, filling vacant posts and creating faculty positions in newer and upcoming faculties;
- One third of the faculty to handle extra-mural funded or University sponsored research projects;
- As per University Act, to obtain state support for generating trained and competent human resource in fisheries, biotechnology, livestock products technologies and industry and business management through designated colleges/faculties; and
- To augment University financial resource and refurbish infrastructure.







## SALIENT ACHIEVEMENTS

### Research:

- Establishment of modern laboratory facilities in the Departments of Veterinary Microbiology and Veterinary Epidemiology at par with any best laboratory in the country;
- With the financial assistance from ICAR, starting of Niche area project on diagnosis and prevention of animal diseases so as to augment productivity of animals;
- Establishment of Central Instrumentation Facility and procurement of latest equipment for undertaking advanced research in various areas of animal health and production; and
- Establishment of Research Advisory Council which will regulate and monitor all research activities in the University.

### Teaching:

- Regularization of the session of different BVSc&AH Professionals;
- Preparation and implementation of Academic Calendar for all teaching programmes;
- Required minimum class attendance of students as per the regulations of Veterinary Council of India;
- Making teaching more target oriented and effective;
- Modernization of laboratories of Clinical Departments through procurement of modern equipment so as to make teaching and clinical training more effective; and
- Construction of basket-ball Court as per International standards.

### Infrastructural Development:

- Construction of Girl's Hostel with the financial assistance from Indian Council of Agricultural Research, New Delhi;
- Inauguration of the laying of main road to the New Campus;
- Sanction of Rs. 134 lacs from ICAR, New Delhi for the construction of Farmer's Hostel with latest facilities; construction work is in progress;
- Renovation and modernization of Laboratories and Seminar Rooms in the Departments of Veterinary Microbiology and Veterinary Epidemiology.
- Repair and renovation of Hostels with the financial assistance of Rs. 12 lacs from ICAR;
- Repair and renovation of :
  - Health Centre
  - Cafeteria
  - Experimental Animal House
  - Kothari Veterinary Clinics
  - Boundary Wall of the Dairy Farm
  - VIP Guest House
  - Teacher's Home
- Construction of brick road to the residences of employees;
- Construction of toilets for resident Class IV employees;
- Repair of the Houses of teachers and employees

### Major Reforms and Managerial Changes Undertaken

- Decentralization of powers and delegation of financial powers to Dean and Head of Departments;
- Constitution of Senior Officers Committee to take major decisions;
- Structuring of University Research Council;
- Experiential learning programme for students;
- Induction of daily wagers into University services against vacant positions on the basis of their seniority;
- Promotion of class III and Class IV staff against vacant posts.

### Financial Status

#### XI Plan

- Perspective Plan (2007-2012) document of Rs. 196 crores submitted to Govt. of UP;
- Planning Board of State Govt. approved an outlay of Rs. 196 crores for the plan period of five years;
- Sanction of Rs. 18.15 crores for the year 2007-08 under the Plan head.

### Annual Grant

#### State Govt.

Plan and Non-plan grant increased to RS. 662 lacs from Rs. 512 lacs during 2005-06;

### External ICAR Support obtained

Development Grant	:	Rs. 125 lacs
Construction and civil works	:	Rs. 26 lacs
Equipment	:	Rs. 200 lacs
Library	:	Rs. 10 lacs
Polyclinic	:	Rs. 39 lacs
Niche area project	:	Rs. 124 lacs
Farmer's Hostel (Extension)	:	Rs. 135 lacs
<b>TOTAL</b>	:	<b>Rs. 659 lacs</b>
<b>Additional Grant from State Govt.</b>		<b>Rs. 150 lacs</b>

**GRAND TOTAL (State and ICAR) : Rs. 809 lacs**

### Seed and grains production at University Farms (Quintals)

Madhuri Kund Farm	:	5159.93
KVK Farm	:	420.93
Pasture Department	:	240.25
Dairy Farm	:	398.67
<b>TOTAL</b>	:	<b>6219.78</b>







## I. INTRODUCTION

UP Pt. Deen Dayal Upadhyaya Pashu-Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan Mathura, first of its kind in the State and fourth in the Country, was established vide Act. No. 27 of 2001 on 25-10-2001 by Govt. of UP with the erstwhile UP College of Veterinary Science & A.H., Mathura as its main constituent College with its all moveable and immovable assets. University is having 782.34 acres prime land in Mathura, which includes all the buildings of Veterinary College, residential complex, hostels, Dairy Farm, Poultry Farm and the agriculture land and another agriculture farm of around 1400 acres at Madhurikund, about 20 km from the main campus.

Presently, all the offices of the University, including that of Vice-Chancellor, are housed in the Administrative Block of Veterinary College. However, with the financial assistance from State Govt., new Administrative Block of the University along with the buildings for four newer Faculties, hostel for students and residential complex for employees and officers are in almost final stages of completion in the new Campus area. In view of the emerging challenges in the field of animal health and production, there is an emergent need for strengthening of Veterinary College as well.

As envisaged in the Act of University, four other constituent Colleges, namely-College of Fisheries, College of Animal Biotechnology, College of Livestock Products Technology and College of Animal Industry and Business Management will be started in the University in near future to generate trained and competent human resource. In addition, Directorate of Research and Directorate of Extension Education will be established to give impetus to research and extension activities. After the establishment of other faculties and offices, the University will be in a position to play a very vital role and march ahead on the path of development and attain the status of eminence amongst sister Institutions.

## II. ORGANIZATIONAL SETUP

The organizational set up of the University (Flow Chart I) is in almost conformity with other state agricultural, veterinary and academic universities and various bodies and authorities of the University exercise their power at various levels to coordinate and regulate administration, education, research and extension activities.

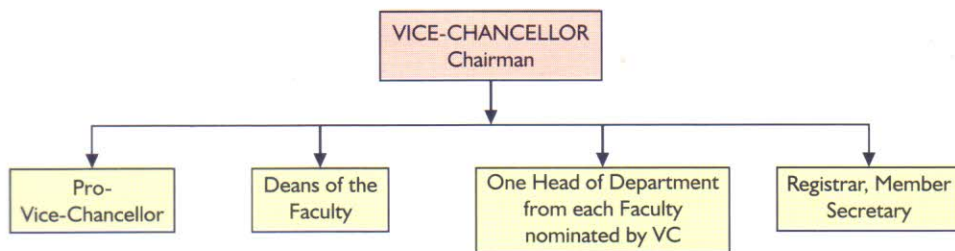
### A. Authorities of the University:

#### 1. Executive Council-

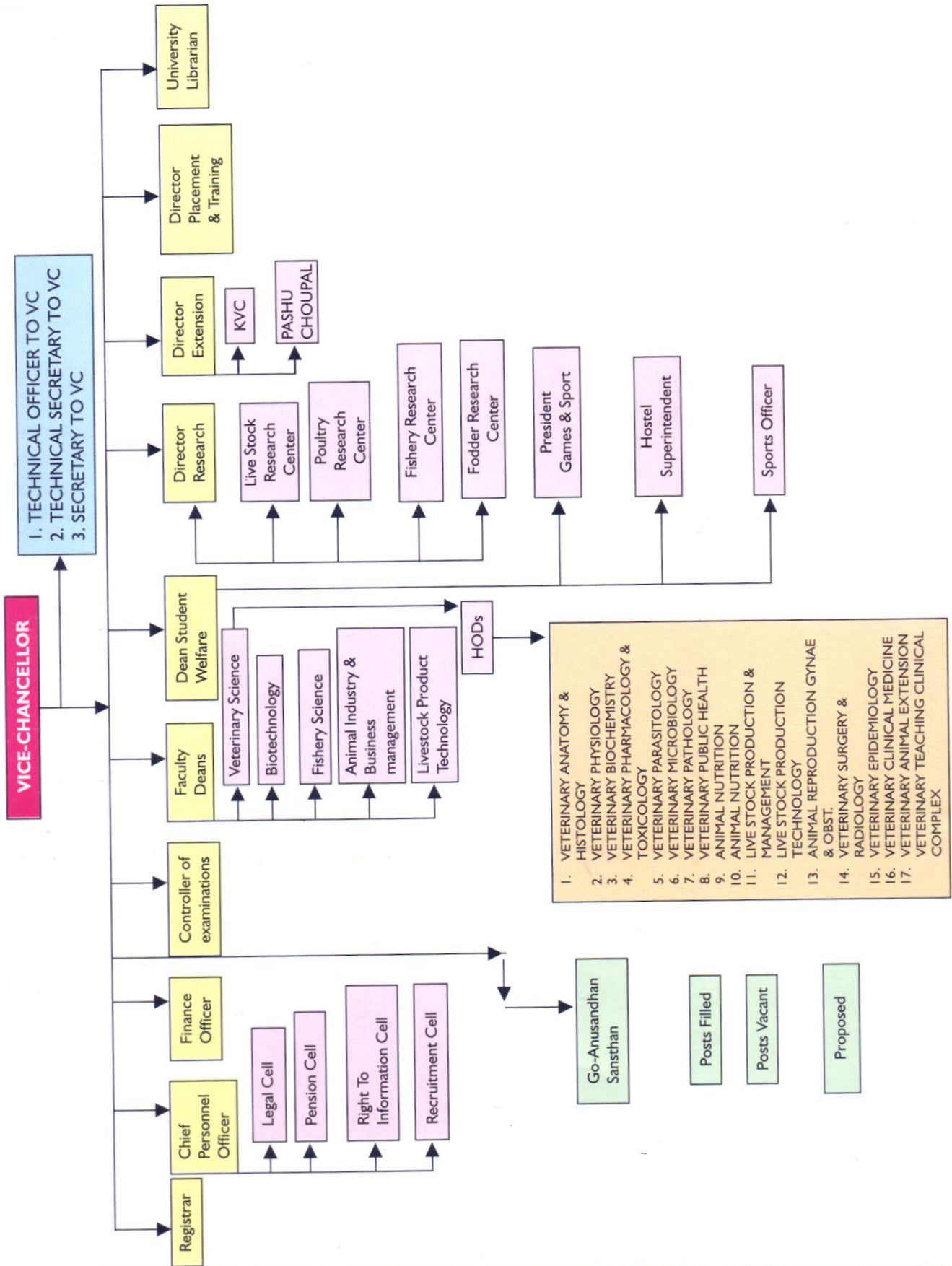
The Executive Council (EC) of the University is, in fact, the main executive body empowered to monitor, supervise and control the affairs of the University. Vice Chancellor is the Chairman of EC and other members of the EC are Pro-Vice Chancellor, Secretary Animal Husbandry and Fisheries, Govt of UP, Secretary Finance Govt of UP, Director of Animal Husbandry Govt of UP, one reputed Industrialist nominated by Govt. of UP, two eminent Veterinarians nominated by Chancellor on the recommendation of UP Govt., two livestock farmers/breeders nominated by UP Govt. and one social worker nominated by Govt. of UP.

#### 2. Academic Council-

The Academic Council of the University is the principal academic body having the control and general regulation and is responsible for the maintenance of standard of instruction, education and examination in the university. The flow chart of Academic Council is presented below:





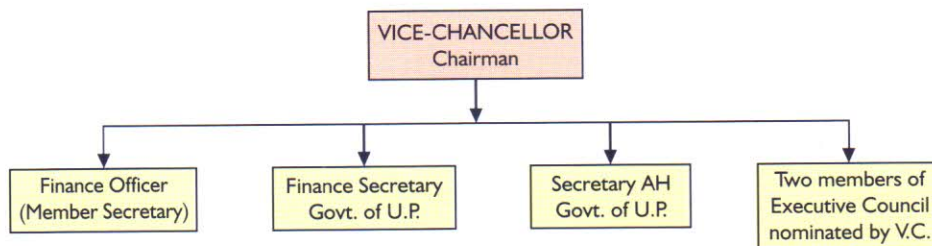






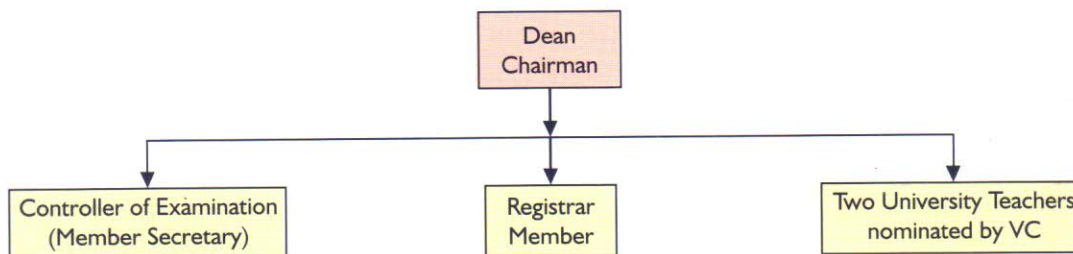
### 3. Finance Committee -

The Finance Committee of the University is to advise the Executive Council on matters relating to administration of the property and funds of the University. The flow chart of Finance Committee is presented below:



### 4. Examination Committee -

Examination Committee of the University coordinates and supervises all the examinations of the University including pre-veterinary test (PVT), appointment of examiners, tabulation and moderation of results and make recommendations to the Academic Council for improvement of the examination system. The flow chart of Examination committee is presented below:

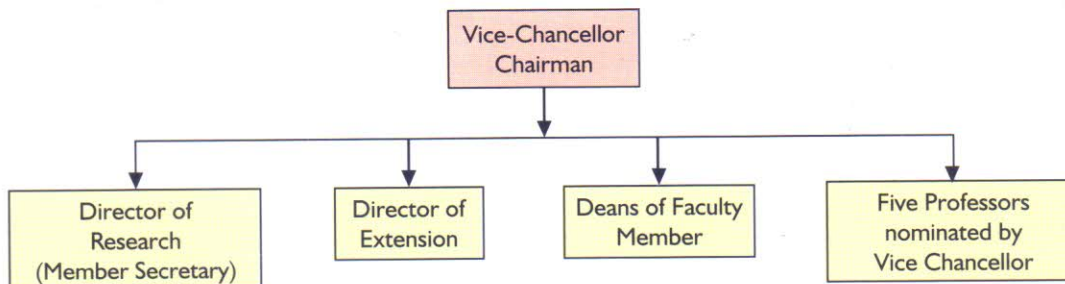


### 5. Board of Faculty -

Board of Faculty is for framing the curricula for undergraduate and post graduate programmes and to make recommendations to the Academic Council for the establishment of new departments, abolition / subdivision / or otherwise reconstitution of the existing departments. Dean of the Faculty is the Ex- Officio Chairman of Board of Faculty, and Faculty Secretary is elected on the basis of consensus amongst the faculty members. All Professors, Associate Professors and Assistant Professors of the faculty are the members of Board of Faculty.

### 6. Research Advisory Committee -

Research Advisory Committee is the policy making body on research activities of the University with Vice Chancellor as its Chairman and Director of Research as the Member Secretary. The set up of this Committee is shown below:

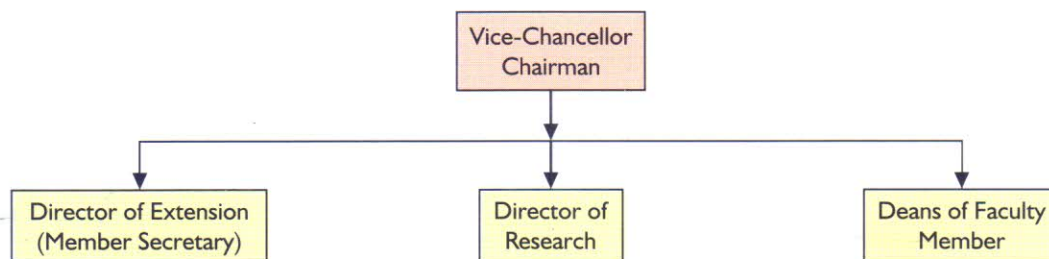






### 7. Extension Advisory Committee -

The Extension Advisory Committee is the policy making body on extension activities of the University with Vice Chancellor as its Chairman and Director of Extension as the Member Secretary. The setup of this committee is as shown here:



### Organizational Meetings held in 2005-06

S.No.	Authority	Date
1.	Executive Council	27.02.2007
		26.09.2007
		03.12.2007
2.	Academic Council	21.09.2006
		13.03.2007
		25.08.2007

### B. OFFICERS OF THE UNIVERSITY

- |                                     |  |
|-------------------------------------|--|
| 1. Chancellor                       | : His Excellency Sri T. B. Rajeshwar<br>Governor of Uttar Pradesh                        |
| 2. Vice-Chancellor                  | : Dr. R.D. Agrawal (21.03.2006 to 04.10.06)<br>Dr. M.L. Madan (from 05.10.06-continuing) |
| 3. Pro- Vice-Chancellor             | : Vacant   |
| 4. Registrar                        | : Dr. Rajesh Nigam (officiating)   |
| 5. Finance Officer                  | : Dr. O.P. Srivastava<br>Shri. R. C. Pandey  |
| 6. Controller of Examination        | : Dr. Kranti Dev (officiating)   |
| 7. Dean Veterinary College          | : Dr. S. D. Sharma   |
| 8. Dean Student Welfare             | : Dr. M. M. Farooqui (officiating)   |
| 9. Director of Research             | : Dr. Sarvajeet Yadav (officiating)  |
| 10. Director of Extension           | : Dr. S. D. Singh (officiating)  |
| 11. University Librarian            | : Dr. Daya Shankar (officiating)   |
| 12. Director Placement and Training | : Dr. A. K. Bhatia (officiating)   |







### III. TEACHING

#### A. Teaching Activity :

##### 1. Teaching Institutes

University presently has only the College of Veterinary Science and Animal Husbandry as the main constituent College, however, four other faculties will be started in near future.

##### 2. Admission strength and turn out of students during 2006-07

S. No.	Degree Programme	Intake capacity	Students Admitted			Students turn out		
			Boys	Girls	Total	Boys	Girls	Total
1	BVSc & AH	80	63	10	73	48	1	49
2	M.V.Sc.	48	43	3	46	36	2	38
3	Ph.D.	22	18	1	19	2	-	2
TOTAL		150	124	14	138	86	03	89

##### 3. Academic attainments of students

During the year 2006-07, seven outgoing BVSc&AH graduates, namely Drs. Vishwas Singh, Saurabh Singh, Chandan Prakash, Dharmesh Tiwari, Brij Kishor Singh, Amit Kumar Jaiswal and Shambho Sharan Chaudhary performed excellently in the JRF examination 2006 of ICAR, New Delhi. On all India basis. Dr. Vishwas Singh, Shambho Sharan Chaudhary and Saurabh Singh ranked first, second and fourth, respectively in Veterinary Science group. Dr. Chandan Prakash and Dr. Ajay Gupta of the outgoing 2006 batch of BVSc&AH received Xceft and Moxel Merit awards, respectively for having secured the highest marks during BVSc&AH degree programme. The awards including the cash prizes of Rs.10,000/ and 7,500/ along with original prints of Veterinary Merck Manuals and surgical kits were conferred upon them on December 12, 2006 by Alembic Pharmaceuticals Limited (Veterinary Division) Mumbai. These prizes were distributed by Registrar of the University.

