

## **DIRECTOR'S REPORT**

### **CAFT, DEPARTMENT OF VETERINARY PATHOLOGY,**

#### **GADVASU, LUDHIANA, PUNJAB**

The training on the topic “Recent approaches in clinico-pathological diagnoses of animal diseases” under the subject area of ‘Molecular approaches in disease diagnostics and vaccines’ was organized CAFT, Department of Veterinary Pathology, GADVASU from 11/17/2017 to 12/7/2017.

66 participants applied for the training, out of which 25 were approved, who attended the training. The participants belonged to 11 states comprising of Asam, Gujarat, Haryana, Jammu and Kashmir, Kerala, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh. The majority (18) participants belonged to the discipline of Veterinary Pathology, however, there were participants from the disciplines of Vety Medicine, Vety Parasitology, Vety Pharmacology, Vety Public Health and Vety Anatomy.

The topics covered in this training comprised of analysis of blood, blood grouping, bone marrow study, analysis of urine, faeces & body fluids and biosecurity measures for laboratory work. Participants of the training have been exposed to clinical techniques like endoscopy, echocardiography, ultrasound guided FNAB, core needle biopsy, skin scrapping and microbiological techniques as well as advanced laboratory techniques like PCR, qPCR, Florescence Polarization Assay, FISH, Doppler analysis. Special emphasis lectures were delivered on advanced ante-mortem diagnosis of Rabies; clinico-pathological diagnosis of neoplasms and diagnostic approaches of mycotic & parasitic diseases.

In addition to the varied topics, being covered in presentations by experts from different fields, there was special emphasis on the hands-on training by actually work in the wet lab. The participants of the training have, thus, received hands on exposure of immunohistochemistry, immunofluorescence, analysis of body fluids/extracts & examination of tissue impression smears.

The exposure of state of the art laboratories to the participants had been incorporated in the training. The laboratories of the departments, where the participants worked were that of Department of Veterinary Pathology, School of Animal Biotechnology, Animal Disease Research Centre, Department of Veterinary Parasitology, Department of Veterinary Microbiology, Department of Veterinary Medicine and Clinical Disease Diagnostic Laboratory.

Dr Charan Kamal Singh,  
Director,  
CAFT, Department of Veterinary Pathology,  
GADVASU, Ludhiana

Annual Report (2018-2019)  
2<sup>nd</sup> advanced faculty training  
course on

**“Recent Approaches in Diagnostic Pathology and  
Oncology” CENTRE OF ADVANCED FACULTY  
TRAINING**



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Pathology College of  
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## **CENTRE OF ADVANCED FACULTY TRAINING**

**Department of Veterinary Pathology**

**College of Veterinary Science**

**Guru Angad Dev Veterinary and Animal Sciences University**

**Ludhiana, Punjab**

### **1. Introduction**

The Centre of Advanced Faculty Training in Veterinary Pathology was established in the year 2016-17. Till date the department has conducted two training courses and have imparted training to 50 Scientists/Surgeons/Clinicians/Teachers from various State Veterinary Universities / State Agricultural Universities / ICAR institutes.

### **2. Main objectives of the scheme**

- i) To develop facilities in the department to function as Centre of Advanced Faculty Training in field of Veterinary Pathology.
- ii) To undertake advanced training and retraining of scientists/faculty members of different universities and ICAR institutes in the country in the field of Veterinary Pathology.
- iii) To conduct advanced trainings, workshops and summer institutes regularly as and when sanctioned by ICAR under Centre of Advanced Faculty Training (CAFT).

### **1. Activities of the Centre during the year 2017-18**

#### **A. New Appointments and Admissions:**

During the current year, no new faculty members joined the department of Veterinary Pathology. Five MVSc students have completed their degrees during the year 2017-18. Six students have been admitted to MVSc and two to PhD Program. At present, a total of 3 students are pursuing PhD and 13 MVSc degree in the department of Veterinary Pathology.

#### **B. Purchase of Equipment**

1. Penta-head Microscope camera with projection screen.

#### **C. Renovation work done:**

1. Seminar/conference room of the department was renovated.

#### **D. Purchase of Books**

Books worth Rs. 35000/- were purchased for departmental library under CAFT.

#### **E. Hosting of website:**

Link of the Centre of Advanced Faculty Training, Department of Veterinary Pathology, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana was created on the university website [www.gadvasu.in](http://www.gadvasu.in).

