DUVASU

ANNUAL REPORT

2014-15

U.P. Pandit Deen Dayal Upadhyaya Pashu-Chikitsa Vigyan Vishwavidyalaya
Evam Go Anusandhan Sansathan (DUVASU), Mathura - 281001 (U.P.) INDIA

DIGNITARIES

DUVASU

वार्षिक प्रतिवेदन

ANNUAL REPORT

2014-15

ड० प्र० पंडित दीनदयाल उपाध्याय पशुचिकित्सा विज्ञान विश्वविद्यालय
एवं गो अनुसंधान संस्थान (दुवासु), मथुरा – 281001 (उ. प्र.) भारत

U.P. Pandit Deen Dayal Upadhyaya Pashu-Chikitsa Vigyan Vishwavidyalaya
vam Go Anusandhan Sansathan (DUVASU), Mathura - 281001 (U.P.) INDIA

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FOREWORD

It is a matter of great satisfaction for me to present the Annual Report of the U.P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidayalaya Evam Go Anusandhan Sansthan, Mathura highlighting the achievements and progress, the University has made in teaching research, extension and infrastructure development during 2014-15. Since its inception in 2001, University has started many novel, applied teaching programmes for skill development. Since 2014-15, College of Biotechnology has initiated the undergraduate programme in Biotechnology and Industrial Microbiology, and PhD degree programme in Biotechnology. With the hard work and sincere efforts of faculty members, 17 students qualified JRF test of ICAR in Animal Science and 05 students in Veterinary Science. Twenty students have been admitted in M.V.Sc. Degree Programme of premier institutes of India such as IVRI, Izatnagar and NDRI, Karnal. To inculcate entrepreneurial skills among the students Hands on Training were imparted to the students of B.V.Sc. & A.H. in poultry rearing, feed and UMMB preparation and value addition in milk and meat. The clinical service have been extended to the livestock owners and farmers through the TVCC, clinical camps and ambulatory services. The internet facility has been provided to the students by Agricultural Knowledge Management unit (AKMU).

In research, the University has made tremendous progress in technology development. Currently University has 11 externally funded projects in various Departments of College of Veterinary Science and Animal Husbandry. Out of these, 5 projects are from ICAR, 2 projects from Government of India and 4 from other R & D agencies. Besides these, University has completed 5 University funded projects. Fourteen new University funded projects have been sanctioned in March 2015. Two patents have been filed by the department of Pharmacology and Toxicology. Many scientists have received awards from their scientific societies for their excellent research work and brought laurel to the University.

University has organized two Kisan Melas, wherein overwhelming response of farmers were noticed. The university farm has generated revenue of more than 175 lacs through milk, poultry and farm produce. Successful organization of PVT-2014 and human resource development through organization of one International Conference (IAVMI-2014), two National Conferences (IMSACON-VI and XXX ISSAR), one Hands on Training sponsored by ICAR were other highlights of the University. The Building of College of Livestock Products Technology was inaugurated by the Hon'ble Chancellor of the University and Governor of Uttar Pradesh Shri Ram Naikji.

On behalf of the University, I express my sincere thanks and gratitude to the State Government, Govt. of India and ICAR, New Delhi for ample financial support. Under the patronage and guidance of our Hon'ble Chancellor Sh. Ram Naik Ji, the University is progressing and I am sure will be able to established the new standards in the field of Veterinary and Animal Sciences. The efforts made by the Chief Editor and his team editors in bringing out this report is highly appreciable.

(A.C. Varshney)

Vice Chancellor

प्राक्कथन

उ० प्र० पं० दीनदयाल उपाध्याय पशुचिकित्सा विज्ञान विश्वविद्यालय एवं गो अनुसंधान संस्थान मथुरा की वर्ष 2014–15 का वार्षिक प्रतिवेदन प्रस्तुत करते हुए मुझे अत्यधिक हर्ष का अनुभव हो रहा है। इस प्रतिवेदन में विगत वर्ष में विश्वविद्यालय द्वारा शिक्षण, अनुसंधान, प्रसार एवं अन्य संवर्धन में किये गये अद्भुत सर्वांगीण विकास का वर्णन है। ई० सन० 2001 में विश्वविद्यालय की स्थापना के बाद इस विश्वविद्यालय ने कई नूतन व्यावसायिक पाठ्यक्रम का शिक्षण समावेश सृजन किया है, जिससे कि विद्यार्थियों की प्रतिभा को विकसित होने का समुचित अवसर प्राप्त हो। वर्ष 2014–15 से जैव प्रौद्योगिकी महाविद्यालय में जैव प्रौद्योगिक स्नातक एवं व्यावसायिक सूक्ष्म जीवविज्ञान स्नातक (बी०टेक–जैव) शिक्षण कार्यक्रम शुरू हो गया है। इसके साथ साथ जैव प्रौद्योगिकी में विद्या वाचस्पति (पी०एच–डी०) उपाधि के लिए शिक्षण व्यवस्था की गई है। विश्वविद्यालय के आचार्य कुल के सार्थक प्रयासों का फल है, कि पशुचिकित्सा विज्ञान महाविद्यालय के 17 छात्रों ने पशु विज्ञान में और 05 विद्यार्थियों ने पशुपालन में भा०कृ०अ०प०, नई दिल्ली द्वारा आयोजित जे० आर० एफ० की परीक्षा को सफलता पूर्वक उत्तीर्ण करके फेलोशिप प्राप्त की है। इसके साथ–साथ 20 विद्यार्थियों ने भारत के श्रेष्ठ वेटेरिनरी संस्थानों जैसे कि आई०वी०आर०आई०, इज्जतनगर और एन०डी०आर०आई०, करनाल में प्रवेश लेने में सफलता प्राप्त की है।

विद्यार्थियों में औद्योगिक स्पर्धा वृत्ति विकसित करने हेतु उन्हें व्यावसायिक प्रशिक्षण भी दिया गया है। पशुचिकित्सालय एवं पशु विज्ञान स्नातकों को कुक्कुट पालन, खाद्य निर्माण, यूरिया मोलेसिस एवं खनिज मिश्रण के पौष्टिक ईंटों के निर्माण तथा दूध एवं मांस की गुणवत्ता में सुधार करके उनके प्रयुक्त प्रसंस्कृत पदार्थों के निर्माण आदि का भी प्रशिक्षण दिया गया है। संबंधित पशुपालकों एवं किसानों को पशुओं के स्वास्थ्य परीक्षण निदान एवं उपचार के लिए उचित चिकित्सकीय सेवा शैक्षणिक पशु चिकित्सालयों, पशु सेवा शिविरों एवं चल पशु चिकित्सा वाहन सेवाओं के द्वारा दिया जाता रहा है। विद्यार्थियों को ज्ञानार्जन हेतु कृषि ज्ञान प्रबन्धन इकाई (ए०के०एम०यू०) द्वारा इन्टरनेट सेवा सभी छात्रावासों, प्रयोगशालाओं में उपलब्ध है।

विश्वविद्यालय में अनुसंधानों के द्वारा पशुपालन के उन्नत तरीकों, उनके रोग उपचार एवं प्रबन्धन तकनीकों में वृहद सफलता प्राप्त की है। वर्तमान में विश्वविद्यालय में बाह्य संस्थाओं द्वारा वित्त पोषित 11 अनुसंधान परियोजनाएं पशु चिकित्सा विश्वविद्यालय के विभिन्न विभागों में चल रही हैं। इनमें से 6 परियोजनाएं भा०कृ०अ०प०, 2 भारत सरकार एवं 3 अन्य बाह्य अनुदान एजेंसी संस्थाओं द्वारा स्वीकृत हैं। चौदह नयी परियोजनाएं, लगभग 16.75 लाख, की मार्च 2015 में पशु चिकित्सा विश्वविद्यालय के भिन्न भिन्न विभागों में स्वीकृत की गयी हैं। पशुचिकित्सा विश्वविद्यालय के पशु भैषज एवं विष विज्ञान विभाग ने 2 पेटेन्ट सरकार के अनुमोदन हेतु अग्रसारित किये गये हैं। विश्वविद्यालय के कई वैज्ञानिकों एवं शिक्षकों को उनके विषय में विशेष योगदान के लिए पुरस्कृत एवं सम्मानित किया गया है।

पशु उत्पाद तकनीकी महाविद्यालय का उद्घाटन भी माननीय कुलाधिपति एवं उ०प्र० के राज्यपाल श्री राम नाईक जी के कर कमलों द्वारा सम्पन्न हुआ। विश्वविद्यालय ने 2 किसान मेलों का आयोजन किया, जिसमें किसानों एवं पशुपालकों ने बढ़ चढ़कर भाग लिया। इस वर्ष विश्वविद्यालय ने अपने फार्म (प्रक्षेत्र) में उत्पादित दूध, कुक्कुट एवं अन्य कृषि सम्बन्धी वस्तुओं के विक्रय से 175 लाख रूपयों की आमद की है। विश्वविद्यालय द्वारा बी० वी० एस० सी० एण्ड ए० एच० में प्रवेश हेतु प्री वेटेरिनरी टेस्ट 2014 तथा मानव संसाधन विकास के लिए विश्वविद्यालय द्वारा 1 अन्तर्राष्ट्रीय सम्मेलन (आई.ए.वी.एम.आई–2014), दो राष्ट्रीय सम्मेलन (इम्यूनोकोन–6, आई.एस.एस.ए.आर–30) एवं एक भा०कृ०अ०प० द्वारा स्वीकृत प्रायोगिक प्रशिक्षण का सफलतापूर्वक आयोजन करना अन्य उपलब्धियाँ हैं।

विश्वविद्यालय की ओर से मैं राज्य सरकार एवं भा०कृ०अ०प० का आभार प्रकट करता हूँ, जिन्होंने विश्वविद्यालय पोषण हेतु प्रचुर वित्तीय संसाधन उपलब्ध करवाये। माननीय कुलाधिपति एवं उत्तर प्रदेश के राज्यपाल श्री राम नाईक जी की छत्रछाया एवं मार्गदर्शन के अन्तर्गत विश्वविद्यालय दिन दूनी–रात चौगुनी उन्नति कर रहा है तथा मुझे विश्वास है कि हम पशुचिकित्सा एवं पशुपालन के क्षेत्र में नये कीर्तिमान स्थापित करेंगे।

इस वार्षिक प्रतिवेदन को वर्तमान स्वरूप में प्रस्तुत करने हेतु मुख्य सम्पादक एवं टीम सदस्यों के प्रयास अति प्रशंसनीय हैं।

(ए० सी० वार्ष्णेय)
कुलपति

EXECUTIVE SUMMARY

TEACHING

- College of Veterinary Science and Animal Husbandry and College of Biotechnology, two colleges of the University are running teaching programmes.
- During 2014-15, College of Veterinary Science and Animal Husbandry admitted 68 students in B.V.Sc. & A.H programme. Out of which 35.29% was constituted by girls. In M.V.Sc. and Ph.D programmes 33 and 08 students respectively, were admitted. During the year 67 Graduates, 10 Postgraduates and 2 Doctorate students passed out. 34 and 48 students were admitted in Diploma in Veterinary Pharmacy (DVP) and Diploma in Livestock extension (DLE) in 2014-15.
- During 2014-15, College of Biotechnology has initiated undergraduate programmes in B.Sc. (Biotechnology) and B.Sc. (Industrial Microbiology). In addition to this, PhD (Biotechnology) was also initiated. Six and twenty six students were admitted in Ph.D Biotechnology and B.Sc. Biotechnology respectively. In academic year 2014-15, three students have completed their M.Sc. in Biotechnology.
- Teaching Veterinary Clinical Complex (TVCC) is having imaging facilities, small animal dentistry unit, operating microscope, laproscopic surgery unit, orthopaedic surgery instruments, eye surgery instruments, diathermy, multiparameters monitors, oxygenators, nebulizers, general unit for large and small animal, and well equipped small animal and large animal operation theaters. There are six indoor rooms for farmers and animal owners, coming from distant places.
- The diseases diagnostic laboratory of TVCC is well equipped with semiautoematic blood and biochemical analyzer, urine analyzer, electrolyte machine in addition to other conventional facilities for diagnosis of animal diseases in clinical cases. During 2014-15, 1984 clinical samples were processed in diagnostic laboratory. Out of these, 178 blood samples for CBC, 114 samples for biochemical analysis, 17 samples of urine, 32 samples of milk, culture and sensitivity tests and 1643 samples of differential leukocyte count (DLC), hemoprotozoan, hemoglobin and feaces were analysed.
- During 2014-15, 10037 clinical cases were treated. Out of these, 3418 large animals, 1198 small animals, 500 equines, 4700 pets and 212 other animals. Total revenue generated during the year was Rs 4, 69,645.00.
- Ambulatory clinical services rendered by TVCC organized 10 clinical camps in Mathura and adjoining districts with the help of gram panchyat and local veterinary officers during 2014-15, in which 838 animals were treated. Out of these, 208 cattles, 554 buffaloes and 76 were other animals like sheep, goat and pigs. 22 surgical cases, 614 medicine cases and 202 gynecological cases were treated in these camps.
- The breeder and layer farm and hatchery of Experiential Learning Unit (ELU) in Poultry Science imparted hands on training to undergraduate, Postgraduate, PhD and Internship students. These students were trained in feeding, watering and

management of poultry farm including hatchery operations and record keeping etc.

- Under experiential learning programme, feed manufacturing unit imparted training to 1st year B.V.Sc. & A.H. students in compounding animal feed and urea mineral molasses block technology. During 2014-15, 85 students were trained in preparation of UMMB and 2725 Quintal feed was manufactured in 436 batches.
- The department of LPT trained undergraduate students of B.V.Sc. & A.H. and post-graduate students of the Department of LPT in the area of milk and meat processing which included pasteurization of milk, milk packaging and preparation of value added products of milk and meat like chicken nuggets, chicken patties, flavored lassi, milk loaf etc.
- During this year the total number of books available for students are 33373. Library also provides "on line journal facility (www.cera.jccc.in) to the students and faculty, through which numerous journals can be accessed on line.
- AKMU has 34 computers systems with internet connectivity for students and faculty members. It ensured internet facility to all Departments, Hostels, Administrative block, College of Biotechnology, Vice-Chancellor's Camp office.

RESEARCH

- University is running eleven externally funded projects in various Departments of College of Veterinary Science and Animal Husbandry. Out of these, 6 projects are from ICAR, 2 projects from Goverenmant of India and three from other R & D agencies.
- During the year, the University has completed 5 University funded projects and 14 projects has been sanctioned during March 2015 of worth Rs. 16.75 lacs to the different departments of College of Veterinary Science and Animal Husbandry.
- Academic research in various departments has resulted in submission of three Ph.D and 16 M.V.Sc. theses in College of Veterinary Science and Animal Husbandry and three M.Sc. (Biotechnology) in College of Biotechnology.

EXTENSION

- Directorate of Extension alongwith EI 10 Media organized three days Kisan Mela 'Pashudhan Krishi Vijay, 2015' on 19-21st of February, 2015 at University Campus where more than 1300 farmers from Uttar Pradesh, Rajasthan and Madhya Pradesh participated.
- Directorate of Extension has also organized one day "Sarsoon Beej Pradarshan Mela" along with Directorate of Rapeseed-Mustard Research, Bharatpur on 03 March 2015 at Madhurikund, Mathura where more than 1200 farmers from U.P. and Rajasthan participated.
- Five on campus and two off campus trainings and workshops were organized by the university on various aspects of animal health and management. Five training manuals were developed by the Directorate of Extension.

- One Externally funded project of extension has been sanctioned on "Imparting scientific knowledge of animal rearing for better production through technology transfer to livestock owner" to the Directorate of Extension by UPCAR of Rs. 14.812 lacs.
- During the year eleven visits of farmers, Veterinary Officers were organized by the Directorate of Extension. These visists were sponsored by Animal Husbandry Department, Department of Agriculture, Sugarcane division, U.P. and ATMA.
- Consultation services were also provided to the farmers regarding animal husbandry practices. Extension literature were developed in the form of booklets and leaflets for the benefit of farmers.
- KVK organized 185 On-Campus and 188 Off-Campus trainings in which more than 3600 and 4300 Farmers/Farm Women respectively, were trained. 71 and 173 Front line demonstrations of Kharif and Rabi season crops respectively were organized on various crops, vegetables, cereals, oilseeds, flouriculture and fodder crops. Two OFT's on weed management in paddy and wheat, one OFT on productivity enhancement were conducted during this year by the scientists in various locations of the adopted villages.
- Gosthies, Diagnostic visits, Kisan Samman Diwas were organized for improving connectivity with the farmers. During this year, Soil Testing Laboratory of KVK analyzed 951 soil samples of 462 farmers from 61 villages and furnished recommendations for optimal use of fertilizers. Live demonstration units of Napier and Guinea grass, Vermi compost, NADEP compost, Crop Cafeteria were also demonstrated to the farmers.
- Eight clinical camps were organized in different villages of Mathura and its adjoining districts. Eleven outbreaks were attended during this year in various districts of Uttar Pradesh.

UNIVERSITY FARMS

- Madhuri Kund Farm produced a total of 6264 Quintals of paddy, til, sorghum, mustard seed, wheat, oats, barseem and mixture of wheat and barley and generated a revenue of Rs. 1,12,27,568.00.
- Dairy farm at ILFC produced 1,84,794 liters of milk, which has generated a revenue of Rs. 53,45,633. In addition to this during this year, a revenue of Rs. 6150 was generated by the sale of about 100 quintals of manure and Rs. 2,55,770.00 from the auction of 6 buffaloes/buffalo calves. It also produced green fodder, bhusa, jai and jau for farm animals.
- Poultry farm of College maintained a variety of species and breeds including layers, Chabro, Aseel Peela, Kadaknath, Naked neck, Japanese quail, Turkey, Guinea fowl and Emu. It has generated revenue of Rs. 3,89,404.00 by the sale of eggs, adult birds and day old chicks.
- Breeder seed of wheat was grown on 33 acres of land by the Pasture unit of the University. 349.40 Quintals of wheat seed generated an income of Rs. 5,06,630.00.

HUMAN RESOURCE DEVELOPMENT

- Directorate of Extension Education DUVASU, Mathura organized one day workshop on "Implementation of certain modules of animal husbandry activities through KVK of Uttar Pradesh and Uttarakhand" on 20th September 2014.
- 28th Annual convention of Indian Association of Veterinary Microbiologists, Immunologists and Specialists in Infectious Diseases (IAVMI- 2014) and an International Conference on "Challenges and opportunities in Animal Health at the face of globalization and climate change" was organized by Department of Veterinary Microbiology and Immunology on 30th Oct.- 1st Nov., 2014.
- The XXX Annual Convention of the Society for the Study of Animal Reproduction (ISSAR) and National Symposium on "Research and Innovations to Improve Fertility and Fecundity" was organized by Department of Gynaecology & Obstetrics from 20-22 November, 2014.
- Department of Livestock Products Technology organized VI Conference of Indian Meat Science Association (IMSACON-VI) and National Symposium on "Sustainable Meat Production for Nutritional Security and Consumer Well-being: Challenges and Strategies" from Nov 28 to 30, 2014.
- A National Seminar on "Veterinary Service Provision in India: An Equine Perspective" was organized by the College of Veterinary Science and Animal Husbandry on February 25, 2015.
- Hands on training on "Use of data acquisition system based physiograph In pharmacodynamic studies" sponsored under ICAR, Niche Area of Excellence Programme was organized by department of Pharmacology and Toxicology on March 9-13, 2015.
- Dr. Jitender Kumar, Associate Professor attended Xth Asian Pacific Poultry Conference held at Jeju, South Korea.
- Dr. Muneendra Kumar, Assistant Professor attended two International conferences and one workshop at Ghent University, Belgium.

STUDENTS' WELFARE

- All India Educational Tour of 5th year students of B.V.Sc. & A.H. were organized to enrich the academic and professional knowledge, wherein students visited Madras Veterinary College, Chennai, Bombay Veterinary College, Mumbai, Veterinary Colleges, Bangalore, Hyderabad, Thrissure and Pookote and Fisheries Institute, Goa.
- During 2014-15, 23 cadets including 11 girls have participated in CATC camp. Ten girl cadets and 4 boy cadets' qualified "B" certificate and 2 boy cadets received "C" certificate.
- 13th Annual Sports Meet of the University was organized on 24th March, 2015. Mr. Dailendra Kumar, 2nd Year Diploma Student and Miss Archana Yadav, 2nd Year student of Master of Veterinary Science respectively, were adjudged the best male and female athletes of the year.

- Fresher's Day of B.V.Sc. & A.H. and Diploma students was celebrated on 30th August 2014 and 20th December 2015 respectively.
- 7th All India Zydus Drawing and Painting competition 2014 was organized on 06.09.2014 in which Miss Deepanka, Mr. Anand Kushwaha and Mr. Rakesh Kumar excelled in Zydus sponsored drawing and painting competitions and were declared first, second and third in the competition.
- On occasion of Hindi Pakhwara, debate and poetry competitions were organized on 16.09.2014 and 18.09.2014 on the topics **"भारतीय कृषि में पशुचिकित्सा एवं पशुपालन का योगदान एवं भविष्य"** व **"पशुचिकित्सा एवं पशुपालन क्षेत्र में सफलता के आयाम"** respectively.
- Fourteen students from College of Veterinary Sciences & Animal Husbandary and two Students from College of Biotechnology participated in All India Agriculture Festival organized at National Dairy Research Institute, Karnal, Haryana from 18th to 21st March 2015.
- Five Students from College of Veterinary Sciences & Animal Husbandary participated in Inter-University Table Tennis Tournament organized by R.C.A Girl's (PG) College, Mathura from 01st to 02nd March 2015 and secured 3rd Position.
- Ninteen Students participated in All India Inter-Veterinary Colleges Badminton and Table- Tennis Tournament and Venkys All India Quiz Championship was organized by Gobind Ballabh Pant University of Agriculture & Technology, Pantnagar from 18th to 20th March 2015.

OTHER HIGHLIGHTS AND ACTIVITIES

- University celebrated Ambedkar Jayanti, World Veterinary Day, Independence Day, Gandhi Jayanti, Republic Day, Basant Panchmi with gusto and enthusiasm.
- University successfully conducted Pre Veterinary Test-2014 in two phases viz; Preliminary Examination and Mains Examination.
- Oath taking ceremony of Veterinary Graduates of the 2009 batch was orgunized on July 6, 2014.
- The Fourth convocation of U.P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidayalaya Evam Go Anusandhan Sansthan was held on 2nd Feb 2015. Honorable Governor of Uttar Pradesh and Chancellor of U.P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidayalaya Evam Go Anusandhan Sansthan, Mathura and Padmabhusan Professor R.B. Singh, Chief guest of the occasion graced the auspicious occasion.

AWARDS AND HONOUR/ACHIEVEMENTS

- Prof. Satish K. Garg, Dean Veterinary College and Professor & Head, Pharmacology was appointed as the Co-Convener of 5th Dean Committee of ICAR Veterinary and Animal Sciences Subgroup for Higher Agricultural Education in India. He was also elected as President of Society of Toxicology (2014-2016) and acted as the Convener of meeting of HODs of Pharmacology and Toxicology.

Animal Genetics and Breeding, Animal Nutrition and Veterinary and Animal Husbandry Extension held at DUVASU, Mathura.

- Dr Vikas Pathak, Professor & Head Department of LPT was elected as Vice-President and Dr. Meena Goswami, Assistant Professor LPT was elected as Executive Body Member of Indian Meat Science Association (IMSA).
- Drs. Ajay Prakash, Professor, Dr. M.M. Farooqui and Dr. Archana Pathak, Associate Professors and Dr. Prabhakar Kumar, Assistant Professor, Department of Anatomy were elected as Secretary, Executive member, Regional representative and treasurer respectively, in Executive body of IAVA, for three years.
- Dr. Mukul Anand, Assistant Professor, Department of Physiology received Young Scientist Award from Bio Ved Institute, Allahabad.
- Department of Pharmacology and Toxicology filed two patents during the year.

FINANCE AND BUDGET

- University received Rs. 1.00 crore under Plan and Rs. 3.00 crores under non-plan from state.
- Indian Council of Agricultural Research, New Delhi granted Rs 3.70 crores under strengthening and development grant.

ESTATE ORGANIZATION

- The Building of College of Livestock Products Technology was inaugurated by the Hon'ble Chancellor of the University and Governor of Uttar Pradesh Shri Ram Naikji.
- Two Guest rooms and one amphitheatre was constructed with the funds received from ICAR, New Delhi.
- With the funding received from Indian Council of Agricultural Research, New Delhi, renovation of Gautam Hostel, Teachers home cum Guest House, Dean Office, Controller of Examination Office, cattle shed and few rooms of S. N. Hostels were renovated.

RIGHT TO INFORMATION ACT

- In compliance of the order of Govt. of Uttar Pradesh and provision of RTI Act, 2005, PIO received 96 applications out of which 89 applications were cleared and rest is under consideration for disposal.

कार्यकारी सारांश

शिक्षण कार्य

पशुचिकित्सा विज्ञान एवं पशुपालन महाविद्यालय तथा जैव प्रौद्योगिकी महाविद्यालय अपने शैक्षणिक सत्र चला रहे हैं।

- विश्वविद्यालय के सत्र 2014–2015 के पशुचिकित्सा विज्ञान एवं पशुपालन महाविद्यालय तथा जैव प्रौद्योगिकी महाविद्यालय अपने शैक्षणिक सत्र विश्वविद्यालय में चला रहे हैं।
- वर्ष 2014–15 के दौरान 68 विद्यार्थियों ने बी०वी०एस–सी० एण्ड ए०एच० कोर्स में प्रवेश प्राप्त किया, जिसमें 35.29% लड़कियों ने प्रवेश प्राप्त किया। एम०वी०एस–सी० तथा पी०एच–डी० में क्रमशः 33 तथा 08 विद्यार्थियों ने प्रवेश प्राप्त किया। इसी वर्ष 67 स्नातक, 10 स्नातकोत्तर तथा 2 पी०एच–डी० विद्यार्थियों ने परीक्षा उत्तीर्ण की। क्रमशः 34 तथा 48 विद्यार्थियों ने वेटेरिनरी फार्मासिस्ट डिप्लोमा तथा पशुधन प्रसार डिप्लोमा कार्यक्रम में प्रवेश प्राप्त किया।
- वर्ष 2014–15 में जैव प्रौद्योगिकी महाविद्यालय ने बी०वी०एस–सी० बायोटैक्नोलोजी तथा बी०एस–सी० इन्डस्ट्रियल माइक्रोबायोलोजी में स्नातक कोर्स की शुरुआत की। इसके अतिरिक्त पी०एच–डी० बायोटैक्नोलोजी की भी शुरुआत की गई। क्रमशः 6 तथा 26 विद्यार्थियों ने पी०एच–डी० बायोटैक्नोलोजी तथा बी०एस–सी० बायोटैक्नोलोजी में प्रवेश प्राप्त किया।
- टी०वी०सी०सी० में सभी प्रकार की परिकल्पना उपकरण दन्त चिकित्सा यूनिट, शल्य अनुवीक्षण एवं लैप्रोस्कोपिक शल्य यूनिट, हड्डी जोड़ तोड़ शल्य क्रिया हेतु उपकरण एवं औजार, नेत्र शल्य क्रिया हेतु उपकरण नेबुलाइजर, बड़े एवं छोटे जानवरों की शल्य क्रिया हेतु उपकरणों से सुसज्जित यूनिट की सुविधा उपलब्ध है।
- टी०वी०सी०सी० की रोग निदान प्रयोगशाला सेमीऑटोमेटिक ब्लड एनालाइजर, बायोकेमिकल एनालाइजर, यूरिन एनालाइजर, इलेक्ट्रोलाइट एनालाजर उपकरणों से सुसज्जित है। वर्ष 2014–15 में कुल 1984 नमूनों का परीक्षण किया गया, जिनमें 178 नमूने सामान्य खून जाँच, 114 नमूने बायोकेमिकल एनालिसिस, 17 नमूने पेशाब के 32 नमूने दूध एवं कल्चर सेन्सेटिविटी के तथा 1643 नमूने विभिन्न ल्यूकोसाइट संख्या के, खून परजीवी एवं मल के जाँचे गये।
- वर्ष 2014–15 के दौरान 10037 रोगी पशुओं का उपचार किया गया, जिसमें 3418 बड़े रोमन्थी पशु, 1198 छोटे रोमन्थी पशु, 500 अश्व प्रजाति के पशु 4700 पालतू पशु 212 अन्य पशु शामिल थे। इन सेवाओं से टी०वी०सी०सी० को कुल चार लाख उन्हत्तर हजार छः सौ पैंतालीस रुपये की राजस्व प्राप्ति हुई।
- वर्ष 2014–15 में टी०वी०सी०सी० ने अपनी चपल पशु चिकित्सालय द्वारा मथुरा तथा निकट के जिलों के गाँव में ग्राम प्रधान तथा पशु चिकित्सकों के सहयोग से 10 शिविर लगाये। इन शिविरों में 838 पशुओं का उपचार किया गया, जिनमें से 208 गोवंशीय पशु 554 महीष वंश के पशु तथा 76 अन्य पशु जैसे भेड़, बकरी, सूअर शामिल थे। इन शिविरों में 22 शल्य चिकित्सा, 614 औषधि रोगी एवं 202 मादा पशु रोगी का उपचार किया गया।
- पोल्ट्री विभाग के प्रायोगिक प्रशिक्षण यूनिट में मौजूद ब्रीडिंग फार्म, लेयर फार्म तथा में स्नातक एवं छात्रों स्नातकोत्तर को व्यावहारिक ज्ञान प्रदान किया गया।
- प्रायोगिक प्रशिक्षण योजना के अन्तर्गत फीड मेन्यूफैक्चरिंग यूनिट में बी०वी०एस–सी० एण्ड ए०एच० के छात्रों को प्रशिक्षित किया गया तथा 2725 कुन्तल फीड का उत्पादन किया गया।
- पशु प्रौद्योगिक विभाग द्वारा पशु चिकित्सा विज्ञान एवं पशुपालन के स्नातक एवं स्नातकोत्तर छात्रों को दूध एवं माँस के विभिन्न उत्पादों के बारे में व्यावहारिक ज्ञान दिया गया तथा विभिन्न उत्पादों जैसे चिकन नगेट्स, चिकन पेटीस विभिन्न स्वादों की लस्सी एवं दूध के लोक का उत्पादन किया गया।
- इस वर्ष विश्वविद्यालय के पुस्तकालय में पुस्तकों की संख्या 2285 से 33373 हो गई तथा पुस्तकालय द्वारा छात्रों एवं फैकल्टी के लिए ऑन लाईन सर्विस द्वारा विभिन्न जर्नलों के अवलोकन हेतु ' सेरा ' की सुविधा प्रदान की गई।
- ए०के०एम०यू० ने 34 कम्प्यूटर की सुविधा के साथ इन्टरनेट की भी सुविधा सभी विभागों, छात्रावासों जैव प्रौद्योगिकी के कैम्प ऑफिस महाविद्यालय एवं कुलपति निवास तक प्रदान की ।

