



NRCE

National Research Centre on Equines
राष्ट्रीय अश्व अनुसंधान केन्द्र



NEWSLETTER

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From Director's Desk

The Centre has attained national and international recognition for quality research on important infectious diseases of equines through its research activities. The Centre maintains nationwide surveillance and monitoring on important equine infectious and during 2017, serum samples from 7 states were tested for various diseases like equine infectious anaemia, equine Influenza, equine herpes virus 1, Japanese encephalitis, trypanosomosis, piroplasmiasis, Salmonella Abortus equi and brucellosis. A planned surveillance of glanders in Uttar Pradesh led to detection of more than 200 cases widely spread over 50 districts. Incidence of glanders in Uttar Pradesh and Delhi was alarming, attracting attention of electronic and print media. This calls for a nationwide surveillance and control programme for total eradication of glanders from India. In our endeavour to develop refined vaccines, EHV1 clone employing bacterial artificial chromosome mediated mutagenesis was developed for its use as vaccine candidate. In addition, recombinant equine influenza virus generated through reverse genetics was evaluated as vaccine candidate in mouse model. The research on development of herbal drugs for *Theileria equi* and novel drug molecules for *Trypanosoma evansi* treatment made headway during the year. Our scientists also focused on management of colic and interventions against osteoarthritis using nano-delivery vehicles. Our results on exploration of phage cocktails for treatment of mastitis gave encouraging results. The antiviral activity of SERCA inhibitor was also evaluated *in vitro* against PPRV and NDV. The phenotypic and genetic characterization of donkey breeds, Marwari horses and development of DNA typing for parentage testing has been done. During the year NCVTC accessioned a total of 70 bacteria, 27 viruses, 24 bacteriophages, 36 recombinant clones and 8 genomic DNA .to strengthen the microbial repository.



The technology development, assessment and transfer to end-users have been the mainstay activities of the Centre. Rapid diagnostic kit for diagnosis of *Theileria equi* and r-protein-based ELISA kit for differentiation of EHV1/4infection were released by Hon'ble Minister of Agriculture & Farmers' Welfare, Sh. Radha Mohan Singh. In addition, recombinant protein-based ELISA kits for diagnosis of glanders were provided to diagnostic laboratories of six states. An indirect ELISA for Japanese encephalitis and whole cell lysate antigen-based ELISA for *Trypanosoma evansi* were also provided to Assam Agricultural University, Guwahati to develop diagnostic facilities in north-eastern region. In addition, PCR assays for Vesicular stomatis virus and Venezualan equijne encephalitis virus were developed using synthetic gene technology.

The centre extended equine welfare activities in different parts of the country by organizing health camps and interactive farmer meets to educate equine owners on various aspects of disease control and management. Under Mera Gaon Mera Gaurav programme NRCE scientists coordinated agriculture, animal health related activities and social awareness programmes. I would like to compliment to the Publication Committee for bringing out this excellent Newsletter 2017.

B.N.Tripathi

Dr. B.N. Tripathi





Sectoral News

Most modern horses are descendants of recently imported Oriental stallions

Recently, the research on Y chromosomes of more than 50 horses representing 21 breeds revealed that the paternal lines of nearly all modern horses trace to stallions brought to Europe from the Orient over the last 700 years. Apart from stallion lines in Northern European breeds, all stallion lines detected in other modern breeds derive from more recently introduced Oriental ancestors. Analysis of 52 Y chromosomes showed that the paternal lineages of various modern horses split much more recently than the domestication of the species, which goes back more than 5,000 years. Apart from a few private Northern European haplotypes, all modern horse breeds included in the study clustered into a roughly 700-year-old haplogroup, transmitted to Europe by the import of Oriental stallions. The research paved the way for a fine-scaled genetic characterization of stallion lines, which should become routine in the near future.

Journal Reference: Barbara Wallner, Nicola Palmieri, Claus Vogl, et al., **Y Chromosome Uncovers the Recent Oriental Origin of Modern Stallions.** *Current Biology*, 2017; DOI: 10.1016/j.cub.2017.05.086

Genetic risk factor for equine eye cancer identified

A genetic mutation in horses has been identified that should help recognize horses that are at risk for squamous cell carcinoma of the eye and enable horse owners to make informed breeding decisions. In the cover article for the *International Journal of Cancer*, scientists announced the discovery of a genetic mutation in horses that is hypothesized to impact the ability of damage specific DNA binding protein 2 (DDB2) to carry out its standard role. Normally, the protein conducts DNA surveillance, looking for UV damage and then calling in other proteins to help repair the harm. The test determines if a horse carries the mutation or has two copies of the risk variant, putting it at highest risk for cancer. In addition to improving the health of horses, this study may have implications for human health as well. The gene found to be associated with equine SCC is also linked in humans to xeroderma pigmentosum complementation group E -- a disease characterized by sun sensitivity and increased risk of cutaneous SCC and melanoma.