## **F. Training Courses conducted during 2017-18**

The 2<sup>nd</sup> advanced faculty training course of 21-day duration was organized on the topic **“Recent Approaches in Diagnostic Pathology and Oncology”** from **November 12, 2018 to December 2, 2018**. For this training course applications were invited from the scientists working in the discipline of Veterinary Pathology and other allied subjects from various State agricultural / Veterinary Universities and ICAR institutes. A total of 47 applications were received. Twenty five scientists were selected; however, 25 participated in the current advanced faculty training course representing 15 States and 20 Institutions.

The trainees were given registration kit/material during the training course. During the training course, participants were imparted knowledge about advances in diagnostic pathology and oncology.

Dr. Sanjeev Kumar Uppal, Dean Postgraduate Studies and Nodal Officer for CAFT training program and Dr. Prakash Singh Brar, Dean, College of Veterinary Science, Guru Angad Dev Veterinary and Animal Sciences University were the guest of honour and chief guest, respectively, during the inaugural function of 2<sup>nd</sup> Advanced Faculty training program. The officers of the University applauded the achievements of the faculty and welcomed the participants.

The trainees were later taken around the various research and teaching laboratories of the Department, Clinical Services Complex, University Library and the college in order to acquaint them with the clinical, research and teaching facilities available at the University campus. This training course comprised of 34 lectures and more than 16 practical demonstrations covering the theme of the training.

The trainees were encouraged to participate in various diagnostic approaches including postmortem examination of animals, leukocytic, erythrocytic and thrombocytic abnormalities, urinalysis, rabies diagnosis, serum chemistry analysis, diagnostic cytology and anemia in animals with special reference to immune mediated hemolytic anemia. In addition, the participants were given hands on training for postmortem examination of animals, preservation of specimen by plastination and casting of pathological specimen, clinical hematology, urinalysis, rabies diagnosis, clinical parasitology, diagnostic microbiology, interpretation of samples in clinical medicine, diagnostic cytology, diagnostic histopathology and diagnostic oncology. The department has established histopathology and immunohistochemistry laboratory for diagnosis of animal and poultry diseases.

Outside experts from other state universities such as, Tamil Nadu Veterinary and Animal Sciences University, Chennai; Tamilnadu and Sapatgiri Institution of Medical Sciences, Bangalore, CSKHPKV Palampur, ICAR were invited to deliver expert lectures and practical demonstrations during the training programme.

This training course comprised 34 lectures and more than 16 practical demonstrations covering the theme of the training. During the training course, Dr. V. Ramakrishna, Retd. Professor and Head, Department of Anatomy & Histology, Sathagiri Institution of Medical Sciences and Research Centre, Bangaluru, delivered two lectures on “Plastination for preservation of pathological tissue specimens” and “Casting for preservation of pathological specimens”. The techniques were also discussed in detail along with discussion on personal experiences which were highly appreciated by the participating scientists.

A lecture on “Advances in pathological approaches for disease diagnosis” was delivered by Dr C. balachandran, Vice-Chancellor, TANUVAS, Chennai. The lecture was highly informative and applauded by the participants and faculty

Dr. P. P. Gupta, Retired, Professor-cum-Head, Department of Veterinary Pathology, PAU , Ludhiana delivered expert lectures on ‘Recent approaches in diagnostic pathology of parasitic diseases in animals’ and ‘Impact of climatic change on diagnostic pathology of post-mortem lesions in sheep and goat’. The lectures were very interesting and helpful for the participants and faculty.

The lecture on the topic “Disease diagnosis using morphological description of pathological changes” delivered by Dr. V. K. Gupta, Professor-cum-Head, Department of Veterinary Pathology, Dr. GC. Negi COVAS, CSKHPKV, Palampur was highly appreciated by the trainees.

Faculty members of the department as well as from the other departments of Guru Angad Dev Veterinary and Animal Sciences University like Departments of Veterinary Microbiology, Veterinary Parasitology, Veterinary Medicine, Veterinary Surgery and Radiology, Livestock Product Technology and Animal Biotechnology also delivered lectures on the subject of their expertise during the training program. Dr. R. K. Asrani, Professor, Department of Veterinary Pathology, Dr. G.C. Negi, College of Veterinary Science, CSKHPKV, Palampur, who was nominated as an observer by the ICAR, visited to evaluate the CAFT centre. He also delivered lecture on “Fumonisin and Moniliformin mycotoxins: Pathology, mechanisms of toxicity and public health impact” and took feedback of participants about the current ongoing training programme and future improvements they wanted to be included in the training module.