अनुसंधान

- विश्वविद्यालय में पशुचिकित्सा एवं पशुपालन महाविद्यालय के विभिन्न संकायों में 11 बाह्य एजेन्सियों द्वारा वित्तीय पोषित योजनाएं चल रही हैं, जिनमें से 6 योजनाएं आई.सी.ए.आर. की, 2 योजनाएं भारतीय सरकार की एवं तीन अन्य बाह्य आर0 एण्ड डी0 संस्थाओं द्वारा स्वीकृत हैं।
- इस वर्ष विश्वविद्यालय में पाँच विश्वविद्यालय द्वारा पोषित योजनाएं सम्पूर्ण हो चुकी हैं तथा 14 योजनाएं 16.75 लाख पुनः विभिन्न संकायों के वैज्ञानिकों को मार्च–2015 में प्रदान की गई।
- विभिन्न विभागों में चलने वाले अनुसंधान कार्यों पर आधारित विषयों पर 3 पी0एच–डी0 तथा 16 एम0वी0एस–सी0 के शोध ग्रन्थ पशु चिकित्सा एवं पशु पालन महाविद्यालय में तथा 3 एम0एस–सी0 के शोध ग्रन्थ जैव प्रौद्योगिक में पूरे किये गये।

प्रसार

- प्रसार निदेशालय द्वारा एस 10 मीडिया के सहयोग से 3 दिवसीय किसान मेला "पशुधन कृषि विजय–2015, 19–21 फरवरी 2015 को विश्वविद्यालय के प्रांगण में आयोजित किया गया, जिसमें 1300 से भी अधिक किसानों ने उत्तर प्रदेश, मध्य प्रदेश, राजस्थान से भाग लिया।
- प्रसार निदेशालय ने तिलहन एवं सरसों निदेशालय, भरतपुर के सहयोग से एक दिन की "सरसों बीज प्रदर्शन मेले" का आयोजन माधुरी कुण्ड फार्म, मथुरा में किया, जिसमें 1200 से अधिक किसानों ने उत्तर प्रदेश एवं राजस्थान से भाग लिया।
- उपकार द्वारा 14.812 लाख रूपयों की एक प्रसार योजना प्रसार निदेशालय को पेशकश की गई। जिसका विषय है "Imparting Scientific Knowledge of animal rearing for better production through technology transfer to livestock owner".
- इस वर्ष निदेशालय प्रसार द्वारा किसानों, पशुपालकों, पशु चिकित्सकों की 11 विभिन्न में भ्रमण आयोजित कराये। यह भ्रमण पशुपालन विभाग, कृषि विभाग, गन्ना विभाग उत्तर प्रदेश एवं आत्मा द्वारा प्रायोजित किये गये। इसके अतिरिक्त किसानों को बेहतर पशुपालन के बारे में पुस्तक तथा लीफलेट्स बाँटे गये।
- कृषि विज्ञान केन्द्र 185 "ऑन कैम्पस" एवं 188 "ऑफ कैम्पस" प्रशिक्षण कार्यक्रम आयोजित किये गये, जिसमें क्रमशः 3600 तथा 4800 से भी अधिक किसानों तथा महिला किसानों ने भाग लिया।
- गोष्ठी, पौधों में रोग निदान, भ्रमण, किसान सम्मान दिवस जैसे अनेक कार्यक्रम कृषि विज्ञान केन्द्र द्वारा आयोजित किये गये, जिनसे किसानों से सीधे सम्पर्क स्थापित किया गया। कृषि विज्ञान केन्द्र की मृदा विश्लेषण प्रयोगशाला में 61 ग्रामों से 462 किसानों द्वारा लाई गयी, मृदा नमूनों का विश्लेषण किया गया तथा उन्हें आवश्यकतानुसार फर्टिलाइजर के प्रयोग के बारे में जानकारी दी गयी।

विश्वविद्यालय फार्म प्रक्षेत्र

- माधुरी कुण्ड फार्म में कुल 6264 कुन्तल धान, तिल, ज्वार, सरसों बीज, गेहूँ, जई, बरसीम तथा गेहूँ तथा जौ का उत्पादन किया गया, जिससे विश्वविद्यालय को एक करोड़ बारह लाख सत्ताईस हजार पाँच सौ अड़सठ रूपये का राजस्व प्राप्त हुआ।
- आई0एल0एफ0सी0 के पशुधन फार्म पर एक लाख चौरासी हजार सात सौ चौरानवे लीटर दूध का उत्पादन हुआ जिससे तिरपन लाख पैंतालीस हजार छः सौ तैंतीस रूपये का राजस्व प्राप्त हुआ। इसके अतिरिक्त छः हजार एक सौ पचास रूपये तथा दो लाख पचपन हजार सात सौ सत्तर रूपयों का राजस्व 100 किलो खाद एवं छः जानवरों की नीलामी द्वारा प्राप्त किया गया।
- विश्वविद्यालय के कुक्कुट फार्म पर विभिन्न प्रजातियों की मुर्गियों जैसे चाबरो, असील पीला, कड़कनाथ, नैकड नैक, जापानी तीतर, टर्की गिन्नी फाउल तथा ऐमू पालन किया गया तथा इनके चूजों, अण्डों तथा मुर्गियों के विक्रय से कुल तीन लाख नवासी हजार चार सौ चार रूपयों की राजस्व प्राप्ति हुई।
- पाश्चर द्वारा 33 ऐकड़ में 349.40 कुन्तल गेहूँ के बीजों का उत्पादन किया गया, जिससे पाँच लाख छः हजार छः सौ तीस रूपयों की प्राप्ति हुई।

मानव संसाधन विकास

- फार्माकोलॉजी एवं टाक्सीकोलॉजी विभाग द्वारा ICAR द्वारा प्रायोजित निश एरिया एक्सीलेंस के अन्तर्गत "Use of data acquisition system based Physiograph in pharmacolynamices studis" 9–13 मार्च 2015 तक प्रशिक्षण आयोजित किया गया।
- प्रसार निदेशालय दुवासु द्वारा एक दिवसीय वर्कशॉप "इम्पलीमेन्टेशन ऑफ लटेन्ट मीकाजम्स ऑफ एनीमल हसबेन्ड्री एक्टीविटीज कॉ॰वि॰के॰ ऑफ उत्तर प्रदेश" 20 सितम्बर 2014 को आयोजित की गई।
- "अठाहरवां एनुअल कनवेन्शन ऑफ इण्डियन एसोसिएशन ऑफ वेटेरिनरी माइक्रोबायोलॉजिस्ट इम्यूनोलॉजिस्ट एण्ड स्पेशिलिस्ट इन्फेक्शियस डीसीज" जीवाणु विभाग द्वारा 30 अक्टूबर से 1 नवम्बर 2014 को आयोजित किया गया।
- "तीसवीं एनुअल कन्वेन्शन ऑफ सोसाइटी फॉर स्टडी ऑफ एनीमल रिप्रोडक्शन" 20–22 नवम्बर 2014 को मादा पशु रोग विभाग द्वारा आयोजित की गई।
- पशुधन प्रौद्योगिकी विभाग द्वारा "छठी कान्फ्रेन्स ऑफ इण्डियन मीट साइंस एसोसिएशन" 28 से 30 नवम्बर 2014 को आयोजित की गई।
- एक दिवसीय सेमीनार "वेटेरिनरी सर्विसिस प्रोवीजन इन इण्डिया एन इक्वाइन प्रास्पेक्टिव" 25 फरवरी 2015 को विश्वविद्यालय में आयोजित किया गया।
- डा॰ मुनिन्द्र कुमार सहायक आचार्य पशु पोषण विभाग ने दो इन्टरनेशनल कान्फ्रेन्स एवं एक वर्कशॉप घेन्ट यूनीवर्सिटी बेल्जियम में भाग लिया।

स्टूडेन्ट वेलफेयर

- आल इण्डिया एजुकेशनल टूर के दौरान बी॰वी॰एस–सी एण्ड ए॰एच॰ के छात्रों ने मद्रास, मुम्बई, बैंगलोर, हैदराबाद, त्रीसुर एवं पुकुट एवं गोवा के वेटेरिनरी कालेज का भ्रमण किया।
- वर्ष 2014–15 में 11 महिला कैडेट्स ने CATC कैम्प में भाग लिया । 10 महिला कैडेट्स एवं चार पुरूष कैडेट्स ने 'B' सर्टीफिकेट तथा 2 लड़कों ने "C" सर्टीफिकेट की परीक्षा उत्तीर्ण की ।
- तेरहवीं वार्षिक खेल कूद प्रतियोगिता 24, 25 मार्च 2015 को आयोजित की गई, जिसमें देवेन्द्र कुमार तथा अर्चना यादव ने क्रमशः पुरूष एवं महिलाओं में सर्वोच्च स्थान प्राप्त किया।
- बी॰वी॰एस–सी एण्ड ए॰एच॰ तथा डिप्लोमा में प्रवेश प्राप्त करने वाले छात्रों के लिए फ्रेशर्स पार्टी का आयोजन किया गया।
- सातवीं आल इण्डिया जाइंडस ड्राईंग एवं पेन्टिंग प्रतियोगिता का आयोजन दिनांक 06.09.2014 को किया गया, जिसमें दीपांका, आनन्द कुशवाहा तथा राकेश कुमार ने क्रमशः प्रथम, द्वितीय तथा तृतीय स्थान प्राप्त किया।
- 16.09.14 तथा 18.09.2014 को हिन्दी पखवाड़ा मनाया गया, जिसमें वाद–विवाद तथा कविता सुनाने की प्रतियोगिताओं का आयोजन किया गया।
- एन॰डी॰आर॰आई॰ करनाल हरियाणा में आयोजित होने वाली ऑल इण्डिया एग्रीकल्चर फैस्टिवल में विश्वविद्यालय के 16 विद्यार्थियों ने भाग लिया ।
- पशुचिकित्सा एवं पशु पालन महाविद्यालय के पाँच छात्रों ने 1–2 मार्च 2015 को इन्टर यूनीवर्सिटी टेबल टेनिस टूर्नामेन्ट मथुरा में भाग लेकर तृतीय स्थान प्राप्त किया।
- 18–20 मार्च 2015 को होने वाले आल इण्डिया इन्टर वेटेरिनरी कॉलेज बैडमिन्टन एण्ड टेबल टेनिस टूर्नामेन्ट तथा वैटविज ऑल इण्डिया क्विज चैम्पियनशिप में विश्वविद्यालय के 19 छात्रों ने भाग लिया।

अन्य झलकियाँ एवं कार्यकलाप

- विश्वविद्यालय में अम्बेडकर जयन्ती, विश्व पशु चिकित्सा दिवस, स्वतन्त्रता दिवस, गाँधी जयन्ती, गणतन्त्र दिवस, बसन्त पंचमी इत्यादि धूम –धाम से मनाए गये।
- वर्ष 2014 की डी वेटेरिनरी टैस्ट का आयोजन सफलता पूर्वक किया गया।
- वर्ष 2009 के वेटेरिनरी स्नातकों का शपथ ग्रहण समारोह 6 जुलाई 2014 को आयोजित किया गया।
- विश्वविद्यालय का चतुर्थ दीक्षान्त समारोह 2 फरवरी 2015 को मनाया गया जिसमें उत्तर प्रदेश के राज्यपाल श्री राम नाईक जी एवं श्री आर॰ बी॰ सिंह जी ने उपस्थित होकर समारोह की गरिमा बढ़ाई ।

पुरस्कार एवं सम्मान

- प्रोफेसर सतीश कुमार गर्ग अधिष्ठाता पशुचिकित्सा विज्ञान एवं पशुपालन विभाग तथा विभागाध्यक्ष फार्माकोलोजी एवं टाक्सीकोलोजी को पीएचडी डीन कमेटी ऑफ ICAR का [illegible] नियुक्त किया गया तथा सोसाइटी ऑफ टाक्सीकोलोजी (2014–16) का अध्यक्ष मनोनीत किया गया।
- डा0 विकास पाठक, प्रोफेसर [illegible] इण्डियन वीट सोसाइटी [illegible] चुने गये तथा उसी विभाग के सहायक आचार्य डा0 सीमा गोस्वामी एक्जीक्यूटिव सदस्य चुनी गई।
- इण्डियन एसोसिएशन ऑफ एनाटोमिस्ट सोसाइटी में डा0 [illegible] प्रोफेसर, डा0 [illegible], डा0 [illegible] पाठक सह–आचार्य एवं डा0 प्रभाकर कुमार, सहायक आचार्य शरीर रचना विभाग क्रमशः [illegible], एक्जीक्यूटिव सदस्य, रीजनल रिप्रजेन्टेटिव एवं कोषाध्यक्ष के पदों पर तीन वर्ष के लिए चुने गये।
- डा0 मुकुल आनन्द, सहायक आचार्य शरीर क्रिया विज्ञान विभाग [illegible] द्वारा [illegible] का यंग साइन्टिस्ट अवार्ड प्रदान किया गया।
- फार्माकोलोजी एवं टाक्सीकोलोजी विभाग द्वारा वर्ष 2014–15 में दो पेटेन्ट हेतु आवेदन किया गया।

वित्त एवं बजट

- विश्वविद्यालय को राज्य सरकार द्वारा एक करोड़ रूपये [illegible] एवं तीन करोड़ रूपये [illegible] के लिए बजट प्राप्त हुआ।
- आई0सी0ए0आर0 नई दिल्ली ने रूपये 3.75 करोड़ रूपये की वित्तीय सहायता, सुदृढ़ीकरण एवं विकास हेतु विश्वविद्यालय को प्रदान किये।

परिवर्धित संसाधन

- पशुजन प्रौद्योगिकी महाविद्यालय की इमारत का उद्घाटन [illegible] उत्तर प्रदेश द्वारा किया गया।
- आई0सी0ए0आर0 नई दिल्ली द्वारा प्राप्त वित्तीय सहायता से दो अतिथि कक्ष तथा एक एम्फीथियेटर का निर्माण किया गया।
- आई0सी0ए0आर0 नई दिल्ली द्वारा प्राप्त वित्तीय सहायता से [illegible] छात्रावास, अतिथि गृह, अधिष्ठाता कार्यालय, कन्ट्रोल ऑफ एक्जामिनेशन कार्यालय, [illegible] के कार्य तथा [illegible] छात्रावास के कुछ कमरों का पुनः निर्माण किया गया।

जनसूचना अधिकार

- उत्तर प्रदेश सरकार तथा आर0टी0आई0 एक्ट 2005 के अनुपालन के अन्तर्गत [illegible] प्रार्थना पत्र प्राप्त हुए, जिनमें से [illegible] का निपटारा किया गया, तथा अन्य विचाराधीन हैं।

MISSION

University was established by U.P. 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 for the farmers and livestock owners.

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;
- Validate indigenous traditional knowledge (ITK) on scientific basis;
- Provide efficient extension services at the doorstep of poor and marginal farmers and livestock owners and motivate them to adopt animal husbandry, poultry, fishery and related vocations as an engine of economic growth and social empowerment ;
- Social empowerment of women to become "knowledgeable stake holders" and giving them economic identity;
- Interface Industry and stakeholders in the newer perspectives of open global market;
- Ensure enhanced production from rural and urban livestock through effective disease surveillance and diagnosis, health care and vaccination programme; and
- Empower rural youth for self-employment adopting integrated farming practices.

MANDATE

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

- 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, SAU's, Indian Council of Agricultural Research Institutes related to animal 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 animal health and allied sectors who become "Job providers" not the "Job seekers";
- To substantially improve 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 programme 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.

Challenges enumerated above have to be faced through concerted efforts of University Academia with full support of the Government of U.P. And ICAR.

UNIVERSITY TARGETS

- Revamp teaching programmes and "Teaching Methodologies", set up e-learning class-rooms, introduce net-based "virtual class-rooms" and promote e-teaching and learning;
- Set up "State of the Art" Instructional Livestock Farms, Demonstration Units, Teaching 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 livestock business managers and team leaders;
- Faculty up-gradation, filling vacant teaching posts and creating faculty positions in newer and upcoming faculties;
- Encourage faculty members to garner more financial assistance from outside agencies through externally funded research projects and support atleast one University funded research project in each department to give impetus to research;
- 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.

I. INTRODUCTION

Govt. of U.P. established U.P. Pandit Deen Dayal Upadhyaya Pashu-Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan Mathura, first of its kind in the State and fourth in the Country, vide Act 27 of 2001 on 25.10.2001 with erstwhile U.P. College of Veterinary Science & AH, Mathura as its main constituent with all its movable and immovable assets including all buildings of Veterinary College, residential complex, hostels, Dairy Farm, Poultry Farm and agriculture land. University is having 782.34 acres prime land in Mathura, and another agriculture farm of around 1400 acres at Madhurikund, about 25 Km from the main campus.

After establishment of the University in 2001, University offices were initially located in Administrative block of Veterinary College, however, after inauguration of Administrative Block of University by His Excellency Shri T.V. Rajeshwar, Hon'ble Chancellor and Governor of U.P. on February 24, 2009, all central offices of University were shifted to new building. New campus with newly constructed houses has been occupied by the employees and teachers. College of Biotechnology building was inaugurated by Sh. John George, Advisor, DBT, Ministry of Science and Technology, Government of India in the august presence of Prof. M.L. Madan, the Hon'ble Vice Chancellor, Dr. Lal Krishna, ADG (Animal Health) ICAR, New Delhi and other officers of the University on September 25, 2009. The building of College of Livestock Products Technology was inaugurated by Hon'ble Chancellor Sh. Ram Naik Ji on 21st Sep. 2014 in the presence of Hon'ble Vice Chancellor Prof. A. C. Varshney and other officers of the University.

Government permitted the University to start College of Biotechnology under self-finance scheme. Accordingly, the University started College of Biotechnology from the academic session 2010-11. During 2009, In an endeavor to augment research and extension activities, Directorate of Research and Directorate of Extension have also been created to coordinate research and extension activities, respectively. The Act of University envisages opening of three more colleges, namely – College of Fisheries, College of Livestock Products Technology and College of Animal Industries and Business Management. However, these colleges could not be started inspite of the best efforts of University due to financial constraints and non-sanctioning of any teaching or other positions by the Govt.


UNIVERSITY ADMINISTRATIVE BLOCK

II. ORGANIZATIONAL SET-UP

The organizational set-up of the University (Flow Chart 1) is in almost conformity with other state agricultural, veterinary and academic universities. Various bodies and authorities of the University exercise their powers at various levels to coordinate and regulate administration, education, research and extension activities.

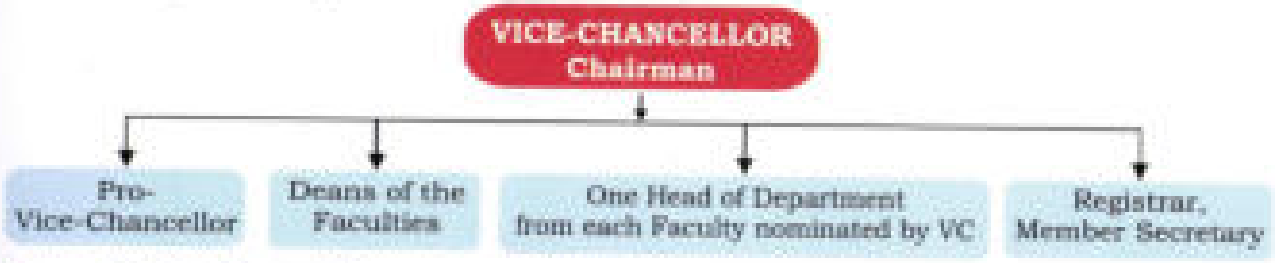
A. AUTHORITIES OF THE UNIVERSITY :

1. Executive Council

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

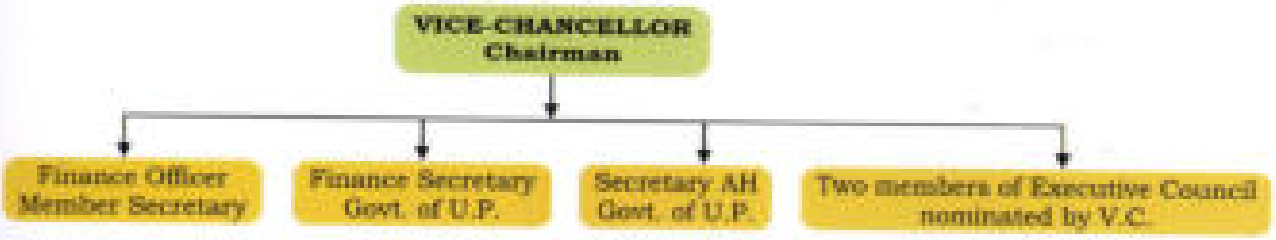
2. Academic Council

Academic Council of the University is the principal academic body which controls and frames all the academic regulations and responsible for maintenance of standards of instruction, education and examination in the University. The flow chart of Academic council composition is presented below :



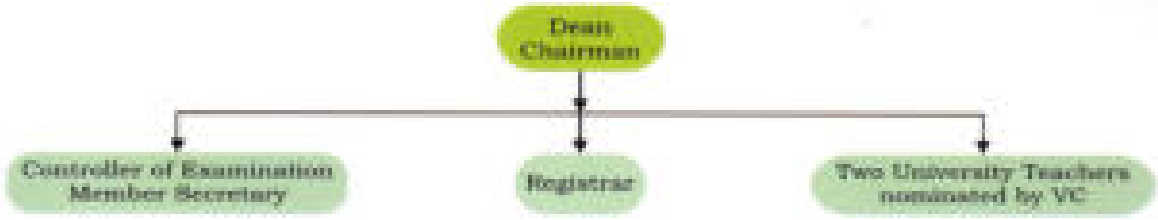
3. Finance Committee

Finance Committee of the University advises the Executive Council on matters relating to administration of property and funds of the University. The flow chart of Finance Committee composition 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 in examination system. The flow chart of the composition of the Examination committee is presented below :

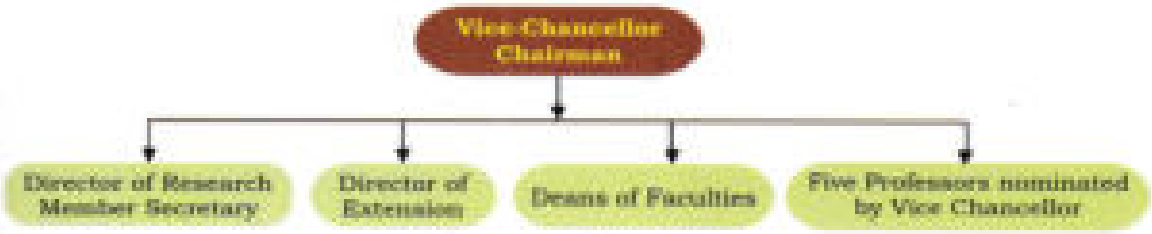


5. Board of Faculty

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.

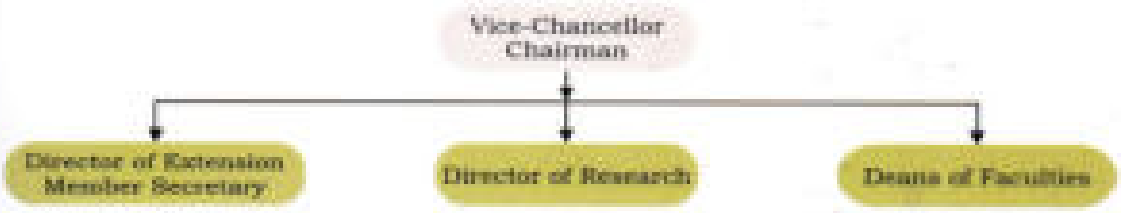
6. Research Advisory Committee

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 :



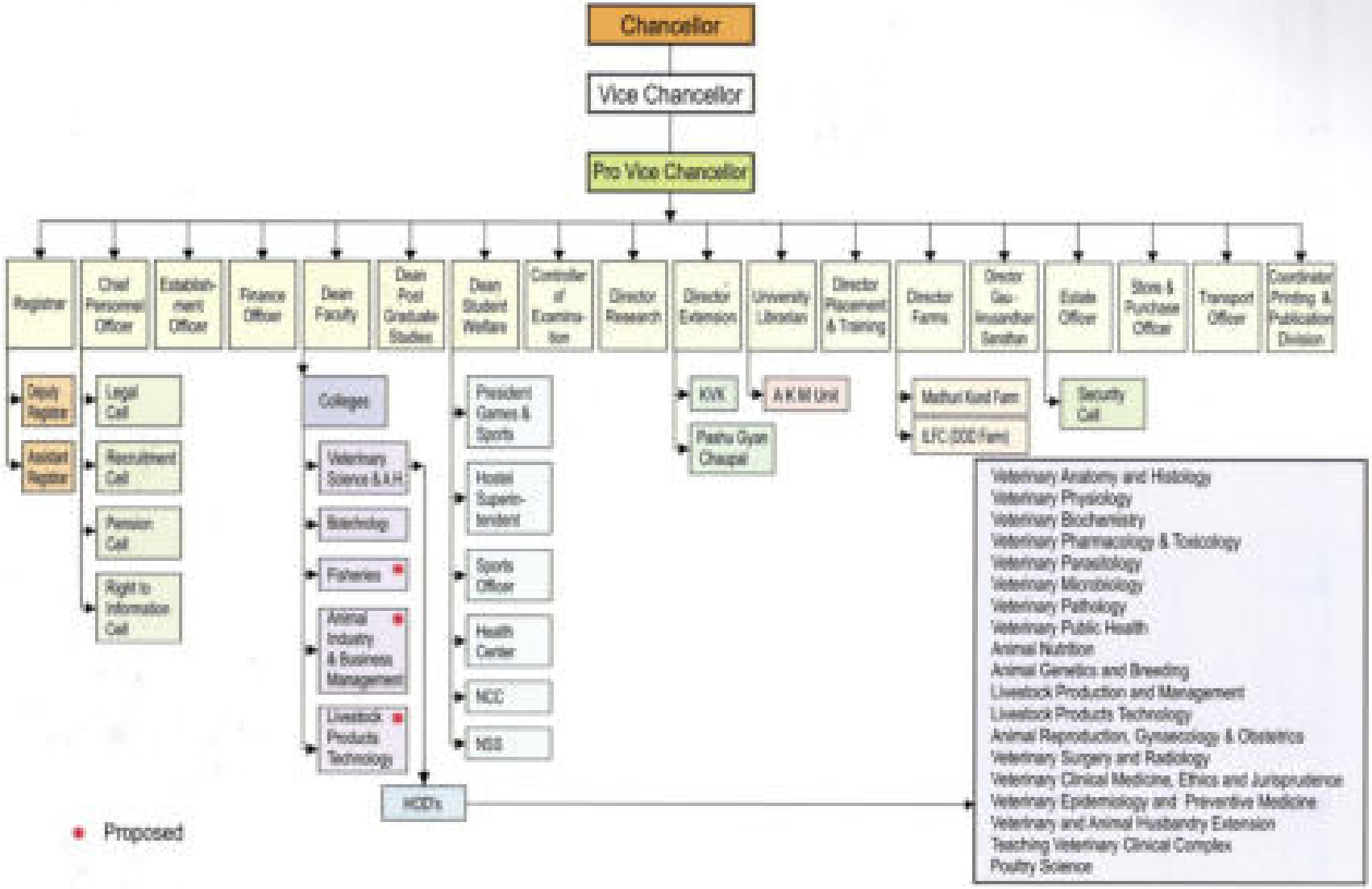
7. Extension Advisory Committee

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 set-up of this committee is as shown here :



ORGANIZATIONAL STRUCTURE

U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalya Evam Go-Anusandhan Sansthan (DUVASU), Mathura



ORGANIZATIONAL MEETINGS

S. No	Authority	Meeting No.	Date	Venue
1.	Executive Council	23rd	01.02.2015	DUVASU, Mathura
2.	Academic Council	47th	27.03. 2014	DUVASU, Mathura
3.	Academic Council	48th	15.05.2014	DUVASU, Mathura
4.	Academic Council	49th	21.05.2014	DUVASU, Mathura
5.	Academic Council	50th	01.08.2014	DUVASU, Mathura
6.	Academic Council	51st	25.08.2014	DUVASU, Mathura
7.	Academic Council	52nd	10.12.2014	DUVASU, Mathura
8.	Academic Council	53rd	14.01.2015	DUVASU, Mathura
9.	Research Advisory Committee	2nd	20.03.2015	DUVASU, Mathura

OFFICERS OF THE UNIVERSITY

S.No.	Designation/ Post	Name of Officer	Date	
			From	To
1.	Chancellor	Hon'ble Shri Ram Naik Ji, Governor of Uttar Pradesh		
2.	Vice Chancellor	Prof. A.C. Varshney	Feb. 20, 2013	Continuing
3.	Registrar	Dr. R.P. Pandey Sh. S.K. Sharma	Jan. 01, 2014 June 11, 2014	June 10, 2014 Continuing
4.	Deputy Registrar	Dr. Brijesh Yadav	June 21, 2014	Continuing
5.	Finance Officer	Sh. A.C. Singh Sh. R.P. Singh	July 10, 2012 Nov. 5, 2014	Nov. 4, 2014 Continuing
6.	Controller of Examination	Dr. Daya Shankar	Aug. 29, 2012	Continuing
7.	Dean College of Veterinary Science & A.H.	Prof. Satish Kumar Garg	Jun. 30, 2009	Continuing
8.	Dean College of Biotechnology	Dr. Rajesh Nigam	Feb. 05, 2013	Continuing
9.	Dean, Postgraduate Studies	Dr. P.K. Shukla	Jan. 15, 2013	Continuing
10.	Director of Research	Dr. Atul Saxena	Nov. 24, 2009	Continuing
11.	Director of Extension	Dr. Sarvjeet Yadav	Nov. 24, 2009	Continuing
12.	University Librarian	Dr. Vikas Pathak	May 27, 2013	Continuing
13.	In charge, Students' Welfare	Dr. A.K. Madan	Nov. 20, 2012	Continuing

III. TEACHING

Presently, academic programme are running in two colleges of the University.