Journal Reference: Rebecca R. Bellone, Jiayin Liu, Jessica L. Petersen, Maura Mack, Moriel Singer-Berk, Cord Drögemüller, Julia Malvick, Barbara Wallner, Gottfried Brem, M. Cecilia Penedo, Mary Lassaline. **A missense mutation in damage-specific DNA binding protein 2 is a genetic risk factor for limbal squamous cell carcinoma in horses.** *International Journal of Cancer*, 2017; 141 (2): 342 DOI: 10.1002/ijc.30744

Institute News

Research highlights

Comparative proteomics analysis of horse, donkey and cow milk

Donkey milk is considered to have some characteristic proteins,

which have therapeutic and cosmetic values. Therefore, the proteomic analysis of donkey milk vis-à-vis horse and cow milk was carried out. Milk samples from donkey and horse mares (were subjected to protein analysis by LC-MS/MS spectroscopy. Obtained proteomic spectrum was annotated with respect to UniPort (<http://www.uniprot.org/>) bovine and equine database. A total of 212 and 211 proteins in horse and donkey mares were identified, respectively. Venn diagram analysis showed that out of these listed proteins, 203 proteins (92.3%) were common between horse and donkey (Fig. 2). There were 9 and 8 unique proteins in horse and donkey milk, respectively. Milk of these species contains lot of proteins, which are involved in various biological processes like cellular (n=83) and metabolic processes (n=70) and represented maximum in the milk. Macromolecular complex, membrane and extracellular region proteins are also vividly represented. This milk proteomic data represented 22 protein classes involving 178 proteins. Nucleic acid binding, transferase, hydrolase, cytoskeletal protein, cell adhesion molecule, enzyme modulator, etc are the major protein classes represented in the horse and donkey mare milk. A few uncommon proteins identified in horse and donkey milk needs to be explored further to identify their biological role and molecular functions.

(Yash Pal, Sanjay Kumar, Anuradha Bhardwaj, R.A. Legha and A.K. Mohanty)

Genetic characterization of Marwari horses for selection of true to breed animals

For the genetic characterization of indigenous Marwari horse populations, Marwari horse DNA samples were analyzed by microsatellite genotyping to determine genetic diversity and relatedness within population. A total of 282 DNA samples from Marwari horses were genotyped with 30 microsatellite markers in six multiplexes. Basic statistical analysis and input file conversions were done by GenAlEx and MSA toolkit softwares. Null alleles and large allele dropouts were checked by Microchecker software for identifying and correcting genotyping errors in microsatellite data and about 23 fluorescent microsatellite markers were finally selected for data analysis based on curated data. Number of alleles and allelic frequency was calculated according to Kimura and Crow, 1964; POPGENE. The allele size ranged from 4 to 17 with an average of 9.6957 ± 3.2813 . The microsatellite marker TKY 333 was the most contributing marker of genetic diversity.



(Bhardwaj, A., Chauhan M., Pal Y., Gupta A.K. and Tripathi B.N)

Emetine has a broad-spectrum antiviral activity and does not induce generation of drug-resistant virus variants.

The virology laboratory of NCVTC screened a library of kinase and phosphatase inhibitors for their antiviral effects, one of them-emetine showed broad spectrum antiviral (*in vitro* and *in ovo*) efficacy against buffalopox virus (BPXV), bovine herpes virus 1 (BHV-1), PPRV and NDV. Emetine treatment results in reduced synthesis of viral genome and proteins. Moreover, emetine was found to exert significant therapeutic effects against BPXV and NDV *in ovo*. Further, emetine-resistant mutants were not observed upon long-term (P=25) sequential passage of BPXV and NDV in cell culture. Therefore, emetine could provide significant therapeutic value against some RNA and DNA viruses without inducing an antiviral drug-resistant phenotype (Khandelwal et al., 2017, Antiviral Research).