##### 4. Academic Research

During the year 2006-07, 38 students submitted their MVSc and two students their PhD theses which were accepted by the University for the award of respective degrees.

#### Master of Veterinary Sciences

##### Animal Breeding and Genetics

S. No.	Title of Theses	Student	Guide
1.	Genetic evaluation of Sahiwal cattle using animal model	Dr. Govind Narayan Tiwari	Dr. H. N. Singh
2.	Inheritance of monthly milk yield in Murrah buffaloes	Dr. Sri Ram Kushwaha	Dr. R. C. Sharma

##### Animal Reproduction Gynecology and Obstetrics

S. No.	Title of Thesis	Student	Guide
1.	Studies on improving post-partum anestrus in cattle and buffaloes using Buserelin (Gn-RH) and tiaprost tromethamine (PGF <sub>2alpha</sub> )	Dr. Jayaprakash Yadav	Dr. Atul Saxena
2.	Studies on certain aspects of infertility in buffaloes and initiation of early post partum breeding.	Dr. Dhananjay Mishra	Dr. Atul Saxena
3.	Studies on certain aspects of infertility in buffaloes and initiation of post partum breeding.	Dr. Ravinder Kumar	Dr. Atul Saxena







### Veterinary Biochemistry

S. No.	Title of Thesis	Student	Guide
1.	Cloning and characterization of goats enteric beta-defensin.	Dr. Ashish Kumar	Dr. Kranti Dev Dr. Ashok Kumar
2.	Molecular studies on goat antimicrobial peptides.	Dr. Ambila Sharma	Dr. Kranti Dev Dr. Ashok Kumar
3.	Cloning and sequence analysis of beta-subunit of goat's leutinizing hormone.	Dr. Jakeehussen A. Olekar.	Dr. Kranti Dev Dr. Ashok Kumar

### Veterinary Clinical Medicine, Ethics and Jurisprudence

S.No.	Title of Thesis	Student	Guide
1.	Studies on some metabolic profiles in buffaloes before and after parturition	Dr. Gyanendra Singh	Dr. H.P Lal
2.	Studies on some aspects of clinical and subclinical mastitis cows and buffaloes	Dr. Amar Pal Singh	Dr. H.P Lal
3.	Clinico-therapeutic studies on dermatitis with "dermanol skin cream" in canines, caprines and bovines and a note on epidemiology of canine diseases with special reference to dermatoses	Dr. Satish Kumar Singh	Dr. H.P Lal

### Veterinary Microbiology

S.No.	Title of Thesis	Student	Guide
1.	Studies on occurrence of <i>Mycobacterium avium</i> subspecies paratuberculosis in bovines with reference to serological and molecular diagnosis	Dr. Pawan Kumar	Dr. A.K. Bhatia
2.	Studies on antibacterial and immunomodulatory properties of <i>Ocimum sanctum</i> and <i>Argimone mexicana</i> leaves	Dr. Dhanesh Kumar	Dr. A.K. Bhatia
3.	Studies on immunogenicity of the three different immunizing motifs against enterotoxigenic <i>Escherichia coli</i> (ETEC) diarrhoea in neonatal calves	Dr. A.K. Katiyar	Dr. A.K. Bhatia

### Veterinary Epidemiology and Preventive Medicine

S.No.	Title of Thesis	Student	Guide
1.	Routine use of PCR for diagnosis of Hemorrhagic septicemia	Dr. Alka Manisha	Dr. B.C. Pal
2.	Molecular epidemiology of IBR virus in buffaloes of U.P.	Dr. Priyanka Shukla	Dr. S. Yadav
3.	Routine use of PCR for diagnosis of respiratory distress in goat.	Dr. Pramod Kumar	Dr. B.C. Pal
4.	Sero prevalence and molecular diagnosis of IBR virus in cattle.	Dr. Tribhuvan	Dr. S. Yadav







### Veterinary Pathology

S.No.	Title of Thesis	Student	Guide
1.	Experimental Pasteurellosis in rats with reference to vaccine strategy and immunomodulatory effect of residue of cow urine.	Dr. V. K. Panday	Dr. A. K. Srivastava
2.	Pathology, pathogenesis and molecular diagnosis of fowl cholera in turkey poults with special reference to vaccine strategy.	Dr. S. K. Singh	Dr. A. K. Srivastava
3.	Studies on immunomodulating role of Gangatiri cow urine in endosulfan-induced toxicity in rats.	Dr. C.K. Singh	Dr. A. K. Srivastava

### Veterinary Parasitology

S.No.	Title of Theses	Student	Guide
1.	Studies on some parasitic infections in different breeds of dogs.	Dr. Manish Singhal	Dr. R. D. Agrawal
2.	Studies on the effect of ticks infection on haematology and body weight in cattle and buffalo calves.	Dr. Pawan Kumar	Dr. R. D. Agrawal

### Veterinary Pharmacology and Toxicology

S.No.	Title of Theses	Student	Guide
1.	Pharmacotherapeutic evaluation of a polyherbal formulation with particular reference to health and growth performance in broilers and its <i>in vitro</i> kill kinetics against certain avian microbes.	Dr. Bharat Bhushan	Dr. Satish K. Garg
2.	Studies on phytochemistry and pharmacodynamics of uterotonic effect of <i>Moringa oleifera</i> flowers extract on buffalo uterus.	Dr. Devendra Singh	Dr. Satish K. Garg
3.	Phytochemical characterization and <i>in vitro</i> evaluation of some indigenous plants for anthelmintic activity.	Dr. Chandra Bhadra	Dr. H. S. Panwar Dr. Satish K. Garg
4.	Pharmacological screening of some indigenous plants for their acaricidal activity with phytochemistry.	Dr. Mritunjay Chaturvedi	Dr. Rajendra Singh
5.	Evaluation of some indigenous medicinal plants for anthelmintic activity	Dr. Vipin Rathi	Dr. H.S. Panwar

### Veterinary Public Health

S.No.	Title of Theses	Student	Guide
1.	Bacterial contamination in meat of poultry and poultry eggs with special reference to <i>E. coli</i> and <i>Salmonella</i>	Dr. Vinod Kumar Yadav	Dr. Basanti Bist
2.	Bacterial profile of <i>Salmonella</i> and <i>E. coli</i> in fish meat and its public health significance.	Dr. L.N. Gupta	Dr. Basanti Bist







3.	Seroprevalnce of brucellosis in cattle and buffaloes in certain organized dairy farms and rural areas of Uttar Pradesh and its public health significance.	Dr. Vijay Kumar Rathore	Dr. Basanti Bist
4.	Bacterial profile in chevon and pork with special reference to <i>Salmonella</i> species and public health significance.	Dr. Hemendra Singh Lambey	Dr. Basanti Bist

### Veterinary Surgery and Radiology

S.No.	Title of Theses	Student	Guide
1.	Studies on combination of xylazine, bupivacaine and butorphanol for epidural analgesia in dogs	Dr. Deepesh Kumar	Dr. R.P. Pandey
2.	Evaluation of xylazine, ketatime and xylazine-propofol for clinical surgery in dogs	Dr. Alok Kumar	Dr. R.P. Pandey
3.	Clinical evaluation of different techniques of ovariohysterectomy in bitches	Dr. Anil Kumar	Dr. Bharat Singh
4.	Anaesthetic and surgical evaluation of xylazine with diazepam or midazolam and ketamine in cattle	Dr. Ram Raj	Dr. Bharat Singh

### 5. Scholarships

Several students of the University received financial assistance from different state and central agencies and University in the form of merit scholarships and stipend.

S.No.	Name of the Scholarship	No. of Recipients
1.	University Merit Scholarship to PG students	07
2.	University Merit Scholarship to UG students	11
3.	National Talent Scholarship	01
4.	Poor Boys Scholarship for General Category	20
5.	State scholarship for students of other backward classes	139
6.	State scholarship to students from SC/ST categories	48
7.	Minority category merit scholarship	01

### 6. Internship Programme :

Forty nine students completed their six months compulsory internship training programme during 2006-07. During this programme, Interns were given hands on training in Clinical and Preventive Medicine, Surgery, Gynaecology, Livestock production, Poultry Science, Semen Technology, Biologicals Production and Zoo Medicine and Management. In addition to practical training on various aspects of animal health and production, Interns were also provided an opportunity to interact with different pharmaceutical companies and acquaint themselves with the latest drugs available in the market.

### 7. Educational Tours :

During the period under report, following educational tours were arranged for students:

1. South India Educational Tour of Final Year BVSc &AH students who visited Mumbai, Goa, Bangalore, Tirupati and Chennai (October 3-19, 2006).
2. North India Educational Tour of 4th BVSc. & A.H students who visited NDRI Karnal, GADVASU, Ludhiana, CSK HPKV, Palampur (March 9-15, 2007).







### 8. Student Welfare, Amenities and Activities

All activities and welfare of students except academics are looked after by Dean Student Welfare who is assisted by Hostel Superintendents, President Games and Sports, Sports Counselors, PTI and other supporting staff.

For entertainment of inmates, each hostel has a common room facility with color T.V., news papers, magazines and telephone and facilities for table tennis, carom, chess etc. Students in almost all the hotels run co-operative messes so as to ensure healthy and hygienic food. Milk is supplied to students at subsidized rates from University dairy farm. Each hostel is well equipped with water purifying device, water geezers and water coolers to provide clean warm and cool drinking water.

#### Students' Hostels

Residential accommodation was provided to all the desirous students (Undergraduate and Postgraduate), including women students. There are five hostels, namely - Sampurnanand, Gautam, Shastri (erstwhile Kisaan Bhavan) and Nehru for boys and Sarojini Hostel for Girls. Girls hostel is having 24 hours internet facilities as well.



With the financial assistance from ICAR, one new Girls Hostel "Kasturba Hostel" was added during the year under report. The Hostel was inaugurated by Dr. Mangla Rai, Director General ICAR and Secretary DARE, Govt. of India on February 03, 2007.



Hostel-wise total strength of male and female students during the year in all the six hostels are furnished here under.

S.No.	Name of the hostel	Students strenght	
		Men	Women
1.	Sampurnanand	135	-
2.	Gautam	104	-
3.	Shastri	50	-
4.	Nehru	50	-
5.	Sarojini Hostel	-	25
6.	Kasturba Hostel	-	29
Total		339	54

#### National Cadet Corps :

Senior Division NCC R&V SQN of Mathura, Veterinary College consists of three troops commanded by a company commander. The allotted vacancy of 100 senior division boys is fully utilized. During the year 2006-07, 100 cadets enrolled themselves in remount and veterinary squadron NCC.



Basic NCC training includes drill, weapon training, field training, map reading, self defense, first aid, hygiene and sanitation, civil defense and leadership. Cadets also learnt equestrian, saddle fitting, shoeing and working in military veterinary hospital, army dog training and hospital management. The above training was given to the cadets in regular parades and camps. Interested cadet trained in equestrian event like horse ridding, show jumping, tent pegging etc. also participated in Republic Day Parade.

During the year under report, 28 cadets qualified "B certificate examination" and two qualified "C Certificate Examination" The unit /SQN has cent-per cent result in certificate examinations. The cadets were also involved in social service activities like tree plantation, pulse polio rally and in the campus cleaning activities.

#### Health Services:

For the health care of the students, employees and their families, University is having health centre where a part time Medical Officer provides OPD services.







### Sports Activity:

In front of the Administrative Building, there is a large play ground for outdoor games like cricket, hockey, football, volley ball, kabaddi, khokho, basket ball and various athletic events. A large indoor badminton hall is also available in one of the boy's hostels. To encourage and facilitate the participation of students in sports activities, good facilities have been created and annual sports meet is a regular feature. Interclass outdoor games competitions provide an opportunity to students to take part in almost all the events.

### Extracurricular Activities :

Apart from teaching and sports, students are also provided opportunities to take part in various extra-curricular activities and University arranges various activities like- debates, declamation, elocution, quiz competition etc.

### B. Clinical activities :

Veterinary Clinical Activities at the University are managed by collaborative efforts of the clinical departments of College of Veterinary Science. At this campus, Veterinary Clinics was established in year 1950 with the funds provided by Late Sri Narsingh Das Kothari of Bikaner as donation. Since then, Kothari Veterinary Hospital has been acting as epicenter of clinical activity at this campus. The building has adequate space and accommodation.

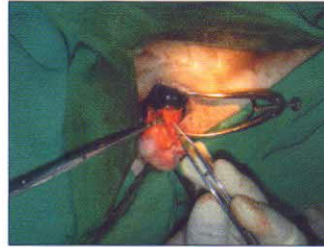


The existing Veterinary Clinic is rendering efficient health care service for all types of farm animals and companion animals since 1950. The quality services provided at the Veterinary Hospital at this University attract very large number of new and referred clinical cases from all over the state of Uttar Pradesh and adjoining districts of Madhya Pradesh, Rajasthan, Haryana and Delhi.

A total of 3347 cases were treated during the period under report. The budget allotted to the hospital for purchase of medicines and hospital consumables during the period under report was Rs. 35,000/.

In the period under report, with the financial assistance from Indian Council for Agricultural Research, the veterinary hospital at the University was developed as Experiential Learning Centre, a facility where the students are given an opportunity for hands on training in order to gain skills in various clinical procedures. The old hospital building was renovated

and modified. At present, the hospital has small and large animal operation theaters, diagnostic lab, sterile supply section, diagnostic imaging unit, OPD, large animal in-patient facility and emergency section. The hospital has recently been equipped



with state-of-the-art facilities for diagnosis and treatment of animal diseases. In addition to this, a computer assisted teaching hall for a full batch of 70 students is built. The renovation and modification of old hospital building is still going on in order to develop it as a multidisciplinary veterinary clinical facility.

### AMBULATORY CLINICAL SERVICE

Large animal ambulatory clinical service is run by the hospital. A team of undergraduate students and one instructor visit the identified centers twice a week. The ambulatory clinical service centers are located in remote rural areas. To provide door step services to livestock owners, the diagnosis and treatment of animal diseases is done at these centers by the experts and the students are given training in real life rural conditions.

### EDUCATION AND TRAINING

Teaching and training for clinical courses to final year under-graduate and post-graduate is done at the University Veterinary Hospital. The students are trained in diagnostic imaging techniques, clinical procedures and laboratory diagnostic work relevant to their curricular requirements in the subject of Veterinary Surgery and Radiology, Obstetrics and Gynaecology, and Clinical Veterinary Medicine.

### HOSPITAL SERVICE

In routine working hours, the diagnostic and treatment services are provided to livestock owners at University Veterinary Hospital. At the hospital the diagnosis and treatment of diseases of all the animals rightfully falling under jurisdiction of a veterinarian is done. Animals treated at the hospital are pet animals like dogs and cats; large animals like cattle, buffalos, horses and camel; small ruminants like sheep and goats, wild animals and birds.

### FACILITIES PRESENT AT THE HOSPITAL

**Ultrasound:** The hospital is equipped with a state-of-art ultrasound machine having convex array and rectal transducers. Liver and spleen abnormalities, prostate enlargements,







cystic calculi, renal abnormalities, pregnancy, pyometra, foreign bodies in gastrointestinal tract, abdominal masses are the conditions diagnosed in pet animals by ultrasound scan. In large animals, pregnancy monitoring, ovarian monitoring, evaluation of musculo-tendinous structures is done sonographically.

**Minimally invasive diagnostic endoscopy:** It has been procured for the hospital during the period under report. For diagnostic work, laparoscopes of different diameter, and arthroscope are available at the hospital. It is planned to upgrade this facility for operative laparoscopy and arthroscopy work.

**Radiology:** Radiology unit is equipped with a powerful 500 mA x-ray machine and a mobile 100 mA single phase machine has recently been procured during the period under report. The physiotherapy equipments include diathermy, trans-cutaneous nerve stimulator and muscle stimulator.

**Orthopaedic Surgery:** For minimally invasive orthopedic procedures, a 9" C-arm image intensifier has been procured for the hospital during the period under report. Adequate facility for internal fixation of fractures has also been created during the period under report.

**Operation theaters:** Small animal operation theater for general surgery, orthopedic procedures and minimally invasive surgery, a large animal operation theater equipped with motor driven hydraulic operated large animal operation table and facility for conducting standing animal operations is present at the hospital. Recently, facility for inhalation anaesthesia, pulse oxymeter, ECG and solid state surgical diathermy have also been created in the University Veterinary Hospital.

**Ophthalmic Surgery:** During the period under report, ophthalmic surgery section was begun at the hospital having facility for extra-capsular cataract extraction and extra-ocular surgery. Utilizing this newly created facility, successful management of corneal dermoids by superficial keratotomy was done in two calves.

## CLINICAL DIAGNOSTIC LABORATORY

The Clinical Diagnostic Laboratory at the hospital is equipped with recently procured automatic haematology analyzer, auto-analyzer for biochemical parameters. Parasitological examination of faeces, haematology, serum chemistry and urinalysis can be done at the diagnostic lab in the hospital. For microbiological and histopathology examination, the samples are sent to concerned departments from the hospital.

## RECEIPTS

By way of hospital collections in the form of case registration fee and diagnostic imaging charges, a sum of Rs.27351.00 was realized during the period under report.

## CLINICAL TRAINING OF INTERNS

Clinical meetings for undergraduate students are regularly conducted. Interns were given hospital training. Practicing veterinarians were given clinical training at the hospital to update their knowledge in the latest techniques in the diagnosis and treatment of various ailments in small and large animals.

## C. Library Services

University Library is the hub of all scholastic activities. The Library has comfortable sitting space for 120 persons and



has CD Rom, internet, on-line database and xerox facilities for readers and visitors. Data entry, bar coding and cataloging of six thousands books, one thousand five hundred journals, one thousand five hundred theses, nine thousand computerized catalogue cards and computerized reader cards have been completed successfully. University library has highly specialized collection of about 30,000 documents in the field of veterinary sciences, animal husbandry, poultry science and other allied subjects including books, theses, periodicals and journals. The collection grows at an average rate of about 500 volumes including recent books per annum. The library subscribed sixteen foreign journals and twenty Indian journals during the year 2006-07.