- College of Veterinary Science and Animal Husbandry
- College of Biotechnology

A. COLLEGE OF VETERINARY SCIENCE AND ANIMAL HUSBANDRY, MATHURA

To generate trained human resource as qualified veterinarians and address animal husbandry and veterinary health issues in the state, and to undertake research and extension education programme, College of Veterinary Science and Animal Husbandry was established in 1947. It was recognized as one of the premiere Veterinary Institute of country and earlier it laid the foundation for establishment of this University in 2001. College of Veterinary Science and Animal Husbandry is running three academic programmes, namely Bachelor of Veterinary Science and Animal Husbandry (B.V.Sc. & A.H., as per VCI regulation 2008), Master of Veterinary Science (M.V.Sc.) in 16 disciplines and Doctor of Philosophy (Ph.D.) in 15 disciplines as per ICAR recommendations for PG education.

During the year, teaching faculty strength of the college was eighty. All faculty members are well qualified and dedicated to their professional duties/services. Besides teaching, research and extension, faculty members of the College managed all the responsibilities of University affairs and activities. They were also actively involved in running postgraduate programme of College of Biotechnology. Keeping in view the paucity of trained pharmacists and livestock extension officers in State Animal Husbandry Department, College started two diploma programmes, namely Diploma in Veterinary Pharmacy (DVP) and Diploma in Livestock Extension (DLE) in 2013-14 under RKVY project with the annual intake of 60 students in each programme.

Admissions and turnout of students during 2014-15

Degree Programme	Intake capacity	Students admitted			Students turn out		
		Male	Female	Total	Male	Female	Total
B.V.Sc. & A.H.	78	44	24	68	52	15	67
M.V.Sc.	36	25	08	33	06	04	10
Ph.D	20	07	01	08	02	00	02
Diploma in Veterinary Pharmacy (DVP)	60	34	13	47	-	-	-
Diploma in Livestock Extension (DLE)	60	48	04	52	-	-	-

B. COLLEGE OF BIOTECHNOLOGY

College of Biotechnology was started with postgraduate degree programme (M.Sc. biotechnology) in 2010-11. During 2014-15, undergraduate programmes in B.Sc. (Biotechnology) and B.Sc. (Industrial Microbiology) and PhD Biotechnology were also initiated.

Admissions and turnout of students during 2014-15

Degree Programme	Intake capacity	Students admitted			Students turn out		
		Male	Female	Total	Male	Female	Total
Ph.D. Biotechnology	06	01	05	06	-	-	-
M.Sc. Biotechnology	25	04	00	04	01	02	03
B. Sc. Biotechnology	30	17	09	26	-	-	-
B.Sc. Industrial Microbiology	30	00	00	00	-	-	-

C. ACTIVITIES OF COLLEGE OF VETERINARY SCIENCE AND ANIMAL HUSBANDRY

Clinical Services

Teaching Veterinary Clinical Complex (TVCC), the erstwhile Kothari Veterinary Hospital, is a multispecialty Veterinary Clinics, is well equipped with Veterinary Disease Diagnostic Laboratory having semiautomatic blood and biochemical analyser, urine analyser, electrolyte machine apart from other conventional facilities for diagnosis of animal diseases in clinical cases and for training of undergraduate and postgraduate students. Imaging facilities include 500mA fixed and 100mA mobile X-ray unit, digital radiography, ultrasonographic machine, 9" C-Arm image intensifier. Small animal dentistry unit, operating microscope, laproscopic surgery unit, orthopaedic surgery instruments, eye surgery instruments diathermy, multiparameters monitor, oxygenators, nebulizers, general unit for large and small animal, and well equipped small animal and large animal operation theaters are the other facilities available in TVCC. Students of B.V.Sc. & A.H. and postgraduate degree programmes (M.V.Sc. and Ph.D.) are thoroughly trained in disease diagnosis and treatment of animals. Emergency services are provided round the clock even on holidays. For the farmers and animal owners coming from distant places, there are six indoor rooms adjacent to TVCC. During the financial year 2014-15, big hall of the TVCC was renovated. During 2014-15, 10037 clinical cases were treated. Out of these, 3418 were large animals, 1198 small animals, 500 equines, 4700 pets and 212 were other animals. Total revenue generated during the year was Rs 4,69,645.00.

Diagnostic laboratory is one of the most important components of TVCC. Undergraduate and postgraduate students are trained for analysis of blood, stool, urine, electrolytes and other biochemical tests. During 2014-15, 1984 clinical samples were processed in diagnostic laboratory. Out of these, 178 blood samples for CBC, 114 samples for biochemical analysis, 17 samples of urine, 32 samples of milk for culture sensitivity tests and 1643 samples for differential leukocyte count (DLC), hemoprotozoan, hemoglobin and feaces were analysed.

TVCC also rendered ambulatory clinical services in nearby villages including clinical camps in Mathura and adjoining districts with the help of gram panchyat and local veterinary officers. During 2014-15, 10 clinical camps were organized in which 838 animals were treated. Out of these, 208 cattles, 554 buffaloes and 76 were other animals like sheep goat and pigs. Twenty two surgical cases, 614 medicine cases and 202 gynecological cases were treated in these camps. Through these camps, students are trained to treat the animals under field conditions.

D. HANDS ON TRAINING OF STUDENTS UNDER EXPERIENTIAL LEARNING PROGRAMME

Poultry Production and Management

The breeder and layer farm and hatchery of Experiential Learning Unit (ELU) in Poultry Science served as model for imparting hands on training to U.G, P.G and PhD students. Internship students were also trained in feeding, watering and management of poultry farm including hatchery and record keeping etc. Hands on training were imparted on rearing of Chabro birds and layers during internship. In addition, the students were also trained on hatchery operations. The resources of ELU *viz.* dead birds and embryonated eggs of different stages of development were provided for teaching and research to the Department of Anatomy, Pathology, Biotechnology and Microbiology. During 2014-15, 'Entrepreneurial training on poultry production' was conducted for B.V.Sc. & A.H. 2nd and 3rd Year students from 25.03.14 to 08.05.14 and 05.11.14 to 03.12.14 respectively. In addition 23 batches of hatches and 10,617 day old chicks were obtained during 2014-15. Entrepreneurial trainings on hatchery management were also given to students of 2nd year, 3rd Year and internship students of B.V.Sc. & A.H. and P.G students of the department.

Feed Manufacturing Unit

This unit is used to provide hands on training to students in compounded feed manufacturing and training as per VCI curriculum. During the year 2014-15, 2725 quintal feed was manufactured in 436 batches. Students of B.V.Sc & A.H. under ANN-121 and ANN-211 courses were given practical training in feed manufacturing with on the spot batch mixing, grinding and packing apart from knowledge of amount, type and quantity of feed ingredients added to make concentrate feed and use of various types of sieves used for cattle, calves and poultry feed.

Urea Molasses Mineral Block Unit was installed for manufacturing UMMB for farmers and training of students in urea mineral molasses block technology. Students were involved in manufacturing of UMMB during practical classes of ANN-121 and Internship. During 2014-15, 85 students were trained in preparation of UMMB.

Milk and Meat Processing Unit

The department of LPT imparted practical training to Undergraduate students of B.V.Sc. &A.H. and post-graduate students of the Department of LPT in the area of milk and meat processing which included pasteurization of milk, milk packaging and preparation of value added products of milk and meat like chicken nuggets, chicken patties, flavored lassi, milk loaf etc. The department under "Revolving Fund Scheme" prepared various milk and meat products involving students and the products, so prepared, were sold to employees of University at nominal prices.

E. OTHER ACADEMIC SERVICES/FACILITIES

Library Services

Library of the University is housed in a double storey building of 18x25 square meter area which is divided into eight sections namely acquisition section, circulation section, stock section, reference section, study section, journal section, technical section and newspaper section. 125 students can be accommodated comfortably at a time in different sections of the library. Library is open on all working days from 10.00 a.m. to 5.00 p.m. Presently the total number of books available in the library is 33373. Out of these, 33117 books are of various subjects while 256 books are on general studies. Library provides "on line journal facility (www.cera.jccc.in) through which numerous journals can be accessed on line. Seven news papers in hindi, two in English, employment news, and five important books for preparation of different competitions were subscribed and regularly received in the library.

Agricultural Knowledge Management Unit (AKMU)

AKMU of DUVASU, Mathura has 34 computers systems with internet connectivity in AKMU for use by students and faculty members. Four new computer systems were procured during 2014-15 and internet connectivity was extended to the newly renovated Gautam Hostel through wireless system. Internet connectivity is available at University campus through NKN (National Knowledge Network) and ERNET which is distributed to all the hostels, departments and colleges etc. through LAN and wireless system.

Directorate of Counseling, Training and Placements

1. *Guest/ Invited Lectures:*

For the benefits of PG students and faculty members, University invited two nationally recognized researchers Dr. N.K.Sood, Professor of Clinical Pathology, GADVASU, Ludhiana for delivering a talk on "Importance of hematology in animal disease diagnosis" on 21.03.15 and Dr. Dheer Singh, Principal Scientist, Division of Genetics and Breeding NDRI, Karnal for delivering a lecture on "Novel mechanisms of fertility regulation lesson learnt from analysis of genetics and epigenetic regulation of fertility gene in differed pathophysiology" on 28.03.15.

2. *Coaching classes for JRF exam:*

Coaching classes were organized for students of internship batch for preparation of ICAR-JRF examination; one for Animal Science and other for Veterinary Science group from January 2015 to March 2015.

3. *Coaching classes for English:*

For improving communication skills and english writing of students of B.V.Sc. & A.H. programme, compulsory, but non credit, course of English was introduced during 2012-13. Regular classes were organized for the first year students.

4. *ICAR JRF examination:*

During the year under report, our students out performed in All India JRF examination conducted by ICAR as per the details given below:

- 17 students got JRF in Animal Science & 05 students in Veterinary Science stream.
- 20 students secured admission in MVSc degree programme in IVRI and NDRI.

5. *Campus Placements:*

Placement interviews were facilitated for passing out graduates of the University.

Name of the Company	No. of students appeared	No. of student shortlisted/Selected
Brooke (India)	30	25
Saahaj Milk Producer Company	4	02
Cargill Feed MNC	06	02
Omar International Pvt. Ltd., Bijnor	20	06

Our 05 Diploma students were also placed as LEO in Saahaj dairy in western U.P. area. Apart from these placements, students were regularly informed about various other job opportunities in different sectors like feed companies, pharmaceutical companies, slaughter houses, educational institutes etc.

IV. RESEARCH

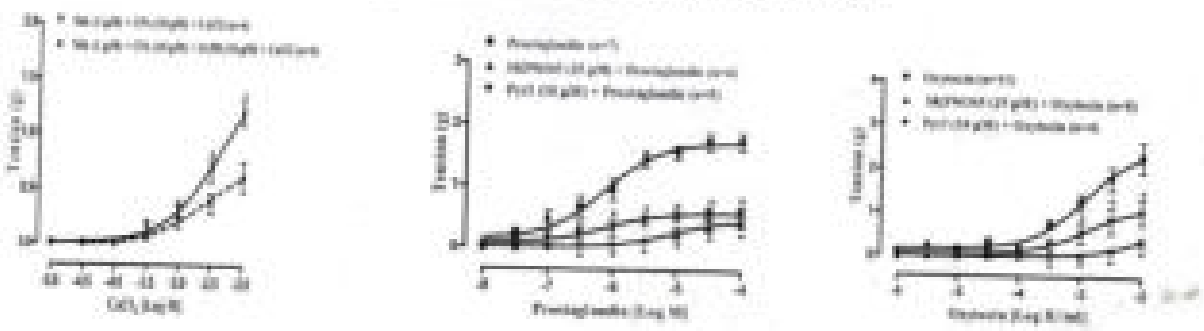
A. ONGOING/COMPLETED EXTRAMURAL FUNDED PROJECTS

S. No.	Name of the Project	Name of PI and Co-PI	Funding Agency	Total Budget (Rs. in lacs)
1.	Niche Area of Excellence project on "Toxicodynamic studies on impact of environmental Pollutants on bovine reproduction with particular reference to regulatory pathways"	Dr. Satish K. Garg Dr. Soumen Chaudhary	ICAR	467.00
2.	Outreach Pogramme on "Pharmacological studies and development of a poly herbal formulation for reproductive disorders in animals"	Dr. Satish K. Garg Dr. Soumen Chaudhary	ICAR	80.00
3.	Diagnostic imaging and management of surgical conditions in animals	Dr. R.P. Pandey Dr. Vivek Malik Dr. Sanjay Purohit Dr. Gulshan Kumar	All India Network Programme	288.00
4.	Outreach Programme on Zoonotic Diseases-Verocyto Toxic *E. coli*	Dr. Basanti Bist Dr. Udit Jain	ICAR	24.00
5.	Conservation and genetic improvement of Muzaffarnagari sheep for multiplication of superior germplasm	Dr. Deepak Sharma Dr. Madhu Tiwari	Government of India	79.66
6.	A study on state wise yield of meat and by products of cattle, buffalo, sheep, pig and poultry	Dr. Vikas Pathak Dr. V. P. Singh Dr. S. K. Bharti	Ministry of Central Statistical Organization and Programme Implementation, Government of India	5.96

7.	All India Co-ordinated Research Project for epidemiological studies on FMD	Dr. Rashmi Singh Dr. A.P. Singh	ICAR	3.00
8.	FMD-Control Programme	Dr. Rashmi Singh Dr. A.P. Singh	ICAR	6.00
9.	Studies on feasibility of distillery raw or biomethanated spent wash as animal feed supplement	Dr. Vinod Sidhu Dr. Debahis Roy Dr. Muneendra Kumar	Dhampur Sugar Mill Pvt Ltd	5.00
10.	Canine nasal parvo vaccine trial in pups	Dr. Amit Kumar	IIL, Hyderabad	2.49
11.	Comparative efficacy of supplementation of herbal liver tonic products on growth and performance in broilers	Dr. Amitav Bhattacharyya Dr. P.K. Shukla	Ayurvet Ltd, Baddi, H.P.	0.6912

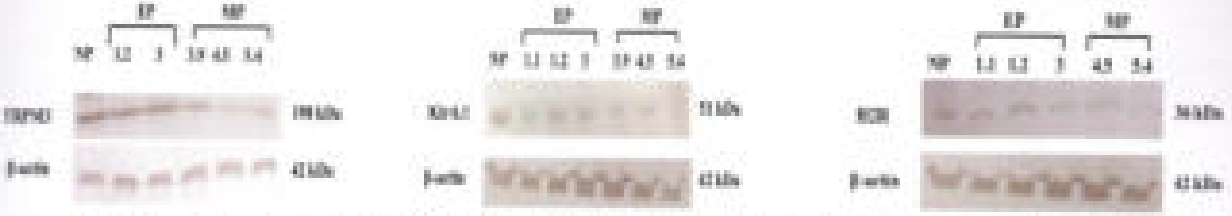
Project-1: Niche Area of Excellence project on "Toxicodynamic studies on impact of environmental pollutants on bovine reproduction with particular reference to regulatory pathways"

During the year under report, we characterized the functional existence of different subtypes of excitatory *alpha*$_1$-adrenoceptors (α_{1A}, α_{1B} and α_{1D}) and inhibitory *beta*-adrenoceptors (β_2 and β_3) in buffalo myometrium using pharmacological tools. The role of store-operated calcium channels (SOCC) in regulating myometrial contraction was also evaluated. Further, transient receptor potential channels subtype C3 (TRPC3) was found to be a predominant member of SOCC regulating spasmogens-induced (OT and $PGF_{2\alpha}$) myometrial contraction. We further demonstrated that K_{ATP} channels-mediated tocolysis in buffaloes seem to be independent of nitric oxide (NO) or activation of adenylyl cyclase (AC) enzyme. Interestingly, we also found that activation of adenylyl cyclase is not a major pathway for regulating *beta*$_2$-adrenoceptor mediated relaxation. Further, forskolin-induced adenylyl cyclase-independent relaxation of myometrium in pregnant buffaloes seems very interesting as forskolin is mostly known to work through activation of AC-AMP- pathway.



We have further reported the existence of TRPM3, Kir6.1 and H2 histaminergic receptor in buffalo myometrium using molecular tools. Relative protein intensity (in

relation to house keeping β-actin) of these receptor and ion channels differed with advancement of pregnancy, thus have significant impact in regulating myometrial activity. Moreover, overall separation profile of uterine membrane proteins indicated the appearance and disappearance of certain proteins during different stages of pregnancy *vis-a-vis* non-pregnant stage.



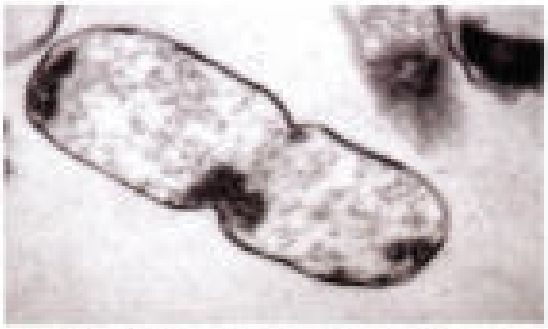
In vitro exposure of rat and buffalo myometrium to mercury chloride ($HgCl_2$) produced contractile effect. This calcium-dependent myometrial contraction in rat myometrium is regulated by PKC and Rho kinase. Muscarinic receptors especially M_2 and M_3 are involved in $HgCl_2$-induced myometrial contraction in rats. Following invivo exposure of female rats for 28 days, $HgCl_2$ exhibited dose-dependent deleterious effects on liver, kidneys, spleen and uterus as revealed by histo-pathological examinations. On the other hand, lead-induced buffalo myometrial contraction is PKC-dependent, however, in the absence of extracellular calcium, lead can permeate through L-type calcium channels (VDCC) and activate PKC to mediate myometrial contraction; thus exerting calcium mimicking action. Based on our findings from the project works we have filed one patent entitled "Non-estrogenized and consistent rat uterus model for pharmacodynaimc studies on myometrium of cyclic rats" (Patent application number: 2642/DEL/2014, dated 15th Sept. 2014).

Project-2: Outreach Programme on **"Pharmacological studies and development of a poly herbal formulation for reproductive disorders in animals"**

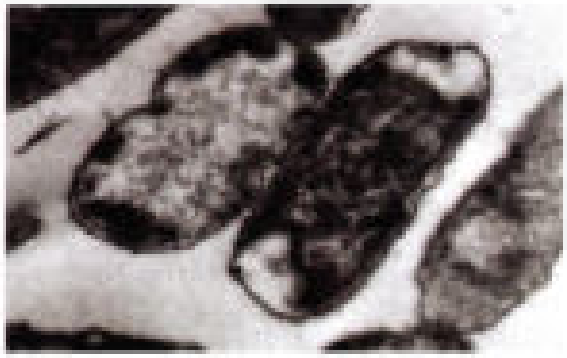
During the year under report, different phyto-constituents (anthraquinones and triterpinoids) of the selected plants were separated and purified by column chromatography and TLC. After GC-MS analysis of these fractions and sub-fractions, certain newer marker phytoconstituents were identified. Further, using transmission electron microscopy (TEM), the target site and probable mechanism of action of certain promising fractions having antibacterial activity against *E. coli* was determined. Herbo-U-care tablets, formulated based on our previous research finding, were found to be effective against post-partum endometritis in cows and buffaloes and also hastened the process of post-partum involution of uterus.

Additionally D7D extract was found to be effective against virus and possibly it acts via preventing viral entry into the cells as well as by inhibiting the release of the virus from plasma membrane. But, it does not prevent attachment of virus or inhibit the viral RNA synthesis. Promising antifungal activity of two herbal extracts (D7D and D23D) against standard fungal cultures and the isolates from clinical cases were determined. These two extracts exerted potentiating effect on antifungal activity when combined together. Based on this, we formulated a herbal capsule against pyoderma in canines and it was found to be very effective against recurrent bacterial/fungal pyoderma and dermatitis in canines. Based on the clinical efficacy trails, a patent on novel herbal capsule for treatment of pyoderma in canines" has also been filed.

E. coli of negative control group treated with methanol showing normal structure of bacteria along with binary fission



E. coli treated with Pefloxacin showing varying degree of damage to cell membrane , internal structure and distortion of shape of the bacteria



E. coli treated with D12D showing varying degree of damage to cell membrane , internal structure of the bacteria

E. coli treated with D7D showing varying degree of damage to cell membrane , internal structure and distortion of shape of the bacteria

Pre-treatment

Post-treatment

Pre-treatment

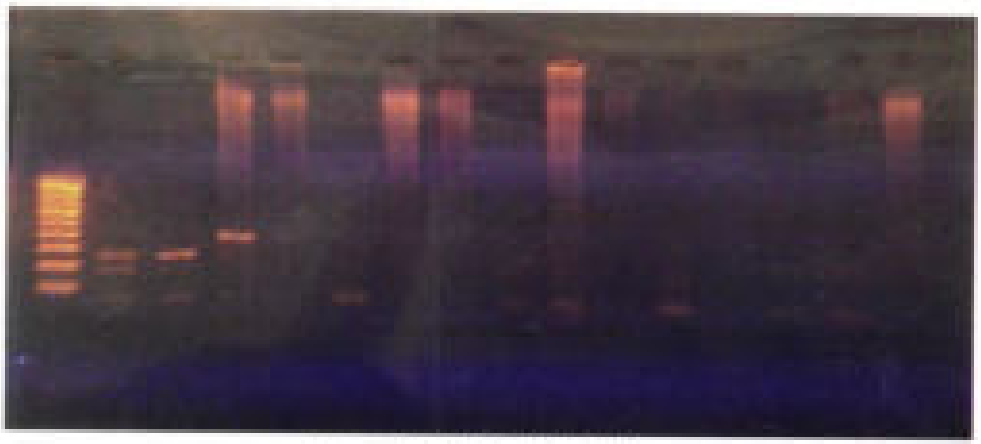
Post-treatment

Project-3: Diagnostic imaging and management of surgical conditions in animals

The project was sanctioned in January, 2015. Therefore the no research work could be taken up during the period under report. Small animal inhalation anaesthesia machine and small animal ventilator were procured, whereas digital radiography unit, video-endoscopes, large animal inhalation anaesthesia machine, ophthalmoscopes, phacoemulsification unit, microsurgery unit and diagnostic ultrasound with color doppler will be purchased during next year and, then further research work will be carried out.

Project-4: Outreach Programme on **"Zoonotic Diseases-Verocyto Toxic *E. coli*"**

A total number of 1225 samples comprising of milk and milk products (200), water (450), faeces (250), soil samples (65), human urine samples (200) and human faeces (60) were collected from five districts, namely Aligarh, Agra, Kanpur, Kasganj and Mathura of U.P. and processed for Verocytotoxic *E. coli* isolation. Out of 20 raw milk samples from Mathura, two were found positive for VTEC and the positivity of VTEC was 10.00% and in milk product samples, prevalence of VTEC was 10.00% (18/180). In milk products, highest positivity was reported in burfi 10.33% (17/165), followed by paneer (6.66%, 1/15). In faecal samples, highest prevalence of VTEC was reported in buffalo faeces 13.33%, 8/60), followed by deer faeces as (11.66%, 7/60), cattle faeces (11.42%, 8/70) and sheep faeces (6.66%, 4/60). In water samples, the prevalence of VTEC was observed 4.00% (18/450). Occurrence of VTEC in human urine (clinically ill) samples collected from different Pathology labs of Mathura district was 2% (4/200). 65 herd soil samples were collected and 07 samples were found positive for VTEC. The positivity of VTEC in soil samples was 10.76% (7/65). A total of 17 genes of VTEC strains (vt1, vt2, eae and hlyA) from different *E. coli* strains were sequenced by Invitrogen Bioservices, Guargaon, Harayana India Pvt Ltd. Eight VTEC strains were submitted to the VTC, NRCE Hisar. Twelve gene sequences were also submitted to NCBI gene bank.



Lane 1: 100 bp DNA ladder

Lane 2: Stx1 gene(180 bp) , Stx2(255 bp)

Lane 3: Stx1 gene(180 bp) , Stx2(255 bp)

Lane 4: eae gene (384bp)

Antibiotic sensitivity pattern of VTEC isolated from Burfi sample

Project-5: Conservation and genetic improvement of Muzaffarnagari sheep for multiplication of superior germplasm

This project was started in Feb. 2013 with 39 female and 10 male purebred Muzaffarnagari sheep for selective breeding to increase the number of superior germplasm. With ninty one new born lambs, an increase of 180% in total flock size has been achieved. to creat a nucleus herd of superior germplasm of purebred Muzaffarnagari sheep at our centre and these will be provided to farmers for propagation of this breed of sheep.

Breeding Rams of Nucleus Herd

Nucleus Herd

Project-6: A study on state wise yield of meat and by products of cattle, buffalo, sheep, pig and poultry

The Department also executed externally funded project on "A Study on State Wise Yield of Meat and By-products of Cattle, Buffalo, Goat, Sheep, Pig and Poultry" funded by Ministry of Statistics and Programme Implementation. Under this project the important carcass parameters were obtained from different species. A data on 200 buffaloes, 100 pig, 500 poultry, 300 sheep and 300 goats were taken and compiled.

The report has been submitted to Principal Investigator, Lead Centre (NRC on Meat). The compilation will provide baseline data for carcass parameters and by-

products yield of our food animals. The results will also be helpful for formulating breeding strategies and nutritional interventions to improve the carcass traits of livestock.

Project-7: AICRP for epidemiological studies on FMD

Three FMD outbreaks were attended and monitored. Ten clinical samples were collected from three outbreaks. Four samples were typed as virus type "O" by Sandwich ELISA. 95 villages/farms/gaushalas were visited by the project officials in different districts of Uttar Pradesh for FMD surveillance work. A total of 7580 random serum samples from different districts of Uttar Pradesh were tested for presence of anti-3AB3NSP antibodies against FMDV to study the carrier status of animals. 24.64% (1868/7580) animals were found positive for FMD by DIVA ELISA test.

Dr. Rashmi Singh participated in 25th Annual Review Meet of AICRP on FMD held at College of Veterinary Sciences, Guwahati (10-11 Oct, 2014) and presented the Annual Report (2013-14) of Regional Research Centre, DUVASU, Mathura. Farmer's awareness campaign was carried out under the aegis of "Pashudhan Krishivijay Mela" organized by U.P. Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Viswavidyalaya ewam Gau-Anushandhan Sansthan, Mathura on 19-21 Feb, 2015. Farmers were made aware about FMD disease and its ill effects and informative literature was also distributed to them. "Case Control Study" was also carried out to ascertain the sero-conversion of inactivated oil adjuvant FMD Trivalent vaccine under field conditions, six model villages from different blocks of Mathura district were selected for case control study. 20 random cattle and buffaloes from each village were vaccinated and pre and post vaccination samples were collected for determination of antibody against O, A and Asia-1 serotype by LPB ELISA. The overall sero-conversion (≥ 1.8 $\log_{10}$ antibody titre) was 78.3%, 67.5% and 74.2% against FMDV serotypes O, A and Asia-1, respectively.

Hon'ble Vice Chancellor of Kamdhenu University, Gujarat, Prof. M. C. Varshney and Hon'ble Vice Chancellor of DUVASU, Prof. A. C. Varshney visiting FMD awareness stall during Pashudhan Krishivijay Mela

Project-8: FMD-Control Programme

Total 27369 (14420 pre- and 12949 post-vaccination) sera samples from different districts of Uttar Pradesh were processed for sero-monitoring of FMD-Control Programme (FMD-CP, Phase XV and XVI) against FMDV serotypes O, A and Asia-1 by single dilution LPB-ELISA (sdLPB-ELISA). A total of 7838 serum samples (3870 pre- and 3968 post-vaccination) from twenty districts of Uttar Pradesh were processed in sdLPB-ELISA for sero-monitoring of FMD-CP Phase XV in the year of study. The overall sero-conversion (≥1.8 $\log_{10}$ antibody titre) was 57.0%, 56.9% and 66.2%, against FMDV serotypes O, A and Asia-1, respectively in cattle and buffaloes together. A total of 19531 serum samples (10550 pre- and 8981 post-vaccination) from 69 districts of Uttar Pradesh were processed in single dilution LPB-ELISA for sero-monitoring of FMD-CP Phase XVI. The overall sero-conversion (≥1.8 $\log_{10}$ antibody titre) was 51.9%, 44.2%, 49.4% against FMDV serotypes O, A and Asia-1, respectively in cattle and buffaloes together.

Case control study in different model village of Mathura by PI and Co-PI of the Collaborative centre.