Training of Veterinary Officers and Distribution of ELISA to State Diagnostic Laboratories for rapid screening of glanders

To support state wide glanders surveillance program, 16 veterinary officers and 2 technicians from six state disease diagnostic laboratories of Uttar Pradesh, Madhya Pradesh, Himachal Pradesh, Punjab, Rajasthan, Maharashtra and Jammu & Kashmir were trained. Hcp1 ELISA was provided to three state diagnostic laboratories like Jaipur, Pune and Jalandhar for screening of equine glanders. State DI labs have been instructed to keep all record of sample and ELISA data and regular submission of data to NRCE. ELISA positive samples were further tested by CFT at NRCE for confirmation of glanders. Till now 17563 samples have been tested in five state laboratories. They have expressed their satisfaction and found very useful for quick and simple methodology of the ELISA. Apart from State Lab, ELISA has also been supplied to CMVL, Meerut for screening of Army Horses. The ELISA may be distributed to other state veterinary laboratories for comprehensive glanders surveillance program.

Research advisory committee held on 25-03-2017 at NRCE, Hisar

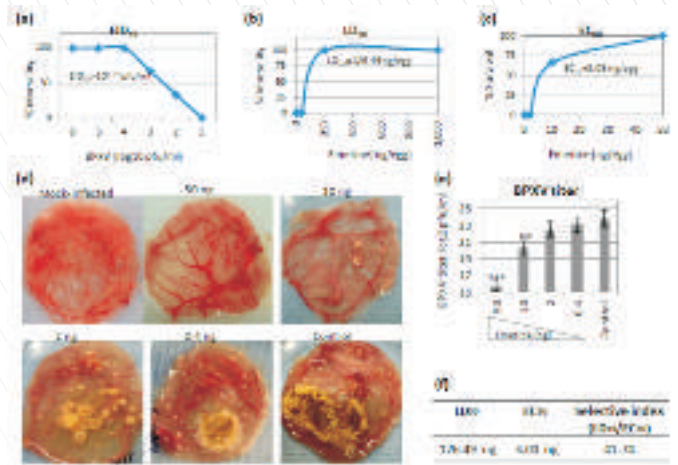
The 21st meeting of RAC was held under the chairmanship of Prof. R.N.S. Gowda Former VC, KVAFSU on 25 March 2018 at ICAR-NRCE, Hisar. Director ICAR-NRCE welcomed the members of new Research Advisory Committee and presented research achievements of the Centre. The RAC reviewed various institute funded and externally funded research projects of the institute in the areas of equine production, equine health and Veterinary Type Cultures. While appreciating the research work at the Centre, the Chairman emphasized the importance of dissemination of the research findings to stakeholders. The RAC advised scientists to work on development of aea specific mineral mixture, parentage testing, development of penride diagnostic & bacterio phase therapy.

Annual Institute Research Committee (IRC) meeting

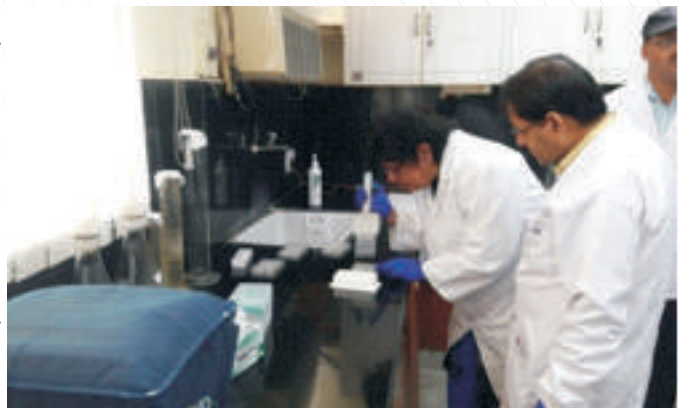
The annual meeting of Institute Research Committee (IRC) was held under the chairmanship of Dr B.N. Tripathi, Director, ICAR-NRCE during 26-29 May, 2017 for appraisal of the research achievements of the ongoing research projects and also to consider new research project proposals. A total of 37 research projects (24 institutional and 13 externally funded) and 5 new concept notes were discussed in the meeting. The chairman expressed satisfaction on quality of the research and publications by the Centre. He urged the scientists to continue the hard work and concentrate more on the output oriented research so that the institute can be self-sustained. He emphasized that the technologies generated by the institute like lateral flow assays for glanders and trypanosomiasis should be transferred to field at the earliest for benefit of the farmers. He advised the scientist that while doing inter-institutional collaborations in research, the interests of the institute should be protected and cost & benefit ratio should be properly analyzed.