## EMERGENCY VETERINARY CLINIC

Although, a separate emergency section is proposed to be established soon and work is under progress; at present the emergency clinical services are provided by the teaching faculty of clinical departments in non-working hours, who attend to the cases. Under-graduate and post-graduate students are involved in emergency clinical work as per need of the case.

## INPATIENT FACILITIES

Adequate in-patient facility for large and small animals is present where the cases requiring intensive or post-operative follow-up care are kept. The facility is under renovation and expansion.







**D. ARIS CELL**

In view of the revolutionary advancements in information technology and to provide rapid and free access to the scientific world, Agriculture Research Information System (ARIS) Cell and cordless internet and Local Area Network (LAN) facility has been established in the University with the financial assistance from ICAR, New Delhi.



ARIS cell is being extensively used by the faculty members and postgraduate students to browse the internet for having access to the latest scientific developments in the field of their interest. Dr. Sharad Yadav, Associate Professor Epidemiology worked as the Officer In-charge of ARIS Cell during 2006-07.

**E. Directorate of Training and Placement:**

The Directorate of Training and Placement of the University helps all the graduate and postgraduate students by providing career related information and placement assistance. Placement Directorate arranges placements in collaboration with potential employers such as hatcheries, feed manufacturers and meat processing units, pharmaceutical companies and non government organizations.



During the year under report, five campus interviews were conducted on the request and demand from private entrepreneurs including NGOs. Large number of students were advised to contact the firms who were in need of certain technical personnel. As a result of which more than twenty five students were suitably placed in different organizations including Pharma and Biotech sectors.

**IV. Research**

**Research Co-ordination and Management:**

For better coordination of research activities in the University, there is Directorate of Research. Research Advisory Committee (RAC) is the policy making body on various issues related to research. The RAC of University, under the Chairmanship of Hon'ble Vice Chancellor, considers and makes recommendations in respect of :

1. Formulation of research projects;
2. Facilities required for implementing research projects; and
3. Orienting research to meet emerging challenges and needs of farmers.

**Extra Mural Research Projects :**

S.No.	Title of the research project	Funding Agency
1.	Niche Area Project on Production augmentation in rural livestock through health intervention	ICAR, New Delhi
2.	Effect of Ocimum sanctum and Argemone mexicana extracts in induction of cytokines and their biological character, Zalon	DST, New Delhi
3.	All India Coordinated Foot and Mouth Project on epidemiological studies	ICAR, New Delhi
4.	Molecular epidemiology and development of diagnostic tools for IBR	UPCAR, Lucknow
5.	Design and development of economical viable feed processing indigenous equipments of economic feed for livestock	DST, New Delhi
6.	Formulation of cheap and balanced ration for bovines with locally available feeds, fodders, agroindustrial waste sand byproducts.	UPCAR, Lucknow





## RESEARCH ACHIEVEMENTS

### PROJECT 1: LEPTIN GENE POLYMORPHISM IN INDIAN GOAT BREEDS

The investigation regarding the leptin gene polymorphism was carried out in Barbari and Jamunapari goat breeds to study the restriction fragment length polymorphism in leptin gene in Indian goat breeds and further evaluating leptin gene in relation to growth performance.

A total 111 blood samples were collected comprising of 41 samples from Jamunapari breed and 70 samples from Barbari breeds and leptin gene polymorphism screened by PCR-RFLP technique. Two regions of leptin gene were amplified in the present study.

1. Amplification of goat leptin gene of exon-2
2. Amplification of intronic region of goat leptin gene i.e. amplification of intron between two exons (exon 2&3)

Indian goats showed the presence of 'T' allele and 'A' allele in all samples under the study. Further analyzing, mutations were present at particular enzyme sites; it was observed that there is changes of bases as GA in most of the sequences at 68 bp and GC in most of the sequences at 100bp respectively loosing the restriction sites of *Hinf*-I (Seq GANTC) and *Sau* 3AI (Seq GATC) enzymes in exon-2 and intronic region.

Leptin gene sequences were obtained in Indian goats for the first time and two regions of leptin gene were amplified and analysed also. The sequences of exon-2 ranges from 153 bp to 265 bp, while sequences of intronic region showing near about 388 bp while only one sequence shows 283 bp of leptin gene. BLAST analysis of *caprine* leptin gene exon-2 shows no similarity with that of other species of livestock, showing that this region in *caprine* leptin gene is more conservative. While BLAST analysis of intronic region of *caprine* leptin gene shows sequence similarity with that of *bos* and *bubalus*. Distance matrix of intronic region of *caprine* leptin gene indicates that *caprine* was more closer to *bos* than *bubalus*, *bos* is more closer to *bubalus*.

In all samples, only 'T' allele or 'TT' genotype and 'A' allele or 'AA' genotype were observed that indicating the absence of leptin gene polymorphism in Jamunapari and Barbari breeds of Indian goats.

### PROJECT-2: EFFECT OF GRADED LEVELS OF PHOSPHORUS WITH CONSTANT LEVEL OF CALCIUM ON GROWTH RATE, NUTRIENT UTILIZATION, RUMEN FERMENTATION AND BLOOD BIOCHEMICAL PROFILE IN WEANED BARBARI KIDS

For experiments, 24 weaned Barbari kids (12 male and 12 female) of 95-120 days old were randomly divided equally

into three treatment groups based on their body weight and age, each groups had similar number of male and female kids. They were reared on three dietary concentrates rations i.e. T<sub>1</sub> with Ca 1% and P 0.350%; T<sub>2</sub> with Ca 1% and P 0.497%; and T<sub>3</sub> with Ca 1% and P 0.644%. Concentrate mixture was offered @ 2% of the body weight to all animals along with Pigion pea straw ad-libitum and Berseem fodder 300-400g/day. Roughage to concentrate ratio was maintained at a minimum of 60:40 in the composite ration.

Observations on growth performance of weaned Barbari kids were recorded from 120 to 240 days of age. The parameters recorded were weekly body weight, average daily gain (ADG), fortnightly DM, CP and OM intake and feed conversion efficiency (FCE).

Voluntary intake of daily DM, OM and CP was not affected by high P supplementation.

Weekly body weights and ADG were not affected by high P supplementation in the concentrate ration. The value of FCE was increased by high P supplementation due to increased ADG. Intake of DM, DOM, TDN, DE, ME, and NE were not affected by high P treatment during metabolism trial of the kids. The digestibility of DM, OM, CP, EE, TCHO, NDF, ADF and hemicellulose was not influenced by high P treatment in the concentrate ration. All the values of N-balance (N-intake, N-excreted and N-retained) were not affected by high P supplementation. All the values of Ca-balance (Ca-intake, Ca-excreted and Ca-retained) were not affected by high P supplementation.

In P-balance studies, excretion of P from faeces followed the same trend as P intake from the ration i.e. high P supplemented groups excreted high amount of P in the faeces, although the retention of P was more in high P treated groups

All parameters (pH, TVFAs and N-fractions) of rumen liquor were not affected by high P treatment. Serum glucose, total protein, albumin, globulin, urea and urea-N values were not influenced by high P treatment. Serum P value was high in high P supplemented groups.

### PROJECT-3: EFFECT OF DIFFERENT LEVELS OF SHILAJIT FEEDING ON PERFORMANCE OF BROILERS

On the basis of a short-term experiment with small number of birds (160 total), it was concluded that in the proper environment, addition of 20 to 60 g shilajit per 100 kg of feed would enhance the growth rate of broilers. While the digestibility of nutrients and carcass quality would not be affected too much.







#### **PROJECT-4: EFFECT OF SUPPLEMENTATION OF DIFFERENT LEVELS AND SOURCES OF SELENIUM ON THE PERFORMANCE OF GUINEA PIGS**

Effect of selenium supplementation through inorganic (sodium selenite) and organic (Jevsel-101) sources was evaluated on growth rate, nutrient utilization and feed conversion efficiency in weaned guinea pigs. Results indicated that selenium requirement of guinea pigs is higher than the presently recommended level of 0.15ppm, as selenium supplemented guinea pigs had better performance than un-supplemented group animals. Further, it is also deduced that organic source selenium is better utilized than inorganic selenium.

#### **PROJECT-5: A STUDY OF REPLACEMENT OF MAIZE BY SORGHUM AND PEARL MILLET AND THEIR EFFECT ON GROWTH PERFORMANCE OF BROILER CHICKENS**

Study was conducted using 90 one day old broilers in order to evaluate the effect of replacement of maize with 2 test diets i.e. sorghum based diet and pearl millet diet on growth performance, nutrient utilization and feed cost economics of broilers. The broilers were fed *ad libitum* with maize based diet, sorghum based diet and pearl millet based diet. be more or less identical in pearl millet (11.5%), sorghum (10.615) and maize (9.15%). The crude protein was in pearl millet based diet (23.96%), sorghum based diet (23.51%) and maize based diet (22.78%).

The main ingredients of diet maize, sorghum and pearl millet used in this experiment were analyzed for chemical composition. Cumulative feed intake (g/b), cumulative body weight gain (BWG), cumulative FCR, nitrogen retention, calcium retention, phosphorus retention, and digestibility coefficient of dry matter, ether extract, crude fibre, total ash, nitrogen free extract were calculated. Mortality rate was found to be 6.66 per cent in maize groups followed by 3.33 per cent on sorghum group and nil in pearl millet group.

Cumulative feed cost of unit weight gain was higher in the broilers fed on sorghum based diet (Rs.22.72) and was lower in broiler fed on pearl millet based diet (Rs.21.95) and maize based diet (Rs.21.53) during 0-4 week of age. Similar trend of cumulative feed cost of unit weight gain was noticed during 0-6 week of age of broilers among different diets.

Sorghum and pearl millet contained relatively more protein than maize, which is used in broiler feed experiments. The performance among broiler chicks in terms of nutrient retention, growth and feed conversion ratio was found non significantly different among maize, sorghum and pearl millet based feeds.

During both metabolic trials, retention of nutrients i.e. nitrogen, calcium, phosphorus, dry matter, ether extract, crude fibre, total ash and nitrogen free extract also did not have any significant difference among different dietary treatment.

The feed cost of unit weight gain in broilers fed sorghum and pearl millet was almost nearer to that of maize fed group. Incorporation of sorghum and pearl millet in place of maize in broiler diet, therefore, did not adversely affect the performance of broiler chicks. On the basis of results, it may be suggested that sorghum and pearl millet could be used completely to replace maize in broiler diet.

#### **PROJECT-6: STUDIES ON SOME ASPECTS OF CLINICAL AND SUB-CLINICAL MASTITIS IN COWS AND BUFFALOES**

A total of 538 lactating animals from various dairy farms and University Veterinary Hospital Mathura were included in the study. The animals were screened by three indirect tests i.e. Mastrip test, MCMT and MWST for the detection of clinical and sub-clinical mastitis in cows and buffaloes.

Season-wise highest incidence was recorded in rainy season (49.12%) followed by winter (27%) and summer (23.32%) season, and species-wise incidence of clinical mastitis was 7.84% and 13.05% in buffaloes and cows respectively. The incidence of sub-clinical mastitis was found 23.21% in cows and 11.24% in buffaloes. The over all incidence of sub-clinical mastitis was higher at farm (closed herd) than field conditions. Highest incidence was seen in second lactation (31.57%) followed by third lactation (26.31%), fourth (16.44%) and first lactation (14.47%). On the basis of lactation stage, maximum number of mastitis cases were found during first month (36.84%) followed by second month (32.89%) and third month (11.84%).

Among the bacterial culture isolates, *Staphylococci* was isolated from 62.18% cases (47.89% coagulase +ve and 14.28% coagulase ve) and *Streptococci* from 20.16%. Besides these, other isolated organisms were *E. coli* (7.56%), *Corynebacterium* (3.36%), *Klebsiella* (1.68%), *Bacillus* sp. Along with fungi also (2.52%).

*In-vitro* antimicrobial sensitivity test revealed that bacterial isolates were highly sensitive to ciprofloxacin (91.37%), chloramphenicol (85.62%) and gentamicin (83.62%), moderately sensitive to amoxicillin (77.50%) and erythromycin, cephadroxil each (79.31%), and slightly sensitive to cloxacillin and ampicillin.

#### **PROJECT-7: IMPACT OF RB-51 VACCINATION IN CONTROL OF BOVINE BRUCELLOSIS**

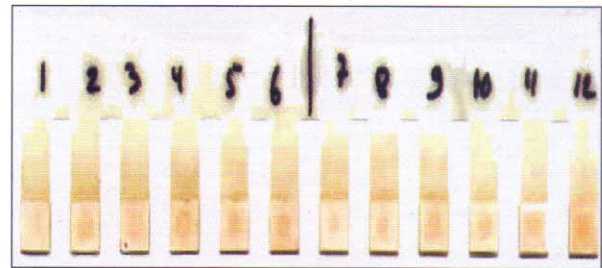
In the present study, a total of 146 cows and 69 buffaloes were taken to know the impact of RB-51 vaccination





in control of bovine brucellosis. After vaccination, there were no side effects like fever, swelling or pain at the site of injection, decrease in feed intake, abnormal behavior except for only slight drop in milk yield in lactating animals. No abortions were found in brucellosis positive and brucellosis negative cows and buffaloes that were vaccinated at different stages of pregnancy from 6-8 months in cows and 6-9 months in buffaloes. During this trial, four animals (2 cows and 2 buffaloes) excreted *Brucella* strain RB-51 organisms in milk and lochial fluid. The strain was identified on the basis of cultural, morphological and biochemical characteristics.

Dot ELISA responses of sera from seronegative animals (35 cows and 35 buffaloes) vaccinated with a reduced dose of Strain RB-51 ( $10^8$  C.F.U.) did not differ from non vaccinated animals except slight indication, which may be either due to non-specific reactions or low dose of vaccination. Dot ELISA responses of sera from seropositive animals (30 cows) at a dose of  $10^9$  C.F.U. Were similar to pre-vaccinated sera of the seropositive animals.



DOT ELISA RESPONSES OF SERA FROM RB-51 VACCINATED SERONEGATIVE ANIMALS

**PROJECT-8: SERO-EPIDEMIOLOGY AND MOLECULAR DIAGNOSIS OF FOOT AND MOUTH DISEASE IN CATTLE AND BUFFALO**

In this cross sectional study, a total of 800 serum samples collected from cattle and buffaloes of different sex, age and from different places (districts Ghaziabad, Gautam Budh Nagar, Aligarh and Mathura) were screened for seroprevalence of FMD using LPB-ELISA.

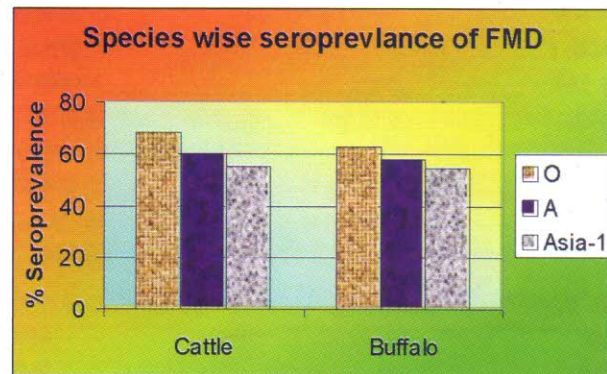
Species and placewise seroprevalence of FMD is shown below:



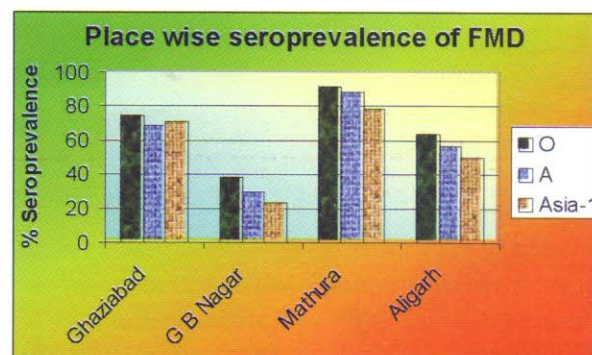
Positive Skin test in cow (reading 72 hours after intradermal injection of  $1 \times 10^8$  cell forming unit RB-51 antigen/0.2ml RB-51 vaccine) following 3 months RB-51 vaccination.



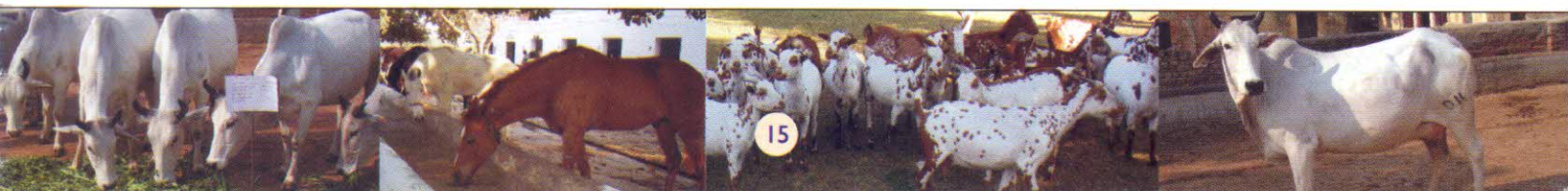
Positive Skin test in buffalo (reading 72 hour after intradermal injection of  $1 \times 10^8$  cell forming unit RB-51 antigen/0.2ml RB-51 vaccine) following 3 months RB-51 vaccination.