Project-9: Studies on feasibility of distillery raw or biomethanated spent wash as animal feed supplement

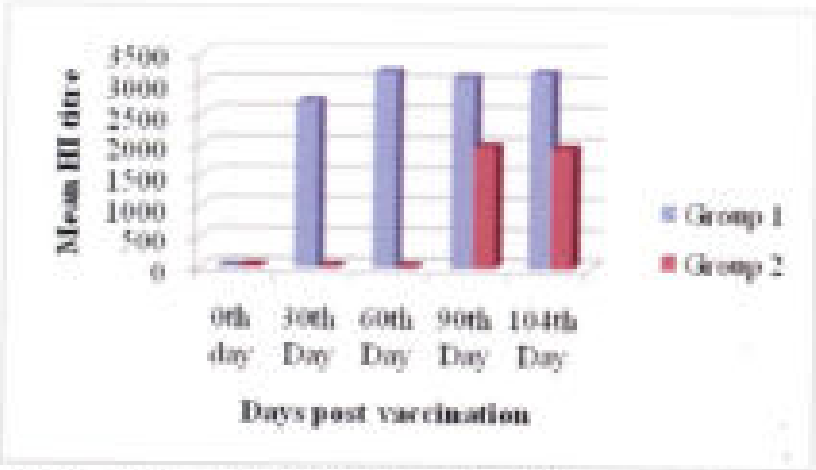
The study was conducted in two phases. In phase I, effect of different levels of spent wash or biomethanated spent wash was studied on rumen fermentation parameters *in vitro*. In phase II study, effect of 10 and 20% SW or BSW (selected from *in vitro* study) was studied on nutrient intake, growth performance, nutrient utilization and blood biochemical attributes. Results of this study revealed that feeding of 10% spent wash as cereal replacer in concentrate mixture improved growth performanee without any adverse effect in growing heifers. Heifers fed on diet supplemented with 10 and 20 % biomethanated distilleries spent wash had lower plasma urea nitrogen concentration and increased plasma Phosphorous, total protein and total immunoglobulin concentration. However, increased plasma albumin and glucose

concentration was observed in 20 % biomethanated distilleries spent wash fed growing animals. Feeding of 10% biomethanated distilleries spent wash replaced in concentrate mixture with cereals improved growth performance without any adverse effect in growing heifers. A >10% levels of spent wash supplementation, moisture in concentrate feed become high and balancing of nutrients in spent wash supplemented ration should be taken care off.

In vivo feeding trial on spent wash at ILFC

Project-10: Canine nasal parvo vaccine trial in pups

The study revealed that canine parvovirus intranasal route vaccine was safe in pups of ~45 days age and it produced good immune response during the entire duration of study period of 104 days. It is safe and effective and thus can be recommended for pups by this route.



Mean serum antibody response at different time intervals following vaccine administration

Project-11: Comparative efficacy of supplementation of herbal liver tonic products on growth and performance in broilers

180 day old chicks were divided into 5 identical groups randomly with four replicates of nine birds each at one week of age. The birds of first group were fed on basal (control) diet; Starter (0d-21d):(CP-23%, ME:2800 kcal/kg), Finisher (21-42d) :(CP-20%, ME: 2900k cal/kg). The second group was subjected to superliv liquid (poly herbal liver tonic) in drinking water @ 5ml/100 birds/day during 1-2 weeks, 10 ml/100 birds/day during 2-4 week, 20ml/100 birds/day during 4-6 weeks of age. The third and fourth groups were subjected to AV/SSL/12 (poly herbal liver tonic) in drinking water @ 2.5ml/100 birds/day during 1-2 weeks, 5 ml/ 100 birds/ day during 2-4 weeks, 10 ml/100 birds/day during 4- 6 weeks and 4ml/100 birds/day during 1-2 weeks, 8 ml/ 100 birds/ day during 2-4 weeks, 15 ml/100 birds/day during 4- 6 weeks respectively. The fifth group was supplemented with Liv 52 protec liquid (poly herbal liver tonic) in drinking water @ 5ml/100 birds/day during 1-2 weeks, 10 ml/100 birds/day during 2-4 week, 20ml/100 birds/day during 4-6 weeks of age. Superliv liquid and AV/SSL/12 had significantly higher (P<0.001) body weight compared to the control group at 2nd week of age. Further, all the treatment groups had apparently higher body weight compared to the control group throughout the experiment. The body weight gain of various liver tonic groups were significantly higher (P<0.001) compared to the control group at 2nd week of age. Feed consumption was significantly higher (P<0.001) in all the treatment groups compared to the control group during 1-2 weeks of age. Thereafter, there was no significant difference between the different treatment groups. FCR was significantly better (P<0.05) in the fourth group (AV/SSL/12) compared to the control group during 3-6 weeks and 1-6 weeks of age. Total immunoglobulins, and mercaptoethanol sensitive (IgM) antibody titer (log 2) values in response to sheep red blood cells (SRBC) was significantly higher (P<0.05) in the fourth group compared to the control group at 6 weeks of age. Foot web index (in response to PHA-P)was apparently higher in the AV/SSL/12 group compared to the control group at 6 weeks of age. The present investigation indicated that feeding of AV/SSL/12 @ 4ml/100 birds/day during 1-2 week, 8 ml/100 birds/day during 2-4 week and 15 ml/100 birds/day during 4-6 week had a positive impact on the growth performance and improved the FCR of broilers. Further, the results obtained in the present study indicate that feeding of AV/SSL/12 at the above mentioned doses in broilers may enhance immunity. Hence, it may be concluded that feeding of AV/SSL/12 may enhance growth performance and elicit immuno competence traits of commercial broilers.

B. UNIVERSITY FUNDED PROJECTS SANCTIONED DURING 2013-14 AND COMPLETED DURING 2014-15

S.No.	Name of the Project	Name of PI and Co-PI	Total Budget (Rs in lacs)
1.	Association between polymorphisms of Interleukin-2 (IL-2) and signal transducers & activators of transcription 5A (STAT5A) genes with milk production traits in Sahiwal and Hariana cattle	Dr. S.P. Singh Dr. Deepak Sharma Dr. Madhu Tiwari Mr. Rakesh Goel	2.10
2.	Association between polymorphisms of solute carrier 27A1 (*SLC27A1*) genes with milk production traits in Sahiwal and Hariana cattle	Dr. Madhu Tiwari Dr. Deepak Sharma Dr. S.P. Singh Mr. Rakesh Goel	1.45
3.	Screening of superficial wound and skin infections in animals for bacterial and mycotic pathogens and their drug sensitivity pattern against commonly used antimicrobial agents	Dr. Ruchi Tiwari Dr. Amit Kumar Dr. Shankar Singh Dr. Neeraj Gangwar	1.00
4.	Molecular basis of host immune response in mastitic dairy cows of different production potential parity and lactation and identification of suitable markers for early diagnosis of subclinical mastitis and development of therapeutics for mastitis.	Dr. Dilip Kumar Swain Dr. Sarvajeet Yadav Dr. Brijesh Yadav Dr. Shankar Singh Dr. Yajuvendra Singh	2.46
5.	Modulation of host innate and adaptive immune system affecting production in Sahiwal and Hariana cattle in the changing climate scenario	Dr. Jitender Kumar Dr. Dilip Kumar Swain Dr. Yajuvendra Singh	2.97

Project-1: Association between polymorphisms of Interleukin-2 (IL-2) and Signal transducers & activators of transcription 5 A (STAT5A) genes with milk production traits in Sahiwal and Hariana cattle

The project was undertaken with the objectives to study the polymorphisms of *IL-2* and *STAT5A* gene in Sahiwal and Hariana breeds of cattle by SSCP technique, to estimate the gene and genotype frequencies of *IL-2* and *STAT5A* gene and to study the association between the polymorphic genotypes of these genes and milk production traits. Blood collection and DNA isolation along with data recording has been done. PCR of STAT5 and IL2 region hs been completed.

Project-2: Association between polymorphisms of Solute carrier 27A1 (*SLC27A1*) genes with milk production traits in Sahiwal and Hariana cattle

Objectives of the study was to find out polymorphisms of *SLC27A1* gene in Sahiwal and Hariana breeds of cattle by PCR-RFLP, estimate gene and genotype frequencies of *SLC27A1* gene and to study the association between the polymorphic genotypes of these genes and milk production traits. Blood collection and DNA isolation along with data recording has been done. PCR-RFLP work has been done.

Project-3: Screening of superficial wound and skin infections in animals for bacterial and mycotic pathogens and their drug sensitivity pattern against commonly used antimicrobial agents

Screening of superficial wounds and skin infections of 255 samples from cattle, buffalo, goats, camel, sheep, horses and dogs from Mathura and nearby surrounding areas revealed involvement of both bacterial (75.20 %) and mycotic agents (24.80 %). Microbiological investigation revealed isolation of strains of *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *E. coli*, *Klebsiella spp.*, *Proteus*, *Bacillus*, *Clostridium*, *Streptococcus*, *Micrococcus*, *Fusobacterium*, Gram negative non-lactose fermenter, Gram positive non-spore producing bacilli. Fungal pathogens included candida, dermatophytes, Microsporum spp (*Microsporum canis*, *M. nanum*, *M. audouinii and Microsporum gypseum*), Trichophyton spp (*T. tonsurans*, *T. verrucosum*, *Trichophyton schoenleinii*, *T. mentagrophytes*, *T. ajelloi* & *T. rubrum*) and opportunistic saprophytic fungi viz. Aspergillus, Penicillium, Mucor, Alternaria etc.Antibacterial resistant strains of *Staphylococcus aureus*, multi-drug resistant strains of *Pseudomonas aeruginosa*, *E. coli*, *Klebsiella spp* were observed. Invitro antifungal sensitivity testing did not reveal any sensitive anti-fungal drug among all tested drugs except itraconazole and ketoconazole in few cases only. Gatifloxacin, sparfloxacin, amikacin, chloramphenicol and gentamicin were highly sensitive drugs in most of the cases. Neither bacteria nor fungi were recorded as the route cause in cases of abnormal skin growth, hence no correlation was found. However, involvement of viral agents was beyond the objectives of this study.

Wound on out growth over testicles

Fungal infection in cattle calves

E-Strip anti-fungal test

Project-4: Molecular basis of host immune response in mastitic dairy cows of different production potential parity and lactation and identification of suitable markers for early diagnosis of subclinical mastitis and development of therapeutics for mastitis

Neutrophil surface expression of adhesion molecules and toll like receptors increased significantly in clinical coliform mastitis as compared to control healthy cows and buffaloes. Neutrophil activation was mediated by phosphorylation of tyrosine containing proteins.

Project-5: Modulation of host innate and adaptive immune system affecting production in Sahiwal and Hariana cattle in the changing climate scenario

Season has a significant effect on neutrophil competence and is directly proportional to expression of surface adhesion molecules and toll like receptors. Early lactation shows compromised neutrophil activity as compared to mid and late lactation. With increase in parity neutrophil competence in terms of activation gets down regulated. Compromised neutrophil activity is being proposed to be correlated with increased incidence of disease.

C. NEW UNIVERSITY FUNDED PROJECTS SANCTIONED DURING 2014-15

S. No.	Name of the Project	Name of PI and Co-PI	Total Budget (Rs. in lac)
1.	Growth performance, rumen fermentation, biomarkers of heat stress, immune status and endocrine variables in summer exposed growing calves supplemented with different sources of chromium	Dr. Debashish Roy Dr. Muneendra Kumar Dr. Vinod Kumar	1.00
2.	Effect of supplementation of inorganic and organic form of copper on growth performance, nutrient utilization and blood parameters in growing cattle	Dr. Shalini Vaswani Dr. Vinod Kumar Dr. Raju Kushwaha Dr. Atul Prakash	1.00
3.	Assessment of apoptosis and capacitation like changes in the cryopreserved sperms of cattle and buffalo	Dr. Vijay Singh	1.00
4.	Hematology of Muzzafarnagri sheep	Dr. Archana Pathak	0.50
5.	Effect of different seasons on biomarkers of environment stress, immunity and endocrine variables in indigenous dairy cattle (*Bos indicus*)	Dr. Jitender Kumar	3.00
6.	Cryoprotective effect of low density lipoproteins (LDL) in extenders on post thaw semen quality in pure breed Hariana bull	Dr. Mukul Anand	1.00
7.	Deciphering the thermal stress associated deprotamination and DNA compaction in bull sperm	Dr. Dilip Kumar Swain	2.00
8.	Studies on pre partum administration of antioxidants and anionic salts to indigenous transition cows	Dr. Shankar Singh	1.50

9.	A comparative pharmacokinetic interaction studies of flunixin and meloxicam with fourth generation cephalosporin (cefquinome) with special reference to bioavailability and dosage regimen in cattle calves	Dr. Rajesh Mandil Dr. Atul Prakash Dr. Rajneesh Sirohi	1.50
10.	Screening of milk of different breeds for nutritional and health providing components	Dr. V. P. Singh Dr. Vikas Pathak Dr. Atul Prakash	1.50
11.	Development of polyvalent vaccine against mastitis in cattle	Dr. Amit Kumar Dr. V. K. Singh Dr. S. P. Singh	1.50
12.	Association of bovine leptin gene polymorphism with production and reproduction traits in primiparous dairy cows	Dr. Vijay Pandey Dr. Rajesh Nigam Dr. S. P. Singh	1.50
13.	Development of native whole cell lysate based ELISA kit for trypanosomosis in cattle and buffaloes	Dr. Amit Kumar Verma Dr. Amit Jaiswal Dr. Vikrant Sudan	1.00
14.	Molecular characterization and phylogenetic analysis of different isolates of trypanosomes in and around Mathura	Dr. Vikrant Sudan Dr. Amit Jaiswal Dr. Daya Shanker	1.75

Research work is in progress.

D. PROJECTS OF POST GRADUATE STUDENTS COMPLETED DURING 2014-15

a. Veterinary Sciences and Animal Husbandry

S. No.	Title of the Thesis	Name of the Student	Name of the Guide	Subject
Ph.D				
1.	Effect of formaldehyde treated mustard oil cake on nutrient utilization and growth performance in heifers	Dr. Mahima	Dr. S.K. Tomar	Animal Nutrition
2.	Cytomorphological, cytochemical, cytoenzymic and ultrastructural study of the blood cells of race horses	Dr. Keshav Kumar Sharma	Dr. Ajay Prakash	Veterinary Anatomy
3.	Development of marker vaccine and attempt to develop diagnostic ELISA kit for detection of BHV-1 Infections	Dr. Rashmi Singh	Dr. Amit K. Verma	Veterinary Epidemiology
MVSc				
4.	Effect of natural antioxidants on lipd oxidation of pork papad	Dr. Abhishek Singh Sengar	Dr. Vikas Pathak	Livestock Products Technology
5.	Development and quality assessment of fiber fortified enrobed chicken kabab	Dr. Santwana Upadhyay	Dr. Vikas Pathak	Livestock Products Technology
6.	Studies on assessment of capacitation like changes in the cryopreserved sperms in Hariana bull	Dr. Meena Verma	Dr. Vijay Singh	Veterinary Obstetrics and Gyanecology
7.	Studies on cystic ovarian follicles of bovines	Dr. Pramod Kumar	Dr. Ram Sagar	Veterinary Obstetrics and Gyanecology
8.	Pharmacological studies on patho-physiological	Dr. Neelam Kurmi	Dr. Satish K. Garg	Veterinary Pharmacology and Toxicology

	dynamics of endometritis in murine model			
9.	Sub-acute pulmona toxicity of flubendiami and its amelioration wi curcumin in in rat	Dr. Kuldeep Kumar	Dr. Atul Prakash	Veterinary Pharmacology and Toxicology
10.	Prevalence of verocytotoxic *E. coli* in milk and milk product in certain areas of Agra district	Dr Manjula	Dr. Basanti Bist	Veterinary Public Health
11.	Quality analysis of ground water & Recreational water sources in brij region with special reference to *E.coli* O157:H7	Dr. Waquar Ahmed	Dr. Udit Jain	Veterinary Public Health
12.	Clinical studies on the maintenance of anaesthesia by constant rate infusion in bitches presented for oophorectomy	Dr. Hasnain Ansari	Dr. Sanjay Purohit	Veterinary Surgery and Radiology
13.	Evaluation of Propofol as constant rate infusion for maintenance of anaesthesia in horses premedicated with xylazine, acepromazine, butorphanol and diazepam in different combinations	Dr. Ashish Kashodhan	Dr. Bharat Singh	Veterinary Surgery and Radiology
14.	Studies on laparoscopic and conventional ovariectomy for canine birth control programme	Dr. Mritunjaya Kumar Chaurasia	Dr. R. P. Pandey	Veterinary Surgery and Radiology
15.	Studies on detection and prevalence of rotavirus infection in lambs and kids	Dr. Uttam Singh	Dr. Rashmi Singh	Veterinary Microbiology

16.	Pathological studies on the co-exposure of cadmium and chlorpyrifos in broilers with ameliorative effect of vitamin E	Dr. Raghvendra Singh	Dr. A. K. Srivastava	Veterinary Pathology
17.	Pathological studies on the co-exposure of Cypermethrin and fluoride in experimental rats with ameliorative action of vitamin E	Dr. Renu Singh	Dr. A. K. Srivastava	Veterinary Pathology
18.	Gross, histological and certain histochemical studies on the uterus in different stage of pregnancy in goat *(Capra hircus)*	Dr. Vijay Kumar	Dr. S. P. Singh	Veterinary Anatomy
19.	Epidemiological, Hemato-biochemical and Clinico-Therapeutic studies on Bovine Trypanposomiasis	Dr. Ashish Pratap Singh	Dr. Arvind Kumar Tripathi	Veterinary Medicine
b. M.Sc. Biotechnology				
1.	Analysis of polymorphic and expression pattern of Heat Shock Transcription factor-1 in goat.	Varun Kumar Singh	Dr. P.K. Rout, CIRG, Makhdoom	
2.	Polymorphic studies of DGAT1 and ABCG2 gene in Sahiwal and Hariana cattle	Anita	Dr. Madhu Tiwari	
3.	Studies on oxidative stress and its role in mastitis with special reference to *Staphylococcus aureus*	Lalita Sharma	Dr. Amit Kr. Verma	

1: Effect of formaldehyde treated mustard oil cake on nutrient utilization and growth performance in heifers

The present study was planned to evaluate the effect of formaldehyde treated mustard cake supplementation on growth and nutrient utilization in heifers and to study the major and trace minerals bioavailability in heifers fed formaldehyde treated mustard cake. The study was conducted in two phases i.e. *in vitro* and *in vivo* study. In *in vitro* study, the experiment was designed to evaluate the effect of different levels (0, 1, 1.5 and 2% of CP) of formaldehyde treated mustard cake containing concentrate and roughages diet in 40: 60 ratio. Mustard cake used for the preparation of concentrate was untreated, treated with formaldehyde (1, 1.5 and 2% of CP) and/or mixed with mineral mixture. NH_3-N was lower in formaldehyde treated group than control. Microbial protein synthesis (mg), pH and partitioning factor values of all groups were similar (P>0.05). TVFA level in 2% formaldehyde treated mustard cake group was lower (P<0.05) as compared to other groups. IVDMD and IVOMD were reported to be low for 1% formaldehyde treated group. TGP, TGDM (ml/g) and TGDDM (ml/g DDM) of various groups did not show any significant difference. On the basis of *in vitro* findings, it was concluded that 1.5% formaldehyde per 100g of CP had showed best results and hence selected for further 120 days growth trial (*in vivo*) in Hariana heifers.

In phase II (*in vivo* study), an experiment was conducted on 24 Hariana heifers randomly distributed on body weight basis into four groups of six animals each. The heifers in four groups were fed different dietary treatments, C_1: negative control diet (diet containing 80% crude protein of NRC); C_2: positive control diet (diet containing 100% CP of NRC); T_1: diet containing formaldehyde treated mustard cake (diet containing 80% CP of NRC) and T_2: diet containing formaldehyde treated mineral fortified mustard cake (diet containing 80% crude protein of NRC). Concentrate mixture was composed of barley, wheat bran, mustard and mineral mixture in 55, 10, 33 and 2 parts, respectively. All animals were fed test diet for a period of 120 days. Weekly DMI, fortnightly body weight changes and BCS were recorded and blood serum samples were analyzed for blood biochemical and major and trace minerals Average body weights of heifers in kg or metabolic body weight ($kgW^{0.75}$) periodically were similar (P>0.05). Fortnightly weight and ADG were higher (P<0.05) in positive control and formaldehyde treated groups. No significant effect on DMI in kg/d and on percent body weight basis was observed. The FCR was found lower in positive control and formaldehyde treated groups. BCS, DM, DCP and TDN intake were similar in all groups. OM digestibility was higher for group C_1, EE digestibility was higher for positive control, and formaldehyde treated groups. NDF digestibility also improved in formaldehyde treated groups. P absorption showed significant higher value (P<0.01) for positive control group. Ca, Mg, Fe, Cu, Zn, Mn and Se absorption were statistically similar in all groups.

Serum creatinine (mg/dl), cholesterol (mg/dl), globulin, BUN (mg/ dl), ALT and AST (IU/L) activity in experimental heifers were statistically similar (P>0.05) among all four groups. The total protein values were higher in formaldehyde treated group at 90 and 120 days. The serum albumin values were higher (P<0.05) in both formaldehyde treated groups at 90 and 120 days. The serum Ca, Mg, Cu and Se levels were not affected by formaldehyde treatment of mustard cake. Serum P level was lower (P<0.05) for both treatment groups (T_1 and T_2) than control groups (C_1 and C_2) on 120th

day. Significantly higher (P<0.05) level of Fe, Zn and Mn concentration was observed in group C_2 than other groups. The results revealed that formaldehyde treatment (1.5%) of mustard cake protect the protein from rumen degradation and improve the weight gain, feed efficiency and nutrient utilization. Mineral absorption and serum mineral levels were not altered due to formaldehyde treatment of mustard cake.

2: Cytomorphological, cytochemical, cytoenzymic and ultrastructural study of the blood cells of race horses

Cytomorphological, cytochemical, cytoenzymic and ultrastructural study was conducted on blood cells of 15 healthy race horses of either sex ranged from 3-7 years of age. The erythrocytes were anuclear, spherical, ovoid, irregular in shape and its average diameter was 5.2 ± 0.12 µm. The rouleaux formation was a common phenomenon. The cytoplasm of erythrocytes exhibited modarete reaction for PAS and alkaline phosphatase and slight reaction at the periphery for lipid. Under SEM erythrocyte were biconcave, rounded or irregular in shape with variable degree of concavity in the centre. Under TEM the erythrocytes were biconcave, round elongated in shape and showed variable degree of electron dense area. The neutrophils were oval or round in shape, composed of 2-7 nuclear lobes and its average diameter was 11.31± 0.28 µm. The nuclei showed moderate to intense Feulgen reaction. The cytoplasm of neutrophils showed intense reaction for PAS and slight reaction for acid phosphatase Under SEM it showed mushroom like cytoplasmic processes of different size, shape and number. Under TEM neutrophils were oval or rod shape with different size of cytoplasmic processes, and different size of cytoplasmic granules. The eosinophils were oval, rounded in shape and had 2-4 nuclear lobes. Its average diameter was 12.07± 0.31 µm. The cytoplasmic granules were homogenously distributed throughout cytoplasm and gave the eosinophils mulberry appearance.

The cytoplasm of eosinophils showed slight to moderate reaction for PAS, intense reaction for lipid and slight reaction for iron. Under TEM eosinophils were irregularly round in shape and had processes. Electron dense granules of various size were scattered throughout the cytoplasm. The basophils were the second largest cell among the leucocytes and its average diameter was 12.22 ± 0.22 µm and its nucleus composed of 2-3 lobes. Cytoplasmic granules were more concentrated towards the periphery and stained violet in colour. The cytoplasm of basophils showed slight reaction for lipid and acid muccopolysacchrides. Under TEM the basophils were roughly round to oval in shape with 1-2 cytoplasmic processes and eccentric nucleus. Electron dense and electron lucent area was observed at the periphery. Cytoplasmic granules were electron dense and on the basis of their size, five types of granules were noticed. The lymphocytes were round to oval in shape and on the basis of their size, these were classified as small, medium and large and measured 4.70± 0.18µm, 6.93± 0.23µm and 9.22± 0.21µm respectively. Under TEM lymphocytes were round in shape and had cytoplasmic processes. Small, medium and large size of lymphocytes was noticed.

The monocytes were round in shape and their average diameter was 12.58 ± 0.23 µm. The eccentric nuclei had varied shapes, ranging from ovoid to kidney having a notch. The cytoplasm of monocytes showed slight reaction for iron and cytochrome oxidase, slight to moderate reaction for PAS and moderate reaction for acid muccopolysccharides. Under TEM monocytes were irregular in shape and cytoplasmic processes were noticed. Nucleus was deeply indented. The platelets were roughly round or irregular in shape and their average diameter was 2.16± 0.12µm. The platelets showed slight to negative reaction for PAS and slight to moderate reaction for

acid muccopolysccharides and alkaline phosphatase. Under SEM platelets were irregular in outline and had cytoplasmic processes. Under TEM platelets were elongated and oval in shape and had 1-2 pseudopodia and microtubules and mitochondria observed.

3: Development of marker vaccine and attempt to develop diagnostic ELISA kit for detection of BHV-1 Infections

Infectious bovine rhinotracheitis (IBR) is a highly infectious and contagious disease of animals including cattle, buffalo, pig and other wild ruminants and worldwide in distribution. The greatest economic impact comes from losses resulting from IBR abortions, which occur chiefly during the last half of gestation, often without evidence of other clinical signs. In India, seroprevalence of IBR in cattle and buffaloes ranges from 14.75% to 73.00%. The disease is caused by Bovine Herpes Virus-1 (BHV-1), a member of the genus *Varicellavirus* in the sub-family *Alphaherpesvirinae* of family *Herpesviridae*. BHV-1 is an enveloped virus having an icosahedral nucleocapsid consisting of 162 capsomeres. The BHV-1 genome is double stranded DNA molecule of about 140kb. It is composed of a unique long (U_L) region and a unique short (U_S) region that are flanked by internal and terminal inverted repeat sequences (IR and TR, respectively). The viral genome encodes approximately 70 different proteins, of which eleven are glycoproteins. Genetic analyses of various clinical isolates have found at least three distinct BHV-1 subtype: a respiratory subtype, a genital subtype and an encephalitic subtype designated as BHV-1.1, BHV-1.2, and BHV-1.3, respectively.

In our country, no suitable vaccine against IBR is available for preventing the disease, while good vaccines viz., Bovilis IBR marker (Intervet), IBR marker (Bayer) etc are available in foreign developed countries. Therefore, in this study an attempt was made to construct a suitable vaccine for effectively control of IBR. In the present study, IBR virus was isolated from an aborted foetus (7 months) collected from Government livestock farm, Hastinapur, Meerut, Uttar Pradesh. Virus was isolated and grown on MDBK cells, characterized and identified as BHV-1. Further, the result was validated from OIE referral laboratory, which confirmed the virus as BHV 1.1. Large scale isolation of BHV-1 was done in MDBK cell line. PCR was carried out to amplify both 3' and 5' flanking regions of gE. Both PCR products were cloned in pUC18 vector in JM104 (*E.coli*) competent cells and both clones are ligated to obtain gE deletion fragment. Co-transfection was performed by calcium phosphate method with gE deleted virus and wild virus. Mutant virus was selected by indirect immunoperoxidase monolayer assay and purified by plaque purification method. Virus was grown in large amount in large size glass bottles. Viral suspension was centrifuged and supernatant collected. Virus was inactivated by heat treatment two times. Fraund's incomplete adjuvant was added in equal amount. Sterility and safety was checked. In laboratory trial on rabbits, the immune response was found low in comparison to that of wild virus, so there is further need to be revalidate the result using different approach.

4: Effect of natural antioxidants on lipid oxidation of pork papad

Study was envisaged to explore the effect of different natural antioxidants on shelf life of pork papads. Formulation and processing technology for preparation of papads were optimized. Different treatments of papad were developed by using three flour viz. green gram, rice and black gram flour replaced by pork meat at the levels of 50, 60 and 70 percent. The pH and volume expansion ratio decreased significantly (P<0.05) with increased levels of pork meat, while protein, fat and ash content increased significantly (P<0.05). The formulation containing each flour and 60 percentage pork meat were compared among each other to select the best variant. The treatment containing rice flour and 60% pork meat (R_3) had minimum pH (5.72±0.02) and fat content (16.25±0.53) and maximum volume expansion ratio (54.02±0.82). Texture profile analysis also showed significantly higher scores in R_3. The variant (R_3) was also awarded highest score (6.62±0.15) for overall acceptability. The selected treatment (R_3) was incorporated with different natural antioxidants viz. lemon grass, jimbu and mint @ 0.25, 0.50 and 0.75 percent. pH decreased significantly () with increased levels of all antioxidants and the minimum pH was observed in treatment containing 0.75 percent lemon grass.

Results of sensory evaluation revealed significant increase in flavor scores with increased levels of antioxidants in formulation; however, treatments with 0.5 percent antioxidants were awarded highest overall acceptability scores. The best selected variants L_2, J_2 and M_2 containing 0.5 percent lemon grass, jimbu and mint respectively were selected for storage studies (30 days) with R_3 as control. pH, T BA and FFA value increased significantly (P<0.05) in all variants during storage while cholesterol value decreased significantly. TBA and FFA values were found highest in control (R_3) and lowest in L_2. Total plate count, yeast & mold count and lipolytic count showed same trends i.e. highest in R_3 and lowest in L_2 throughout the storage. Results of sensory evaluation studies during storage also demonstrated decrease in sesnsory scores during advancement of storage period and minimum scores for all the attributes were observed for R3 during each day of sampling. L_2 (treatment containing 0.5% lemon grass) was rated highest for appearance & colour, flavor, texture and overall acceptability during the entire study period.

5: Development and quality assessment of fiber fortified enrobed chicken kabab

Study was carried out with the prime objective of enriching the fiber content of kabab simultaneously preserving its quality characteristics with edible coating. Three fibre rich vegetables viz. carrot, winter melon and jack fruit were added in the formulation of kabab replacing lean meat @ 10, 15 and 20 per cent. The moisture content increased while fat and protein content decreased with increased levels of vegetables. The incorporation of carrot and jack fruit resulted in increase in pH of kabab, however reverse trend was observed in case of winter melon. Cooking yield also decreased, significantly (P<0.05) with the incorporation of winter melon and non significantly with increased levels of carrot. However the addition of jack fruit showed a significant (P<0.05) increase in cooking yield. Texture profile analysis demonstrated significant (P<0.05) decrease in firmness and toughness of kabab with increased levels of carrot and winter melon while contrary findings were observed with jack fruit. One best treatment from each group; formulations with 20 percent carrot (C3), 20 per cent winter melon (B3) and 10 per cent jack fruit (J1) were selected on the basis of results of sensory evaluation and compared among each other. pH (6.28±0.02) and cooking yield (81.93±0.20) was maximum in J1 which was significantly higher (P<0.05) than other variants. Similar trends were recorded for firmness and toughness. No

significant difference was observed in protein and fat content. However, C3 was rated best on the basis of overall acceptability scores by sensory panelists. The selected variant was enrobed/coated with 0.5, 1.0 and 2.0 per cent aqueous solutions of guar gum, sodium alginate and carrageenan. No significant effect of coating was observed on physic-chemical properties. The results of texture profile analysis illustrated significant reduction in firmness and toughness of kabab coated with 1.0 per cent solution of guar gum. Three best variants i.e. kabab coated with 0.5 per cent guar gum (G1), 0.5 per cent sodium alginate (S1) and 2.0 per cent carrageenan (R3) were selected on the basis results of sensory evaluation and were evaluated for physico-chemical, textural and microbiological properties during storage at refrigeration (temp). The estimated mean TBA and FFA values were found significantly ($P<0.05$) higher in control throughout storage. The highest moisture content was observed in R3. No significant effect of storage was observed for mean protein, fat and ash content. The firmness and toughness decreased significantly ($P<0.05$) on 7th day. The average TPC counts increased significantly during storage and significant higher counts were observed in C3 on day 7 as compared to other treatments. The sensory attributes scores also decreased with advancement of storage. The chicken kabab incorporated with 20 per cent carrot and further enrobed by 2 per cent carrageenan was most acceptable upto 7 days stored at refrigeration temperature.