Half Yearly Institute Research Committee (IRC) Meeting

Half yearly IRC meeting of ICAR-NRCE was held on 10 October, 2017 under the chairmanship of Director, NRCE, Hisar. In this meeting, 34 research projects operational at the Centre including 22 institutional and 12 externally funded projects were discussed. The Chairman motivated all the scientists for submitting proposals for external funding. He also invited suggestions from all the scientists for new initiative to optimize resource use to boost research activities. A plan to develop equine tourism at EPC Bikaner campus was also discussed in the



(Khandelwal N., Barua S., Riyesh T., Tripathi B.N., Kumar N.)





meeting. In the meeting it was also suggested to develop Central Instrumentation Laboratory for optimal use of resources.

Project Monitoring Committee Meeting at EPC Bikaner

The 2nd Project Report Monitoring Committee on Inter-institutional Project "Feasibility studies on biogas and compost production from mule dung in hilly regions" was held at Equine Production campus, Bikaner on October 30, 2017 under the chairmanship of Dr Anjan K. Kalia, President Biogas Forum, India. The meeting was attended by Dr H. Rahman, Regional Representative South Asia, ILRI and Dr B.N. Tripathi, Director, NRCE. The Chairman said that to meet environmental challenges like straw burning composting and vermin composting are good alternatives. He also emphasized to produce technologies, which are economically viable and has broad application in animal husbandry.

केन्द्र में आयोजित हिन्दी पखवाड़ा 14-28 सितम्बर, 2017 का विवरण

राष्ट्रीय अश्वअनुसंधान केन्द्र में हिन्दी पखवाड़े का आयोजन डॉ० भूपेन्द्रनाथ त्रिपाठी, निदेशक की अध्यक्षता में 14 से 28 सितम्बर, 2017 तक किया गया। कार्यक्रम के प्रथम दिन व हिन्दी दिवस के अवसर पर एक हिन्दी कार्यशाला का आयोजन किया गया। इस कार्यक्रम में स्थानीय दयानन्द महाविद्यालय, हिसार के डॉ० सुरेन्द्र कुमार बिष्णोई, सहायक प्रोफेसर (हिन्दी विभाग) विशिष्ट अतिथि के रूप में उपस्थित थे। मंच संचालन केन्द्र की वैज्ञानिक एवं हिन्दी अधिकारी डॉ० अनुराधा भारद्वाज द्वारा किया गया। इस दौरान विभिन्न हिन्दी प्रतियोगिताओं का आयोजन किया गया। निदेशक महोदय ने हिन्दी पखवाड़ा में बच्चों की प्रतिभागिता की सराहना की और उन्हें पुरस्कार देकर प्रोत्साहित किया।



हिन्दी पखवाड़ा समारोह में केन्द्रीय कार्यालयों के कर्मचारियों के बच्चों की कविता पाठ प्रतियोगिता

समापन समारोह के दिन केन्द्रीय कर्मचारियों के लिए कविता पाठ प्रतियोगिता करवाई गई एवं विजेताओं को पुरस्कार दिए गए। मुख्य अतिथि डॉ० प्रमोद बत्रा, कमांडेंट ईबीएस ने हिन्दी के उत्थान एवं हिन्दी की महत्त्वता पर संबोधन दिया। श्री महेन्द्रपाल कुलश्रेष्ठा, निदेशक, राष्ट्रीय सूचना केन्द्र, हिसार विशिष्ट अतिथि के रूप में मौजूद थे। केन्द्र के निदेशक महोदय डॉ० भूपेन्द्रनाथ त्रिपाठी ने संस्थान के कर्मिकों को अधिकाधिक हिन्दी में कार्य करने के लिए प्रेरित किया।



समापन समारोह में केन्द्र के निदेशक महोदय डॉ० भूपेन्द्रनाथ त्रिपाठी ने संस्थान के कर्मिकों को हिन्दी में कार्य करने के लिए प्रेरित किया

केन्द्र में आयोजित हिन्दी कार्यशालाओं का विवरण

राजभाषा कार्यान्वयन समिति के द्वारा हिन्दी कार्यशाला, को हिन्दी दिवस (14 सितम्बर, 2017) के अवसर पर आयोजन किया गया। इस कार्यक्रम में स्थानीय दयानन्द महाविद्यालय, हिसार के डॉ० सुरेन्द्र कुमार बिष्णोई, सहायक प्रोफेसर (हिन्दी विभाग) मुख्य वक्ता के रूप में उपस्थित थे। उन्होंने हिन्दी के उत्थान तथा विकास का आह्वान किया तथा वैज्ञानिकों व अधिकारियों को अधिकाधिक कार्य हिन्दी में करने के लिए प्रेरित किया। हिन्दी की दूसरी कार्यशाला 17 मई 2017 को करवाई गई जिसमें डॉ० सज्जन सिंह, प्रधान वैज्ञानिक, केन्द्रीय भैंस अनुसंधान संस्थान द्वारा किसानों की आय दोगुनी करने के विषय पर व्याख्यान दिया। हिन्दी