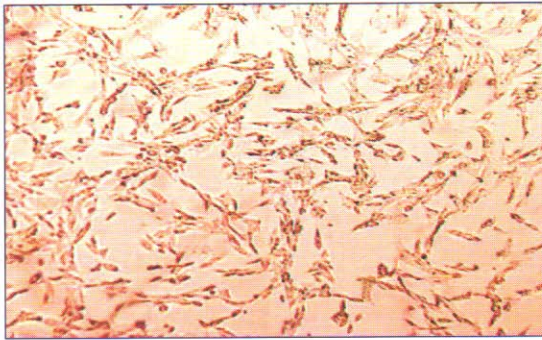
Species wise seroprevalence of FMD in cattle and buffaloes



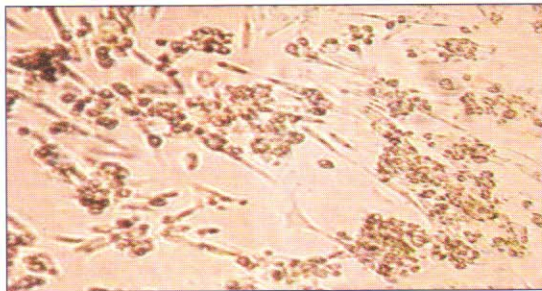
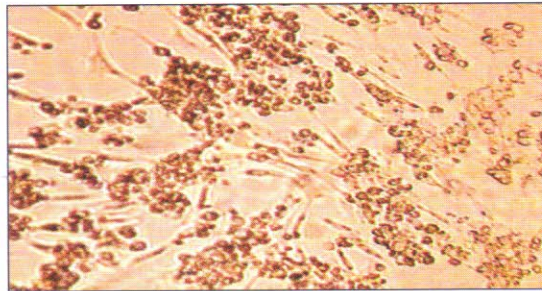
Place wise seroprevalence of FMD in cattle and buffaloes







Normal cells of BHK-21 cell line (10X)

CPE on BHK-21 cell line on 3<sup>rd</sup> days post infectionCPE on BHK-21 cell line on 6<sup>th</sup> days post infection

A total of 50 samples of tongue epithelium from different districts of Uttar Pradesh were processed for different types of virus viz., type O, A, C and Asia-I by using sandwich ELISA test, of which 32 specimens were found positive for the presence of FMD virus. The overall type ability was 64.00%. In the scenario of overall distribution pattern of FMD virus types, type O (62.50%) was the predominant type, followed by serotype A (37.50%). The significant observation was noted that type C and type Asia-I could not be recovered during this time period.

FMD virus could be isolated (showed cytopathic effect on BHK-21 cells) from only 10 of the 50 samples (tongue epithelium), however, 38 of the 50 samples (tongue epithelium) yielded positive results using PCR technique. Of the ten FMD virus isolates, three were characterized as FMD serotype O and seven as FMD serotype A. Sensitivity and specificity of PCR was found to be 100% and 66.67%, respectively.

### PROJECT-9: A STUDY ON CANINE MYCOPLASMAS

Seven (4.96%) mycoplasma isolates were recovered from 41 nasal swabs, 82 genital swabs, and 18 ocular swabs. Mycoplasma organisms were isolated from one nasal samples and six genital samples, however, from ocular samples, mycoplasma could not be isolated.

All mycoplasma isolates were characterized by using morphological, cultural and biochemical tests. Digitonin sensitivity test was performed for differentiation of mycoplasmas and acholeplasmas. To minimize the use of standard antiserum, biochemical tests were used viz., glucose and mannose catabolism, arginine hydrolysis, phosphatase production, formation of film and spot, tetrazolium chloride and hemadsorption.

In this study seven mycoplasmas were identified as *Mycoplasma canis* (1), *Mycoplasma gateae* (2), *Mycoplasma arginine* (2) and two samples remained unidentified for serological testing whole cell antigen (WC) was prepared. Growth inhibition test was performed by using homologous antiserum. These isolates of canine mycoplasmas were tested against six antibiotics, erythromycin, spiramycin, sparflaxacin, tylosin, oxytetracycline and enrofloxacin. Tylosin, enrofloxacin and spiramycin were found to be sensitive for all these *Mycoplasma* isolates.

In the present study, isolate (*M. canis*) was inoculated in three experimental dogs via different routes viz., oral, nasal and intramuscular. The respiratory symptoms like coughing, nasal secretions, high temperature were observed. One pup was sacrificed for histopathological examinations. On gross examination, lungs showed congestion and mild to moderate consolidation. Histopathological changes included massive infiltration of lymphocytes and macrophages around the bronchioles, alveoli and blood vessels.

There was development of lymphoid hyperplasia in the peribronchial and perivascular areas. Brochial epithelium showed hyperplasia with lymphocytic and macrophages infiltration. Alveoli showed copious serocellular exudates consisting primarily of desquamated epithelial cells and mononuclear cell infiltration. Alveolar duct, sacs and alveoli were highly enlarged throughout the lung (emphysema). Inter alveolar septa become thickened with abundance of mononuclear cells. Fibrin was also noticed in the lumen of blood vessels. The lumen of the blood vessels contained eosinophilic mass having few mononuclear cells. In the lumen of these vessels, plasma cells within the wall were also noticed.

### PROJECT-10: SERO-MONITORING OF PESTE DES PETITS RUMINANTS (PPR) INFECTION IN SMALL RUMINANTS AND EVALUATION OF SYNTHETIC ANTIGEN IN SOLID PHASE ENZYME IMMUNOASSAY







In case of PPR and RP also, specific sero-diagnosis have always been questionable when conventional tests have been used which utilized whole virus antigen or recombinant proteins for capturing antibodies.

A total of 1707 non-vaccinated and 296 vaccinated sera samples were collected for the study and tested by competitive ELISA (C-ELISA), to determine epidemiological parameters affecting the occurrence of PPR in animals on the basis of age and sex. A peptide ELISA (P-ELISA) was standardized for testing field serum samples, by repeated checkerboard titrations and screening of known positive and negative sera.

Out of total 296 samples from vaccinated population, 70.95% were found positive by C-ELISA, as against this, 82.77% were positive by P-ELISA. However, in case of non-vaccinated population, out of 1707 serum samples tested, comprising 79 sheep and 1628 goats, the percentage of positive samples was 32.8% in sheep and 19.47% in goats using C-ELISA. When tested with P-ELISA, 21.5% sheep and 27.02% goats were recorded positive. Evaluation of data on the basis of sex revealed males to show greater prevalence (20.6%) than females (18.9%) by C-ELISA whereas by P-ELISA 28.25% female and 24.5% males were detected positive.

With C-ELISA 22.8% sheep and 19.9% goat serum samples revealed anti PPR antibodies. By P-ELISA, goats showed higher prevalence (27%) than sheep (21.5%). The synthetic peptide antigen used in ELISA in the study revealed high sensitivity in detecting PPR specific antibodies in vaccinated animals, at the same time, was also highly specific in terms of its ability to detect only PPR specific antibodies and no cross reaction with RP virus antibodies. A sero-positive test of the kind developed in the present investigation (P-ELISA) is required when vaccination status of the animal is evaluated to formulate a national eradication programme of the disease wherein, it is necessary to segregate the specific antibodies harboring population from those which are lacking any antibodies for the causative agent. Sero-monitoring for PPR in vaccinated and non-vaccinated sheep and goat populations can be done with high sensitivity and precision using synthetic peptide antigen from nucleocapsid protein of PPR virus.

**PROJECT-11: STUDIES ON HEMORRHAGIC SEPTICEMIA: MOLECULAR CHARACTERIZATION OF THE SEROTYPE**

Out of 368 selected animals, 25 positive isolates were characterized on the basis of cultural, morphological and biochemical characteristics. The characterized isolates were subjected to pathogenicity test by inoculation in rabbit. Majority of isolates were found sensitive to chloramphenicol (100%), ciprofloxacin (91%), enrofloxacin(83%), gentamicin (75%), amoxicillin(62.5%), oxytetracyclin (54%), and streptomycin (54%).

A rapid slide agglutination test was used for identification of the organism with standardized antiserum obtained from FAO regional reference laboratory (Asian region). Agar gel immunodiffusion was done for antigenic characterization of the isolate using standard hyperimmune serum for observing precipitin band.

Counter current immunoelectrophoresis was used for screening of the animals for disease. It was also used for the capsular and somatic typing of the isolate in short. For this test 45 sera samples were taken for screening of the animals against disease, out of which 11 sera sample were found positive. It can be concluded that the rapid slide agglutination AGID and CCIE were good technique but were time consuming. Restriction endonuclease analysis was also performed using ECORI endonuclease enzyme. ECORI digestion gave a good pattern. The DNA fingerprinting was done and it was observed a good tool to differentiate the isolate in the epidemiological study.

**PROJECT-12: STUDIES ON SERO-EPIDEMIOLOGY AND MOLECULAR DIAGNOSIS OF PESTE-DES-PETITS RUMINANTS IN GOAT**

In present study, two outbreaks were studied. The infected goats were having clinical signs like high fever (104°F-105°F), necrotic stomatitis, erosions on gums, white pulpy coating with wheat bran appearance on tongue, sticky ocular and mucopurulent nasal discharges, crust around nostrils, coughing, pneumonia, arched back and streamy diarrhea and the morbidity, mortality and case fatality rates were 60%, 40% and 66.67%, respectively.

On post-mortem observation, there was inflammation of gastro-intestinal tract, hemorrhagic liver and enlarged gall bladder in kids, congested and consolidated lungs, zebra stripping over large intestine, hemorrhagic kidneys, cyanotic spleen and congested intestinal mucous membrane. Five samples - four tissues (spleen, lung, lymph nodes, tissue mixture) and a rectal swab were used for virus isolation using Vero and B-95a cell lines applying both viz. co-cultivation and absorption methods of virus inoculation. The cytopathic effect of PPR virus on Vero cell line were developed within 5 days and on B-95a cell lines on 4<sup>th</sup> day post-infection. The virus isolation was confirmed by using RT-PCR with amplicon size of 372 bp of molecular weight marker observed by agarose gel electrophoresis.

The antigen detection of PPR virus was conducted by using sandwich-ELISA. Out of total 33 samples (18 tissues, 12 swabs and 3 of whole blood) processed, 27 (17 of tissue, 7 of swabs and all the 3 of whole blood samples) were having PPRV antigen.

For seroprevalence of PPRV antibodies, five nearby districts of outbreak were selected viz. Mathura, Agra, Aligarh, Hathras and Etah. The PPRV antibodies were maximum in





Mathura district (63.64%) and minimum in Agra district (18.60%). Thus, the overall prevalence of PPRV antibodies was found to be 34.03%. The maximum prevalence was found in goats with age group 6-12 month (40.96%) and minimum for the age group below 6 months (26.32%). It was noticed that the prevalence of PPRV was more in Jamunapari goats (40.54%) than Barbari goats (29.91%). The sexwise prevalence showed that the females were more affected than males.

The molecular characterization of PPRV was done using RT-PCR for F-gene during this study. The specimens viz. spleen, lung, liver, tissue mixture and rectal swab, were tested positive for s-ELISA and virus isolation were subjected for RT-PCR. Only 3 specimens, a rectal swab and two isolate of lung and spleen tissues were found showing high amplicon with 372 bp, which is similar to PPR virus. The characteristic bands were found on agarose gel electrophoresis for F-gene specific PCR product with primer pairs (F1 and F2).

### PROJECT-13: CLONING AND CHARACTERIZATION OF GOAT ENTERIC $\beta$ -DEFENSIN

Beta-defensin are key components of innate immunity of animals and are widely distributed in epithelial tissues and leukocytes of mammals, insects, plants, molluscs and birds.

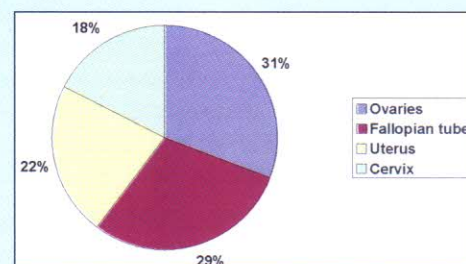
To clone and characterize the enteric beta-defensin mRNA from Indian non-descript male goats' distal ileum, total cellular RNA was isolated using TRI REAGENT™ method immediately after collection of ileal epithelium from a local abattoir under ice. 0.15  $\mu$ g RNA was yielded per mg of tissue and the  $A_{260}/A_{280}$  ratio was found to be 1.84. Integrity of RNA was confirmed by agarose gel electrophoresis.

cDNA was synthesized by reverse transcription using 200 ng of goat EBD RNA, 2  $\mu$ l of reverse primer and 2  $\mu$ l of omniscrypt and sensiscrypt reverse transcriptase. Amplification of cDNA was done by designing a specific set of primer on comparing bovine EBD mRNA and goat BD2 mRNA sequence to amplify 253 bp fragment using Hotstart Taq DNA polymerase.

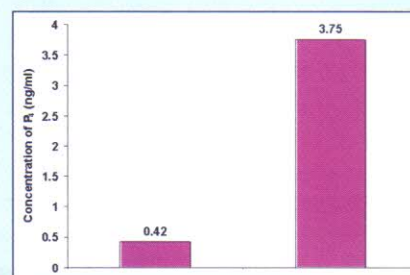
The recombinant plasmid was prepared as stab culture to be sent for DNA sequencing at DNA sequencing facility, Division of Biochemistry, University of Delhi, South Campus, New Delhi by an automated sequencer. The sequence of goat EBD was compared with published beta-defensin nucleotide sequence of different species. There were 26, 16 and 5 nucleotide substitution in goat EBD as compared to cattle EBD, buffalo EBD and goat BD2, respectively. Goat EBD was found to be closer to BD2 with 97.4% homology. The deduced amino acids sequence of goat EBD from the nucleotide sequence showed a homology. The phylogenetic tree drawn from the available beta-defensin sequence showed that the beta-defensin of ruminants form one group that implies they evolve from the same precursor molecule.

### PROJECT-14: STUDIES ON CERTAIN ASPECTS OF INFERTILITY AND INITIATION OF EARLY POSTPARTUM BREEDING IN BUFFALOES

In the present work, biometry and gross anatomical defects of female genitalia collected from the slaughter house, status of estrus in buffaloes presented for AI in our Institute based on their serum progesterone concentration and effect of Gn-RH on early post partum breeding was studied. No significant difference was observed as far as biometry of paired organs was concerned. Abnormalities of ovaries and fallopian tubes dominated amongst the various abnormalities indicating an urgent need for controlling uterine infections. The results also showed that the major problem of infertility in buffaloes can be controlled by proper estrus detection. Gn-RH therapy can be used for early post partum breeding with reasonable success.



Graphical presentation of various abnormalities (percentage) in female genitalia of buffaloes collected from the local slaughter house.



Overall mean concentration of progesterone (ng/ml) in the serum of buffaloes presented for AI at both the centers (Mathura & Tanda) with their corresponding number of animals

### PROJECT-15: STUDIES ON ANTIBACTERIAL AND IMMUNOMODULATORY PROPERTIES OF OCIMUM SANCTUM AND ARGEMONE MEXICANA LEAVES IN REFERENCE TO CYTOKINES (IL-2 AND IL-4) INDUCTION

Viewing the medicinal and immunoregulatory potential of *Ocimum sanctum* and *Argemone mexicana* in mind, present study was undertaken to study the safe dose, antibacterial and immunomodulatory properties of the leaves of these two plants. Preliminary studies were also carried out for determining their cytokine inducing activities.





*Ocimum sanctum* treated albino rats showed increase in PCV, Hb, and TEC values. There was a remarkable leucocytosis. *Argemone mexicana* leaves aqueous extract fed rats also exhibited increase in PCV, Hb and TEC values. Increased TLC was only noted in a group fed with 100mg/kg. But in group II and III treated with 250mg/kg body and 500mg/kg body weight, respectively TLC value showed reverse trend indicating suppressive effect. Moreover, differential leukocyte count indicated lowering in percentage of lymphocytes, but the percentage of neutrophil was increased. It was found that feeding of *Ocimum sanctum* leaves aqueous extract increased the total serum protein, albumin and Ca<sup>++</sup> level in the serum. Where as decrease in the level of glucose, triglycerides, sodium and potassium was noted.

In *Argemone mexicana* fed animals values of total serum protein, albumin, calcium and chloride were enhanced too. But the value of sodium, potassium and triglycerides were decreased. The results on cholesterol and glucose values were conflicting. Methanolic and acetic extracts of the leaves of both plants were found with marked antibacterial activity against all the three bacteria. The study revealed that methanolic extract of *Ocimum sanctum* and *Argemone mexicana* leaves showed more antibacterial activity against gram positive (*Staphylococcus aureus*) and gram negative (*E. coli* and *Salmonella typhimurium*) bacteria.

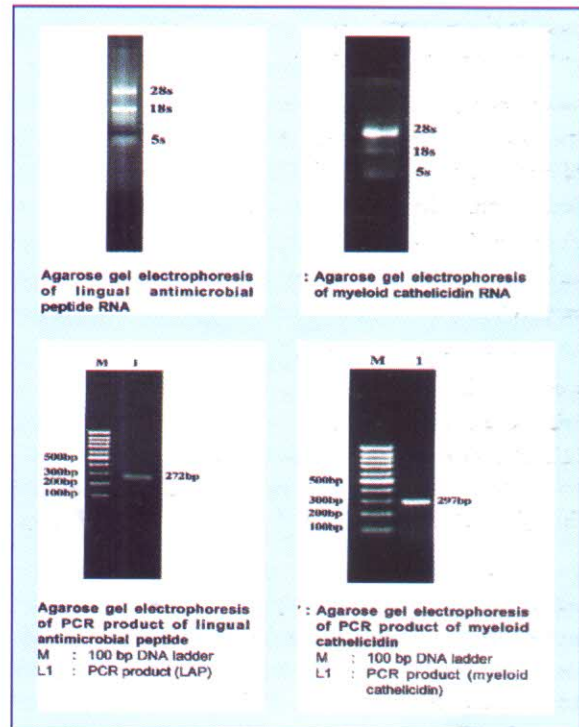
Percentage of lymphocytes separated on Histopaque 1077 from peripheral blood was increased to the level of 79.84% in blood of *Ocimum sanctum* aqueous extract fed rabbits but lymphocytopenia was noted up to the level of 26.61% in *Argemone mexicana* aqueous extract fed rabbits. DNCB skin hypersensitivity test indicated 56.84% and 5.26% increase in thickness at 24 hrs in *Ocimum sanctum* treated and *Argemone mexicana* fed animals respectively where as control showed 47.36% increase in thickness at 24 hrs. Comparing with control 20% and 41% increase in thickness in *Ocimum sanctum* treated animal but 88.8% and 83.3% inhibition in *Argemone mexicana* treated animals was calculated at 24 hrs and 48 hrs post challenge respectively. These studies revealed the T-cell stimulating effect of aqueous extract of *Ocimum sanctum* and T-cell suppressive effect of aqueous extract of *Argemone mexicana*.

The study was also designed to assess the effect of aqueous extract of leaves of *Ocimum sanctum* / *Argemone mexicana* on rat splenocytes proliferation. Both extracts were tested on Con-A induced rat splenocytes proliferation. Test sets were treated with three concentrations (80µg, 40µg and 20µg) of extract. The proliferation was measured using dose-dependent stimulation on Con-A induced splenocytes proliferation. The aqueous *Argemone mexicana* leaves extract showed inhibition of Con-A induced splenocytes proliferation. In case of *Ocimum sanctum*, 20.36% stimulation was recorded with 80µg aqueous *Ocimum sanctum* leaves extract while 10.42% inhibition was seen 80µg aqueous *Argemone mexicana* leaves extract.