The training curricula were evaluated by the participants at the end of the training course. The trainees appreciated the work being done at the department of Veterinary Pathology, team work of the faculty and the training module. A compendium and CD of lectures and presentations prepared by the faculty members were distributed to the participants. Concluding function of the 2<sup>nd</sup> t Advanced Faculty training course was held on the last day training i.e. on 02.12.2018. Dr. Charan Kamal Singh, Director of this training programme and Sr. Veterinary Pathologist-cum-Head advised to the participants to use the acquired knowledge for the advancement of teaching, research and extension activities of their institutes. Dr N.K. Sood, Senior. Veterinary Pathologist and Dr Kuldeep Gupta, Professor, were the course coordinators of this training program.

Dr. S.K. Uppal, Dean Postgraduate Studies-cum-Centre Coordinator of this training program was the Chief Guest in the concluding function. He applauded the efforts being made by the department in organising the training program and congratulated the faculty and participants on successful completion of the training programme. Dr Uppal said that such training programs are necessary for upgrading the core and advanced diagnostic, anaesthetic and surgical skills of the faculty members to meet the objectives of effective teaching and clinical research. The Chief Guest released a compendium of lectures and a CD containing the power point presentations delivered by the various experts during the training course and distributed certificates to the participants.

Details of lectures delivered during 2<sup>nd</sup> Advanced Faculty Training program

- Necropsy procedures for animal disease diagnosis
- Collection, preservation and processing of samples for analysis
- Plastination for preservation of pathological tissue specimens
- Diagnostic approaches for poultry diseases
- Casting for preservation of pathological specimens.
- Urinalysis and animal disease diagnosis
- Immunopathological approaches for diagnosis of animal diseases
- Disease diagnosis using morphological description of pathological changes
- Erythrocytic abnormalities and animal disease diagnosis.
- Advances in pathological approaches for disease diagnosis
- Laboratory diagnosis of anaemia in animals.
- Recent approaches in diagnostic pathology of parasitic diseases in animals
- Leukocytic abnormalities and animal disease diagnosis
- Impact of climatic change on diagnostic pathology of post-mortem lesions in sheep and goat.
- Avian neoplasms: Detection and differentiation of avian oncogenic virus infections
- Recent approaches in rabies diagnosis.
- Recent advances in diagnosis of diarrhoea in calves
- Diagnosis of parasitic infections in livestock animals: microscopy to gene level.
- Advances in diagnosis of parasitic infections
- Advances in the diagnosis of respiratory affections in animals
- Diagnostic cytology of animal diseases and cancers
- Diagnostic microbiology for animal disease diagnosis.
- Diagnostic Procedures in Clinical Veterinary Medicine
- Cytology and diagnosis of eye, ear and skin diseases.
- Livestock health schemes for effective animal health management
- Use of histopathological technique for identifying different tumours
- Advances in diagnosis of epithelial tumours of animals.
- Epithelial Mesenchymal transition in tumors and other conditions
- Advances in diagnosis of miscellaneous tumours (other than epithelial & mesenchymal tumours) of animals
- Cytological and clinical diagnosis of avian diseases
- Livestock extension for a Veterinary Pathologist
- Advances in diagnosis and surgical management of cancer veterinary patients.
- Recent advances in canine mammary neoplasia
- Non-invasion approaches for diagnosis of tumors
- Meat inspection with special reference to poultry
- Ante-mortem and post-mortem inspection of meat animals
- Diagnosis of diseases during outbreaks in animals
- Fumonisin and Moniliformin mycotoxins: Pathology, mechanisms of toxicity and public health impact

#### **G. A Brief Statement on Achievements:**

The CAFT training under the aegis of capacity Building Program (CBP) of Indian Council of Agricultural Research (ICAR) was conducted by Department of Veterinary Pathology, Guru Angad Dev

Veterinary and Animal Sciences University. Ludhiana from 12<sup>th</sup> November to 2<sup>nd</sup> December 2018. The theme of this year's training has been Recent Approaches in Diagnostic Pathology and Oncology.