6: Studies on assessment of capacitation like changes in the cryopreserved sperms in Hariana bull

Study was undertaken on four Hariana bulls aging 5.5-6.5 years and weighing 450-500 kg . Forty ejaculates were collected from four bulls during the period of study with using artificial vagina. The study was designed to cryopreserve Hariana bull spermatozoa in 0.25ml straws using tris egg yolk glycerol extender and to study the protein tyrosine phosphorylation in fresh and cryopreserved Hariana bull spermatozoa. Live spermatozoa, progressive motility, HOS reactive spermatozoa, CTC positive spermatozoa and acrosomal intact spermatozoa significantly reduced with the stages of freezing (fresh with initial dilution, semen with final dilution and post thaw). Capacitation and acrosome reaction in post thawed spermatozoa were significantly higher as compared to fresh and finally diluted semen. SDS-PAGE of fresh semen samples showed 84, 82, 80, 78, 76, 75, 72, 60, 58, 54, 50, 45, 42, 40, 38, 20 and 14 kDa protein bands when resoluted in SDS-PAGE. Similar pattern of bands were also shown by the proteins of finally diluted semen samples. The resolved gel showed protein bands of molecular weight (150, 140, 120, 110, 90, 84, 82, 80, 78, 76, 75, 72, 60, 58, 54, 50, 45, 42 and 40 kDa) in thawed semen. The five high molecular weight proteins having molecular weight 150, 140, 120, 110, and 90 kDa were found only in thawed semen samples. Proteins of 38 kDa was absent in thawed semen samples. Fresh and finally diluted semen samples revealed 5 tyrosine specific phosphorylated proteins as evident by immune-blotting. The proteins identified were p 40, p42, p48, p68, and p70. Immuno-blotting of post thawed semen samples exhibited nine proteins which appeared to be tyrosine phosphorylated. The proteins identified were p28, p42, p44, p48, p50, p68, p78, p84 and p94. Tyrosine specific phosphorylated proteins were found to be localized on the sperm flagella and in specific, tyrosine phosphorylated proteins were confined to middle and principle piece of sperms. The study concluded that with freezing, capacitation of sperms occur and it is associated with phosphorylation of tyrosine containing proteins. Further studies are required to identify these specific proteins and their role in sperm function and capacitation.

7: Studies on cystic ovarian follicles of bovines

Incidence of cystic condition in cows and buffaloes, its association with biochemical, mineral and hormonal profile and effectiveness of hormone GnRH and progesterone was studied. Cystic animals were selected on the basic of history of infertility followed by confirmation with ultrasonography examination. Selected animals belonged to University Farm (ILFC) and daily OPD of TVCC. The cystic animals were divided into two groups and treated with GnRH (Receptal, 0.02 mg I/M, Treatment 1) & progesterone (Triu B, 948 mg Intra-vaginaly, Treatment 2). Beside, normal cyclic cows and buffaloes were kept as control. Blood sample from these animals were collected for biochemical, mineral and hormonal studies on three occasions i.e on the day of detection of cyst (day 0), 14th after treatment and at induced estrus. For normal cyclic animals blood collection schedule was on the day of estrus and 14 day post estrus . The study reveals the incidences of cystic condition in cows as 22.29% (37/166) and in buffaloes' as 23.15% (22/95).Comparison of biochemical parameters of cystic animals (cows and buffaloes) with normal cyclic animals (cows and buffaloes) reveal significant difference for glucose, cholesterol, total protein , albumin, AST and ALT however, no significant difference was observed for blood urea nitrogen, creatinine . For mineral profile significant difference was observed for zinc, manganese and magnesium, however, no significant difference was observed for copper, iron, calcium and phosphorus. Concentration of hormone progesterone differs significantly however, estrogen was found to differ significantly in buffaloes only. Cystic cows treated with GnRH (T1) responded 100% to treatment and resulted in 60% pregnancy taking 2.50±0.37 service per conception. The average duration from induction to conception was 53.4±7.77 days. In progesterone treated group (T2), 95% animals responded to treatment and resulted in 63.16% pregnancy taking 2.00±0.23 service per conception. The average duration from induction of estrus to conception was 41.62±5.63 days.In cystic buffaloes for GnRH treatment group (T1), 100% responded to treatment resulting in 66.66% pregnancy taking 3.16±0.27 service per conception. The average duration from induction of estrus to conception was 78.50±21.28 days. In progesterone treated group (T2) 90% animals responded to treatment resulting in 77.78% pregnancy taking 2.29±0.22 service per conception. The average duration from induction of estrus to conception was 24.30±9.25 days.

8: Pharmacological studies on patho-physiological dynamics of endometritis in murine model

Study was undertaken on phathophysiological dynamics of endometritis in murine model and evaluated the efficacy of certain plant extracts. *Eucalypts citridora* and *Moringa oleifera* leaves and *Tagetes erecta* flowers methanolic extracts were subjected to phytochemical analysis using qualitative tests and HPLC and GC-MS assays. All the three plant extracts were found to possess oxalic acid, salicylic acid and acetyl salicylic acids apart from normal phytoconstituents which included alkaloids, flavonoids, saponins, sugars, tannins, glycosides, fixed oil, protein and amino acids. GC-MS analysis of *E. citridora* leaves revealed 11 compounds with five major constituents, *M. oliefera* revealed 14 different compounds with three major compounds and *T. erecta* flowers revealed 45 compounds with four major marker compounds. Uterine discharge of clinical and subclinical endometritis cases having history of anestrus (17%), repeat breeding (43%) and abortion (39%) were found to have *E. coli* (43.3%), *Staph. aureus* (30%), *Streptococcus* (16.7%), *Klebsiella* (6.67%) and *Pseudomonas* (3.33%). *Eucalyptus citridora* and *Moringa oleifera* leaves methanolic extracts (50µl each of 200mg/ml) exhibited promising antibacterial activity against all

the clinical isolates while *Tagetes erecta* flowers extract exhibited poor antibacterial activity as determined by disc diffusion method.

Murine bacterial endometirtis model was established by inoculating the mixture of *E. coli* and *Staph. aureus* in to uterine horns during diestrus stage followed by cervical ligation and the model was confirmed based on presence of visible pus in the uterus, edematous uterine horn, thinning of endometrial lining and presence of large number of PMN cells and bacterial load in uterine flushing. Efficacy of *E. citridora* and *M. oleifera* leaves methanolic extracts was evaluated based on marked to significant reduction in uterine weight, uterine secretion index, PMN cells and bacterial load in uterine flushings, alteration in TLC and DLC, serum TNFα levels and histopathological changes. Results were compared with gentamicin and it was evident that *E. citridora* and *M. oliefera* produced curative and protective effect against endometritis. All the three test plant extracts produced inhibitory effect on myometrial activity in control, sham-operated and endometritis groups. Enrofloxacin and gentamicin also produced inhibitory effect on myometrial contractility and gentamicin was more potent than enrofloxacin but ampicillin did not produce any appreciable effect on myometrium contractility in any of the three groups.

Oxytocin and PGF2α produced contractile effect on uteri of all three groups but compared to healthy control group, oxytocin produced markedly higher contractile effect while PGF2α produced significant higher contractile effect on endometritic rats compared to that on healthy control. Following treatment of endometritis in rats with *E. citridora* and *M. oleifera*, there was marked alteration in sensitivity of myometria to the effect of oxytocin, $PGF_{2\alpha}$ and potassium chloride. Based on these studies, it may be inferred that *E. citridora* and *M. oleifera* leaves extracts possess promising antibacterial activity and efficacy against experimental endometritis and, therefore, can be exploited in drug development program for treatment of endometritis in human beings and animals.

9: Sub-acute pulmonary toxicity of flubendiamide and its amelioration with curcumin in rat

Study was undertaken to evaluate the pulmonary toxicity of flubendiamide and its possible amelioration with curcumin in wistar rats of either sex. Fourty two rats were divided in to seven groups each containing six rats viz. – G1 control, G2 vehicle control, G3 curcumin, G4 flubendiamide (100 ppm), G5 flubendiamide (200 ppm), G6 flubendiamide (400 ppm) and G7 flubendiamide (200 ppm) plus curcumin. Daily feed and water intake was reduced at 200 and 400 ppm flubendiamide alone groups on last week whereas, no change was found in flubendiamide plus curcumin treated group as compared to control group. No significant change in body weight and percentage weight gain was found among all groups, however slight decrease in body wt. was found at 200 ppm and 400 ppm dose level on 14th, 21st, 28th day as compared to control group. Absolute liver weight increased significantly in 200 and 400 ppm groups whereas no significant change was found in influbendiamide plus curcumin treated group. Adrenal weight was also significantly increased in 400 ppm group whereas it increased non significantly in 200 ppm group as compared to control group. Dose dependent significant decrease in hemoglobin and TEC level was found in 100 ppm, 200 ppm and 400 ppm groups as compared to control group, however, no significant change was found in flubendiamide plus curcumin group as compared to control group. Platelet count also increased significantly in 400 ppm group as compared to control group. In DLC, the percentage of eosinophils and neutrophils was increased significantly in 400 ppm group however eosinophils were also increased

significantly in 200 ppm group as compared to control group. Lymphocyte percentage was decreased significantly in 400 ppm group whereas, it was non significantly in 200 ppm group as compared to control group. No significant change was found in eosinophils, neutrophils and lymphocyte percentage in flubendiamide plus curcumin treated group. Total protein and cholesterol level in plasma were increased significantly in 400 ppm group, however total protein was also increased significantly in 200 ppm group as compared to control group. No significant change was found in total protein and cholesterol level in flubendiamide plus curcumin treated group. ALT and AST level altered non significantly in 200 and 400 ppm flubendiamide alone treated groups whereas no significant change was found in flubendiamide plus curcumin treated group.

Lipid peroxidation (LPO) and GST level in erythrocyte was increased significantly in 400 ppm group and increased non significantly in 200 ppm group whereas no significant change was found in flubendiamide plus curcumin treated group. The level of SOD, CAT and GPx increased non-significantly in 400 ppm group as compared to control group. Differential leucocyte count of bronchoalveolar lavage fluid (BALF), eosinophil count increased significantly in different flubendiamide alone treated groups. Neutrophil count was increased significantly at 400 ppm dose level and non significantly at 200 ppm dose level. Alveolar macrophase count was decrease significantly in 200 and 400 ppm flubendiamide alone treated group. No significant change was found in eosinophils, neutrophils and alveolar macrophase count in flubendiamide plus curcumin treated group. Preliminary study on tracheal smooth muscle responsiveness against sub-acute exposure of flubendiamide exhibited no indication of alteration in basal tone of tracheal rings. There was no indication of any alteration in potency and efficacy of acetylcholine and maximum response of 80 mM KCl solution on isolated tracheal smooth muscle against sub-acute exposure of flubendiamide.

10: Prevalence of verocytotoxic *E. coli* in milk and milk product in certain areas of Agra district

The present study was undertaken to find the prevalence of verocytotoxic *E.coli* in milk and milk products from certain areas of Agra district. During the present study a total of 350 samples comprising of 200 milk samples (150raw milk and 50 pasteurizes milk) and 150 milk product samples (30 of each paneer, curd, burfi and milk powder) were processed for detection of *E.coli*. The overall prevalence of E.coli in milk samples was found to be 26.5% (53/200). The prevalence in raw and pasteurized milk was found to be 20.67% (31/150) and 44% (22/50), respectively. The prevalence was higher in cow's milk i.e.23.63% (26/110) in comparison to buffalo milk 12.5% (5/40). In milk products, the overall prevalence of *E.coli* was found to be 18% (27/150) with highest prevalence reported in curd 33.33% (10/30) followed by paneer 26.67% (8/30), burfi 16.67% (5/30) and peda 13.33 (4/30) whereas no *E.coli* was found in milk powder. The overall prevalence of VTEC in milk samples was found to be 6.5% (13/200). The presence of VTEC in raw milk suggests that milk was apparently not produced under hygienic conditions and thus could have been subjected to faecal/environmental contamination. The prevalence of VTEC in raw milk samples was 8.0% (12/150) which was higher in cow milk 10% (11/110) in comparison to buffalo milk 2.5% (1/40). In pasteurizes milk samples only 2.0% (1/50) samples were found positive for VTEC among the milk products, one out of 30 samples each of paneer and curd (3.33%) were found positive for VTEC. No VTEC was found in other milk products like peda, burfi and milk powder. Out of 350 samples, 80 *E.coli* (53

milk, 27 milk products) isolates were screened by PCR to detect the presence of Stx1, Stx2 eae and hlyA genes. A total of 15 VTEC stains were detected from milk and milk products samples harbouring different gene combinations. These VTEC isolates were obtained from various sources (raw milk – 12, pasteurized milk-1, paneer-1, curd-1). 6 strains of VTEC (40%) from raw milk and milk products samples harboured Stx1 gene, one VTEC (6.66%) was positive for Stx2 gene, 4 strains of VTEC (26.66%) carried both Stx1 and Stx2 genes whereas 2 strains of VTEC (13.33%) were found to be positive for all four genes (Stx1, Stx2, eae and hlyA) and 2 VTEC strains (13.33%) detected one from curd and another from pasteurized milk samples carried Stx1 and hlyA genes.In present study, the overall haemolytic activity and congo red dye binding ability was found to be exhibited by 46.67% and 86.67% VTEC respectively. The antibiogram assay of verocytotoxic *E.coli* revealed that the strains were highly sensitive for Ciprofloxacin (100%) followed by Ofloxacin (93.33%), Cefotaxime (86.66%), Ceftriaxone (80.0%), Chloramphenicol (73.33%), Cefoperazone (73.33%). In the present study, highest resistance was observed against antibiotics like Co-trimoxazole (80%), followed by Levofloxacin (40.0%), ampicillin (33.33%) and amoxyclave (26.0%). The antibiotic sensitivity pattern of the isolates of verocytotoxic *E.coli* revealed that resistance to antibiotics is on increase. The multiple drug resistance is of alarming nature, development of resistant pathogenic strains of E.coli impose considerable threat to public health.

11: Quality analysis of ground water and recreational water sources in Brij region with special reference to *E. coli* O157:H7

The present study was emphasized to access the physico-chemical and microbiological quality including the prevalence of *E. coli* O157:H7 (Enteropathogen) in ground water and recreational water sources in Brij region. A total of 200 water samples comprising of 130 ground water samples from 5 blocks (Baldeo, Farah, Maant, Mathura and Raya) and 70 samples of recreational water including 32 samples from four swimming pools (primary contact recreation sources) and 38 samples from Yamuna river ghats & Ponds (secondary contact recreation sources) were analyzed. Ground water quality of Maant block were found good as all ground water samples of Maant block were sweet in taste whereas in Baldeo, Farah and Raya block most of the samples were found sweet and few were brackish in taste. In Mathura block most of the sample were sweet whereas some salty and few were brackish. All ground water samples were odourless except few samples of Mathura block contained oily odour. Physical parameter viz. pH and temp were found within the prescribed limit whereas total dissolved solids, total hardness, sulphate, nitrate were found beyond the permissible limit. Fluoride values were found beyond the permissible limit in most samples of the Mathura block. Ground water samples were almost free from microbiological contamination as only 9.23% samples contained *E. coli*. None of the ground water samples were found positive for VTEC. In swimming pools, pH and temp were found within the limit whereas the range of dissolved oxygen was 17.5-34.2 mg/l and for residual chlorine, 0.1-0.6 mg/l.

In swimming pools 100% of the samples had faecal coliforms 1MPN/100ml whereas 53.13% of samples of swimming pools had SPC content 200/ml and were found unacceptable. Percentage positivity of *E. coli* was observed in 68.75% samples. No VTEC strains could be detected in the water samples of all four swimming pools. In water samples of Yamuna river ghats and ponds overall range of pH and temp were found as 7.30-8.50 and12.40-30.0°C respectively. The range of dissolved oxygen were reported as 0.2-0.4 mg/l. The overall range of total hardness in Yamuna river ghats &

ponds were found as 116-198 mg/l. The total coliform range were recorded as 275-1800 MPN /100 ml. In Yamuna river ghats and ponds, 100% of water samples were found positive for *E. coli*. In Yamuna river ghats 43.33% samples were found positive for VTEC whereas no VTEC isolates could be detected from ponds. 43.33% samples of Yamuna river ghats (100% VTEC positive samples) contain stx1 and stx2 genes whereas 10% samples of Yamuna river ghats (23.07% VTEC positive samples) contain hlyA gene. Out of 13VTEC strains isolated from Yamuna river ghats, only 3 were found positive for O157:H7 on MUG-Sorbitol agar. In the present study 23.08% VTEC strains were found to be phenotypicaly positive for α- Haemolysin & Enterohaemolysin detection on washed sheep blood agar. Antibiogram studies of isolates (13) revealed that 62 % VTEC strains were resistant to Amoxyclav whereas 88 % isolates were sensitive to Cefotaxime/Clavulanic acid.

E. coli colonies showing lactose fermentation on MLA agar

E. coli colonies with characteristics greenish metallic sheen on EMB agar

Colonies of Verotoxic *E. coli* (O157 & Non O157) on MUG-sorbitol showing nonfluorescent and fluorescent colonies

12: Clinical studies on the maintenance of anaesthesia by constant rate infusion in bitches presented for oophorectomy

Two anaesthetic protocols were evaluated in two groups (A and B) of animals presented for conventional and laparoscopic oophorectomy. Each group was subdivided in to 2 subgroup (A_1, A_2 and B_1, B_2) each contain 5 animals. These five animals in each group were used to evaluate two different anaesthetic protocols. All

the animals of four groups were receive glycopyrrolate (0.005 mg/kg) and xylazine (0.5 mg/kg) intramuscularly as preanaesthetic medication taking the time interval of 10 minutes between glycopyrrolate and xylazine administration. After 10 minutes, of the administration of preanaesthetics, induction of anaesthesia was achieved by administering midazolam (0.2 mg/kg) and ketamine (5.0 mg/kg) i.v., till effect. After 5 minute of induction, the maintenance of anaesthesia was started with midazolam (0.4 mg/kg/hr)-ketamine (20 mg/kg/hr)-xylazine (1.0 mg/kg/hr) in animals of group A_1 and B_1 while propofol (3.6 mg/kg/hr)-ketamine (5.4 mg/kg/hr) was used in the animals of groups A_2 and B_2 as constant rate infusion (CRI) with definitive rate using an infusion pump. The effects of these anaesthetic combinations were evaluated on the basis of alteration in clinicophysiological, haemodynamic, haematological and biochemical parameters. These parameters were recorded at base line, maximum depth of sedation, 5 min after induction, middle of maintenance and at complete recovery of drug administration. Xylazine produced mild to moderate sedation in animals of all groups. Degree of analgesia and muscle relaxation was mild to moderate at maximum depth of sedation, moderate to excellent at 5 min after induction and excellent at middle of maintenance. Palpabral reflex and pedal reflex was weak to very light at maximum depth of sedation, very light to abolished at 5 min after induction and abolished at middle of maintenance. Response to intubation was varied from allowed deeper entry but coughed to easy intubation without coughing in animals of all groups. Sternal recombency time (SRT) and Complete recovery time (CRT) were significant higher in animals of A_1 and B_1. Haemodynamic (ECG, SpO_2 and MAP), haematological and biochemical parameters in animals of all groups altered within physiological limit and nearly normalised at complete recovery, indicating non significant alteration in body systems. Total cost of anaesthsia (Rs/kg b. wt.) in A_1, B_1 groups was significantly ($P<0.05$) higher than A_2, B_2 groups.

13: Evaluation of propofol as constant rate infusion for maintenance of anaesthesia in horses premedicated with xylazine, acepromazine, butorphanol and diazepam in different combinations

The study was conducted on three clinically healthy experimental female horses as well as on clinical cases. All horses were utilized in a latin square design using four different anaesthesic combinations in four different groups viz. A, B, C and D. Horses were premedicated with administration of acepromazine (0.02mg/kg) + xylazine (0.5mg/kg) mixed in same syringe intravenously in A group, xylazine (0.5mg/kg) immediately followed by diazepam (0.1mg/kg) intravenously in B group, acepromazine (0.02mg/kg) + butorphanol (0.02mg/kg) + xylazine (0.5 mg/kg) mixed in same syringe intravenously in C group and with butorphanol(0.02mg/kg) + xylazine (0.5 mg/kg) mixed in same syringe immediately followed by diazepam(0.1mg/kg) intravenously in D group of animals. Induction of anaesthesia was achieved by i.v. administration of combination of Xylazine and Ketamine in ratio of 3:5 by weight, till effect in all four groups. Maintenance of anaesthesia was done by constant rate infusion (CRI) of propofol (1%) for 30 minutes. The anaesthetic groups were compared on the basis of anaesthetic, physiological, haematological and biochemical parameters.

Xylazine-diazepam combination (B group) was found better preanaesthetic in comparison to other three combinations as this produced strong sedation quality with shorter time of occurrence of maximum sedation with reduction in doses of induction and maintenance agents to a significant level. This combination was also produced less depression of cardiopulmonary system with good to excellent quality of recovery from anaesthesia. Significantly lesser doses of xylazine and ketamine for induction of

anaesthesia was observed (0.74±0.024 and 1.23±0.039 mg/kg, respectively) in B group in comparison to A, C and D groups (1.48±0.015 mg/kg and 2.46±0.025 mg/kg , 0.86±0.051 and 1.43±0.085 mg/kg, 0.75±0.059 and 1.25±0.098 mg/kg, respectively). The required infusion rates of propofol to maintain the adequate depth of anaesthesia in A, B, C and D groups were 0.159±0.014, 0.145±0.026, 0.112±0.016 and 0.073±0.007 mg/kg/min, respectively. All the drug combinations produced adequate surgical anaesthesia. Cardiopulmonary functions were well preserved during whole period of anaesthesia. Results on present study on the various anaesthetic, physiological (HR, RR, RT, MAP, SpO2, ECG), haematological (PCV, Hb, TLC, TC, DLC) and biochemical (serum glucose, creatinine, SUN, ALT, AST, chloride, sodium, potassium, cortisol) parameters did not reveal any deleterious effects on any vital function and organ in the body and these drug regimens can safely be used in routine clinical cases of surgery in field conditions without any risk.

14: Studies on laparoscopic and conventional ovariectomy for canine birth control programme

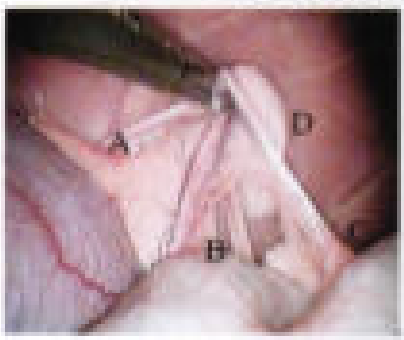
Randomized surgery was done on twelve healthy female dogs of 5–12 month age and 5–10 kg body weight presented for owners' consented elective reproductive sterilization (spaying) by ovariectomy by three different methods to include four dogs each of Group A (Laparoscopic ovariectomy using intracorporeal haemostatic technique with use of CO_2 for laparoflation), Group B (Laparoscope assisted ovariectomy using extracorporeal haemostatic techniques with use of filtered air for laparoflation) and Group C (Conventional mid-line ovariectomy) to select the most suitable technique for ABC programme.

Procedures were done under intravenous anaesthesia with a combination of glycopyrrolate-midazolam-xylazine-ketamine or glycopyrrolate-midazolam-propofol-ketamin. Pelvis down lateral recumbency position was found good in group A & B while in group C dorsal recombency position was used. In group A and B surgery was done at 12 mm Hg IAP and 2 litre/min flow rate. Two portal site (both median port 5 mm) of Group A and four port site (two median ports 5 mm, two flank incision ports 5-10 mm) in Group B were adequate to visualize, access and remove the ovaries. 5-8 cm midline incision (considering it as a single port) was adequate to visualize access and remove the ovaries in group C. The operative time ranged from 57 to 67 minutes, 44 to 56 minutes and 45 to 53 minutes in group A, B and C respectively. Mean port making time was 7.5±0.29, 10.25±0.63 and 9.5±0.65 minutes; mean left OVE time was 20±0.71, 13.25±1.03 and 11.75±0.85 minutes; mean right OVE time was 24.5±1.19, 16.25±0.48 and 15.25±0.63 minutes; mean port closure time was 10±3.03, 10±0.41 and 12.75±0.63 minutes; and mean operative time was 62±2.08, 49.75±2.46 and 49.25±1.75 minutes in group A, group B and group C respectively. Mean perioperative time which included preparation tine, operative time and up till post operative recovery time was 100.8±4.2, 108.5±14.4 and 97.5±10.1 minutes for group A, B and C respectively. Mean incision length was 1.63±0.13, 3.13±0.13 and 6.25±0.6 cm in group A, B and C respectively. Ease and intraoperative manoeuvrability was poor in group A, excellent in group B and good in group C. Intraabdominal organ visualization ease and intra abdominal clarity of vision was excellent in group A and B while in case of group C, it was poor. The ease of port site delivery of ovary after Ovariectomy was poor in group A and excellent in group B and C. Subcutaneous emphysema was not observed in group A but in one case of group B, it was observed at flank port. In one case only, the liver got penetrated with Veress needle but it was of little consequence. No instance of electrical injury or accidental burn during use of

diathermy occurred. Failure of haemostatic technique was observed in one case in group A and this had to be converted in exploratory laparotomy.

Changes in mean heart rate, respiration rate and rectal temperature in group A, B and C at different time intervals and between the groups were non significant. In group A and B the mean values of SPO2 just before first skin incision and after left OVE were significantly lower in comparison to the base line value. Comparison among different groups revealed that there was non significant difference in mean SPO2 at different intervals. The mean SAP, DAP and MAP values in group A and B did not differ significantly from the base value but in group C, there was a significant increase just after completion of surgery. IInd lead tracing ECG in all the animals did not register any conduction abnormality except in one instance likely to be due to anaesthetic agents. The changes registered in mean Haemoglobin and Packed cell volume values, TLC and differential cell count in group A, B and C showed largely non significant differences and ranged within the normal physiological limits. Post operative inflammation was of low grade in group A and B and of medium grade in group C. In group A, no change in behavioural manifestation was found and group B but mild alteration in behaviour was reported in animals of group C. On the basis of tolerance to abdominal palpation, there was no resentment in group A and mild resentment in group B and C. Mean volume of CO_2 utilized was 106±3.24 grams. Mean total cost of procedure was calculated on the basis of cost of antiseptics, anaesthetics, surgical consumables and post operative expenses. It varied with weight of animal and minimum cost of procedure (for 5 kg female dog in each group) was 306, 280, 422 rupees respectively in group A, group B and group C.

Laparoscope assisted ovariectomy in group B female dogs



Ovary lifted towards abdominal wall A-Suspensory ligament, B- ovarian pedicle, C- uterine horn D- Ovary

Ovary being taken out throughlateral flank incision with help of artery forceps

Ovarian pedicle being ligated extracorporeally

Intra abdominal view after ovary being taken out from flank incision

Alternatively, ovarian pedicle being coagulated

Ovarian pedicle after ovary being excised off.

15: Studies on detection and prevalence of rotavirus infection in lambs and kids

Rotavirus is an important cause of severe, acute, dehydrating diarrhea in neonates of caprine and ovine. Group A rotavirus (RVA) are most commonly associated with gastroenteritis. Recently, *Picobirnavirus* (PBV) has been associated with diarrhea. A total of 225 fecal samples were collected from 0-3 months old diarrheic and non-diarrheic sheep lamb (n=100) and goat kids (n=125) during July, 2013 - Feb, 2014 from unorganized and organized farms in the Mathura region. Ten percent fecal suspension was used for extraction of viral RNA by phenol: chloroform or TRI reagent. The extracted RNA was subjected to RNA-PAGE. All caprine and ovine fecal samples failed to reveal clear 11 segmented banding pattern of RV and a truncated banding pattern were observed. One sample (K23) showed presence of faint 4-6 bands that was identified in RVA specific ELISA and was further typed for RVA and PBV. Other 12 samples showing truncated banding pattern with faint one or two bands were positive in diagnostic RVA (n=9) and PBV (n=4). Detection of rotavirus by antigenic ELISA Kit was performed for RVA antigen and a prevalence of 0.8% caprine RVA was found. For ovine RVA, none of the sample was positive in ELISA. With VP6 gene based diagnostic PCR, a prevalence of 8% was obtained for caprine RVA (10.66% in diarrheic kids and 4% in non-diarrheic kids) and 5% was obtained for ovine RVA (8% in diarrheic lambs and 2 % in non-diarrheic lambs). On genotyping, VP7 gene amplicon size of 746 bp and 590 bp corresponding to G6 and G8 genotypes was obtained in one caprine sample (K23). On P typing for VP4 gene, amplicon size of 334 bp corresponding to P [11] was obtained in K23 caprine isolate. Fourteen samples remained untypeable. In the multiplex-nested PCR assay for genogrouping of PBV, three caprine samples (2.4 %) and three ovine samples (3.0 %) were positive for amplicon size of 201 bp for genogroup I (GGI). Two ovine samples (2.0 %) also showed the presence of amplicon size of 369 bp for genogroup II (GGII). Three ovine and one caprine (K23) sample showed mixed infection of RVA and PBV. K23 sample was positive for G6G8P [11] on RVA typing and GGI genogroup for PBV. One ovine sample untypeable for RVA was positive for GGI and two ovine samples untypeable for RVA were positive for GGI and GGII. The K23 sample was collected in the month of August 2013 and was from kid below 1 month of age. In the present study, the prevalence of caprine RVA and age of infection is similar to what have been reported earlier. Typing results in the present study indicate the presence of already reported G6 and G8. P [11] has not been reported earlier. G6 and G8 have not been reported earlier as mixed infection. These mixed infections most likely represent naturally occurring reassortance of rotavirus strains. In the present study, it appears that ovines are less frequently infected than caprines. The presence of a large number of samples as untypeable in the present study needs further investigation.