*Ocimum sanctum* aqueous leaves extract significantly enhanced the secretion of IL-2 in mitogen stimulated splenocytes culture where as *Argemone mexicana* suppressed the secretion of IL-2 as compared to control culture. Maximum increase was observed to be with use of 80 µg/ml *Ocimum sanctum* aqueous leaves extract concentration. Synthesis of IL-4 cytokine was found to be increased as compared to control when the cells were cultured in presence of *Argemone mexicana* leaves aqueous extract. 40µg/ml concentration maximally enhanced the secretion of IL-4. While *Ocimum sanctum* leaves aqueous extract did not show any significant effect on IL-4 secretion.

### PROJECT-16: MOLECULAR STUDIES ON GOAT ANTIMICROBIAL PEPTIDES

Goat lingual antimicrobial peptide and myeloid cathelicidin were characterized. Goat cathelicidin has 89.2%, 77.8%, 85.9% homology at nucleotide level and 81.8%, 74.7%, 74.7% homology at amino acid level with cattle CATHL-7, cattle CATHL-4 and goat bac 7.5, respectively. The phylogenetic tree analysis, both at nucleotide and amino acid, showed that goat LAP and goat BDI are closely related while goat myeloid cathelicidin is closest to cattle CATHL7.



### PROJECT-17: DEVELOPMENT OF AN ANTIGEN CAPTURE ELISA FOR DETECTION OF BOVINE VIRAL DIARRHOEA VIRUS INFECTION AND GENETIC ANALYSIS OF BVD VIRUSES FROM SHEEP AND GOATS.

Blood samples from 42 sheep and 15 goats were tested for the presence of BVD antigen in leucocytes by employing antigen capture ELISA developed in this study and also by using







commercial kit. An antigen capture ELISA was developed for detection of BVDV infection in blood and genetic characterization established the prevalence of BVDV1b in sheep and goats and BVDV2a in goats.

**PROJECT-18: STUDIES ON VIRULENCE FACTORS OF ESCHERICHIA COLI ISOLATED FROM DIARRHEIC NEWBORN CALVES WITH REFERENCE TO PCR BASED IDENTIFICATION OF VIRULENCE GENES AND SELECTION OF ETEC FOR IMMUNIZING MOTIFS.**

In the present study, emphasis was given to the virulence attributes of diarrheagenic *Escherichia coli* isolated from newborn diarrheic and non-diarrheic cow calves (1-90 day old) and the virulence attributes of isolates were characterized by different direct and indirect tests, biological assays and molecular techniques. Finally preparation of entero-toxoid and bacterin, using heat-labile toxin fractions and K99<sup>+</sup> *E.coli* respectively for immunizing motifs to prevent neonatal diarrhea caused by ETEC.

Total one hundred ten fecal samples from diarrheic (82) and non-diarrheic (28) neonatal cow calves maintained at four organized Govt. farms were collected to screen diarrheagenic *E.coli*. The bacterin prepared from multiple K99<sup>+</sup> enterotoxigenic *E.coli* strain with toxoid prepared from immunogenic heat labile enterotoxin in combination showed promising results, as antibody titre remained higher 42<sup>nd</sup> days post vaccination.

**PROJECT-19: STUDIES ON IMMUNO-MODULATING ROLE OF GANGATERI COW URINE IN ENDOSULFAN INDUCED TOXICITY IN RATS**

Present study was conducted on rats to study the effect of distilled cow urine and endosulfan on various clinicopathological, immunological, pathomorphological and body weight gain.

Distilled cow urine was given to the treatment group @ 5 ml/ rat/ day. Blastogenic capacity of both B- and T-lymphocytes was evaluated in the presence of mitogens, LPS and ConA, respectively. The effect on body weight showed highly significant weight gain in the urine treated rats as compared to control rats indicated anabolic effect of cow urine. The haematological observations revealed highly significant increase in the values of Hb, PCV and TLC in the urine treated rats as compared to that of control group.

Haematological and biochemical parameters analysis of cow urine reveals presence of ingredients useful for the health of animals and human being. Cow urine has immunopotentiating properties as revealed by enhanced B- and T-cell blastogenesis (cell mediated immune response). Low doses of endosulfan @ 5 mg/ kg body weight for 30 days caused significant haematobiochemical alterations in adult male rats. Even at low

doses, endosulfan cause immunosuppression by down regulating B- and T-lymphocytes proliferation

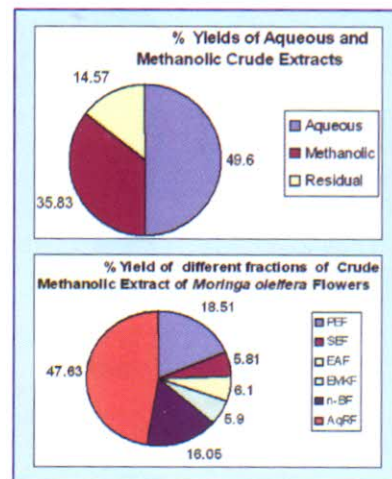
**PROJECT-20: EPIDEMIOLOGICAL, HEMATO-BIOCHEMICAL AND THERAPEUTIC STUDIES ON ANCYLOSTOMIASIS IN DOGS**

Out of total 384 dogs (including clinical cases reported at the hospital, pets and stray), on the basis of EPG, prevalence of Ancylostomiasis was found to be 60.94% and the incidence was 60.02% in males while 57.53% female animals. Prevalence was highest in age group of 0-4 months followed by 13-24 months and lowest in 5-8 months i.e.76.57, 63.88, and 48.00 percent respectively. It was maximum nondescript dogs, followed by Pomeranian and Bull dog i.e. 77.97, 57.30 and 16.66 percent, respectively. Highest incidence was observed during the month of March followed by April and lowest in January i.e. 69.53, 60.29 and 50.00 per cent, respectively. In infected dogs, drop in Hb, PCV and TEC values and leukocytosis with neutrophilia, lymphopaenia and eosinophilia was observed. A significant decrease in total serum protein, serum albumin and A/G ratio, and an increase in serum alkaline phosphatase (SAP), serum glutamic oxaloacetate transaminase (SGOT) and serum glutamic pyruvic transaminase (SGPT) level were also recorded.

Infected dogs were treated with two chemotherapeutics (Ivermectin and Pyrantel pamoate) and two herbal drugs (seed extracts from *Butea frondosa* and *Melia azadirachta*). Ivermectin showed highest efficacy (99.27%) followed by *Butea frondosa* (98.27%), Pyrantel pamoate (97.27%) and *Melia azedarach* (86.98%).

**PROJECT -21: PHARMACODYNAMIC STUDIES ON UTEROTONIC EFFECT OF MORINGA OLEIFERA FLOWERS EXTRACT ON ISOLATED MYOMETRIAL STRIPS OF BUFFALOES**

Crude aqueous and other extracts and different fractions of methanolic extract of shade dried flowers *Moringa oleifera* flowers were prepared using Soxhlet Apparatus and the yields of different extract are shown with the help of pie diagram.







Crude aqueous extract of *Moringa oleifera* flowers (MOFE) was evaluated for its uterotonic effect and pharmacodynamics there of employing isolated uterine strips of buffaloes. Uteri of pregnant and diestrous stage buffaloes were collected from the local abattoir and mounted in Ringer-Locke (RL) and modified Ringer Locke (MRL) solutions containing magnesium sulfate. Uterine strips exhibited spontaneous rhythmic contractions of high amplitude and frequency in RL solution which subsided in modified RL solution. Therefore, for further detailed investigations, MRL solution was used.

MOFE produced concentration-dependent contractile effect on uterine tissues. The minimum threshold concentration of MOFE on certain tissues was found to be 0.97 g/ml and the maximal effect was observed at 250 g/ml. On such tissues, the cumulative concentration response curve was almost a straight line and the EC<sub>50</sub> value of MOFE was calculated to be 6.3 g/ml. The response of tissues from pregnant and diestrous stage animals was quite different and the EC<sub>50</sub> values of MOFE on pregnant and diestrous uteri were found to be 14.96 and 31.25 g/ml, thus suggesting that the diestrous uteri were much more sensitive compared to pregnant animals and thus the diestrous stage uteri may be preferably used for the bioassay of uterotonics. Qualitative studies employing muscarinic-, H<sub>1</sub> histaminergic- and α<sub>1</sub> adrenergic receptor antagonists revealed that MOFE-induced uterotonic effect seems to be mediated through different uterotonic receptors, may be muscarinic-, H<sub>1</sub> histaminergic- and α<sub>1</sub> adrenergic receptors.

Possibilities of other mechanisms involved in mediating uterotonic effect including ion channels were also worked out which suggested that spontaneous rhythmic myometrial contractions in buffaloes are regulated by intracellular Ca<sup>2+</sup> and MOFE-induced uterine contractility is partially regulated by intra-cellular Ca<sup>2+</sup> while completely dependent on availability of extra-cellular calcium. Further, the functional presence of different types of potassium channels, namely- K<sup>+</sup><sub>ATP</sub>, K<sup>+</sup><sub>v</sub> or K<sup>+</sup><sub>Ca</sub> and their possible involvement in modulating MOFE-induced uterotonic effect in buffaloes was also apparent. The results also suggest that *Moringa* flowers possess very good potential as oxytocic and may be used in drug development programme to replace the conventionally used oxytocics or abortifacients as it would be ecofriendly and likely to be free from any adverse effects on animal or human health.

**PROJECT 22: PHYTOCHEMICAL CHARACTERIZATION AND IN VITRO EVALUATION OF SOME INDIGENOUS PLANTS FOR ANTHELMINTIC ACTIVITY**

Leaves, flowers or seeds of different plants were collected, shade dried and their coarse powders were prepared. Plant materials were subjected to exhaustive extraction in different solvents. Some qualitative and rapid tests were carried out to detect the presence or absence of some major phyto-

constituents like alkaloids, glycosides, flavonoids, tannins, saponins, resins, reducing sugars, proteins, amino acids, nitrates and nitrites and fixed oils in crude extracts.

Crude hot aqueous, hot ether and cold ether extracts of *M. oleifera* were positive for all the above constituents except nitrates and nitrites while glycosides and nitrates and nitrites were found to be absent in alcoholic extract. In both the extracts of *C. procera*, nitrates and nitrites were absent but the phytoconstituents listed above were present except proteins in case of aqueous extract and reducing sugars in case of methanolic extract. *Bamboo arundinacea* methanolic extract was lacking in most of the constituents, namely- alkaloids, flavanoids, tannins, reducing sugars, nitrates and nitrites but the aqueous extract was positive for all except reducing sugars and nitrates and nitrites.

All the phytoconstituents in both the aqueous and methanolic extracts of *P. corylifolia* seeds were same except that the aqueous extract was positive for glycosides while methanolic extract as negative. Both the extracts of *N. sativa* was tested positive for glycosides, alkaloids, saponins, proteins, amino acids and fixed oils but did not reveal the presence of flavanoids, tannins, resins, reducing sugars, nitrates and nitrites.

Both the aqueous decoction and methanolic extract of *T. ammi* seeds lacked most of the phytoconstituents except glycosides in aqueous decoction and saponins in methanolic extract. The aqueous extract of *C. papaya* was found to be positive only for glycosides, tannins, saponins, resins, proteins and amino acids.

Based on the results of present study, it may not be unreasonable to infer that all seven plants included in the study, namely- *Moringa oleifera*, *Calotropis procera*, *Bamboo arundinacea*, *Psorelea corylifolia*, *N. sativa*, *Trachyspermum ammi*, *Carica papaya* possess moderate to marked anthelmintic efficacy and the adulticidal effect of the crude extracts of these plants was observed between 6 and 24 h of exposure.

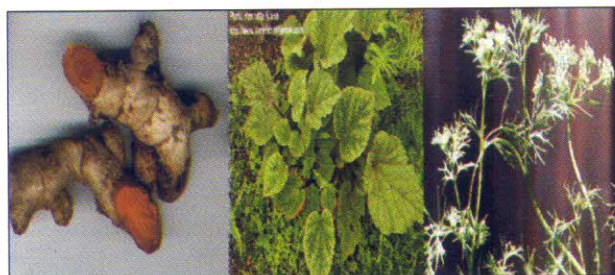
Based on the median lethal concentration and drug efficiency index values of aqueous extracts at 12 h the order of anthelmintic potency was *Calotropis procera* > *Moringa oleifera* > *Trachyspermum ammi* > *Carica papaya* > *Bambusa arundinacea* > *Psoralea corylifolia* > *Nigella sativa* while the order of potency of methanolic extract was *Calotropis procera* > *Moringa oleifera* > *Nigella sativa* > *Psoralea corylifolia*. These results suggests that *Calotropis procera*, *Moringa oleifera* and *Trachyspermum ammi* possess promising anthelmintic potential and may be exploited in the drug development programme.

**PROJECT 23: PHARMACOTHERAPEUTIC EVALUATION OF HERBIOTIC-FS- A POLYHERBAL ANTIMICROBIAL GROWTH PROMOTER IN BROILER CHICKS**





Polyherbal feed supplements hold very good potential in view of the concern of residues of drugs and feed supplements in meat and eggs. Therefore, an effort was made to evaluate the performance of a polyherbal feed supplement consisting of *Curcuma longa*, *Rheuma emodi* and *Trichospema ammi* in comparison to Bacitracin, which is conventionally used in poultry industry.



The average body weight of chicks of Herbiotic-FS (1679.41 ± 52.17) and bacitracin supplemented groups (1680.00 ± 51.54) was numerically almost eight (8.62%) percent higher compared to chicks of control group (1554.17 ± 92.56). The FCR in chicks from day 28 onward till 49<sup>th</sup> day (during 5 to 7<sup>th</sup> week) was numerically lower (1.86) in HB group compared to that bacitracin or control groups (2.03 in both).

The total intestinal bacterial load (mean ± SE; CFU/ml) in Herbiotic-FS supplemented group was numerically lower (144 ± 22.65 × 10<sup>7</sup> CFU/ml) compared to bacitracin-supplemented group (167.50 ± 10.97 × 10<sup>7</sup> CFU/ml) but significantly (p < 0.05) lower compared to control group (205.50 ± 0.41 × 10<sup>7</sup> CFU/ml). At lower dilution of 10<sup>-6</sup> also, similar effect was observed i.e. the number of colonies was less in Herbiotic-FS group compared to other groups (Table 9).

Polyherbal feed supplement did not have any adverse effect on any of the haematological or biochemical parameters rather it exhibited promising anti-oxidant activity, thus may be useful in poultry production as Glutathione-S-transferase (GST) activity of Herbiotic-FS group (6.87 ± 0.67 HM.Mm<sup>-1</sup>.mg<sup>-1</sup> protein) was significantly (p < 0.05) more compared to control group (4.29 ± 0.28 HM.Mm<sup>-1</sup>.mg<sup>-1</sup> protein) and bacitracin treated groups (4.75 ± 0.45 HM.Mm<sup>-1</sup>.mg<sup>-1</sup> protein). However, the values of GST in bacitracin group did not significantly differ from that of control group.

The mean ± SE of height of villi in Herbiotic-FS treated group (528.92 ± 74.12 m) was significantly (P < 0.05) more compared to that observed in bacitracin group (263.36 ± 0.82) while the difference was non significant compared to the control group (364.93 ± 36.72). However, the number of villi in 500m<sup>2</sup> ideal area did not differ between the Herbiotic-FS or bacitracin supplemented group (5) and the control (6) groups.

Chicks of Herbiotic-FS supplemented group revealed almost normal cellular architecture comparable to that in

that in control group except for presence of large number of goblet cells in the mucosa of ileum and there was increase in the number of goblet cells in lining epithelium and intestinal glands.

In *E. coli* challenged birds too, Herbiotic-FS fed group exhibited significantly (p < 0.05) lower number (181.00 ± 19.32 × 10<sup>7</sup> CFU per ml of original sample) of colony forming units (CFU) per ml of intestinal suspension compared to control challenge (321.00 ± 40.3 × 10<sup>7</sup> CFU/ml) group at 10<sup>-7</sup> dilution. Further, the number of colonies was even numerically but non-significantly lower compared to bacitracin (242.00 ± 38.72 × 10<sup>7</sup> CFU/ml) or control healthy (233.00 ± 39.12 × 10<sup>7</sup> CFU/ml) groups in Herbiotic-FS group at 10<sup>-7</sup> dilution.

Histopathological examination of liver, kidneys, spleen and bursa were also undertaken. Pharmaco-economics of supplementing the feed with poly herbal formulation suggested that it was economical to use herbal supplement and most importantly, the broilers meat was free from any drug residues and therefore, safe from public health point of view.

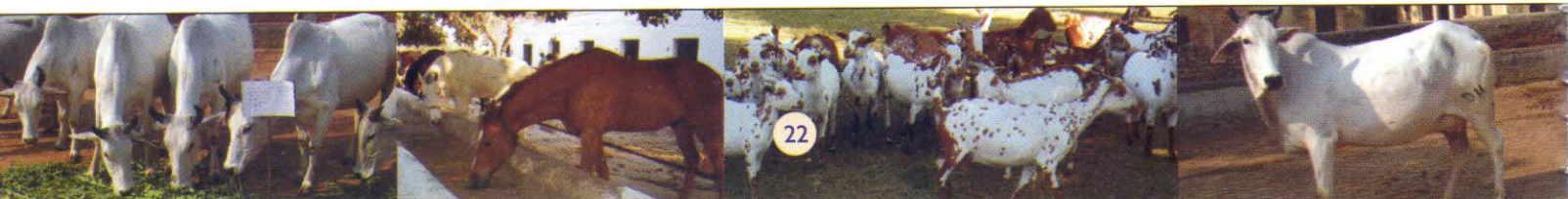
### PROJECT-24: BACTERIAL CONTAMINATION IN MEAT OF POULTRY AND POULTRY EGGS WITH SPECIAL REFERENCE TO *E. COLI* AND *SALMONELLA* SPECIES AND ITS PUBLIC HEALTH SIGNIFICANCE

Meat samples (120) from 6 different places in Mathura city (20 samples from each point) and 200 egg samples from 10 retail outlets (20 samples from each point) were taken. Quantitative examination was performed by standard plate count (SPC), Coliform count (CC) and Staphylococcus count (SC).