Topics covered during the training included Necropsy procedures for animal disease diagnosis, Plastination and Casting for preservation of pathological specimens, Diagnostic approaches for poultry diseases, Urinalysis and animal disease diagnosis, Immunopathological approaches for diagnosis of animal diseases, Erythrocytic abnormalities and animal disease diagnosis, Leukocytic abnormalities and animal disease diagnosis, Thrombocytic abnormalities and disease diagnosis in animals, Recent approaches in diagnostic pathology of parasitic diseases in animals, Impact of climatic change on diagnostic pathology of post-mortem lesions, Recent approaches in rabies diagnosis, Epithelial Mesenchymal transition in tumours, Advances in Avian Haematology & Oncology and Recent advances in canine mammary neoplasia.

In this year's CAFT Training, Hands on training was imparted on Clinical haematology practice, Plastination practice, Casting practice, Necropsy practice, Rabies diagnosis, Clinical parasitology practices for diagnosis of parasitic infections, Diagnostic microbiology for animal disease diagnosis, Diagnostic cytology of animal diseases and cancers, Use of histopathological technique for identifying different tumours.

It was ensured that in addition to the state of the art laboratories and facilities within the Department of Veterinary Pathology, the trainees of the CAFT training in the department also get sufficient exposure of the expertise and infra-structure in other departments of the university. Accordingly, experts from various departments of university also shared their expert views related to the theme of the training with the trainees.

In addition to the experts from the various departments of the university, there were guest lectures by experts from outside the GADVASU. The guest experts included Dr V. Ramkrishna, Professor, Sathagiri Institute of Medical Sciences and Research Centre, Bangalore, Dr Jyoti Misri, Principle Scientist, ICAR, Dr PP Gupta, Retired Professor Dr V K Gupta, Professor and Head, Department of Veterinary Pathology, CSKHPKV, Palampur. In addition, Dr Warner, Diplomat of ACVP in Clinical Pathology from University of Calgary, who was in GADVASU, also shared her expert views with the trainees of CAFT.

Out of 47 applicants, 25 faculty members from various institutes of 15 states of India participated in the training. Each participant was offered a compendium with CD of presentations of expert lectures. Free access to the library, computer and other facilities in the department was provided to the trainees.

## **H. Constraints**

1. Funds are required to procure new computers and multimedia system to strengthen training activities.



## Training Activities



**Dr V. Ramkrishna demonstrating the plastination and casting for preservation of pathological specimens**



**Dr. B S Sandhu interacting with the participants in the Clinical Diagnostic laboratory**



**Dr. Kuldip Gupta demonstrating the immunohistochemical staining of the tissues**



**Dr. V. K Gupta delivering his expert lecture to the participants of the training**



**Dr Warner, Diplomat of ACVP in Clinical Pathology from University of Calgary interacting with the participants of the training**



**Dr. Naresh Kumar Sood Delivering his expert lecture to the participants**



**Dr. Jitender Mohindroo demonstrating technique for ultrasound guided biopsy**



**Dr. Amarjit Singh describing the gross lesions in the museum of the department**



**Dr. Harish Kumar Verma, Director, Extension Education , Guru Angad Dev Veterinary and Animal Sciences University delivering his expert lecture to the participants**



**Dr. Jyoti Misri, Pricipal Scientist ICAR, interacting with the participants**



**Participants and faculty members of the department with faculty members from University of Calgary, Canada**

**REPORT (2019-2020)**

**3<sup>RD</sup> ADVANCED FACULTY TRAINING COURSE ON**

**“Diagnosis of Animal and Poultry Diseases with Emphasis on Morphological Characterization  
Gross and Histological Lesions”**

**CENTRE OF ADVANCED FACULTY TRAINING**



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**CENTRE OF ADVANCED FACULTY TRAINING**

**Department of Veterinary Pathology**

**College of Veterinary Science**

**Guru Angad Dev Veterinary and Animal Sciences University**

## **Ludhiana, Punjab**

### **1. Introduction**

The Centre of Advanced Faculty Training in Veterinary Pathology was established in the year 2016-17. Till date the department has conducted 3 training courses on various topics and have imparted training to 73 Scientists/Surgeons/Clinicians/Teachers from various State Veterinary Universities / State Agricultural Universities / ICAR institutes.

### **2. Main objectives of the scheme**

- i) To develop facilities in the department to function as Centre of Advanced Faculty Training in field of Veterinary Pathology.
- ii) To undertake advanced training and retraining of scientists/faculty members of different universities and ICAR institutes in the country in the field of Veterinary Pathology.
- iii) To conduct advanced trainings, workshops and summer institutes regularly as and when sanctioned by ICAR under Centre of Advanced Faculty Training (CAFT).