16: Pathological studies on the co-exposure of cadmium and chlorpyrifos in broilers with ameliorative effect of vitamin E

The present study was carried out for pathological studies on the co-exposure of cadmium and chlorpyrifos in broilers with ameliorative effect of vitamin E. For this purpose a total of 48 chicks were randomly divided into eight equal groups. The cadmium chloride was given @ 50 PPM (50 mg/lit) in drinking water in bird of groups-III, V, VII and VIII and Chlorpyrifos was given @ 4 mg/kg body weight by oral route in bird of groups-IV, VI, VII and VIII and Vitamin E was administered @ 150 mg/kg body weight by oral route in bird of groups-II, V, VI, and VIII daily for the period of 45 days. The birds of the group-I were kept as control. At the intervals of 15, 30 and 45 days post feeding various parameters of study were carried out.

Clinical signs of reduced appetite, listlessness, diarrhoea, gasping, inability to stand, difficult breathing, inco-ordination in movement, stiffness, muscle twitching, dry oral mucous membrane with mucous like substances present in the oral cavity, enlarged joints, scaly skin, reduced growth, ruffled feathers, dull, depressed and paresis of left leg were observed after 15 days post feeding in the toxicity groups. The body weight of the bird of groups-III, IV, V, VI, VII and VIII revealed significant reduction from 15 days to end of the experimentation. The weight of liver, lungs, kidneys, heart, brain, spleen and bursa of Fabricius was found to be significantly lower in bird of toxicity groups.

Hematological observations revealed significant decrease in the values of Hb, PCV and TEC. The mean values of TLC and lymphocyte significantly decreased and heterophils increased significantly in toxicity groups. The mean values of AST, ALT and ALP were significantly increased in the toxicity groups. There was significant increase in the level of glucose, urea, creatinine and decrease in total proteins, albumin, and globulins in toxicity groups. The mean values of LPO and SOD depicted significant increase while the mean values of GSH revealed significant decrease in the bird of toxicity groups. The values of various biochemical attributes were less severe at different intervals in the bird of ameliorative groups-V, VI and VIII.

Pathomorphologically, the toxicity groups showed degenerative changes, cholangio-hepatitis, coagulative necrosis and lymphoid nodules in the liver; moderate to marked congestion in the blood vessels with extravasation of erythrocytes, oedema formation in the air vesicles, degeneration and desquamation of bronchial epithelium, and presence of a mass of cartilage in the parabronchi surrounded by air vesicles of the lungs; degeneration and desquamation of lining epithelium of renal tubules and extravasation of erythrocytes, shrunken and degenerated glomeruli, focal areas of sub-acute interstitial nephritis, sub-acute glomerular nephritis, hyperplasia and degeneration of podocytes and parietal layer of epithelium in the kidneys; congestion and extravasations of large number of erythrocytes in myofibres, vacuolization, focal areas of sub-acute myocarditis with infiltration of mononuclear cells viz. lymphocytes, plasma cells and macrophages in the heart; congestion and extravasation of erythrocytes, presence of shrunken and small neurons having triangular and eccentric nucleus, neuronophagia, hyperplasia of ependymal cells and separation of molecular and granular layers in the cerebellum of the brain; degeneration and necrosis of mucosal epithelium with infiltration of mononuclear cells in the proventriculous; degeneration and necrosis of lining epithelium especially at tip of the intestine; hyperplasia of bursal epithelium, forming numerous acini like structures depletion of lymphoid tissue and presence of fragmented cellular debris in the bursa of Fabricius.

Similar pathomorphological lesions but of mild in nature were also recorded in the ameliorative groups (V, VI and VIII) suggested the protective action of vitamin E on biological tissue.

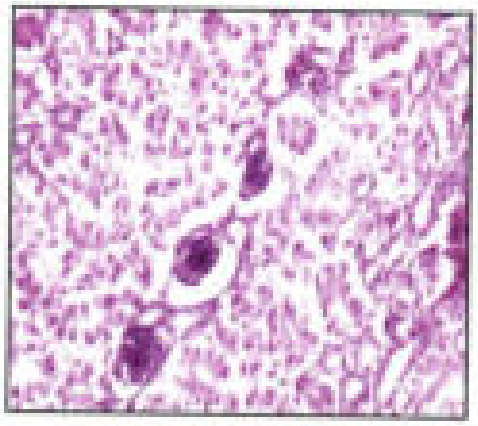


Fig.: Kidney showing shrunken glomeruli with increased periglomerular spaces in the bird of group-VII on day 45 (H&E 400X)

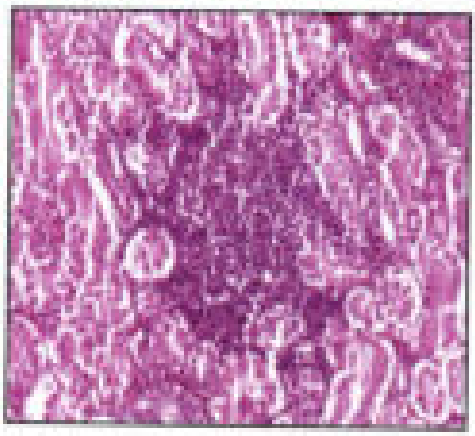


Fig.: Kidney showing focal lesion of sub-acute interstitial nephritis characterized by infiltration of lymphocytes, plasma cells and macrophages replacing the renal parenchyma in the bird of group- VII on day 45 (H&E 400X)

17: Pathological studies on the co-exposure of Cypermethrin and fluoride in experimental rats with ameliorative action of vitamin E

The present study was carried out for pathological studies on the co-exposure of Cypermethrin and fluoride in experimental rats with ameliorative action of vitamin E was investigated. For this purpose, a total of 48 rats were randomly divided into eight equal groups. The rats of group-I were kept as control. The Cypermethrin was given @ 25 mg/kg body weight (corn oil) orally in the rats of group-II, III, IV and group-VIII. The rats of group-III, V, VI and VIII were administered with Sodium fluoride @ 8 mg/kg body weight (distilled water) orally. Vitamin E was given @ 100 mg/kg body weight (corn oil) orally in the rat of group-IV, VI, VII and group-VIII. The clinical symptoms observed daily in each group and body weight and haematobiochemical were carried out at 15, 30 and 45 days of intervals. The organ weight, oxidative stress and pathomorphological studies were carried out on day 45 of experiment.

Clinical signs of reduced appetite, less water intake, decrease in body weight, dry skin, rough hair coat, dullness, depression, emaciation and decrease in growth rate were observed after 15 days post feeding in the toxicity groups (II, III & V) but of milder intensity in the rat of ameliorative groups (IV, VI & VIII). The body weight gain revealed onset of significant reduction in the body weight from 15th day in the rat of toxicity groups (II, III & V) and ameliorative groups (IV, VI & VIII). The weight of liver, lungs, kidneys, heart, brain, spleen and testes was found to be significantly lower in toxicity groups (II, III & V). Hematological observations revealed significant anemia in toxicity groups (II, III & V) and significant improvement was found in ameliorative groups (IV, VI & VIII). The mean values of TLC revealed significant decrease at all the intervals with significant increase in neutrophil and significant decrease in lymphocyte count in toxicity groups (II, III & V). The mean values of AST, ALT, ALP creatinine, urea, uric acid and glucose was significantly increased in toxicity groups (II, III & V) as compared to group-I (control) and VII at all the intervals of the experimentation. The mean values of various biochemical attributes were less severe and low frequency at different time intervals in the rat of ameliorative groups (IV, VI & VIII). The mean values of total proteins were significantly decreased in toxicity groups (II, III & V) as compared to group-I and VII at all intervals. The mean values of albumin was significantly decreased in toxicity groups (II, III & V) as compared to group-I and VII (vitamin E) at 30 and 45 days intervals of experimentation and significant improvement in the mean values of total proteins and

albumin in the rat of ameliorative groups (IV, VI & VIII) at all intervals. The mean values of SOD, GSH and catalase significantly decrease and LPO significantly increased in liver and kidney homogenate in toxicity groups (II, III & V).

The rat of toxicity groups (II, III & V) grossly revealed pale with occasional presence of pinpoint haemorrhages and mottling on the dorsal surface of liver; congested and edematous lungs; mild congestion in kidneys, heart and testes. Microscopically, congested and distended sinusoids with hyperplasia of kupffer cells, sub acute hepatitis characterized by area of necrosis of hepatocytes along with infiltration of mononuclear cells and degenerative changes ranging from cellular swelling to vacuolization in liver; mild congestion of alveolar capillaries with or without oedema formation in the alveolar spaces, formation of lymphoid nodules in the peribronchiolar regions, lesion of steatites characterized by infiltration of mononuclear cells in the interstitium of adipose tissue in lungs; mild to moderate congestion in glomeruli and intertubular blood vessels with degenerative changes in tubules, vacuolization in the lining epithelium of tubules and sub acute interstitial nephritis in kidneys; degenerative changes, vacuolization and separation of cardiac myofibres and extravasation of erythrocytes in heart; mild to moderate congestion in choroid plexus of ventricles with or wihout extravasation of a few erythrocytes, perineural and perivascular edema, neuronophagia, spongiosis and separation of molecular and granular layers with depletion of purkinje cells in brain; mild depletion of lymphoid tissue in the malpighian corpuscles of white pulps with accumulation of large number of erythrocyte in the red pulp in spleen; hyperplasia of goblet cells, diffuse degeneration and necrosis of villous epithelium in intestine; accumulation of pink watery fluid in the interstial spaces with depletion of spermatogonial layers in the seminiferous tubules in testes of toxicity groups (II, III & V) were observed.The lungs of the rat of group-III also revealed the lesions of pneumocyto-carcinoma featured by presence of large, flat, pleomorphic squamous type of cells filling the alveolar lumen having hyperchromatic nuclei. Similar but mild morbid lesions except pneumocyto-carcinoma was also recorded in the rat of ameliorative groups (IV, VI & VIII) treated with vitamin E @ 100 mg/kg body weight orally as compared to the rat of toxicity groups (II, III & V).

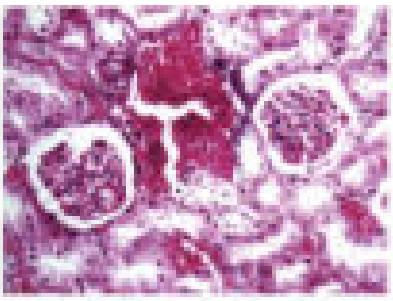


Fig.: Kidney showing congestion in glomeruli and intertubular blood vessel with degenerative changes in the lining epithelium of tubules in the rat of grou p-III (H&E 400X)

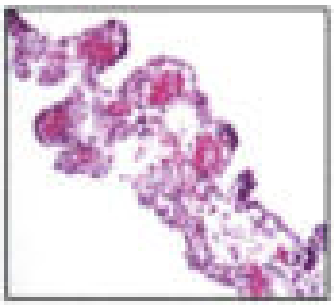


Fig.: Brain showing congestion in choroid plexus of ventricles in the rat of group-III (H&E 400X)

18: Gross, histological and certain histochemical studies on the uterus in different stage of pregnancy in goat *(Capra hircus)*

The present study was conducted on the 18 healthy and normal goat uteri of non-descript breed *(Capra hircus)* varying from day old to 150 days of gestation. The uteri were assigned in to three groups according to their gestational age; Group I (0-50

days), II (51 -100 days) and III (101-till term). After recording gross morphological feature and measurements, the tissue were fixed in one of the fixative for studying the histological and histochemical studies. Histological and Histochemical study of cotyledon was not noticed in early pregnancy period due to very loose attachments between caruncle and cotyledon.

The length, diameter and thickness of gravid horn, non gravid horn, body and cervix were significantly increased with the advancement of pregnancy. Weight of uterus was also significantly increased as pregnancy progressed. The thickness of endometrium, myometrium, perimetrium and total thickness of uterine wall in gravid horn was significantly increases with advancement of pregnancy.

During early pregnancy the surface epithelium was denuded from most of the area of endometrium. During mid pregnancy surface epithelium was reappearing in discontinuous manner. During late pregnancy the surface epithelium reappeared in most of the areas. It was simple columnar to pseudostratified.

During early pregnancy uterine glands was appeared simple tubular with occasional branching towards their base. The epithelium of different part of uterine glands varies from simple columnar to pseudostratified ciliated but mostly simple columnar and some places simple cuboidal epithelium are also present during different stage of pregnancy. During late pregnancy the epithelium of neck, middle and basal segment of uterine glands were simple columnar. The epithelial height of the uterine gland in gravid and non-gravid horn range increases significantly with advancement of pregnancy. The size of sinus was increases as pregnancy progressed and during late stage of pregnancy sinuses of endometrial glands were merged to form large size sinuses. Between the endometrial glands the collagen and reticular fibers decreased and elastic fibers increased as pregnancy progressed. Every segment of uterus the outer and inner lumen diameter and epithelial height of neck, middle and basal segments was significantly increased as pregnancy progressed.

The diameter of the individual muscle cells in myometrium were increased several times as pregnancy advanced. Particularly the thickness of tunica muscularis layer increases due to hypertrophy and hyperplasia. The thickness of perimetrium not varied as pregnancy progressed.

Surface epithelium eroded from maximum place during early stage of pregnancy. During mid stage of pregnancy was observed that the epithelium was simple columnar, pseudostratified columnar and stratified columnar type. But mostly pseudostratified columnar and stratified columnar type was present. During late stage of pregnancy was observed that the surface epithelium was simple columnar to pseudostratified columnar but mostly simple columnar type. Stratified columnar epithelium observed very few place

The lamina propria was consisted of densely arranged collagenous fibers and also contains with few reticular and elastic fiber. As pregnancy progressed the number of collagen and reticular fibers were increased and elastic fibers were decreased. The fibro-muscular layer of the cervix consisted of circularly arranged smooth muscle. It's comprised of fine collagenous bundles and the elastic fibers were rarely present. The muscular core highly developed in the primary fold towards the external os.

The numbers of placentomes range from 92 to 153 which were significantly increased from early to mid pregnancy and subsequently significantly decrease during late pregnancy. Placentome appeared oval shape with convex surface during early

pregnancy and these became concave with a thick margin during mid pregnancy. In the late pregnancy the placentome were disc like with a shallow depression and relatively thinner margin. The length, width and thickness of the placentome were significantly increases with the advancement of pregnancy.

Crypt formation first appeared at 23 days of pregnancy. Microscopically, cotyledon was first appeared at 43 days of pregnancy. The attachment between two components of placentome very much loosens in early pregnancy, firm attachment during mid pregnancy and again gradually became looser during late pregnancy for impending parturition.

The caruncular epithelium appeared extensively denuded. The caruncular stroma comprised of superficial and deeper connective tissue zone, with the development of cryptal zone there was reduction of the superficial and deeper connective tissue zone. With the development of cryptal zone there was a reduction of superficial and deeper connective tissue zone.

Cryptal epithelium occurred in small patches during mid pregnancy while it was present in larger area during late pregnancy. The cryptal epithelium comprised of simple squamous to cuboidal and rarely columnar cells with numerous giant cells. The latter increased in the subsequent stages.

Symplasmic bodies increased with the advancement of mid pregnancy and were gradually reduced in the late pregnancy. The symplasmic body would be representing the worn out tissue of the intercrypt columns during the process of their remodeling. These would also be a source of histotroph during the maximal nutritional requirement of the conceptus.

The villi consistently branched with the progressed of gestation. The trophoblast lining the villi appeared cytotrophoblastic to syntrophoblastic in nature. The letter was relatively more evident with the advancement of pregnancy

The villus epithelium comprised of cuboidal to columnar cells with the abundant giant cells. Binucleate giant cells predominated during mid pregnancy while during late pregnancy multinucleate giant cell increased in number. Giant cells particularly binucleate types were actively phagocytic.

Arcade epithelium in the region of extensive erythrophagocytosis was frequently detached, degenerated and was probably phagocytosed by the adjoining cells. On this basis it appeared that arcade epithelium was concerned mainly with the histotrophic nutrition while villus epithelium provided haemotrophic nutrition to the foetus.

Accumulation of increasing amount of hematoma during mid pregnancy was considered to act as a source of histotrophic nutrition and late gestation assisted in the process of separation. Further histochemical reaction revealed that this mass provided a rich source of nutrition, particularly iron in to the foetus. The placentome in goat appeared syndesmochorial to epitheliochorial in most areas.

The cytoplasm of surface epithelium of endometrium and endometrial glands showed mild to intense reaction during different stage of pregnancy with Periodic acid Schiff's reaction. The cytoplasm of surface epithelium, stratum compactum of endometrial layers showed very mild activity in early and late pregnancy where as during mid pregnancy showed moderate activity towards acid mucopolysaccharides. The cytoplasm of epithelial cells of endometrium and endometrial glands showed mild to intense activity towards alkaline phosphatase during different pregnancy. Surface

epithelium of endometrium layers endometrial glands were mild activity during different stages of pregnancy towards lipid and acid phosphatase activity.

The cytoplasm of epithelial cells of in endometrial glands were showed mild to intense reaction during different stage of pregnancy towards Sudan black B and nuclei of different segments of endometrial glands varied between mild to intense Feulgen reaction.

The syncytial mass of inter crypt columns was mild PAS positive while cytoplasm of binucleate giant cells were strongly PAS positive. Reaction of PAS positive substances, acid mucopolysaccharides and alkaline phosphatase in the arcade zone epithelium varied from negative to moderate. Cytoplasm of cuboidal to columnar cells of villus epithelium exhibited trace to mild reaction for PAS positive material. It occurred mild to moderate amounts in uninucleate and multinucleate cells while the binucleate giant cells revealed moderate to intense concentration.

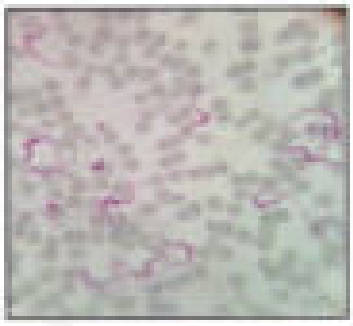
There was intense reaction for alkaline phosphatase in the caruncular area during early pregnancy while it was mild to moderate during mid and late pregnancy. Binucleate giant cells showed greater concentration of this enzyme other than other cells. Increased alkaline phosphatase activity in the caruncular area during early pregnancy. A faint reaction with acid phosphatase activity was notice in the villous epithelium while cytoplasm of binucleate giant cells exhibited larger amounts.

19: Epidemiological, Hemato-biochemical and Clinico-Therapeutic studies on Bovine Trypanposomiasis

Trypanosomiasis, an arthropod born blood protozoan disease commonly known as Surra is caused by *Trypanosoma evansi* and transmitted mainly by *Tabanus* spp. The present study was conducted to investigate the various diagnostic techniques (viz. giemsa stained thin blood smear, buffy coat method and TE-LAT) used in the diagnosis of trypanosomiasis in buffaloes, clinical epidemiology of trypanosomiasis in buffaloes and comparative efficacy of various anti-trypanosomal drugs (viz. isometamidium chloride hydrochloride, diminazene aceturate and quinapyramine sulphate).

The order of decreasing diagnostic efficacy during present investigation was found as: TE-LAT (52.02%) > Buffy Coat method (45.62%) > Giemsa stained thin blood smear (38.20%). The maximum prevalence was recorded during the month of September followed by the month of October and the least prevalence was recorded in the month of June. It has been found that prevalence of trypanosomiasis in buffaloes does not vary with the sex, breed and pregnancy status. However, higher prevalence was observed with the increase in the age and parity of the animals. Predominant clinical signs observed in trypanosomiasis with highest frequency were anorexia, fever, depression, reduced milk yield, congested mucous membrane, nasal discharge, emaciation, respiratory distress, pallor mucous membrane, anaemia and edema of dependent parts, with moderate degree of frequencies were superficial lymph node swelling, salivation, ocular discharge, ileus, head pressing and with lowest frequencies were frequent urination, excitement, circling, abortion, abdominal pain, muscular twitching, diarrhoea, bloat, corneal opacity, localized paralysis, generalized paralysis and exophthalmia. There was a reduction in Hb, PCV, TEC and lymphocyte count and increase in TLC and neutrophil counts in all the positive cases before treatment, however, no significant variation in basophils, monocyte and eosinophils percentage were recorded. In biochemical study the values of serum globulin, creatinine, BUN, ALT, AST and ALP in all the positive cases were found significantly higher while blood

glucose and serum albumin values were found lower, however, no alteration in total protein was recorded before treatment. In terms of improvement in hematological and biochemical values after treatment of positive cases, best recovery was assessed in treatment with isometamedium followed by diaminazine and quinopyramine. On the basis of clinical improvement in terms of disappearance of clinical signs & parasitological examination, isometamidium chloride hydrochloride was found as most effective anti-trypanosomal drug followed by diminazine aceturate and quinapyramine sulphate was found to be least effective.



b. M.Sc. BIOTECHNOLOGY

1: Studies on oxidative stress and its role in mastitis with special reference to *Staphylococcus aureus*

Mastitis is considered as one of the most common diseases in dairy cows, causing significant economic losses to the dairy industry. Oxidative stress is believed to be a primary factor in various cattle diseases including mastitis, but scanty literature is available on its role in mastitis. *Staphylococcus aureus* is the most common bacterial pathogen causing acute as well as chronic mastitis in both cattle and buffaloes. The present study was carried out to estimate the level of oxidative stress in clinical and subclinical mastitis cases in dairy animals (cattle and buffalo); to compare the level of oxidative stress with apparently healthy mastitis free lactating animals; to detect the prevalence of *Staphylococcus aureus* infection in mastitis cases; and to assess the bacterial antibiotic susceptibility pattern of *Staphylococcus aureus*. Milk and blood samples were collected from 10 normal cows and 20 cows each with clinical and subclinical mastitis from dairy cows in Mathura, India. This study examined urea, activities of lactate dehydrogenase (LDH), alkaline phosphatase (ALP), lipid peroxidase (LPO) and glutathione peroxidase (GPx) in the serum samples, and activities of lipid peroxidase (LPO) and glutathione peroxidase (GPx) in milk of lactating dairy cows with clinical and subclinical mastitis. Milk samples were also processed for isolation and identification of *S. aureus* using biochemical tests. All the confirmed *S. aureus* isolated under study were examined for their antibiotic resistance pattern by disc diffusion method using 38 antibiotic discs. *Staphylococcus aureus* were isolated from only 27 samples showing the overall incidence of *Staphylococcus aureus* in clinical as well as sub clinical mastitis as 33.75%. The incidence of *Staphylococcus aureus* was higher (50.00%) in clinical mastitis in comparison to that of subclinical mastitis (17.50%). The results revealed that the incidences of *Staphylococcus aureus* in clinical as well as sub-clinical mastitis were higher in cattle in comparison to buffaloes. Drug sensitivity revealed 100% resistance against penicillin followed by vancomycin (88.89%), nalidixic acid (77.78%), cefixime, methicillin, novobiocin (66.67% each), amoxyclav, colistin, pipemidic acid (55.56% each), ofloxacin, streptomycin, sulphamethizole (44.44% each), ampicillin/sulbactum, cefalexin, cefazolin, cefaperazone, enrofloxacin, floxidin, meropenem (33.33% each), cefuroxim,

ciprofloxacin, clindamycin, gentamicin, levofloxacin, norfloxacin, tetracycline (22.22% each). Eighteen isolates were found to be methicillin-resistant, while the remaining (09) were methicillin-susceptible. Similarly, twenty four *S. aureus* isolates were intermediate to vancomycin, while 03 were vancomycin susceptible. None of the isolate was resistant to vancomycin. The occurrence of lipid peroxidation as revealed by elevated blood and milk lipid peroxidase levels, in present study, indicated the involvement of oxidative stress and the possible oxidative damage in clinical and subclinical mastitis in dairy cows. From the present study, it may be concluded that supplementation of antioxidants such as vitamins and minerals may enhance the resistance against subclinical and clinical mastitis in the dairy cows. The higher prevalence of methicillin resistant bacteria clearly indicate increase in drug resistance. Thus, the findings of the study are useful for formulating specific control programs for bovine mastitis caused by *S. aureus* in this region.

2: Analysis of polymorphic and expression pattern of heat shock gene and heat shock transcription factor-1 in goat

The present study was designed to investigate the polymorphic pattern of HSP70 gene in Jamunapari goats and HSF-1 gene in Jamunapari and Barbari goats. Expression pattern of HSP70 gene was analyzed in different tissues viz. spleen, heart, kidney and brain during heat stress. Blood samples from 30 Jamunapari goats were collected in 10 ml vacutainer tubes using EDTA and DNA was isolated to analyze the polymorphic pattern using HRM. RNA was extracted from the tissues of organs viz. spleen, heart, kidney and brain of Jamunapari goats and the expression pattern of HSP70 gene was analyzed by Real Time qPCR. Blood samples from Barbari and Jamunapari goats was used to isolate DNA and to analyze the polymorphic pattern of HSF-1 gene by PCR. The results of the HRM analyses showed 5 different genotypes of HSP70 gene among the analyzed samples. Relative quantification by RT-PCR indicated that the Hsp70 gene expression was almost similar in brain and heart. Its expression was about 6 folds higher in kidney as compared to that in heart and brain. Hsp70 expression was found highest in spleen which was about 20 folds greater than that in heart and brain and about 3 folds higher than that in kidney. Genotyping of different goat breed was carried out to analyze polymorphism in HSF-1 gene by PCR. The size of amplified product of HSF-1 gene was observed as 220 bp. Sequencing of the product was carried out and no difference was observed in all the analyzed samples in present study.

3: Polymorphic studies of DGAT1 and ABCG2 gene in Sahiwal and Hariana cattle

Acyl-CoA diacylglycerolacyltranaferases 1(DGAT1) and ATP binding cassette sub family G member 2(ABCG2) are two strong candidate genes for milk production traits. Diacylglycerolacyltranaferase (DGAT) plays a central role in formation of lipid in different tissues of biological body and metabolism of cellular glycerolipids. DGAT catalyzes the final step in triacylglycerol (TAG) biosynthesis by converting diacylglycerol (DAG) and fatty acyl-coenzyme A (CoA) into triacylglycero1. A quantitative trait loci (QTLs) for milk production traits were mapped to the centromeric region of the bovine chromosome 14 (BTA14). ATP-binding cassette transporter ABCG2 is a member of the ABC transporter superfamily that actively extrudes xenotoxins from cells and is a major determinant of the bioavailability of many compounds. ABCG2 QTL for milk production trait on BTA 6 was found by many workers in various populations of *Botaurus*. There is strong evidence that a polymorphism of the ATP-binding cassette

superfamily G member 2 transporter (ABCG2) gene located on BTA 6 is associated with effects on milk yield and composition in the Holstein cattle. The genomic DNA was isolated from 50 blood samples of Sahiwal and Hariana cattle brred and the purity of DNA was checked spectrophotometrically and by agarose gel electrophoresis. A 491 & 292 bp amplified PCR product was obtained by using optimum primers and RFLP was performed by *EaeI and PstI* restriction endonucleases. The EaeI/PCR-RFLP assay showed the monomorphic nature of DGAT1 gene due to the presence of only KK genotype in screened population. The genotypic frequency of KK genotype was found to be 1 and the allelic frequencies of K allele was also observed to be 1. By the present study it can be concluded that the Sahiwal &Hariana cattle had only wild type genotype for DGAT1 gene. The PstI/PCR-RFLP assay showed the monomorphic nature of ABCG2 gene due to the presence of only AA genotype in screened population. The genotypic frequency of AA genotype was found to be 1 and the allelic frequencies of "A" allele was also observed to be 1. By the present study it can be concluded that the Sahiwal and Hariana cattle had only wild type genotype for ABCG2 gene.

V. EXTENSION

A. DIRECTORATE OF EXTENSION

Directorate of Extension with the assistance of College of Veterinary Science and Animal Husbandry and KVK, Mathura co ordinated the different extension activities undertaken by the university during the year under report.

1. Kisan Mela (Pashudhan Krishi Vijay-2015)

Directorate of Extension alongwith El 10 Media successfully organized three days Kisan Mela 'Pashudhan Krishi Vijay, 2015' on 19-21st of February, 2015 at University Campus where more than 1300 farmers from Uttar Pradesh, Rajasthan and Madhya Pradesh participated. Kisan Mela was inaugurated by Dr. M. C. Varshney, Vice-Chancellor, Kamdhenu Vishwavidyalaya, Gandhi Nagar, Gujarat, the Chief Guest of the occasion, in the gracious presence of Prof. S. K. Garg, Former Vice-Chancellor, DUVASU and Prof. A. C. Varshney, Hon'ble Vice Chancellor, DUVASU. In Kisan Mela, special goshthi sessions for the benefit of dairy farmers, sheep and goat farmers and poultry entrepreneurs were also organized apart from regular sale and distribution of seeds. Line departments of Government, non-govt. organizations, and other companies including trans-national companies working in the field of genetic improvement of livestock, nutritional supplementation, equipment manufacturers and suppliers provided a unique blend of opportunity for interaction between farmers and other stakeholders by exhibiting their products through stalls.

2. Mustard Demonstration Mela

Directorate of Extension alongwith Directorate of Rapeseed-Mustard Research, Bharatpur successfully organized one day "Sarsoon Beej Pradarshan Mela" on 03rd March 2015 at Madhurikund, Mathura where more than 1200 farmers from U.P. and Rajasthan participated. The Kisan Mela was inaugurated by Dr. J. S. Sandhu, DDG (Crop Science), the Chief Guest of the occasion in the gracious presence of Prof. A.C. Varshney, Hon'ble Vice Chancellor and other officers of the University.