In the present study, level of contamination recorded by SPC, CC and SC were found increased. A total of 32 *E. coli* isolates and 14 *Salmonella* isolates were subjected to Antibiogram. The isolates showing higher range of sensitivity for *Salmonella* were recorded as Chloramphenicol, Ciprofloxacin, Norfloxacin and Streptomycin. There is a clear sign of increase in resistance of isolates against antibiotics like Penicillin-G, Amoxycillin, Ampicillin Erythromycin etc. For *E. coli* higher range of sensitivity given by Amoxycillin, Streptomycin Ciprofloxacin and a clear sign of resistance were shown against Ampicillin Penicillin-G.

### PROJECT-25: STUDIES ON SEMINAL ATTRIBUTES AND CRYOPRESERVATION OF SEMEN OF FRIESWAL BULLS

Seven Frieswal bulls aged between 18 to 42 months were evaluated for their semen quality on the basis of their volume, mass motility, sperm concentration and progressive motility. The maximum mean volume was found as 5.43 ± 0.21 ml while minimum was 3.35 ± 0.20ml. The maximum mean mass motility individual bull was 3.12 ± 0.07 while minimum





minimum was  $2.51 \pm 0.98$  on 0-5 scale. The maximum mean concentration off an individual bull was found on  $1654.50 \pm 74.99$  millions/ml while minimum was  $1000.50 \pm 49.37$  millions/ml.

The maximum mean progressive motility of an individual bull was found as  $62.17 \pm 1.41$  percent while minimum  $49.00 \pm 1.83$  percent.

#### **PROJECT-26: STUDIES ON CRYOPRESERVATION OF BHADAWARI BULL SEMEN**

The study was done to evaluate the performance of different Bhadawari bulls based on their seminal attributes on the basis of study of the effect of glutamic acid, different hypo osmotic gradient solutions, different concentration of glycerol, total constituted volume of EYT dilutor on certain seminal attributes.

Maximum sperm production from Bhadawari bull can be achieved as  $791.08 \pm 120.92$  millions/ml with  $73.64 \pm 3.52$  per cent live spermatozoa. EYT can be satisfactorily used for preservation of Bhadawari bull semen provided all ingredient except egg yolk and glycerol be dissolved in triple distilled water and volume be made upto 100 ml, using Egg Yolk as 20%, glycerol as 7% and adopting 2 hrs time for glycerization and 3 hrs time for equilibration.

Glutamic acid is helpful in protecting sperm cells during freezing and thawing other than the protection by egg yolk and glycerol. Better post thaw motility ( $45.21 \pm 1.58$  per cent), live spermatozoa ( $52.47 \pm 1.57$  per cent) and HOS positive spermatozoa ( $52.94 \pm 2.33$  per cent) can be achieved following thawing of semen diluted in EYT + glutamic acid at  $37^{\circ}\text{C}$  for 45 seconds.

#### **PROJECT-27: STUDIES ON BUPIVACAINE, XYLAZINE, KETAMINE HYDROCHLORIDES AND THEIR COMBINATIONS FOR LUMBOSACRAL ANAESTHESIA IN DOGS.**

The present study was conducted to evaluate the effect of bupivacaine, xylazine, ketamine and their combinations for lumbosacral epidural analgesia in dogs. The initiation of analgesia was quick in ketamine, alone which took  $3.5 \pm 0.50$  minute followed by bupivacaine, bupivacaine- ketamine, and bupivacaine xylazine, xylazine alone and xylazine - ketamine. Bupivacaine produced moderate to extreme analgesia at tail, perineal, thigh, flank and inguinal regions. Ketamine produced mild to moderate analgesia at tail, perineal, thigh, flank and inguinal regions. Xylazine alone produced moderate to extreme analgesia at tail, perineal, thigh, flank and inguinal regions. Bupivacaine ketamine produced moderate to extreme analgesia at tail, thigh, flank and inguinal regions. Bupivacaine xylazine produced moderate to extreme analgesia at tail, perineal, thigh, flank and inguinal regions. Xylazine ketamine produced moderate to extreme analgesia at tail, perineal, thigh, flank and inguinal regions.

The duration of analgesia was longer in bupivacaine alone, which lasted  $265.50 \pm 48.50$  minutes followed by bupivacaine- xylazine ( $260.00 \pm 23.93$  min.), bupivacaine ketamine ( $241.00 \pm 29.71$  min.), xylazine ketamine ( $79.00 \pm 6.62$  min.), xylazine ( $72.50 \pm 7.32$  min.) and ketamine ( $69.0 \pm 11.45$  min.).

Xylazine, bupivacaine xylazine and xylazine ketamine produced deep sedation lasting for 20 to 30, 20 to 45 and 15 to 20 minutes, respectively. Moderate and medium cataleptic effects of ketamine were observed in ketamine alone and bupivacaine ketamine group of animals respectively, however, in presence of xylazine the xylazine ketamine group of animals, did not show any cataleptic effect.

Bupivacaine did not show any appreciable effects on heart rate, respiration rate and rectal temperature at any interval. Ketamine alone produced significant increase in heart rate, respiration rate and rectal temperature.

Serum glutamic oxaloacetic transaminas (SGOT), Serum glutamic pyruvic transaminas (SGPT), serum creatinine and glucose level increased significantly in all treatment groups while no appreciable effect on serum sodium and potassium ion concentration was noticed.

On the basis of result of various clinical, physiological, haematological, biochemical and serum electrolytes parameters it is reveal that there was no deleterious effect on any vital function and organ of the body effect bupivacaine, bupivacaine xylazine and bupivacaine ketamine drugs can be used and these drug regimens can safely be used in routine clinical cases of surgery without any risk except ketamine, which showed cataleptic effect in the concentration used for the study.

Based on duration of analgesic for three to four hour duration of operations while xylazine and xylazine ketamine can be used for one-hour duration of surgical operation in the flank and hind limb.

#### **PROJECT 28: EFFECT OF HERBAL CRD POWDER ON GROWTH AND IMMUNOCOMPETENCE PERFORMANCE OF COMMERCIAL BROILERS**

The use of synthetic Vitamin C or phyto 'C' i.e. herbal vitamin C during stress condition in livestock and poultry feeding is relatively a new concept. Now a day's herbal preparations are given more importance than chemical compounds in livestock and poultry feeding. Synthetic Vitamin C is being used as a feed supplement. Herbal Vitamin C (*Withania somnifera*, *Occimum sanctum*, *Embllica officinalis*) is a antistressor and a herbal Vitamin C replacer. The supplementation of synthetic vitamin C or phyto 'C' is gaining momentum to ameliorate stress affects, and is known to exert beneficial effects on live weight gain, feed conversion efficiency and reduced mortality in chickens.







One hundred twenty five day old broiler chicks were procured and kept on deep litter system. After the initial period of one week on standard starter ration, they were kept on the different treatments. The total experimental period lasted for six weeks starting from 2<sup>nd</sup> to 7<sup>th</sup> weeks of age. Immobilization stress for 1 hour/day by tying their legs was given at age of three weeks onwards up to seventh week of age in all experimental groups except control (treatment I).

Two metabolic trials were conducted at the end of fourth and sixth weeks of age for three consecutive days to find out the nutrient utilization. Representative blood samples were collected at the end of seventh week i.e. at the time of slaughter to determine the various haematological and biochemical changes in the birds kept on different dietary treatments. At the end of seventh week two birds one male and one female from each treatment group were slaughtered to measure the carcass quality characteristics and after conducting a careful postmortem examination various visceral organs were collected for the detailed gross examinations. During the entire experimental period birds were offered feed and water *ad libitum* and were kept on artificial light through out. Results of the present study suggested that Vitamin C (ascorbic acid) supplementation to commercial broiler chick ration @ 200 ppm was beneficial during stress period. Supplementation to commercial broiler chick ration during stress period Phyto 'C' i.e. Herbal Vitamin C replacer (Phyto 'C' B @ 200ppm) was a better alternate to Synthetic Vitamin C for economic consideration and higher response

**PROJECT 29: EXPERIMENTAL PASTEURELLOSIS IN RATS WITH REFERENCE TO VACCINE STRATEGY AND IMMUNOMODULATORY EFFECT OF RESIDUE OF COW URINE.**

The study was conducted in three groups of the rats viz. Group I (Medicated and infected), Group II (Vaccinated and infected) and Group III (positive control) to study the experimental pasteurellosis along with the immunomodulatory effect of the residue of cow urine and efficacy of laboratory prepared vaccine on various traits relating to body weight gain, clinicopathological, immunological and pathomorphological parameters.

There was significant increase in the body weight gain and Hb, PCV TEC and TLC in the rats treated with residue of cow urine at the intervals of 15, 30, 45 and 60 days of experiment. The CMI and humoral responses revealed significant enhancement in the rats of medicated and vaccinated groups. All the rats of positive control group died within 24-48 hour post inoculation. In the rats of medicated group 60% mortality occurred. The rats of vaccinated group recovered from the infection and did not show any mortality.

Pathomorphological lesions in positive control group revealed acute bronchopneumonia, grayish-white necrotic foci in liver, epicardial and endocardial hemorrhages in heart, degenerative and necrotic changes in kidneys, catarrhal

enteritis in small intestine. Almost similar lesions but of mild intensity were seen in urine treated group. No significant lesion was recorded in vaccinated group.

Analysis of cow urine residue for various biochemical constituents revealed presence of 96.0 mg/g total protein, 142.8 mg/g urea, 8.403 mg/g uric acid, 95.0 mg/g creatinine, 0.85 mg/g free volatile phenol, 1.308 mg/g conjugated volatile phenol, 2.88 mg/g total aromatic hydroxyl acids, 27.96 mg/g calcium and 1.61 mg/g phosphorus. Fractionation of cow urine residue by SDS-PAGE showed presence of 8 different bands of protein having molecular weights as 69, 63, 50, 45, 34, 30, 18.4 and 16 kDa, respectively.

**PROJECT 30: PATHOLOGY, PATHOGENESIS AND MOLECULAR DIAGNOSIS OF FOWL CHOLERA IN TURKEY POULTS WITH SPECIAL REFERENCE TO VACCINE STRATEGY.**

The study was undertaken to elucidate the pathology, pathogenesis, molecular diagnosis and vaccine strategy with special reference to development of a laboratory prepared improved fowl cholera vaccine in turkeys of Group I (Vaccinated-Lab prepared and challenged), Group II (Vaccinated-commercial and challenged) and Group III (Non vaccinated and challenged) . For study of pathogenesis of fowl cholera, invasiveness study showed septicemia in twelve hours post inoculation with mean death time of 25.88 hours. There was increase in the humoral and CMI response in the birds of group I as compared of Group II.

Pathomorphological and electron microscopical studies revealed moderate to marked changes in parenchymatous organs of birds of Group III as compared to other groups. PCR assay using different template DNA preparation from liver and spleen showed amplified bands of identical size. PCR assay on directly homogenized tissue lysate and DNA from paraffin fixed tissue sections indicated amplified product of ~ 460 and ~ 1044 bp in specific PCR and capsular PCR assay for *P. multocida* serotype A, respectively.

**V. Extension**

**DIRECTORATE OF EXTENSION**

Extension is the most important activity of any state Agricultural and Veterinary University. Accordingly, for the welfare of rural people and to motivate them for adopting new and improved scientific practices in agriculture and animal husbandry operations, University is playing an important role for better implementations of extension oriented works and activities.

Directorate of Extension was established in the University on 17-05-2004 with the objective of planning and executing all extension programmes and disseminating the relevant information/knowledge from various faculties and KVK(s) to animal owners and farmers.





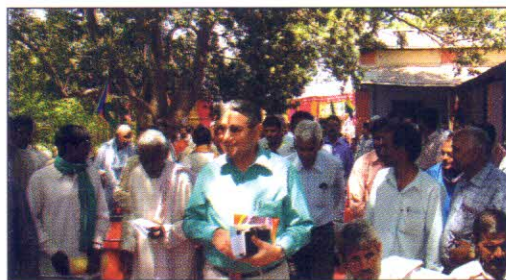


During the period under report, Directorate put its best efforts to promote extension activities and arranged trainings, demonstrations, Kisaan mela and Kisaan goshties etc. In addition to the hands on training of ex-servicemen in routine animal husbandry and poultry production methods to encourage them to adopt these vocations after their retirement from defence services, several groups of farmers were imparted training on scientific lines for feeding, breeding, management and disease control in goat rearing.

**Krishi Vigyan Kendra(KVK):**

Following extension activities have been taken up by KVK :

1. Front Line Demonstration (FLD): Sixty frontline demonstrations on mustard and eight frontline demonstrations on Til at Cheoli and Nagla Chhahar of Baldeo and Goverdhan blocks have conducted successfully.
2. On Farm Testing (OFT): Integrated Plant Nutrients Management (IPNM) technology in cereals like wheat, barley and paddy were demonstrated while Integrated Pest Management Technology were demonstrated in vegetables. The farmers were trained in use of balanced fertilizers and control of crop/vegetables devouring pests by using simple methods and motivating them to minimize the use of chemical pesticides.
3. Demonstration other than FLD: Eight demonstrations on JANSW wheat and barley benefiting farmers of Cheoli, Amirpur and Damodarpura village under Baldev and Mathura Block have been conducted successfully.



In addition to the other specialized training programmes, Kisan Mela was also organized by KVK, Mathura in



the premises of KVK which was inaugurated by Professor M.L. Madan, Hon'ble Vice Chancellor on March 26, 2007. Farmers of the nearby villages were distributed quality seeds of multi-cut jowar free of cost. Kisan goshti was also arranged to solve the day to day working problems of farmers and livestock owners. More than five hundred farmers and animal owners participated in mela.

**TRAININGS:**

**On Campus:** On campus trainings to 562 farmers and 153 rural youths were given to uplift their skill while 378 Extension functionaries were provided training in various aspects of scientific farming.

**Off Campus:** 600 farmers under various disciplines were given training of which 152 were females and 448 were males. These farmers belonged to all categories i.e. general, backward class, schedule caste and schedule tribes.

**In service training:** Block-wise training to the staff of State Agriculture Department was provided from 15th December 2005 onward.

**Seed Production:** Quality seed of Moong (HUM-1) and multi-cut jowar was produced on the farm of KVK.

**LITRETURE DEVELOPED**

A magazine namely 'Brij me Krishi' covering various agro and allied topics has been developed by the scientists of KVK.

**PRAGATISHEEL KRISHAK MITRA PRASHIKSHAN PROGRAMME**

One farmer each from every Gram Panchayat has been selected totaling to 479 farmers from all the 10 blocks of the district and were given five days technical training on various agriculture and veterinary related topics by different scientist at KVK centre and teachers of Veterinary College. The trainings were provided in a batch of 50 farmers each.





## NEW DEVELOPMENTS

1. With a view to provide precise scientific crop production technology, a Soil Testing Laboratory has been established at KVK Campus with an outlay of Rs. 11.80 lacs from ICAR.
2. For the fencing of the farm, tube well and irrigation channels, ICAR has sanctioned Rs. 18.95 lacs out of which Rs. 7.2 lacs have been released and fencing work is in progress.
3. A vermi-compost Unit with the production capacity of Five quintal per three months has been established at KVK Farm.

## VI. University Farms:-

The university has 782.34 acres prime land in Mathura on which there is dairy farm, poultry farm and KVK demonstration farm. There is also a big agriculture farm of about 1400 acres at Madhuri Kund.

### MADHURI KUND FARM

After establishment of U.P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidhyalaya Evam Go Anusandhan Sansthan Mathura, Madhuri Kund Farm along with daily labourers was transferred by C.S.A. University of Technology Kanpur in July 2003. Out of a total area of 1396 acre, 770 acre is under crop production, 123 acres is under social forestry, 80 acres is under roads and buildings while rest is covered by vilayati Babool and salt affected barren soil. Irrigation of the land is through canal water only. Presently, Dr. H. S. Panwar is officiating as Director of Farms and Dr. S. K. Sharma as the Officer In-charge of Madhuri Kund Farm.

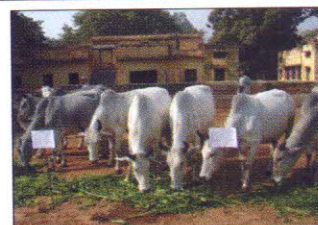
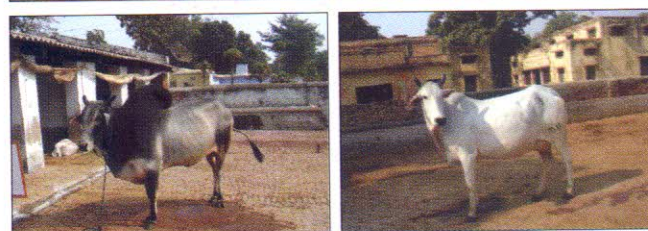
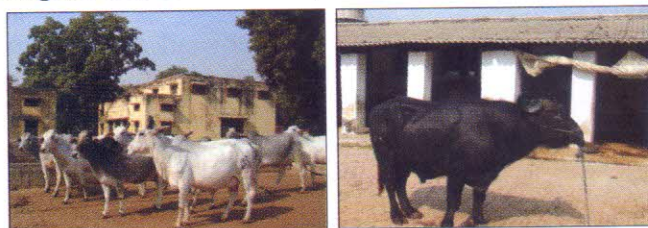
Madhuri Kund farm is well equipped with farm machinery and implements, namely tractors, combines, straw reaper, weighing bridge, tankers, manure-spreaders, trolleys, threshers, chaff-cutter, feed-grinder, multi-crop planter, aeroblast sprayers, forage harvester, rotavator, rotatill drill, engine with pump 50 HP, compressor etc. All these machinery and implements were purchased in the NATP scheme from ICAR, New-Delhi under mechanization of Farm scheme. Wheat, barley, mustard, oats, berseem and taramira are grown at the farm to produce certified seed for National Seed Corporation. In addition to above, a herd of dry cows of the University is also being maintained on the farm.

### DAIRY DEMONSTRATION FARM

Dairy Demonstration Farm (DDD Farm) was established in Veterinary College in the year 1947 with the objective of producing clean and hygienic milk for the students and staff of the College and supplying good quality and pedigreed bulls and calves to farmers. The farm is maintaining pure Harijana cows, Harijana X Friesian cross cows and Murrah buffaloes and their male and female calves. The milk is supplied to students by the University at subsidized rates.

Depending on the need, the farm also provides animals for experimentation to different Departments. Livestock of the farm is also a good source for collection of biological samples for research on different aspects of animal health.

In addition to the animal sheds and other buildings, DDD Farm has an agricultural land of approximately 110 acres for the production of green fodder, bhussa and concentrates during different seasons of the year.