### **1. Activities of the Centre during the year 2018-19**

#### **A. New Appointments and Admissions**

During the current year, one new faculty member has joined the department of Veterinary Pathology. Five MVSc students have completed their degrees during the year 2018-19. Eight students have been admitted to MVSc and one to PhD Program. At present, a total of four students are pursuing PhD and 16 MVSc degree in the department of Veterinary Pathology.

#### **B. Purchase of Equipment**

- Microscopy camera for penta head microscope.

#### **C. Renovation work done**

The Conference room, Museum and Post Mortem Hall of the department were renovated.

#### **D. Purchase of Books**

Books worth Rs. 35000/- were purchased for departmental library for use by CAFT participants.

#### **E. Hosting of website:**

Link of the Centre of Advanced Faculty Training, Department of Veterinary Pathology, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana was created on the university website [www.gadvasu.in](http://www.gadvasu.in).

#### **F. Training Courses conducted during 2018-19**

The 3<sup>rd</sup> advanced faculty training course of 21-day duration was organized on the topic "Diagnosis of Animal and Poultry Diseases with Emphasis on Morphological Characterization of Gross and Histological Lesions" from November 17, 2019 to December 7, 2019. The applications were invited from faculty members working in the discipline of Veterinary Pathology and other allied subjects from various state agricultural universities (SAUs) / Veterinary



universities and ICAR institutes. A total of 49 applications were received. Twenty five scientists were selected; however, finally 23 participated in the current advanced faculty training course representing 12 States and 19 institutions.

The trainees were given registration kit/material during the training course. During the training course, participants were imparted knowledge about advances in diagnostic pathology and oncology.

Dr. Sanjeev Kumar Uppal, Dean Postgraduate Studies and Nodal Officer for CAFT training program and Dr. Prakash Singh Brar, Dean, College of Veterinary Science, Guru Angad Dev Veterinary and Animal Sciences University were the Chief Guest and Guest of Honour respectively, during the inaugural function of 3<sup>rd</sup> advanced faculty training program. The officers of the university applauded the achievements of the faculty of the department and welcomed the participants.

In addition to the facilities within the Department of Veterinary Pathology, the trainees were taken around various research and teaching laboratories of the College, Clinical Services Complex, University Library and Animal Biotechnology College in order to acquaint them with the clinical, research and teaching facilities available at the University campus. This training course comprised of 39 lectures and 15 practical demonstrations covering the theme of the training.

The trainees were encouraged to participate in various diagnostic approaches including postmortem examination of animals, interpretation of gross lesions, rabies diagnosis, diagnostic hematology, urinalysis, cytology, histopathology and biopsy. In addition, the participants were given hands on training for postmortem examination of animals, preservation of specimen by plastination of pathological specimens, clinical hematology, urinalysis, rabies diagnosis, immunohistochemistry, clinical parasitology, interpretation of samples of diagnostic cytology, diagnostic histopathology and diagnostic oncology and ante-mortem and post-mortem examination of meat animals. The department has a well established histopathology and immunohistochemistry laboratory for diagnosis of animal and poultry diseases.

Outside experts from other state universities such as, College of Veterinary Science, SVVU Tirupati, Andhra Pradesh, Sardarkrushinagar Dantiwada Agricultural University Sardarkrushinagar, Gujarat, College of Veterinary Science and Animal Husbandry Bhubaneswar, Orissa, Nainital and ICAR were invited to deliver expert lectures and practical demonstrations during the training programme.

During the training course, Dr. Ch. Srilatha, Professor & Head, Department of Veterinary Pathology College of Veterinary Science, SVVU Tirupati, Andhra Pradesh delivered two expert lectures on “Pathomorphological aspects of zoo/wild animal tumours” and “Gross and histopathological aspects of uterine cancers in bovines” which were highly appreciated by the participants.

Dr. D V Joshi, Dean College of Veterinary Science & Animal Husbandry Sardarkrushinagar Dantiwada Agricultural University Sardarkrushinagar, Gujarat also delivered two expert lectures on “Gross descriptive techniques of animal diseases” and “Pattern based analysis microscopic descriptive technique of animal neoplasms” which were based on the theme of the training and very much liked by the participants.