3. Trainings and Workshops Organized

a. i. On Campus

S. No.	Title of Training	Duration	No. of Farmers	Beneficiaries	Funding Agency
1.	Implementation of certain modules of Animal husbandry activities through KVK of Uttar Pradesh & Uttarakhand	20th Sept., 2014	36	SMS of Animal Science of KVK's of UP & Uttarakhand	DUVASU, Mathura
2.	Pashupalan Prashikshan	9-11 Oct., 2014	14	Farmers from Nawada, Bihar.	ATMA, Nawada (Bihar)
3.	Unnat Dairy Palan Prashikshan	02-06 Dec., 2014	36	Selected farmers of Kamdhenu/ Mini-Kamdhenu Scheme	UP Animal Husbandry Dept.
		09-13 Feb, 2015	27		
		23-27 Feb, 2015	25		

a. ii. Under Pashu Gyan Chaupal

S. No.	Date of Training	No. of beneficiaries	Activity
4.	01.03.15	12	Lectures on ideal characteristics of dairy animals and different breeds of cattle & buffaloes with the help of multimedia projector.
5.	29.03.15	10	Distribution of mineral mixtures,

	dewormers and literature related to animal health and production (package pf practices).

b. *Off campus*

S. No.	Name of the Village	Date of Training	No. of Farmers	Activity
1.	Churmura, Shehzadpur and Gadhi	28.02.15	30	1. Lectures on animal health and management, treatment about various disease causing organism & parasites to improve animal productive & reproductive performance. 2. Distribution of mineral mixtures and dewormers and packages of literature of practices.
2.	Ading and Kanchanpur	27.03.15	24	

4. Training Manuals developed

- Compendium of Module on "Implementation of certain modules of Animal husbandry activities through KVK of Uttar Pradesh & Uttarakhand" DUVASU Publication No-118, Dr. Sarvajeet Yadav, Dr. Arun K. Madan and Dr. D. N. Singh
- Pashupalan Prashikshan Pustika, DUVASU Publication No. 119, Dr.Sarvajeet Yadav and Dr. Deep Narayan Singh
- Unnat Dairy Palan Pustika-I, DUVASU Publication No. 120, Dr. Deep Narayan Singh and Dr. Sarvajeet Yadav
- Unnat Dairy Palan Pustika-II DUVASU Publication No. 123, Dr. Rajneesh Sirohi, Dr. Satyendra Pal Singh and Dr. Sarvajeet Yadav
- Unnat Dairy Palan Pustika-III DUVASU Publication No. 124, Dr. Sarvajeet Yadav, Dr. Rajneesh Sirohi and Dr. Satyendra Pal Singh

5. Externally funded extension project sanctioned during the year

Title of the project	PI or Co PI	Funding agency	Budget (Lacs)
Imparting scientific knowledge of animal rearing for better production through technology transfer to livestock owner	Dr. Sarvajeet Yadav Dr. D. N. Singh	UPCAR	14.812

6. Visits of Farmers/Officials

S.No.	Date of Visit	Number & Address of Farmer/ Officials	Sponsoring Agency	Activity
1.	13.06.2014	30 Farmers of Koria and Surajpur district of Chhatisgarh state	Animal Husbandry Department	Dairy farm & PGC visit and distribution of literature
2.	28.07.2014	02 Veterinary Officers from Dist. Etawah under RP scheme	Animal Husbandry Department	
3.	21.08.2014	20 Farmers from Koria district of Chhatisgarh state under leadership of Shri Rajendra Gupta	Department of Agriculture (Gramin Prasar Vibhag)	
4.	30.10.2014	Dr. P. K. Tripathi (J.D. D.C), Dr. A. K. Srivastava (DD HQ) & Dr. Manav (DD Animal Development)	Animal Husbandry Department	Information regarding training facilities and other training materials and also provided 01 set of literature.
5.	06.01.2015	Shri Moti Singh, Progressive farmers of Maa Radha Rani, Shri Bahula Gai Gaushala, Bati, Dist-Mathura	-	Information & literature regarding management of cows under Kamdhenu Yojana.
6.	20.02.2015	13 farmers from Saharanpur district	During Kisan Mela	Dairy farm & PGC visit and distribution of literature.

7.	23.02.2015	31 Farmers from Ganna Kisan Sansthan Prashichhan Kendra, Varanasi (UP)	Ganna Vibhag, UP	Information & literature regarding Animal Husbandry activity and dairy & PGC Visit
8.	24.02.2015	50 Farmers from Ganna Kisan Sansthan Prashichhan Kendra, Shahjahanpur (UP)		
9.	17.03.2015	40 Farmers from Ganna Kisan Sansthan Prashichhan Kendra, Muzzafarnagar (UP)		
10.	19.03.2015	70 Farmers from Ganna Kisan Sansthan Prashichhan Kendra, Shahjahanpur		
11.	28.03.2015	14 Farmers from dist. Shyopur (MP)	ATMA Kisan Kalyan Evam Krishi Vikas	

7. Consultation Services Regarding Animal Husbandry Practices

1.	12.09.2014	Farmers from Rasulpur, Jajampatti, Dist- Mathura
2.	16.09.2014	Farmers from Baldi-ghadi, Block-Raya Dist- Mathura
3.	02.10.2014	Farmers from Jabera Block, Dist.-Damoh (MP) under the leadership of Shri Atul Soni under ATMA programme
4.	13.10.2014	Farmers from Krishnapuri, Mathura

8. Extension Literature Developed

- दीप नारायण सिंह, चतुर्वेन्द्र सिंह, रजनीश सिरोही, ममता एवं अजय (2014)। पशु आहार के मुख्य घटक एवं उनका महत्व। पशुपालन प्रशिक्षण पुस्तिका। दुवासु पब्लिकेशन नं0 119, पेज नं0 14-16।
- दीप नारायण सिंह, चतुर्वेन्द्र सिंह, रजनीश सिरोही, ममता एवं अजय (2014)। दुधारू पशुओं के प्रमुख लक्षण। उन्नत डेयरी पालन प्रशिक्षण पुस्तिका, दुवासु पब्लि0 नं0 120, पेज नं0 1-2।
- चतुर्वेन्द्र सिंह, अजय कुमार, ममता, रजनीश सिरोही एवं दीप नारायण सिंह (2015)। स्वच्छदुग्ध उत्पादन के उद्देश्य एवं उनका महत्व। उन्नत डेयरी पालन प्रशिक्षण पुस्तिका। दुवासु पब्लिकेशन नं0 123।
- Leaflet: 04 (Financial Assistance by UPCAR under project)
- ब्याने से पूर्व एवं ब्याने के बाद गाभा पशु की देखभाल दुवासु पब्लिकेशन नं0 125। डा0 दीपनारायण सिंह, डा0 जयसिंह एवं डा0 सर्वजीत यादव।
- नवजात बछड़ों में खीस का महत्व, दुवासु पब्लिकेशन नं0 126। डा0 दीपनारायण सिंह एवं डा0 जयसिंह।

- दुधारू पशुओं में टीकाकरण का महत्व, दुवासू पब्लिकेशन नं0 127। डा0 जयसिंह, डा0 दीपनारायण सिंह, डा0 कवि तिवारी।
- थनैला रोग की पहचान एवं उपचार, दुवासू पब्लिकेशन नं0 128। डा0 दीपनारायण सिंह, डा0 शंकर सिंह एवं डा0 जयसिंह।
- खुरपका एवं मुँहपका रोग: लक्षण, उपचार, व्यापत भ्रान्तियां एवं समाधान। डा0 अजय प्रताप सिंह, डा0 रहिम सिंह, डा0 उत्तम सिंह, डा0 योगेश कुमार एवं डा0 शरद कुमार यादव।
- खुरपका एवं मुँहपका रोग: बीमारी फैलने पर पशुपालकों/पशु चिकित्सकों के लिए अनुदेश। डा0 रहिम सिंह, डा0 अजय प्रताप सिंह, जितेन्द्र कुमार, डा0 उत्तम सिंह, तृप्ति सिंह, पूनम यादव एवं डा0 शरद कुमार यादव।

9. Extension Lecture Delivered During Conference

D.N. Singh, Jai Singh & Sarvajeet Yadav (2015). Constraints perceived in adoption of scientific technology by the livestock owners in western Uttar Pradesh. Fourth international conference on management of sustainable livelihood systems global social science conference – 2015, February 14-17, 2015 at OUAT, Bhubaneshwar (Orissa).

B. KRISHI VIGYAN KENDRA, DUVASU, MATHURA

1. Trainings

185 On-Campus and 188 Off-Campus trainings were organized in which more than 3600 and 4300 Farmers/Farm Women respectively were imparted trainings.

a. On-Campus

Type of Training	No. of Courses	M	F	T
Farm & Farm women	135	2197	487	2684
Rural Youth	32	347	153	500
Extension Functionaries	13	333	32	365
Vocational	5	81	-	81
Total	**185**	**2958**	**672**	**3630**

b. Off-Campus

Type of training	No. of Courses	M	F	T
Farm & Farm women	142	2008	649	2657
Rural Youth	18	203	78	281
Extension Functionaries	10	174	44	218
Sponsored	12	859	257	1114
Vocational	6	99	-	99
Total	**188**	**3343**	**1028**	**4369**

2. Frontline Demonstrations

i. Kharif Season:

To show the yield potential and other characters of latest varieties, 71 demonstrations on various crops and vegetables covering an area of 58.75 acres were conducted in different adopted villages. The details of the demonstrations are:

S. No.	Name of the crop	Variety	Area (acre)	No. of demonstrations
1	a. Paddy	Pusa Sugandhi-2	18.75	20
	b. Paddy (Micronutrient)	Pusa Sugandhi-4	10	10
2	Bajra	Dhanya hybrid MP2967	12.5	16
3	Til	Tarun	12.5	20
4	Brinjal	Pus Navkiran	5.0	5
	Total		**58.75**	**71**

ii. Rabi Season:

173 demonstrations, each on cereals, oilseeds, floriculture and fodder crops covering an area of 147 acres in Rabi were conducted in different adopted villages to showcase the yield potential and other characters of latest varieties. Similarly, demonstrations under Animal Science were undertaken:

S. No.	Name of the crop	Variety	Area (acre)	No. of demonstrations
1	Barley	NB-2	12.5	16
2	Wheat	HD-2967	12.5	12
3	Mustard	RH-749	100	93
4	Marigold	Pusa Narangi	5	5
5	Berseem	Vardan	7	37
6	Wheat (Micronutrient)	HD-2733	10	10
7	Mineral Mixture	-	-	17
8	De-worming	-	-	34
	Total		**147**	**224**

3. On Farm Testing

To identify location specificity solutions, problem based OFT's at different locations to showcase the importance of weed management, new varieties, integrated nutrient management, pest management, storage of food grain and mineral mixture were conducted.

Two OFT's on weed management in paddy and wheat, one OFT each on productivity enhancement (varietal evaluation of new paddy varieties), nutrient management in mustard, micro nutrient management in paddy and cauliflower, pest management in chilli, food grain storage and feeding of mineral mixture were conducted during this year by the scientists in various locations of the adopted villages.

4. Other Extension Activities

Gosthies: Scientists of KVK participated in Regional, District and Block level gosthies organized by various line departments like Agriculture, Horticulture, NGOs, and Banks etc.

Diagnostic Visit: During the reporting period, 30 diagnostic visits to different villages to inspect the ailing crops of farmers were undertaken and the reports with remedies were submitted.

Radio/TV talk: Scientists have delivered their talks on All India Radio and got the recording for ETV on various need based topics for the benefit of farmers.

Farmers Visit to KVK: Farmers from different states of the country visited KVK under exposure visits cum trainings. The farmers were imparted training and exposed to various facilities and activities.

Kisan Samman Diwas: Kisan Samman Diwas was organized on 23 Dec., 2014 to celebrate the birth anniversary of Ch. Charan Singh at Mathura Block HQ in which scientists from the different departments of the University participated and exhibited their stalls.

Publication: A monthly news letter "What to do this month" was published by KVK for the benefit of farmers.

Soil Testing Laboratory: Soil Testing Laboratory of KVK analyzed 951 soil samples of 462 farmers from 61 villages and furnished recommendations for optimal use of fertilizers.

5. Live Demonstration Units

Napier & guinea grasses: Napier grass and Guinea grass were raised on 2.5 acres of land under the demonstration unit at ILFC to meet out & promote the fodder requirement. The root stocks of these grasses were also sold to farmers.

Vermi-compost: To improve the soil health, a demonstration unit of Vermi-composting at ILFC was established where around 10 Q of vermi-compost was produced. The produce was sold to the farmers and also used for University

NADEP compost: To showcase the technology of making compost with roughages and other biodegradable material using very less dung was also put for demonstration at KVK.

Crop Cafeteria: To showcase the potential of various high yielding varieties, a crop cafeteria on crops, vegetables, flowers, fodders and nutritional kitchen gardening was also demonstrated according to season.

Instructional farm: KVK has an instructional farm of 42.50 acres located near Dairy Farm of DUVASU on Nalva Path Road where seed production of district specific major crops is being undertaken.

Season	Crop	Variety	Area (acre)	Quantity (Q)	Revenue Generated (Rs.)
Zaid	Jawar (Fodder)	Desi (Poorvi)	5.0	-	42,000.00
Kharif	Til	Shekhar	15.00	9.88	74,762.00
Rabi	Wheat	PBW-550	32.50	370.00	5,18,000.00
		Raj-3777	10.00	88.00	1,23,200.00

C. DEPARTMENT OF VETERINARY AND ANIMAL HUSBANDRY EXTENSION

Ten exposure visits-cum-trainings were conducted for 206 farmers mostly from the states of Chhattisgarh and Rajasthan. Various technologies on animal husbandry practices were displayed and literature was distributed to them.

D. EXTENSION ACTIVITIES BY VETERINARY COLLEGE

a. Clinical and animal welfare camps organized: Faculty members from the department of Veterinary Clinical Medicine, Veterinary Surgery and Radiology, Veterinary Gynaecology and Obstetrics and Veterinary Parasitology were involved in clinical camps organized in different villages of Mathura district.

S. No.	Date	Name of Village	No. of Cases handled	District
1.	08.03.2014	Niroli Farah	163	Mathura
2.	22.03.2014	Nagla Sanjay Baldev	28	Mathura
3.	30.08.2014	Rahera chaumuha	96	Mathura
4.	06.09.2014	Neva Pagdi Baldev	69	Mathura
5.	22.09.2014	Deen Dayal Upadhayaya Dham, Farah	29	Mathura
6.	27.09.2014	Sonshed	19	Mathura
7.	20.12.2014	Bandi Baldev	145	Mathura
8.	27.12.2014	Daulatpur/Goverdhan	29	Mathura
		Total	**578**	**Mathura**

b. Outbreaks attended: Diagnostic services were also rendered for the benefit of livestock owners and farmers and State Animal Husbandry Department in the event of any disease outbreaks in the state. Some of the major outbreaks attended during the year are tabulated below.

Details of Outbreaks:

Dates	Places
11.04.2014	Senafarm, Agra
12.08.2014	Senafarm, Agra
24.08.2014	Lion safari, Itawa
24.09.2014	Lion safari, Itawa
13.10.2014	Godiapur , Mainpuri
16.10.2014	Lion safari, Itawa
01.01.2015	Chiror, Mainpuri
20.03.2015	Jahangirpur, Bulandsaher

FMD outbreaks attended during 2014-15

Month of outbreak	District	No. of clinical sample collected	No. of Virus types confirmed			NVD	No. of Samples referred to centre lab
			O	A	As-1		
Feb, 2015	Aligarh	02	02	-	-	-	02
March, 2015	Jhansi	06	-	-	-	06	06
March, 2015	Bulandsahar	02	02	-	-	-	02
Total		**10**	**04**	**-**	**-**	**06**	**10**

c. Exposure visits of Veterinary Officers, students and farmers to Department of Poultry Science and Poultry farm

S. No.	Date	Beneficiaries
1	06.06.2014	25 farmers from West Singbhum, Jharkhand
2	13.06.2014	10 farmers from Surajpur, Jharkhand
3	22.08.2014	20 farmers from Dist Korea, Chattisgarh
4	14.10.2014	Two groups of 10 farmers each along with a veterinary officer from Dist Janjgir Chapa, Chhattisgarh
5	17.10.2014	Twenty farmers along with 2 veterinary officers from District Bilaspur, Chhattisgarh
6	17.10.2014	55 students and 4 teachers from Dolphin PG College, Chandigarh
7	18.10.2014	Three groups of 17, 11 and 14 farmers along with 1 V.A.S in each group from District Mungeli
8	13.02.2015	30 farmers from Chaumuhan, Mathura
9	27.02.2015	10 farmers from Rajgarh, M.P.
10	27.02.2015	Students from K. R. Degree College , Mathura
11	02.03.2015	12 farmers from Churmura, Shahjadpur under UPCAR project
12	26.03.2015	13 Farmers from Mungeli, Chattisgarh

VI. UNIVERSITY FARMS

A. MADHURI KUND AGRICULTURE FARM

Madhuri Kund Agriculture Farm is spread over 1396 acres of land and is located 25 Km away from the main campus of University. Out of this, almost 800 acres of land is under cultivation. Lack of irrigation facilities and soil salinity are the problems of farm. During the year under report, following crops were cultivated and overall production of the farm was better than the total production of 2013-14.

Season	Crop	Area (acre)	Production (quintal)
Kharif-2014	Paddy sugandh-2	25.00	374.35
	Paddy CSR-23	11.00	162.25
	Paddy CSR-36	15.50	244.10
	Til	30.00	012.64
	Sorghum	46.39	Green fodder was auctioned except 1.25 acres
	Dhaincha for green manuring	72.00	Green manuring
Rabi 2014-15	Mustard seed (DRMR) and Mustard Seed (Commercial)	102	403.87
	Wheat DBW-17 Wheat PBW-550	337	3484.56
	Oats (NSC)	05	16.58
	Oats (os-6)-RKVY	51	225.10
	Berseem	27.80	1.12
	Mixture (wheat/barley)	-	12.00
	Grand Total		**6264.02**

In spite of the adverse agro-climatic conditions including drought during monsoon and untimely heavy rains in March 2015, the total grain/seed production was 6264.02 quintals and the gross receipt of Rs. 1,12,27,568.00 is expected.

B. INSTRUCTIONAL LIVESTOCK FARM COMPLEX (ILFC)

The total number of animals maintained at dairy farm was 465, which included Hariana, Sahiwal, Murrah and cross-bred cattle. During 2014-15, total milk production at the farm was 1, 84,794 liters. Out of which cow milk was 1, 52, 621 liters and buffalo milk was 32,173 liters. Average milk production was 506 liters per day. During 2014-15, the total receipt generated through milk sale was Rs 53, 45, 633.00. Besides milk, 12,201.15 quintals green fodder, 210.90 quintals bhusa, 70.20 quintals jai and 231.10 quintals jau was also produced. During this year, one new shed for animals and amphitheatre for instructional purposes was constructed apart

from renovation of one old cattle shed. Besides this, ILFC also generated a revenue of Rs. 6150.00 by the sale of manure and Rs. 2,55,770.00 from auction of animals.




Equine Unit: College of Veterinary Science and Animal Husbandry is also maintaining horses for teaching and research purposes. This unit is maintained by Department of Livestock Production and Management. Initially the equine unit was at main campus but recently it has been shifted to ILFC. Presently five horses are there out of which, 3 are Kathiawari and 2 are thoroughbred.

Sheep and goat unit: Department of Physiology is maintaining sheep and goat unit with the present strength of 52 animals of the college. Goat breeds are Sirohi, Barbari, Jamnapari and Jakharana while sheep breeds are Nalli, Chokla and Malpura. These animals are kept for teaching and research purpose like breed identification, antemortem examination, blood collection etc. Besides these, Department of Physiology is doing extensive study on the quality and preservation of semen in sheep and goat.

C. POULTRY FARM

Poultry farm of the College maintained the following varieties of birds during 2014-15:

Sl. No.	Species, Breeds and varieties	Flock strength
1.	Layers	54
2.	Chabro adult birds	181

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3.	Chabro chicks	537
4.	Aseel Peela adult birds	23
5.	Kadaknath adult birds	26
6.	Naked Neck	9
7.	Other breeds (Black Rock, White Rock, Chandigarh Broiler, Red Cornish, Dahlem Red, Barred Rock, PB Broiler, PB-1 Layer, Punjab Brown, Chandigarh Black)	103
8.	Japanese quail	328
9.	Turkey	167
10.	Guinea Fowl	18
11.	Emu	4

During the year 2014-15, the farm was able to earn a revenue of Rs. 3,89,404.00 through selling of eggs, chicks and birds.

D. PASTURE UNIT

Jowar and Till was sown in 10 acres each while daincha on 13 acre area for green manure. Jowar fodder was auctioned for Rs. 1,21,000.00. As per our MOU with IARI, New Delhi breeder seed of wheat variety was grown on 33 acres of land and 349.40 quintals of wheat seed was produced and generated a income of Rs. 5,06,630.00.

Inspecting team from IARI, New Delhi, for the inspection of Breeder Wheat (HD3067)

VII. HUMAN RESOURCE DEVELOPMENT

WORKSHOPS AND TRAININGS ORGANIZED

a). Hands on training on "Use of data Acquisition System Based Physiograph In Pharmacodynamic Studies" sponsored under ICAR, Niche Area of Excellence Programme

Hands on training on "Use of data Acquisition System Based Physiograph In Pharmacodynamic Studies" sponsored under ICAR, Niche Area of Excellence Programme was organized by department of Pharmacology and Toxicology on March 9-13, 2015.

The training programme was inaugurated Dr. Khub Singh, Ex. Director, National Institute of Animal Nutrition and Physiology. Twelve candidates from different SAUs (TANUVAS, Chennai; MAFSU, Nagpur; LUVAS, Hisar; RAJUVAS, Bikaner), central institute (AMU, Aligarh) along with five internal students (DUVASU, Mathura) participated in this training programme.

b). Workshop on modules of animal husbandry activities for SMSs of KVKs

Directorate of Extension Education DUVASU, Mathura organized one day workshop on "Implementation of certain modules of animal husbandry activities through KVKs of Uttar Pradesh and Uttarakhand" on 20th September 2014. 36 scientists from KVK's of Uttar Pradesh and Uttarakhand participated in the workshop. It was inaugurated by Dr. Atar Singh, Zonal Project Director in the gracious presence of Prof. A.C. Varshney, Vice chancellor, DUVASU and senior officers of the university.

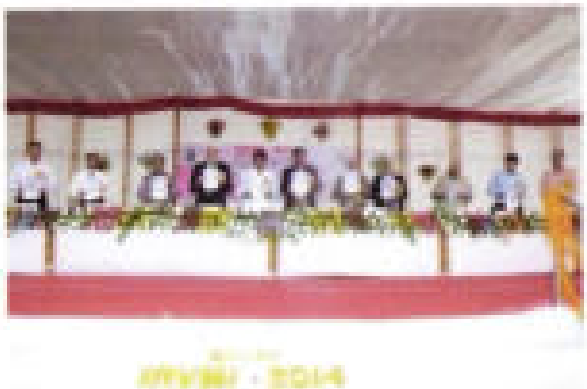
c). Pashupalan Evam Unnat Dairy Palan Prashikshan

Three days training on "Pashupalan Prashikshan" was organized from 9-11th October, 2014 in which 14 farmers from Nawada district (Bihar) participated and sponsoring agency was ATMA, Nawada (Bihar). Five days training on "Unnat Dairy Palan Prashikshan", sponsored by U.P. Animal Husbandry Department was also organized in which 36 beneficiaries from different districts of U.P. under Kamdhenu and Mini Kamdhenu schemes participated.

CONFERENCES

28th ANNUAL CONFERENCE OF IAVMI

28th Annual convention of Indian Association of Veterinary Microbiologists, Immunologists and Specialists in Infectious Diseases (IAVMI- 2014) and an International Conference on "Challenges and opportunities in Animal Health at the face of globalization and climate change" was organized by Department of Veterinary Microbiology and Immunology on 30th Oct.- 1st Nov., 2014. Conference was inaugurated by the chief guest Shri. Raj Kishore Ji, Cabinet Minister of Animal Husbandry and minor irrigation, U.P. Guest of Honor was Prof. (Dr.) S. Honnappagol, Animal Husbandry Commissioner, Government of India and Prof. (Dr.) K. M. L. Pathak, Deputy Director General (Animal Sciences), ICAR, New Delhi was special invitee. In the inaugural ceremony, Dr. K.M.L. Pathak, DDG (AS), ICAR was awarded IAVMI Life Time Achievement Award for his contribution in the field of infectious diseases. Dr. D. K. Sarma, Director NRC on pigs and Dr. Rishendra Verma, Joint Director, CADRAD, IVRI were designated as FELLOW IAVMI. The retired faculty members were also felicitated for their contribution in the Department. The conference included 11 scientific sessions including session of Dr. P.G. Pandey Memorial Oration Award and Key Note Address. Dr. Bramhadev Pattnaik, Project Director, PD FMD delivered Dr. P.G. Pandey Memorial Oration Award lecture on the title "Evolution of Foot and Mouth Disease Virus in India". The Key note address was delivered by Dr. R. K. Singh, Director, IVRI on "Climate Change and Animal Health". The sessions included 28 lead papers of eminent scientists, 78 oral presentations and 237 poster presentations by students, scientists, researchers and veterinarians not only from India as well as from the countries like Malaysia, USA, Vietnam, UK, Pakistan and Iran. More than 350 delegates participated in the conference with 329 registrations.



During the conference one day International workshop on "Aquatic Animal health and Diseases" with the topic of "Fisheries Microbiology and histopathology based disease diagnosis of fish and shell fish" was also organized on 31st Oct., 2014.

The chief guest of the workshop was Dr. B. N. Tripathi, Director NRC on equines, Hisar and Guest of honor were Dr. Lal Krishna, former ADG (AS), ICAR and Dr. R. S. Chauhan, Former Director Fisheries, Govt. of Uttarakhand. The workshop was divided in four sessions. The key note address was delivered by Dr. Lal Krishna. Session two on Aquatic Animal Health and diseases included Lead paper of Director CIARI, Port Blair, Dr. S. D. Roy and 3 research papers. These were followed by third Session on Fish ecology, nutrition and diseases with 11 lectures of experts and forth one on Retrospective technique in aquaculture. The workshop was attended by more than 75 delegates from all over the country. The recommendations for improvement of animal as well as aquatic health and formulation of strategies were submitted to government agencies. Dr. S. B. Shivachandra, Senior Scientist, IVRI, Mukteswar was awarded Young Scientist Award.

XXX ANNUAL CONVENTION OF THE SOCIETY FOR THE STUDY OF ANIMAL REPRODUCTION (ISSAR)

The XXX Annual Convention of the Society for the Study of Animal Reproduction (ISSAR) and National Symposium on "Research and Innovations to Improve Fertility and Fecundity" was organized by Department of Gynaecology & Obstetrics from 20-22 November, 2014. Dr. K.M. Bujarbaruah, V.C. AAU, Jorhat inaugurated the National Symposium and Dr. A.C. Varshney, V.C., DUVASU, Mathura presided over the function. The other dais dignitaries were Dr. A.K. Misra, V.C., MAFSU, Nagpur & President ISSAR, Dr Balbhader Yadav, CEO, UP, LDP, Dr S.K.Garg, Dean, COVS, DUVASU and Chairman of the Organizing Committee, Dr S.P.Maurya, General Secretary, ISSAR and Dr Atul Saxena, Organizing Secretary. In the inaugural function, Department felicitated its all retired faculty members for their immense

contribution to the Department. Total 240 participants were registered in the seminar which includes staff members from SAUs, SVUs, ICAR, State animal husbandry departments, UPLDB, Retired life members of ISSAR, post-graduate students from different discipline of veterinary and animal sciences from all over the country. There

were nine scientific sessions in which different lead papers and research abstracts (oral and poster) were presented. Extensive discussions were carried out in different sessions, namely Reproduction & Fertility in Females, Artificial Insemination & Andrology, Biotechnology in Animal Reproduction, Reproduction in Pet, Wild and High Altitude Animals and Animal Reproduction in Veterinary Education. In each scientific session, best presentation was awarded in two different categories as young scientist (scientist below 35 years of age) and best paper (above 35 years). The seminar concluded with awards to the best judged presentation and announcement for holding the XXXI Annual Convention at Bangalore.

VI CONFERENCE OF INDIAN MEAT SCIENCE ASSOCIATION (IMSACON-VI)

Department of Livestock Products Technology organized VI Conference of Indian Meat Science Association (IMSACON-VI) and National Symposium on "Sustainable Meat Production for Nutritional Security and Consumer Well-being: Challenges and Strategies" from Nov 28 to 30, 2014. Prof. (Dr.) Col. A.K. Gahlot, Vice Chancellor, RAJUVAS, Rajasthan and Prof. (Dr.) Nagendra Sharma, Former Vice Chancellor, Sher -E- Kashmir University of Agriculture Sciences and Technology, Jammu were the Chief Guest and Guest of Honour respectively.

There were total nine sessions including Key Notes address and Industry Academia Meat. Around 150 scientists from different parts of the country participated and presented their research papers in respective sessions. Two theme papers and 30 invited papers were presented by eminent Scientists and these were complied in a compendium and compendium and CD were released during the inaugural function. The research work of Department was appreciated and the students of Department were awarded best paper awards in the different sessions of the Conference.

Budding scientists interacted on meat sustainability, innovative processing technologies for meat by-products and ways to improve functionality of meat products. They also discussed on development of recent and advance techniques for meat preservation and packaging. Scientists also emphasized on the approach towards nutritional security through animal food for consumer well-being, developenent of sensor-based meat marker and other biotechnological tools contributing in meat science and technology. Last session of the conference was "Industry-Academia Meet" to build a scientific bridge between researchers and industrialists for boosting Indian meat industry.

During General body meeting of IMSA, Dr. Vikas Pathak, Professor & Head of the Department was unanimously nominated as Vice President of Executive Committee of Indian Meat Science Association (IMSA).

NATIONAL SEMINAR ON "VETERINARY SERVICE PROVISION IN INDIA: AN EQUINE PERSPECTIVE"

A National Seminar on "Veterinary Service Provision in India: An Equine Perspective" was held on 25th February 2015. The seminar was organized by Brooke Hospital for Animals (India) in collaboration with DUVASU, Mathura and National Academy of Veterinary Sciences (India). The main aim of the seminar was to bring policy makers, researchers and animal welfare professionals from diverse government and non-government organizations and institutions on a common platform, to deliberate on the health and welfare issues faced by equines and equine owners in India.