### POULTRY FARM:

University has a full-fledged Department of Poultry Science which is also located in the premises of Poultry Farm. Poultry farm has all the facilities for maintaining chicken broilers, layers and also quails. All the PG students of the University rear and maintain their experimental birds at the poultry farm.



## VII. Human Resource Development

In order to equip faculty members with the latest scientific technologies and to strengthen the academic activities including research, teachers/scientist were permitted to attend Conference / Symposia / Seminar / work shop / training / Summer school / Short term courses of various disciplines organized by other institution within India.

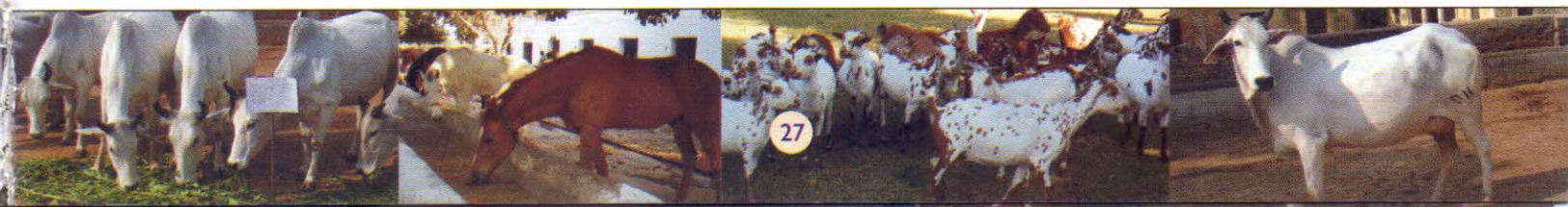






**Congress / Conference / Symposia / Seminar / Workshop / Training**

Name and Designation	Name of Seminar/ Congress Conference/ Workshop	Duration	Place
Dr. S.. Mishra TO, KVK Dr. Y.K. Sharma, TA KVK	Annual workshop of FLD's and OFST's	Apr 17-18, 2006	Chitrakoot UP
Dr. H. N. Singh, Professor	18 <sup>th</sup> ICAR Regional Meeting	September 01-02, 2006	Patna
Dr. A.S. Gujel TA KVK	10 days training programme on "Organic farming"	September 9-18, 2006	Allahabad, Deemed Agriculture University, Naini (UP)
Dr. Sarvajeet Yadav	Seminar on "Conservation of threatened breed-Jamunapari goats in UP"	September 9-28, 2006	Lucknow
Dr. M.P. Gupta Professor and Head, Associate Professor	National Seminar on "Quality Milk Management"	October 6-7, 2006	Narain PG College, Shikohabad UP.
Dr. Kranti Dev, Professor and Head	76th Annual Symposium and Platinum Jubilee Celebrations of National Academy of Sciences	October 6-8, 2006	IIT, Bangalore
Dr. Y. K. Sharma Ta KVK	Annual Zonal Workshop on KVKs	November 02, 04,-2006	NDUA&T, Kumar Ganj, Eazabab (UP)
Dr. M. P. Gupta Professor and Head, Associate Professor	XXXV Dairy Industry Conference on "Restoration of Indian Dairy Industry- a business with socio-economic development objective"	November 23, 25,-2006	Kolkatta
Dr. Satish K. Garg, Professor and Head	VI Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology	November 24, 26,-2006	Bihar Veterinary College, Patna
Dr. S. K. Mishra, To KVK	National Workshop on KVKs	November 26027, 2006	N.G. Rnga Rao Agricultural University Hyderabad
Dr. S.D. Sharma, Dean Dr. H.S. Panwar, Dean PGS Dr. Sarvajeet Yadav, Associate Professors	31st Annual Convention of IAUA	December 9-22, 2006	C.S.A.U & T., Kanpur
Dr. Sarvajeet yadav, Associate Professor Dr. Sharad Yadav	Seminar on "Livestock and Livelihood in UP"	December 21-22, 2006	UPCAR, Lucknow
Dr. Ajay Prakash Dr. M.M. Farooqui Associate Professors	XXI Annual Convention of Indian Associates of Veterinary Anatomy	December 21-23, 2006	Veterinary College, Jammu
Dr. Jitender Kumar, Assistant Professor	16th Annual Conference of Society of Annual Physiologists of India	January 10-11, 2007	Veterinary College, Gauwahati
Dr. Jitender Kumar, Assistant Professor	Short course on "Clinical Physiology"	Jan. 20-Feb. 08, 2007	IVRI, Izatnagar
Dr. A.K. Srivastava, Professor and Head	16th Annual Conference of Indian Association for Advancement of Veterinary Research	February 8-9 2007	Veterinary College, Mhow
Dr. H. N. Singh, Dr. K.C. Sharma, Professors	Seminar on "Conservation and development of Jamunapari breed of goats"	February 13, 2007	Vikas Bhawan, Etawah
Dr. H. N. Singh, Professor	Seminar on "Conservation and development of Jamunapari breed of goats"	February 28, 2007	CIRG, Makhdoom
Dr. H. N. Singh, Professor	Training Programme on "Conservation and development of Jamunapari goats and Bhadawari buffaloes"	March 17, 2007	Vikas Bhawan, Etawah









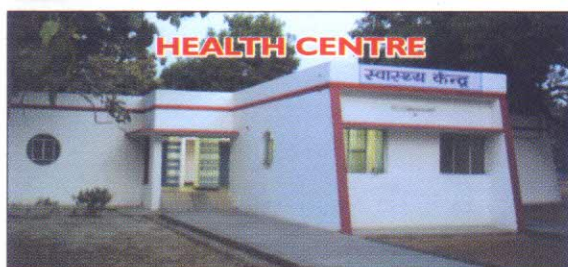
**XI. Finance and Budget (in lacs)**

State Govt.				External					Grand Total
Year	Plan	Non Plan	Total	Dev. Grant	Cons-tuction	Project	K.V.K.	Total	
2003-04	900.00	490.75	1390.75	150.50	0.00	207.96	26.85	395.31	1776.06
2004-05	14.28	514.00	528.28	120.00	0.00	58.76	31.10	209.86	738.14
2005-06	14.28	490.75	505.03	154.00	75.00	26.38	32.83	228.21	793.27
2006-07	640.73	640.75	1281.48	400.00	44.81	140.98	42.85	628.64	1910.12

**XII. New Infrastructure added**

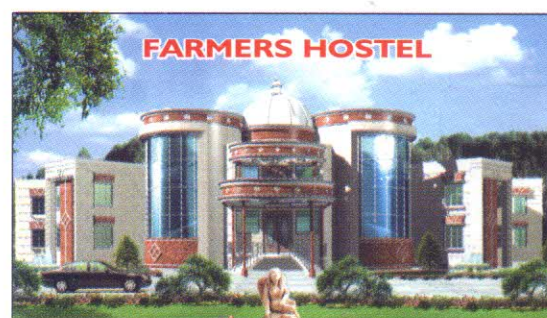
During the period under report, with the financial support from ICAR, New Delhi, laboratory facilities have been extensively improved. To give hands on training to all the post-graduate students, state of art Central Instrumentation Laboratory has been established which will have all the latest and advanced equipments required for taking up research on different aspects of animal health including molecular biology and biotechnology. This laboratory will have HPLC, Atomic absorption spectrophotometer, data-acquisition system based physiograph, CO<sub>2</sub>-incubator, ultra-low freezer, refrigerated centrifuge, UV Spectrophotometer, ELISA reader, sonicator, bio-safety cabinet etc. Similarly, under the Niche Area project, the laboratories have been equipped with ultracentrifuge, RT-PCR, DNA sequency and almost all other equipments required in molecular biology.

The central cafeteria was also been renovated in the university.

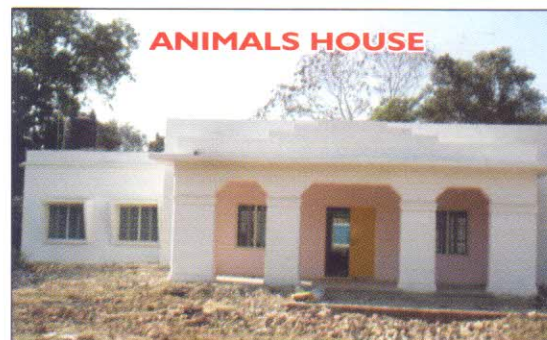


Health Centre with gym facilities, musical instruments and music teacher has also been started for the benefit of students and teachers. Students have been extensively making use of these facilities and performed very nicely during different cultural programmes.

With the financial assistance from ICAR, New Delhi, one Farmers Hostel is also coming up and is likely to be completed very soon.



Small Laboratory Animals House of the erstwhile UP Veterinary College was in almost abandoned condition, the same has been renovated and converted to a modern Animal House with optimal facilities for breeding and maintenance of experimental animals with the financial support from Indian Council of Agricultural Research, New Delhi.







### XIII. Research Publications

#### A. National and International Journals

Arpita Mohan and Satish K. Garg (2006). Pharmacokinetics of single intravenous bolus dose of ofloxacin in calves. *Indian Journal of Pharmacology*, **38**:368-369.

S Arora, RK Agrawal and B Bist (2006). Comparison of ELISA and PCR visa-vis cultural mMethods for detecting *Aeromonas* spp. in food of animal oriogin *International Journal of Food Microbiology*, - **106** : 177-183.

RD Agrawal and R. Singh (2006). Viability of coccidian oocysts of buffaloes under different physical and chemical conditions. *Journal of Veterinary Parasitology*. **220**:105-107.

VS Singh, PPS Chauhan, RD Agrawal and D. Shankar (2006). Prevalence of helminthic infections in buffaloes in and around Mathura. *Journal of Veterinary Parasitology*, **20**:195-197.

G Garg, DK Sharma, RD Agrawal and PK Raut (2007). Protective response of immunization with low molecular protein and crude antigen of *Hhaemonchus* in Barberi goats. *Indian Journal of Animal Sciences*, **77**:19-25.

V. Kumar, AK Bhatia and SV Singh (2006). Evaluation of efficacy of the species- specific antigens in the diagnosis of ovine and caprine Paratuberculosis using plate ELISA. *Journal of Immunology and Immunopathology*, 2006. **8**(1):48-53

H Kumar, and AK Srivastava (2006) Scanning electron microscopic study on sheep erythrocyte in experimental copper toxicity. *Indian Journal of Animal Sciences*, **76**:456-457

V Malik, Sheshman, RP Pandey and B Singh (2006). Management of an acquired contracture of fetlock in a mule. *Indian Journal of Veterinary Surgery*, **27**(1) : 59-60

SK Gupta, Ajay Prakash and Raja Ram (2006). Histochemistry of the tertiary follicle of ovary in goat (*Capra hircus*). *Indian Veterinary Journal*, **83**:536-38

SK Gupta, Ajay Prakash and Raja Ram (2006). Histoarchitectural studies on the primordial follicle in goat (*Capra hircus*). *Indian Veterinary Journal*, **83**:428-30

SK Gupta, Ajay Prakash and Raja Ram (2006). Light microscopic observations on the corpus luteum in the ovary of goat (*Capra hircus*). *Indian Journal of Animal Sciences*, **76**:18-20

SK Gupta, Ajay Prakash and Raja Ram (2006). Histochemical observations on the atretic follicle in goat (*Capra hircus*). *Indian Journal of Veterinary Anatomy*, **18**:40-43

SK Gupta, Ajay Prakash and Raja Ram (2006). Histochemistry of the primordial and primary follicle in goat ovary. *Indian Veterinary Journal*, **83**:568-69

SK Gupta, Ajay Prakash and Raja Ram (2006). Micrometrical study of secondary and tertiary follicle in the ovary of goat. *Indian Veterinary Journal*, **83**(6):652-54

AR Choudhury, MM Faoouqi and Chandra Pal (2006). Light microscopic study of the germinal epithelium in the ovary of goat (*Capra hircus*). *Indian Veterinary Journal*, **83**:680-81

AR Choudhury, MM Faoouqi and Chandra Pal (2006). Microscopic study of secondary follicle in the ovary of goat (*Capra hircus*). *Indian Journal of Veterinary Anatomy*, **18**:8-11

AR Choudhury, MM Faoouqi and Chandra Pal (2006). Micrometric observations on various segments of metanephros in prenatal goat (*Capra hircus*). **18**:30-32

#### B. Abstracts published during Annual Conferences/Symposia

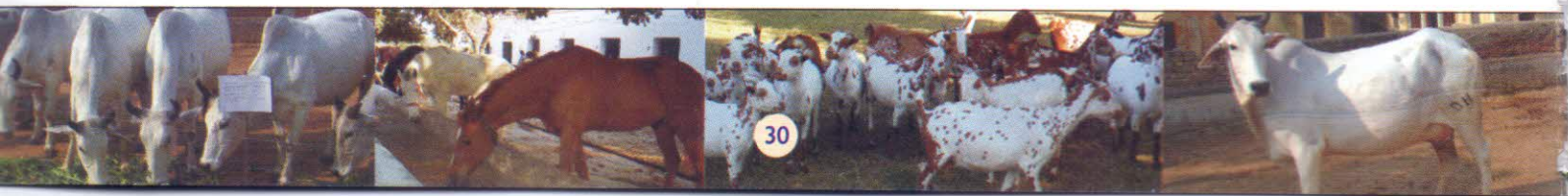
Soumen Choudhury, Atul K. Baranwal, Satish K. Garg, Jitendra Kumar and A.H. Ahmad (2006). Studies on clinico-pathological alterations and residues of diclofenac sodium in broiler chickens. Paper presented during the 26<sup>th</sup> Annual Conference of Society of Toxicology (India), held at Jiwaji University, Gwalior (October 9-11, 2006).

\*Soumen Choudhury, Atul K. Baranwal, Kapilesh M. Varshney, Satish K. Garg and Jitendra Kumar (2006). Diclofenac sodium-induced haemato-biochemical alterations in broiler chickens. Paper presented during the 26<sup>th</sup> Annual Conference of Society of Toxicology (India), held at Jiwaji University, Gwalior (October 9-11, 2006).

\*Bharat Bhushan, Satish K. Garg and Basanti Bist (2006). Effect of feeding a polyherbal formulation (Herbiotic-FS) on intestinal bacterial load and nutrient utilization in *E. coli* challenged birds and its pharmaco-economics. *Souvenir*: 42.

\*Satish K. Garg, Atul K. Baranwal, Soumen Choudhury, Chandra Bhadra, Kapilesh M. Varshney and Jitender Kumar (2006). *Moringa oleifera* leaves as a feed supplement in poultry ration and its effect on haematological and antioxidant parameters. *Souvenir*: 47.

\*Chandra Bhadra, Satish K. Garg and H.S. Panwar (2006). Phytochemical characterization and *in vitro* evaluation of *Moringa oleifera* leaves and *Calotropis procera* flowers for anthelmintic activity. *Souvenir*: 48.







\*Devendra Singh and Satish K. Garg (2006). Autonomic and autacid-receptors mediated uterotonic effect of *Moringa oleifera* flowers extract on isolated myometrial strips of buffaloes. *Souvenir*: 71.

\*Satish K. Garg, Atul K. Baranwal, Soumen Choudhury, Jitender Kumar and S.K. Mishra (2006). *Moringa oleifera* leaves extract-induced blood-biochemical and clinico-pathological alterations in chickens. *Souvenir*: 94.

\*Papers presented during the 6<sup>th</sup> Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology, held at Bihar Veterinary College, Patna (November 23-25, 2006).

Thakur Uttam Singh, Satish K. Garg and S.K. Mishra (2007). Effect of arachidonic acid on Na-K-ATPase activity in ovine pulmonary artery. International Conference on Cardio-Pulmonary Regulation in Health and Disease: Molecular and systemic integration, held at Vallabhbhai Patel Chest Institute, New Delhi (Feb. 22-24, 2007). p-15.

SK Singh, AK Srivastava, Dinesh Kumar, AK Baranwal and AA Kumar (2006) Study of pathogenicity of *P. multocida* (A:1) of quail origin in turkey poult. Paper presented and abstracted in the symposium on 'New concepts in diagnostic Veterinary Pathology and Toxicopathology with special emphasis on Indian System of Medicine held on 27-29, December, 2006 at Chennai.

SK Singh, AK Srivastava and AA Kumar (2006) Fowl Cholera in turkey poult: Molecular changes in liver and spleen. Paper abstracted in the symposium on 'New concepts in diagnostic Veterinary Pathology and Toxicopathology with special emphasis on Indian System of Medicine held on 27-29, December, 2006 at Chennai.

SK Singh, AK Srivastava and AA Kumar (2007). *P. multocida* (A:1) an invasiveness study in turkey poults. Paper presented in the symposium on VII Indian Veterinary Congress and Progress and demand in livestock and poultry health and production and new areas like animal welfare and distant management held on 8-9<sup>th</sup> February, 2007 at Mhow, Indore. on 8-9<sup>th</sup> February, 2007

SK Singh, AK Srivastava and AA Kumar (2007). Diagnosis in Fowl cholera in turkey poult by PCR. Paper presented in the symposium on VII Indian Veterinary Congress and Progress and demand in livestock and poultry health and production and new areas like animal welfare and distant management held on 8-9<sup>th</sup> February, 2007 at Mhow, Indore on 8-9<sup>th</sup> February, 2007.

AK Srivastava, AK Baranwal and DK Johari (2007). Balon ki parton se go evam mahish banso ki pahachan. Pashupalan evam Pashuchikitsa Vigyan Karyashala March I, 2007 at IVRI, Izatnagar (March I, 2007).

Govind Tiwari, HN Singh, Rakesh Goel and KC Sharma (2007). Conservation of Indigenous germplasm of Sahiwal cattle: Genetic and phenotypic parameters of economic traits. National Symposium on "Role of Animal Genetic Resources in Rural Livelihood Security", held at Feb 8-9, 2007 at Ranchi College of Veterinary Science and Animal Husbandry, Birsa Agriculture University, Ranchi. (Feb 8-9, 2007) pp. 214.

\*D Pan and AK Bhatia (2006). Isolation and identification of Vero-toxic *Escherichia coli* from new born diarrhoeic and non-diarrhoeic calves.

\*D Pan and AK Bhatia (2006). Studies on fimbrial characters of *Escherichia coli* from new born diarrhoeic cow calves.

\*D Pan and AK Bhatia (2006). Studies on toxicity of verotoxin in rabbit and mice.

\*D Kumar, A Goel and AK Bhatia (2006). Antibacterial effect of *Argimone mexicana* leaves extract.