Dr. Susen Kumar Panda, Professor & Head, Department of Veterinary Pathology College of Veterinary Science and Animal Husbandry Bhubaneswar, Orissa also delivered two expert lectures on wild life pathology

“Challenges and opportunities in elephant disease diagnosis” and “Pathomorphological diagnosis of diseases in wild ruminants and felines”.

Dr. P. P. Gupta, Retired, Professor-cum-Head, Department of Veterinary Pathology, PAU , Ludhiana delivered two expert lectures on ‘Diagnosis of mycotic diseases in animals and poultry with emphasis on morphological characterization of gross and histological lesions’ and “Diagnosis of parasitic diseases in animals and poultry with emphasis on morphological characterization of gross and histological lesions”. The lectures were very interesting and helpful for the participants and faculty.

Faculty members of the department as well as from the other Departments of Guru Angad Dev Veterinary and Animal Sciences University like Departments of Veterinary Microbiology, Veterinary Parasitology, Veterinary Surgery and Radiology, Livestock Product Technology and Animal Biotechnology and Animal Disease Research Centre also delivered lectures on the subject of their expertise during the training program. Dr. K. P. Singh Principal Scientist and Head, Division of Veterinary Pathology, IVRI Institute, Izatnagar, Bareilly, Uttar Pradesh who was nominated as an observer by the ICAR, visited to evaluate the CAFT centre. He also delivered lecture on “Molecular epidemiology, pathogenesis and diagnosis of Blue Tongue” and took feedback of participants about the current ongoing training programme and improvements to be done in the future training programmes.

The curricula of training was evaluated by the participants at the end of the training course. The trainees appreciated the work being done at the department of Veterinary Pathology, team work of the faculty and the training module.

A compendium and CD of lectures and presentations prepared by the faculty members were distributed to the participants.

Concluding function of the 3<sup>rd</sup> Advanced Faculty training course was held on the last day training i.e. on 07.12.2019. Dr. Charan Kamal Singh, Director of the training programme and Sr. Veterinary Pathologist-cum-Head advised the participants to use the acquired knowledge for the advancement of teaching, research and extension activities of their institutes. Dr Kuldeep Gupta and Dr. APS Brar, Professors were the course coordinators of this training program. Dr. S.K. Uppal, Dean Postgraduate Studies-cum-Centre Coordinator of this training program was the Chief Guest in the concluding function. He applauded the efforts being made by the department in organising the training program and congratulated the faculty and participants on successful completion of the training programme. Dr Uppal said that such training programs are necessary for upgrading the core and advanced diagnostic facilities of the faculty members for diagnosis of diseases of animals and poultry. The Chief Guest distributed the compendium of lectures and a CD containing the power point presentations delivered by the various experts during the training course and also distributed certificates to the participants.

### **Details of lectures delivered during 3<sup>rd</sup> Advanced Faculty Training program**

- Post-mortem examination of animals and interpretation of gross lesions
- Collection and processing of morbid material for histopathology
- Diagnostic approaches for calf diarrhoea
- Diagnosis of mycotic diseases
- Diagnostics of hemoprotozoan infections of animals

- Diagnosis of parasitic diseases in animals and poultry
- Pathomorphological aspects of zoo/wild animal tumours
- Gross and histopathological aspects of uterine cancers in bovines
- Application of enzyme histochemistry in diagnostic pathology
- Advances in rabies diagnosis
- SBS model of stray dog population management for effective control of rabies
- Advances in diagnosis of canine mammary tumours
- Gross descriptive techniques of animal diseases
- Pattern based analysis microscopic descriptive technique of animal neoplasms
- Diagnostic Hematology
- Affections of eye in animals
- Diagnostic cytology in diagnosis of diseases
- Pathological alterations in experimentally induced infectious coryza in chickens and quails
- Significance of epithelial to mesenchymal transition in tumour spread in mammary neoplasia
- Analysis of urine for animal disease diagnosis
- Diagnosis of helminth infections in animals with emphasis on molecular diagnosis
- Histological alterations in animals suffering from rabies
- Challenges and opportunities in elephant disease diagnosis
- Pathomorphological diagnosis of diseases in wild ruminants and felines
- Poultry disease diagnosis and avian haematology
- Collection of biopsy specimens for pathological interpretations
- Significance of Livestock Extension for Veterinary Pathologists
- Role of EMT in animal models of lung fibrosis in humans
- Recent advances in diagnosis of mycobacterial diseases in animals
- Ante mortem and post mortem examination of meat animals with a special reference to poultry
- Immunohistochemistry as a diagnostic tool in molecular pathology
- Plastination as a novel approach for preservation and analysis of pathological lesions in animal tissues
- Advances in diagnosis of Avian neoplasms
- Foldscope: a unique tool for microscopic observation of animal tissue/fluids in absence of microscope
- Molecular epidemiology, pathogenesis and diagnosis of blue tongue
- Diagnosis of animal diseases on the basis of clinical signs and gross lesions