PARTICIPATION OF FACULTY MEMBER IN INTERNATIONAL TRAININGS/WORKSHOPS

S.No.	Name of Faculty	Title of event and place	Date
1.	Dr. Muneendra Kumar	10 weeks International Training Programme in Dairy Nutrition organized by Faculty of Bioscience Engineering	Oct. 3- Dec 12, 2014

PARTICIPATION OF FACULTY MEMBERS IN TRAININGS AND WORKSHOPS

S.No.	Name of Faculty	Title of event and place	Date
1.	Dr. Debashis Roy	An advanced Short course on "Feed safety and nutritional security under changing climatic scenario" held at Centre of advanced faculty training (CAFT), IVRI, UP	June 3-23, 2014
2.	Dr. Vikas Pathak	Workshop on "Implementation of livestock/meat traceability system in India" held at National Research Centre on Meat, Hyderabad	Aug. 4, 2014
3.	Dr. S. K. Yadav Dr. M.M. Farooqui Dr. Archana Pathak Sh. Rakesh Goel Dr. Amit Kumar Dr. Varsha Gupta Dr. Amit Kumar Verma Dr. Ruchi Tiwari Dr. Vinod Kumar Singh	International Workshop on "Fisheries Microbiology and histopathology based disease diagnosis of fish and shell fish" held at DUVASU, Mathura	Oct. 31, 2014
4.	Dr. Ambika Sharma	"Molecular Approaches for Diagnosis of Animal Cancers and Strategies for Developing Cancer Vaccines" held at IVRI, Bareilly	Nov. 1-10, 2014
5.	Dr. Ruchi Tiwari	Short term training programme on "Frontier Approaches in Diagnosis and Control of Animal Viral Diseases with Quality Assurance and Quality Control of Veterinary Biologicals", IVRI, Izatnagar, Bareilly, Uttar Pradesh	Nov. 10-19, 2014

6.	Dr. Vikrant Sudan	21 day training programme at Centre For Advanced Faculty Training (CAFT) on "Advanced techniques in detection and control of parasitic diseases" held at Hebbal Banglore.	Nov. 10-30, 2014
7.	Dr. D.N. Singh	Global Social Science Conference on "Management of Sustainable Livelihood Systems" (Under Collaboration of International Society of Extension Education, Orissa University of Agriculture & Technology and Orissa Society of Extension Eduction)	Feb. 14-17, 2015
8.	Dr. Yajuvendra Singh	Training programme of "Advanced tools for analysis of phenomic and genomic data" – under CAFT, DCB, Division held at NDRI, Karnal.	March 05-25, 2015
9.	Dr. Udit Jain	Two days SBS-ASM-ICAR Biosafety Awareness Programme, including Workshops on "Culture of responsibility, pathogen inventory management and fundamentals of working with biosafety cabinets" at ICAR-National Institute of High Security Animal Diseases, Bhopal	March 13-14, 2015

PARTICIPATION IN INTERNATIONAL CONFERENCE

S.No.	Name of Faculty	Title of event and place
1.	Dr. Jitender Kumar	10th Asian Pasific Poultry Conference held at Jeju Island held on 19-23 Oct, 2014
2.	Dr. Muneendra Kumar	Conference on "What next? How International Students can Contribute to the Development of their Home Country after a Successful Study Abroad Experience" held at Ghent University, Belgium held on Nov. 11,2014
3.	Dr. Muneendra Kumar	Conference on "Animal biodiversity and family farming: facts from the field " held at Ghent University, Belgium held on Nov. 14, 2014

PARTICIPATION IN NATIONAL CONFERENCES AND SYMPOSIA

S.No.	Name of Faculty	Title of event and place	Date
1.	Dr. Muneendra Kumar	Second Annual Agriculture Congress 2014, held at U.P. Council of Agricultural Research, Lucknow	June 14 -16, 2014
2.	Dr. Barkha Sharma Dr. Amitav Bhattacharya	2nd International Conference on Animal and Dairy Sciences held at Hyderabad India International Convention Centre (HICC), Hitex City, Hyderabad	Sept.15-17, 2014
3.	Dr. Sanjay Purohit	XXXVIII Annual Congress of Indian Society for Veterinary Surgery and International Symposium on New Horizones of Camel Surgery and Large Ruminant Surgery held at Bikaner, Rajasthan	Oct. 15-17, 2014
4.	Dr. S. K. Yadav Dr. Vikas Pathak Dr. M.M. Farooqui Dr. Archana Pathak Dr. Rashmi Singh Sh. Rakesh Goel Dr. Amit Kumar Dr. Varsha Gupta Dr. Vijay Pandey Dr. Amit Kumar Verma Dr Udit Jain Dr. Ajay Pratap Singh Dr. Ruchi Tiwari Dr. Vinod Kumar Singh	XXVIII Annual Convention of Indian Association of Veterinary Microbiologists, Immunologistas and Specialists in infectious Diseases (IAVMI) & International Conference on "Challeneges and opportunities in animal health at the face of globalization and climate change" held at DUVASU, Mathura	Oct. 30- Nov 1, 2-014
5.	Dr. Neeraj Kumar Gnagwar	National Symposium on "Impact of climate change on pathobiology of diseases of animals, poultry and fish" Held at Anand Veterinary College, Anand."	Nov. 13-15, 2014
6.	Dr. R. P. Pandey Dr. S. Yadav Dr. Jitender Kumar Dr. A. K.Madan Dr. Brijesh Kumar	XXX Annual Convention of the Indian Society for Study of Animal Reproduction (ISSAR) and National Symposium on " Research and Innovations to Improve Animal	Nov. 20-22, 2014

	Dr. Mukul Anand Dr. D. K. Swain Dr. Varsha Gupta Dr. Sriprakash Singh Dr. Vijay Pandey Dr. Rajneesh Sirohi Dr. Vivek Malik Dr. Gulshan Kumar Dr. Sanjay Purohit Dr. S. P. Singh Dr. Abhinov Verma	Fertility and Fecundity" at DUVASU, Mathura	
7.	Dr. S. Yadav Dr. Brijesh Yadav Dr. D. K. Swain	23rd Annual Conference of Society of Animal Physiologist of India (SAPI) held at Hisar	Nov. 27-28, 2014
8.	Dr. Vikas Pathak Dr. Jitnedra Kumar Dr. A. K. Madan Dr. Rashmi Singh Dr.V.P.Singh Dr Udit Jain Dr. Amitav Bhattacharya Dr. Debashis Roy Dr, Mukul Aanad Dr. Yajuvendra Singh Dr. Meena Goswami Awasthi Dr.S.K.Bharti	6th Conference of Indian Meat Science Association (IMSACON-VI) and National Symposium on "Sustainable Meat Production for Nutritional Security and Consumer Well-being: Challenges and Strategies" held at DUVASU, Mathura	Nov.28-30, 2014
9.	Dr. Satish K. Garg Dr. S. Choudhary	14th Annual Conference of "Indian Society of Veterinary Pharmacology and Toxicology" held at College of Veterinary Science, Khanapara, Guwahati -781022. Assam	Dec. 2-4, 2014
10.	Dr. Satish K. Garg	34th Annual Conference of Society of Toxicology (STOX), India held at TANUVAS, Chennai	Dec. 10-12, 2014
11.	Dr. Vinod Kumar	IXth Biennial Conference on "Eco-responsive feeding and nutrition: Linking livestock and livelihood" held at C.V. Sc. & A.H., AAU, Guwahati	Jan. 22-24, 2015
12.	Dr. P K Shukla Dr. Atul Saxena	Asian Science Congress, Karnal	Feb. 3-6, 2015

13.	Dr. M.M. Farooqui Dr. Archana Pathak Dr. Prabhakar Kumar	XXIX annual convention of IAVA and the National Symposium on "Recent concepts and cpplications of veterinary anatomy for improvement of livestock health and production" at College of Veterinary Science & A.H., Chhattisgarh Kamdhenu Vishwavidyalaya, Anjora, Durg (Chhatisgarh)	Feb. 11-13, 2015
14.	Dr. D.N. Singh	Global Social Science Conference on "Management of sustainable livelihood ystems" held at Orissa University of Agriculture & Technology, Bhubneswar	Feb. 14-17, 2015
15.	Dr Rajesh Nigam Sh. Rakesh Goel, Dr Udit Jain Dr. Deepak Sharma Dr. S.P. Singh Dr. Madhu Tiwari Dr. Rajneesh Sirohi Dr. Yajuvendra Singh Dr. Ruchi Tiwari Dr. Vijay Kumar Dr. D.N. Singh Dr. Pawanjeet Singh Dr. Ambika Sharma Dr. Vijay Pandey	National Seminar on "Veterinary service provision in India: an equine perspective" organized by Brooke Hospital for Animals (India) in collaboration with DUVASU, Mathura and National Academy of Veterinary Sciences (India)	Feb. 25, 2015

VIII. DIGNITARIES VISITED

CHANCELLOR VISITED DUVASU

Hon'ble Chancellor of the University and Governor of Uttar Pradesh, Shri Ram Naik Ji, visited University on 21st September 2014 and inaugurated the building of College of Livestock Products Technology. Various research activities and R&D produce of the university were exhibited in the seminar hall of LPT deptt. Hon'ble Governor also visited the University Educational Museum and had an overview of the ongoing teaching, research and extension activities of the University. During his visit, he also interacted with Hon'ble Vice Chancellor, Deans, Directors and other senior officers of the University after formal presentation of the programmes and activities of the University by Prof. Satish K. Garg, Dean of Veterinary College. Hon'ble Chancellor expressed his happiness on the developments and also emphasized on further improvement in quality of teaching and research apart from regularity and punctuality in the declaration of academic results. He also stressed on regular holding of University convocations.

HON'BLE UNION AGRICULTURE MINISTER VISITED DUVASU

Shri Radha Mohan Singh Ji, Union Agriculture Minister, visited the University on 20th September 2014. Hon'ble Vice Chancellor, Prof. A.C. Varshney welcomed the Hon'ble Minister on behalf of DUVASU family. Dean, College of Veterinary Science & A.H., Dr. S. K. Garg presented brief account of various ongoing teaching, research and extension activities of the University along with achievements of the students and faculty and also constraints and challenges. During the interaction, Hon'ble Agriculture Minister expressed his concern on adaptation of exotic breeds of cattle with changing climatic conditions. Therefore, there is need to conserve and propagate the native breeds of who are well adapted to harsh climatic conditions. He emphasized on improved research extension activities so that farmers/animal owner's friendly technologies can be easily transferred from laboratories to real stakeholders. He also visited the University Educational Museum and had an overview of various activities and programmes of the University.

VISIT OF PEER REVIEW TEAM (PRT)

Peer Review Team (PRT) constituted by Indian Council of Agricultural Research, New Delhi visited the University on 21st to 24th May, 2014 to verify and accrediate the teaching, research and extension activities. Dr. S.A.H. Abidi, Ex Member ASRB New Delhi was the Chairman of the PRT, Dr. Gajraj Singh Former Dean Veterinary College, Aizwal and Dr. S.M. Usturge, Dean Veterinary College, KVAFSU, Bidar were the members of PRT and Dr. K.P. Tripathi, Principal Scientist (EQR), Education division ICAR acted as the Member Secretary. The PRT critically evaluated the infrastructural facilities in the college and University as per the detailed guidelines for accreditation. Their interaction with Hon'ble Vice Chancellor, Professor A.C. Varshney and other officers of the University after an elaborate presentation about the overall activities and programmes of the University as per format of "Self Study Report" was very fruitful. Chairman of the PRT thanked the University administration and appreciated Professor S.K. Garg, Dean College of Veterinary Science and Animal Husbandry., the Nodal Officer, for preparing the "Self Study Report" and for liasoning with the PRT members and Dr. R.P. Pandey, Registrar for efficiently co-ordinating the visit. The untiring efforts and vision of all the former and present Vice Chancellors of the University for all-round developenent of the University was also appreciated.

IX. STUDENTS' WELFARE

SOUTH INDIA EDUCATIONAL TOUR

36 students of 5th Year B.V.Sc & A.H during their All India Educational Tour (24.12.2014 to 08.01.2015) visited Madras Veterinary College, Chennai, Bombay Veterinary College, Mumbai, Veterinary Colleges, Bangalore, Hyderabad, Thrissure and Pookote and Fisheries Institute, Goa. The tour was not only an excursion programme but also enabled students to know about facilities available and recent developments in these instituite. Dr. Rajneesh Sirohi and Dr. Pawanjeet Singh, Assistant Professor, Departement of Livestock Products Management and Veterinary Biochemistry respectively, were the tour leaders.

NATIONAL CADET CORPS

During 2014-15, 23 cadets including 11 girls participated in CATC camp. 10 girl cadets and 4 boy cadets qualtified "B" certificate and 2 boy cadets received "C" certificate.

13th ANNUAL SPORTS MEET

13th Annual Sports Meet of the University was inaugurated by Prof. A.C Varshney, Hon'ble Vice-Chancellor of the University on 24th March, 2015. The meet was declared open by Hon'ble Vice-Chancellor after the march-past, salutation and sports oath. Doves were released as a token of peace and freedom. Dr. Daya Shankar, President, Games and sports, teachers, staff and students attended the inauguration of 13th annual sports meet. Almost all the inter-class competitions of in-door and out-door games and sports including some athletic events were completed on 24th March

2015 and remaining athletic events were completed on 25th March, 2015. Mr. Dailendra Kumar, 2nd Year Diploma Student and Miss Archana Yadav, 2nd Year student of Master of Veterinary Science respectively, were adjudged the best male and female athletes of the year. Slow cycling, musical chair for ladies and "Tug-of-war" between teachers and students were the special attractions of the afternoon. The closing ceremony was held on 25th March 2015, Where Dr. S.K Agrawal Director, Central Institute of Research on Goats, Makdoom, Farah Mathura was the Chief Guest.

FRESHER'S DAY BY B.V.Sc. & A.H. STUDENTS

Students of 2nd Year B.V.Sc & A.H along with other senior students, faculty and staff formally welcomed the newly admitted students of 2014 batch to veterinary fraternity on 30th August 2014. First year students presented different cultural events in which Mr. Shivam Khare and Miss Rashmi Verma were respectively adjudged as Mr. and Miss fresher. Hon'ble Vice-Chancellor graced the occasion and gave away the prizes. Speaking on the occasion, Hon'ble Vice-Chancellor Prof. A.C. Varshney advised the students to work hard and understand their responsibility on being admitted to veterinary profession. Dr. Satish Kumar Garg, Dean, College of Veterinary Sciences and Animal Husbandary presided over the function while Dr. Pankaj Kumar Shukla, Dean, Post Graduate Studies, Dr. Rajesh Nigam, Dean College of Biotechnology and other officers of the University graced the occasion.

FRESHER'S DAY BY DIPLOMA STUDENTS

Students of 2nd Year Diploma Programme along with faculty and staff formally welcomed the newly admitted students of 2014 batch to Diploma fraternity on 20th December 2015. First Year students presented different cultural events in which Mr. Mridul Mahesh and Miss Pratibha Yadav were adjudged as Mr. & Miss fresher. Hon'ble Vice-Chancellor Prof A.C Varshney is chief guest on this occasion. Dr. Satish Kumar Garg, Dean, College of Veterinary Sciences & Animal Husbandry presided over the function while Dr. Jitendra Kumar, Chief-Coordinator Diploma Programmee coordinated the occasion.

7th ALL INDIA ZYDUS DRAWING AND PAINTING COMPETITION 2014

Zydus drawing and Painting competition 2014 was organized on 06.09.2014 in which Miss Deepanka, Mr. Anand Kushwaha and Mr. Rakesh Kumar excelled in Zydus sponsored drawing and painting competitions and were declared first, second and third in the competition. They were awarded with certificates and cash prizes of Rs. 2000.00, Rs 1500.00 and Rs 1000.00, respectively.

HINDI PAKHWARA

On occasion of Hindi Pakhwara, debate and poetry competitions were organized on 16.09.2014 and 18.09.2014 on the topics 'भारतीय कृषि में पशुचिकित्सा एवं पशुपालन का वर्तमान एवं भविष्य' व 'पशुचिकित्सा एवं पशुपालन क्षेत्र में सफलता के आयाम' respectively. Dr. Shalini Vashvani, Assistant Professor, Department of Animal Nutrition coordinated debate competition while Dr. Mamta coordinated poetry competition. Mr. Jai Prakash and Mr. Sandeep Kumar Mishra were adjuged as 1st and 2nd in debate competition respectively while Mr. Sandeep Kumar Mishra, Miss Garima Shukla and Mr. Jai Prakash were adjuged 1st, 2nd, 3rd in poetry competition, respectively.

ALL INDIA AGRICULTURE YOUTH FESTIVAL

Fourteen students from College of Veterinary Sciences & Animal Husbandary and two Students from College of Biotechnology participated in All India Agriculture University Festival organized at National Dairy Research Institute, Karnal, Haryana from 18th to 21st March 2015. Dr. Mamta, Assistant Professor, Department of Livestock Products Management, COVSc & A.H and Dr. Rahul, Assistant Professor, Department of Pathology, College of Veterinary Sciences & Animal Husbandry were the tour leaders.

INTER UNIVERSITY TABLE TENNIS TOURNAMENT

Five Students from College of Veterinary Sciences & Animal Husbandary participated in Inter-University Table Tennis Tournament organized by R.C.A Girl's (PG) College, Mathura from 01st to 02nd March 2015. Our University students secured 3rd Position. Dr. Jitender Tiwari, Assistant Professor, Departement of Parasitology, College of Veterinary Sciences and Animal Husbandry was the tour leader.

ZYDUS ALL INDIA VETERINARY COLLEGE BADMINTON, ALL INDIA TABLE-TENNIS TOURNAMENT AND VENKY'S ALL INDIA PROFESSIONAL QUIZ CHAMPIONSHIP

All India India Inter-Veterinary Colleges Badminton and Table- Tennis Tournament and Venkys All India Quiz Championship was organized by Gobind Ballabh Pant University of Agriculture & Technology, Pantnagar from 18th to 20th March 2015. Ninteen Students (09 girls and 10 boys) participated in events. Our students were runner up in Venky's All India Professional Quiz Championship out of the 10 participating teams. Dr. Jitender Tiwari, Assistant Professor, Department of Parasitology, College of Veterinary Sciences & Animal Husbandary and Dr. Ambika Sharma, Assistant Professor, Department of Biochemistry, College of Veterinary Sciences & Animal Husbadnary were the tour leaders.

X. OTHER HIGHLIGHTS AND ACTIVITIES

AMBEDKAR JAYANTI

In remembrance of Dr. B.R. Ambedkar, the University celebrated Ambedkar Jayanti on 14th April 2014. Senior officers, faculty members, non teaching staff and students paid floral tributes to Dr. B.R. Ambedkar and remembered his contributions to the country.

WORLD VETERINARY DAY

World Veterinary Day 2014 was celebrated on 26th April, 2014. Hon'ble Vice Chancellor, Professor A.C. Varshney, inaugurated the occasion by doing the anti-rabies vaccination of dog. Around 127 animals were vaccinated free of cost. Out of these, 89 were dogs and rest was pups. Treatments of other animals were done for various diseases. All treatments were done free of cost. A knowledge dissemination programme on feeding, management, breeding and disease control was also arranged for pet and livestock owners. On the occasion, Professor S.K. Garg Dean, College of Veterinary Science and A.H., Heads/Incharges of different departments and students were also present.

OATH TAKING CEREMONY

Oath taking ceremony of Veterinary Graduates of the 2009 batch was organized on July 6, 2014. Dr. Arvind Kumar, Hon'ble Vice Chancellor Central Agricultural University, Jhansi (U.P) was the chief guest and Hon'ble Vice Chancellor DUVASU, Prof. A.C. Varshney, presided over the function. Oath was administered to 38 graduates by Prof. Satish Kumar Garg, Dean, College of Veterinary Science & A.H. First and Second toppers of the batch received Ch. Charan Singh Rashtriya Pratibha Puruskar sponsored by Kisan Trust, New Delhi. Certificates of appreciation were also given to students who qualified the ICAR-JRF Examination-2014.

PRE-VETERINARY TEST-2014

University conducted Pre Veterinary Test-2014 in two phases viz; Preliminary Examination and Mains Examination. First phase of PVT -2014 was conducted in five cities-Allahabad, Kanpur, Lucknow, Bareilly and Mathura on 18.05.2014 in which 2,410 candidates appeared. Out of these, 455 candidates qualified for the mains examination. The second phase of the PVT was conducted on 29.06.2014 at BSA College Mathura and RCA college Mathura. In this 431 candidates appeared. Out of these, 398 candidates qualified the test. These candidates were admitted to the B.V.Sc. & A.H. Programme on the basis of merit in competitive examination under various categories.

INDEPENDENCE DAY

Independence Day was celebrated on 15.08.2014, wherein, Professor A.C. Varshney, Hon'ble Vice-Chancellor DUVASU Mathura was the Chief Guest and he unfurled the national flag. Two saplings of bottle palm were also planted in front of Department of Veterinary Physiology, College of Veterinary Sciences & Animal Husbandry, Mathura as a mark of "DUVASU Mathura go green".

GANDHI JAYANTI

Gandhi Jayanti was celebrated on 2nd October 2014 with offering of floral tributes to the Father of the Nation in front of College of Veterinary Sciences and Animal Husbandry, Mathura by Hon'ble Vice-Chancellor, Prof. A. C. Varshney and other officers of the University. On this occasion, Hon'ble Vice-Chancellor administered oath to students and staff members to keep our surroundings neat and clean which is a dream project of our Prime Minister Hon'ble Shri Narendra Modi Ji. **"Swach Bharat Abhiyan"** was also launched with **"Shram Daan"** by students, staff and faculty of the University.

BASANT PANCHMI

Basant Panchmi, a festival of Saraswati puja, highlighting the coming of spring was celebrated at DUVASU, Mathura on 24th Jan, 2015. Hon'ble Vice Chancellor, Senior Officers of the university, Faculty members, non teaching staff and students worshipped godess Saraswati, the goddess of knowledge, music, art and culture.

REPUBLIC DAY

Republic Day was celebrated on 26th January 2015 in front of College of Veterinary Sciences & Animal Husbandry. Prof A.C. Varshney, Hon'ble Vice-Chancellor, Chief Guest on the occasion, unfurled the National flag. Two saplings of *Ficus* were planted in front of Department of Anatomy.

4th CONVOCATION OF DUVASU

The Fourth convocation of U.P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidayalaya Evam Go Anusandhan Sansthan was held on 2nd Feb 2015. Honorable Governor of Uttar Pradesh and Chancellor of U.P. Pt. Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidayalaya Evam Go Anusandhan Sansthan, Mathura and Padmabhusan Professor R.B. Singh, Chief guest of the occasion graced the auspicious occasion. At the onset Hon'ble Vice Chancellor Prof. A.C. Varshney welcomed the dias dignitaries and august gathering and presented a brief account of progress of the University during the intervening period 2014-15

encompassing research, education and extension activities together with the students achievements and infrastructural facilities being developed. Hon'ble Chancellor conferred degrees to 72students. Out of a total 72, 4 students received their Ph.D degree, 25 students received M.V.Sc and 38 B.V.Sc. & A.H. and 5 students received M.Sc. degree in Biotechnology. 10 students received different medals on the basis of their excellent performance in academics and extra-curricular activities. Hon'ble Governor and Chancellor of the University congratulated the degree and medal receipients and gave them five moolmantras for the success in their career. He further encouraged the students to give their services to the society particularly in the village areas for their better living and empowerment of rural masses. Hon'ble chief guest of the occasion Prof R.B. Singh delivered the convocation address and congratulated the Degree and medal recipients on their academic achievement and wished them a bright and purposeful professional career. He encouraged the students to give their services in the villages for the better living and empowerment of rural masses and poor people.

Hon'ble Vice Chancellor delivered the Address of Hon'ble Governor and the Chancellor of the University Shri B.L. Joshi. In the evening a colorful cultural programme was organized for distinguished guest, senior officers of the university, faculty members, non-teaching staffs students and degree recipients.

XI. AWARDS AND HONOUR/ACHIEVEMENTS

- Prof. Satish K. Garg, Dean, Veterinary College was appointed as the Co-Convener of 5th Dean Committee of ICAR Veterinary and Animal Sciences Subgroup for Higher Agricultural Education in India.

- Prof. Satish K. Garg, Professor & Head, Pharmacology and Dean, Veterinary College was elected as President of Society of Toxicology (2014-2016).

- Prof. Satish K. Garg, Head Pharmacology and Dean, Veterinary College acted as the Convener of meeting of HODs of Pharmacology and Toxicology, Animal Genetics and Breeding, Animal Nutrition and Veterinary and Animal Husbandry Extension held at DUVASU, Mathura.

- Dr Vikas Pathak, Professor & Head, LPT was elected as Vice-President of Indian Meat Science Association.

- Dr Meena Goswami Awasthi, Assistant Professor, LPT was elected as Executive Body Member of Indian Meat Science Association.

- Dr. Ajay Prakash Professor, Veterinary Anatomy was elected as Secretary, Dr. Prabhakar Kumar Assistant Professor elected as Treasurer, Dr. M.M. Farooqui, Associate Professor as member in Executive Committee and Dr. Archana Pathak, Associate Professor as Zonal Secretary in IAVA for three years.

- Dr. Mukul Anand, Assistant Professor, Veterinary Physiology received Young Scientist Award from Bio Ved Institute, Allahabad.

- P S Lalitha Silver Jubilee Award and Gold Plated Silver Medal for the best paper published in Indian Journal of Veterinary Anatomy in year 2013 conferred in XXIX Annual Convention of IAVA at Durg for the paper entitled "Prenatal development of vas deferens in goats (*Capra hircus*)" by M M Farooqui, Chandrapal, Archana Pathak, Ajay Prakash and Prabhakar Kumar published in Indian Journal of Veterinary Anatomy. 25 (1): 12-15.

- Dr. C. Vijayaragavan Memorial Silver Jubilee Medal and Award for Best Paper in Avian Anatomy to the research paper entitled "Comparative anatomy of pelvis of fowl, turkey, peacock and white breasted waterhen" by Archana Pathak, S.K. Gupta, A. Verma, M.M. Farooqui and Varsha Gupta" during XXIX Annual Convention of Indian Association of Veterinary Anatomists and National Symposium on "Recent concepts and applications of veterinary anatomy for improvement of livestock health and production" held at Chhattisgarh Kamdhenu Vishwavidayalaya, Durg from Feb, 11-13, 2015.

- Dr. Yajuvendra Singh and Dr. Anuj Kumar participated as judges of Cattle in Dairy Mela held at NDRI, Karnal.

❖ **Patents Filed:** Department of Pharmacology and Toxicology filed two patents during the year

S. No.	Application No.	Title
1	2642/DEL/2014 15/09/2014	Non-estrogenized and consistent rat uterus model for pharmacodynamic studies on myometrium of cyclic rats
2	839/DEL/2015 26/03/2015	Novel herbal capsule (Pyodermacare-G) for treatment of bacterial and mycotic dermatitis in canines

XII. RESEARCH PUBLICATIONS

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Goswami, M., Pathak, V., Bharti, S. K., Singh, V. P., Singh, T. and Sengar, A. (2014). Development and evaluation of quality characteristics of egg balls. Nutrition and Food Science, **44(6):** 536 – 544.

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Kasoudhan, A. K., Malik, V., Chaurasia, M. K., Singh, S. and Singh, R. K. (2014). Diagnosis and retrieval of two large sized urinary calculi in a dog. Indian Journal of Canine Practice, **6(2):** 152-153.

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XIII. ESTATE ORGANIZATION

INAUGURATION OF THE NEW BUILDING

Hon'ble Chancellor of the University and Governor of Uttar Pradesh Shri Ram Naikji inaugurated the Building of College of Livestock Products Technology and dedicated it to the Nation on 21.09.2014.

NEW CONSTRUCTIONS

With the funds received from ICAR, New Delhi, two new guest rooms at Sarojini hostel and International Hostel and one amphitheatre were constructed.

RENOVATION AND REPAIRS OF UNIVERSITY BUILDINGS AND FARMS

- With the funding received from Indian Council of Agricultural Research, New Delhi, renovation of Gautam Hostel, Teachers home cum Guest House, Dean Office, Controller of Examination Office was done.
- Cattle shed was constructed
- Few rooms were renovated in the S.N. Hostel, which were more than 65 years old.

XIV. FINANCE AND BUDGET

State Government			Indian Council of Agricultural Research	RKVY
Plan	Non-Plan	Total	Plan	NIL
100	300	400	370	

XV. RIGHT TO INFORMATION ACT

In compliance of the order of Govt. of Uttar Pradesh and provision of RTI Act, 2005, PIO received 96 applications out of which 89 applications were cleared and rest is under consideration for disposal.

DIGNITARIES VISITED

Hon'ble Chancellor of the University and Governor of Uttar Pradesh **Shri Ram Naik ji**

Hon'ble Union Agriculture Minister **Shri Radha Mohan Singh ji**

Hon'ble Cabinet Minister, Animal Husbandry and Minor Irrigation, Uttar Pradesh **Shri. Raj Kishore Ji**

Prof. (Dr.) S. Honnappagol, Animal Husbandry Commissioner, Government of India

Prof. (Dr.) K. M. L. Pathak, Deputy Director General (Animal Sciences), ICAR, New Delhi

Dr. Arvind Kumar, Hon'ble Vice-Chancellor, Central Agricultural University, Jhansi, (U.P.)

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Dr. V. V. Kulkarni, Director, National Research Centre on Meat, Hyderabad

Dr. D. K. Sarma, Director, National Research Centre on Pigs, Guwahati

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Prof. (Dr.) Nagendra Sharma, Former Vice Chancellor, Sher -E- Kashmir University of Agriculture Sciences and Technology, Jammu

Dr. R. S. Chauhan, Former Director, Fisheries, Govt. of Uttarakhand

Dr. Lal Krishna, Former Additional Director General (AS), ICAR, New Delhi

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Vice Chancellor

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