\*Papers presented at the International Symposium and 5<sup>th</sup> Annual Conference on "New Strategies for prevention and control of emerging and re-emerging zoonotic diseases- an integrated veterinary and medical approach" held at CSK HPKV, Palampur (October 12-14, 2006).

^ MM Farooqui, Chandra Pal and Raja Ram (2006). Histogenesis of testis of goat (*Capra hircus*).

^ AR Choudhury, MM Faoouqi and Chandra Pal (2006). Morphometrical study of prenatal penis of goat (*Capra hircus*).

^ Ajay Prakash and G Chandra (2006). Histological and certain histochemical studies on the metanephros of prenatal goat (*Capra hircus*) excretory part.

^ Archana, RS Katiyar, DN Sharma and MM Farooqui (2006). Light microscopic observations in the mucosa of duodenum of goat.

^ Archana and RS Katiyar (2006). Anatomy of the vas deferens of a day old kid.

^ Archana and RS Katiyar (2006). age related anatomical changes in the testis of Gaddi goat (*Capra hircus*).

^ Abstracts of papers presented during the XXI Annual convention of Indian Association of Veterinary Anatomist & National symposium held at Division of Anatomy and Histology, Faculty of Veterinary and Animal Sciences, Jammu (Dec. 21-23, 2006).

BC Pal and SK Yadav (2006). A prevalence study of *Mycoplasma bovis* in Northern India. Paper presented during 16<sup>th</sup> Congress of International Organization for Mycoplasmaology, held at St. Johns College, Cambridge, UK. (July 9-14, 2006).

Udit Jain, BC Pal and SK Yadav (2006). Application of routine PCR for the identification of *Mycoplasma capricolum* sub-species *capripneumoniae* from nasal swabs of kids with pneumonia. Paper presented during 16<sup>th</sup> Congress of International Organization for Mycoplasmaology, held at St. Johns College, Cambridge, UK. (July 9-14, 2006).

Bhawana Gupta, SK Yadav and BC Pal (2006). Detection of *Mycoplasma capricolum capripneumoniae* (Mccp) in pneumonic goat in India by PCR and western blot. Paper presented during 16<sup>th</sup> Congress of International Organization for Mycoplasmaology, held at St. Johns College, Cambridge, UK. (July 9-14, 2006).





DK Singh, Sarvajeet Yadav, Vikas Chandra and Subodh Kumar (2006). Effect of cold shock on ejaculated and epididymal buck semen. Paper presented during National Symposium on animal resource development through advanced nuclear and biotechnological interventions and XVI Annual Conference of Society of Animal Physiologists of India held at Gauwahati (January 10-12, 2007).

### C. Guest/Invited lectures delivered

Satish K. Garg (2006). Newer perspectives in pharmacokinetic studies of antimicrobial agents with particular reference to assay procedures, modeling, pharmacodynamics and use of bioenhancers. Lecture delivered during the ICAR Short Course on "Advances in Clinical Pharmacokinetics and Drug Delivery System in Veterinary Practice", organized by Faculty of Veterinary Sciences and Animal Husbandry, Jammu (November 7-16, 2006).

Satish K. Garg (2006). Bioprospecting of ancient database for newer drug molecules and bioenhancers: Challenges and scope in animal health programmes during twenty first century. Lead Paper presented during the 6<sup>th</sup> Annual Conference of Indian Society of Veterinary Pharmacology and Toxicology, held at Bihar Veterinary College, Patna (November 23-25, 2006). Conference Souvenir: 31-34.

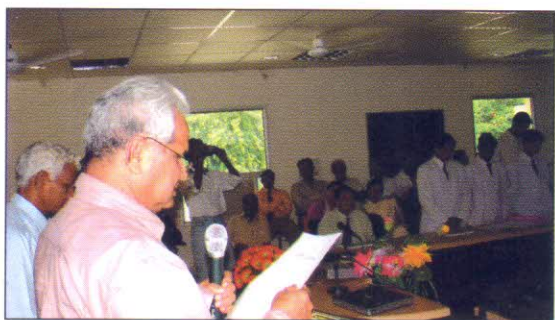
A.K. Srivastava (2006) Pathology of Jamunapari goats. Lecture delivered in the Conference on Conservation of Jamunapari goats sponsored by Directorate of Animal Husbandry, Lucknow in 2006.

A.K. Srivastava (2007). Pathological review of Leptospirosis in dogs. Lecture delivered in the Symposium of Asian Congress of Canine Practice held on 7-9<sup>th</sup> February, 2007 at Nagpur.

A.K. Bhatia (2007). Recombinant phage display antibody- an alternative to hybridoma. Lecture delivered during Society of Immunologists and Immunopathologists Conference at Chennai during February 2007.

## XIV. Other Highlights And Activities

### Oath Taking Ceremony



On satisfactory completion of the requirements for the degree Programme of B.V.Sc. & A.H., 48 students were administered the oath of profession for serving the deaf and



dumb animals on 18<sup>th</sup> September 2006 by Dr. Chandrika Prasad Yadav, the Director General of UP Council of Agricultural Research, Lucknow. We congratulate all the degree recipients. On this occasion, Dr. Chandan Prakash of the outgoing batch of 2006 received Late Dr. P.G. Pandey Memorial Gold Medal for having secured the highest marks in Veterinary Pathology during B.V.Sc. & A.H. degree programme.

### University Foundation Day

6<sup>th</sup> Foundation Day of the University was celebrated by the employees and students of the University. On the occasion, Prof. M.L. Madan, the Hon'ble Vice Chancellor of the University, was the Chief Guest. Main theme of the celebration was "the Retrospect and prospects of the University". On this occasion, teachers and students expressed their views and expectations. Hon'ble Vice Chancellor while speaking on the occasion



enumerated his priorities for improving the infrastructural facilities for imparting quality and need-based education and training to the students. He also emphasized on the need for better management of the University resources and dedicated efforts of all sections of the University employees.

### Deputy Director General Fisheries visited the University

Dr. S. Ayyapan, DDG (Fisheries), Indian Council of Agricultural Research, New Delhi visited the University on December 6, 2006. During his stay, he visited the under construction building of College of Fisheries and had detailed discussion with the





Hon'ble Vice Chancellor. He expressed satisfaction on the upcoming facilities in the College and also gave certain



constructive suggestions. Further, he assured all technical and financial assistance from the Council. Dr. Ayyapan expressed his feeling that joining of Prof. Madan will give new impetus to the ongoing developments and with his dedication and devotion, this University will soon be on the International map.

### State Planning Board Officials on the campus

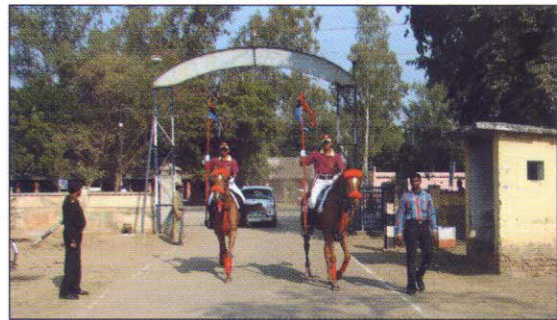
In view of the finalization of XI Five Year Plan of the UP Govt., Hon'ble Vice Chancellor, Prof. M.L. Madan invited Sh. A.N. Mishra, Special Secretary Planning and Dr. G.N. Pandey, Principal Coordinating Officer Planning, Govt. of UP for on the spot assessment of the status, functioning and needs of Veterinary University. Sh. Mishra, and Dr. Pandey visited the University on



23<sup>rd</sup> of January 2007 and an interactive session was organized in the Conference hall of Hitech lab. Prof. Madan made an elaborative presentation on current scenario of livestock sector in the state and the country and future perspectives of this sector for alleviating poverty not only in the state but the whole country. In view of the importance, vast potential and scope of livestock in ensuring poverty alleviation and social empowerment, perspective plan document for strengthening of Veterinary University in a phased manner during the XI Plan was presented by Prof. Madan. Mr. Mishra, Special Secretary planning also admitted that in the poverty alleviation programme of the state, animal husbandry can play a pivotal role and emphasized that success of all animal husbandry programmes lies on the flag bearers. Therefore, University, being the key player has to come forward in reorienting its all the health and husbandry practices to make them user-friendly.

### Director General ICAR visited the University

On the personal request of Prof. Madan, Hon'ble Vice



Chancellor, Dr. Mangla Rai, DG ICAR and Secretary Department of Agriculture Research and Education, Govt. of India visited Veterinary University on 3<sup>rd</sup> of February 2007. Prof. Madan discussed the future development plans of the University with



Dr. Rai and apprised him with the constraints. University extended a ceremonial welcome to DG, ICAR by offering tilak on his forehead, presenting a memento and bouquet.

Dr. Rai also visited the under-development new campus of the University and closely interacted with the teachers to face the current and emerging challenges in agriculture and animal husbandry sector.







With the financial assistance of Rs. 75 lacs from ICAR, New Girls hostel was constructed and named as "Kasturba Girls Hostel". The girls hostel, sufficient to accommodate 50 girls has 25 rooms, one visitor's room, one dining hall and one common



room, was inaugurated on 3<sup>rd</sup> of February 2007 by Dr. Mangla Rai, DG ICAR and Secretary DARE, Govt. of India in a colorful function which was presided over by Prof. M.L. Madan, Hon'ble Vice Chancellor. Dr. Rai in his address to the students, employees and teachers and other guests emphasized on the need of streamlining and promoting livestock sector in the country for the benefit of livestock owners, landless labourers and marginal farmers. He also assured of all possible financial assistance from ICAR for the development of this newly established Veterinary University which is still to establish itself and come on the national map.

### Perspective Plan (2007-12)

As a follow up exercise, after the successful visit of Sh. A.N. Mishra, Special Secretary Planning, Govt of UP, University prepared a very ambitious but realistic Perspective Plan document highlighting the needs of the University in the changed scenario of importance of livestock and allied sectors in improving rural economy, poverty alleviation and social empowerment programmes of the country. Since this University is yet to attain the proper shape in terms of establishment of different offices, creation of newer teaching positions in different faculties, built up of infrastructural facilities for upcoming Faculties, strengthening of Veterinary College in terms of state of art laboratory facilities, instructional farms, small animal house facility, and most importantly, to strengthen the extension wing of the University to out-reach to the door-steps of livestock owners and needy persons by way of the establishment of Pashu Gyan Chaupals, University prepared a Plan Document seeking a financial assistance to the tune of Rs. 196 crores and the same has been approved by the State Planning Board for the University. We are pretty optimistic that with such a financial support from the State Govt., the University will soon be on the front line amongst the sister Veterinary Universities in the country.

### Celebration of Republic Day

National Flag on the 57<sup>th</sup> Republic day of the country was unfurled by the Hon'ble Vice Chancellor, Prof. M.L. Madan.



After flag hoisting ceremony, all the officers, teachers, employees and students assembled in the Conference Hall of the University. Rich floral tributes were paid to "Father of the Nation" by garlanding the photograph of Bapu. On this occasion, both the students and employees remembered the sacrifices of national martyrs for freedom struggle of the country and expressed their views. Speaking on the occasion, Prof. Madan stressed upon the need of taking the nation forward by sincerely



devoting our self for our motherland and institution. He urged upon the students to become sincere and responsible citizens of the country and serve the nation for its progress and prosperity. Hon'ble Vice Chancellor planted a few saplings in front of the Administrative block of the University. After the plantation programme, a friendly volleyball match between the staff and students was also organized. Hon'ble Vice Chancellor was introduced to both the teams by Sh. J.N. Pal, Physical Instructor of the Institute.

### Celebration of Independence Day

On 15<sup>th</sup> of August 2007, National Flag was unfurled by Hon'ble Vice Chancellor in front of the administrative block. In his address to the employees and students of University, Prof. Madan presented an account of the developments which had taken place during the last six months. Central Cafeteria and Health Centre were inaugurated and dedicated to the service of students and employees of the University. Few of the saplings were also planted by him and other officers of the University in front of the administrative block and in the hostels.





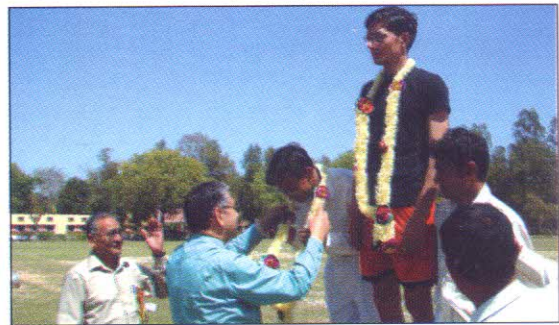


### Annual Sports Meet of the University

Annual sports meet of the University was inaugurated by Prof. M.L. Madan, Hon'ble Vice Chancellor of the University on 23<sup>rd</sup> of March 2007. Hon'ble Vice Chancellor took salute from the contingents of different classes and declared the meet open by releasing balloons in the sky. Best athlete of the year 2006, Dr. Raveendra Nath Pathak, administered the sports oath to players. Dr. B.C. Pal, President Games and Sports welcomed the Chief Guest, other guests, teachers and students. Different Inter-class indoor and outdoor sports events and some of the athletic



events were completed before the athletic meet while the remaining athletic events were completed on 23<sup>rd</sup> and 24<sup>th</sup> of March. Apart from active participation of students in different



events, 100 meter race of non-teaching employees, tug-of-war between the students and teachers and musical chair race of girl students and ladies were the special events of interest.

### Participation in Inter-College/University Sports and Extracurricular activities:

Two girl students, Dr. (Ms) Monika Goel and Miss Shalini Parihar, participated the Zonal elocution competition on the topic "Science for livelihood security" held at GB Pant University of Agriculture and Technology on January 16, 2007.

Six students of Veterinary College participated in All India Veterinary Colleges badminton and Table Tennis competition held at GB Pant University of Agriculture and Technology on March 16-18, 2007.

Twelve students participated in All India Inter Agricultural Universities Youth Festival held at Maharana Pratap University of Agriculture & Technology, Udaipur in Sept., 2007.

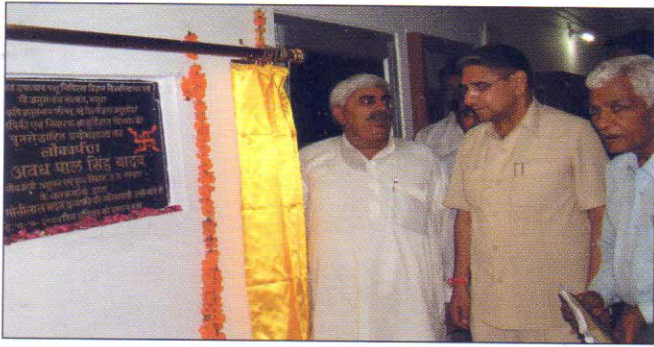
Dr. Atul Kumar Baranwal and Dr. Monika Goel ranked 4<sup>th</sup> and 6<sup>th</sup>, respectively, in the essay competition on "Challenges and opportunities for Veterinarians in National Socio-economic awakenings" organized by Sardar Krushinagar Dantiwada Agricultural University, Sardar Krushinagar, Gujarat to commemorate the Silver Jubilee of College of Veterinary Science and Animal Husbandry.

### Minister of Animal Husbandry, Govt. of UP visited University

Sh. Avadh Pratap Singh Yadav, Hon'ble Minister of Animal Husbandry and Fisheries, Govt. of UP visited University on July 7, 2007. On his arrival in the University VIP Guest House, he was welcomed by Prof. M.L. Madan, Hon'ble Vice Chancellor. Bhoomi Poojan for Farmer's Hostel was performed by the Hon'ble Minister and Vice Chancellor. On the arrival of Chief Guest in the Conference Hall, he was welcomed by University Officials and representatives of all unions. Prof. Madan in his presentation and address highlighted the achievements of the University and also drew the attention of Govt. enumerating the





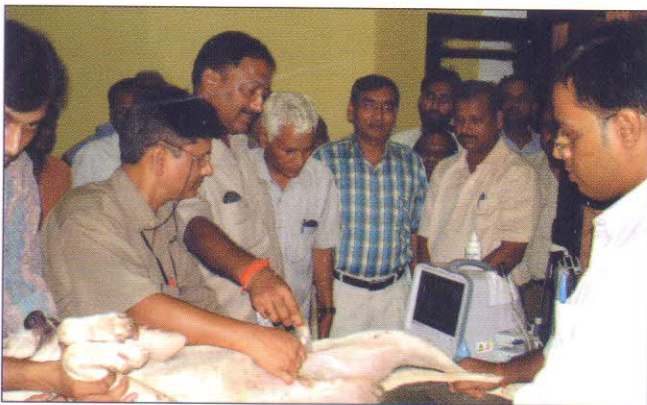


difficulties and challenges. The Minister addressed the students, employees, teachers and officers of the University and assured of all possible assistance to the University. He also inaugurated the newly renovated and established laboratories of Niche area project in Department of Epidemiology and Preventive Medicine.



**Ultrasonography facility dedicated to the services of livestock owners**

With the financial support of Indian Council of Agricultural Research, New Delhi, Ultra-sound facility has been created in Kothari Veterinary Hospital Complex. The Ultrasonography facility was dedicated in the service of farmers by the local MLA, Sh. Pradeep Mathur on September 04, 2006.



This facility will not only help in diagnosis of animal diseases, but also will be of great use in imparting quality education and training to UG and PG students.

**Other Construction Works in the University**



Foundation stone for Vice Chancellor's lodge in the new Campus was laid down by Prof. M.L. Madan, Hon'ble Vice Chancellor on 30<sup>th</sup> of November 2006 and also bhoomi poojan for laying the main road connecting the Veterinary College with new Campus of the University was performed by the Hon'ble Vice Chancellor along with other officers, teachers, employees and students of the University. While addressing the gathering, emphasis was laid on the quality assurance and also timely completion of the construction work.

**Joint Secretary Animal Husbandry, Govt. of India visited the University**

Kumari Neeraja Rajkumar, Joint Secretary Animal Husbandry, Dairying and Fisheries, Govt. of India visited the University on 14<sup>th</sup> of June 2006 to have an inspection of Hitech Laboratory established with the financial support from Govt. of India and also to evaluate the impact of training programmes organized by the Hitech laboratory of the University. She interacted with the Hon'ble Vice Chancellor and core faculty members of the training and expressed her satisfaction on the conduct and success of training programmes.







**FARMER'S HOSTEL**  
(Under Construction)



# LAYOUT OF NEW CAMPUS OF THE UNIVERSITY



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