**G. A Brief Statement on Achievements:**

The CAFT training under the aegis of capacity Building Program (CBP) of Indian Council of Agricultural Research (ICAR) was conducted by Department of Veterinary Pathology Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana from 17<sup>th</sup> November to 7<sup>th</sup> December 2019. The theme of this year's training has been Diagnosis of animal and poultry diseases with emphasis on morphological characterization of gross and histological lesions.

Topics covered during the training included postmortem examination of animals, interpretation of gross lesions, rabies diagnosis, diagnostic hematology, urinalysis, cytology, histopathology, biopsy. In addition, the participants were given hands on training for postmortem examination of animals, preservation of specimen by plastination of pathological specimen, clinical hematology, urinalysis, rabies diagnosis, immunohistochemistry, clinical parasitology, interpretation of samples of diagnostic cytology, diagnostic histopathology and diagnostic oncology and ante-mortem and post-mortem examination of meat animals.

In this year's CAFT Training, hands on training was imparted on interpretation of gross lesions, biopsy and diagnostic histopathology for diagnosis of different diseases of animals and poultry and identification of different tumours, rabies diagnosis, diagnostic haematology, diagnostic cytology of animal diseases and cancers, urinalysis, plastination for preservation of pathological specimens, clinical parasitology practices for diagnosis of parasitic infections,

It was ensured that in addition to the state of the art laboratories and facilities within the Department of Veterinary Pathology, the trainees of the CAFT training in the department also get sufficient exposure of the expertise and infra-structure in department of Veterinary Parasitology, Teaching Veterinary Clinical Complex, Centralized Clinical Diagnostic Laboratory, Instructional Poultry Processing Unit and College of Animal Biotechnology of the university. Accordingly, experts from various departments of university also shared their expert views related to the theme of the training programme.

In addition to the experts from the various departments of the university, there were guest lectures by experts from outside the GADVASU. The guest experts included Dr. Ch. Srilatha, Professor & Head, Department of Veterinary Pathology College of Veterinary Science, SVVU Tirupati, Dr. D V Joshi, Dean College of Veterinary Science & Animal Husbandry Sardarkrushinagar Dantiwada Agricultural University Sardarkrushinagar, Gujarat, Dr. Susen Kumar Panda Professor & Head, Department of Veterinary Pathology College of Veterinary Science and Animal Husbandry Bhubaneswar, Orissa and Dr. P. P. Gupta, Retired, Professor-cum-Head, Department of Veterinary Pathology, PAU, Ludhiana.

Out of 49 applicants, 23 faculty members from various institutes of 12 states of India participated in the training. Each participant was offered a compendium with CD of presentations of expert lectures. Free access to the library, computer and other facilities in the department was provided to the trainees.

## **H. Constraints**

1. Funds are required for purchase of furniture for the seminar /conference room of the department for convenience of trainees of CAFT and strengthening the training activities.

## Training Activities



**Dr. Prakash Singh Brar, Dean COVS interacting addressing the participants**



**Dr. Ch. Srilatha delivering expert lecture**



**Dr. D.V. Joshi delivering expert lecture**



**Dr. S. K. Panda delivering expert lecture**



**Dr. P. P. Gupta delivering expert lecture**



**Dr. C. K. Singh, Director, CAFT interacting with participants of CAFT**



**Dr. H S. Banga delivering theory lecture**



**Dr. N K. Sood interpreting biopsy slides with the participants**





**Dr. A. P. S. Brar giving practical demonstration of poultry postmortem examination**



**Dr. Amarjit Singh giving practical demonstration of interpretation of slides of poultry diseases**



**Dr. Kuldip Gupta interpreting of biopsy slides with the participants**



**Dr. B. S. Sandhu giving hands on training on Rabies diagnosis**



**Visit to the college of Animal Biotechnology**



**CAFT participant giving feedback of the training programme during the valedictory function**



**Distribution of certificates and compendium to the participants during the valedictory function**