की तीसरी एवं चौथी कार्यशाला 29 दिसम्बर, 2017 एवं 17 मार्च 2018 को करवाई गई जिसमें प्रशासनिक विभाग एवं अनुबंधित कर्मचारियों के लिए हिन्दी टंकण का प्रशिक्षण दिया गया। हिन्दी अधिकारी डॉ० अनुराधा भारद्वाज के निरीक्षण में प्रशासनिक अधिकारी द्वारा 11 कर्मचारियों को हिन्दी टंकण का अभ्यास करवाया गया।

केन्द्र की राजभाषा कार्यान्वयन समिति की बैठकें

केन्द्र में राजभाषा कार्यान्वयन समिति की बैठकें निरंतर की जाती हैं। इन बैठकों में लिए गए निर्णयों पर क्रियान्वयन व अनुपालन किया जाता है। प्रत्येक तिमाही में निष्पादित कार्यवाही पर चर्चा करके पुष्टि की जाती है। अप्रैल 2017 से मार्च 2018 तक की 4 बैठकें (16 मई 2017, 5 सितम्बर, 2017, 26 दिसम्बर, 2017 एवं 20 मार्च, 2018 को) आयोजित की गई।

Swachh Bharat Abhiyan at ICAR-NRCE 2017-18

In the Swachh Bharat Mission for the year 2017-18 has been initiated and all the Scientists/officers/staff members participated in the campaign. Activities carried out under this mission were includes cleaning of all the laboratories/office/working place, NRCE lawns, main entry gate area, approach road and building premises and these activities were performed on regular basis. Moreover, organization of equine health camps and kisan goshtis, and sensitization of equine owners about "Swachh Bharat Abhiyan" and importance of cleanliness in animal shed and day to day life was also done. As per ICAR guidelines, implementation of the ERP and employee's personal information's was updated. PFMS was implemented and nowadays all the financial works is being done under this portal. Vermicomposting of the equine dung is the main achievement of this campaign.



Republic Day and Independence Day- 2017 Celebration at ICAR-NRCE

The centre celebrated Republic day (26th January 2017) and Independence day (15th August 2017) with colossal enthusiasm. The national flag was hoisted by Director NRCE, Hisar, which was followed by National anthem. While addressing the staff of the centre, Director, NRCE, briefed about the accomplishments of NRCE and appreciated the contributions of staff for NRCE's achievements in



total. He also flashed light on movement of independence and sacrifices made by our leaders and nationalists. He encouraged the staff of NRCE to dedicate themselves for the development of the institute and nation. On these occasions, children of NRCE staff were presented gifts and motivated for participating in Nation's development activities.

International Yoga day for Peace and Harmony

Yoga International day was celebrated at NRCE Hisar on 21 June 2017. On this occasion, the employees of NRCE and their family members participated with great zeal and interest under slogan “*Yoga for Peace and Harmony*”. They practiced Yoga and Pranayama as per Common Yoga Protocol developed by Ministry of Ayush, GoI under the guidance of Dr Balvinder and Miss Reena from Patanjali Yog Samiti, Hisar. Under Mera Gaon and Mera Gaurav, girls and ladies of Kajla village, Hisar practiced Yoga on 20th June, 2017 with NRCE Scientists and officials of Integrated Child Development Scheme, Haryana.



Celebration of World Environment Day

ICAR-NRC on Equines, Hisar celebrated world environment day on 5th June, 2017. On the occasion, the institute staff actively participated in plantation of neem plants near animal sheds. The main aim of celebration was to create awareness regarding importance of environment in our lives.

National Science Day Celebration

National Science day was celebrated on 28th February, 2017 by ICAR-NRCE, Hisar at Government High School at Village Neolikhurd for the specially abled children/persons. An interactive meet of parents, doctors, scientists, school teachers and Sarpanch/Panch was organized, focusing on problems being faced by the parents/children. The parents were apprised of the scientific measures and how to deal with these children by a doctor, individually on a case to case basis. The help of ANM was also sought. The School Principal, teachers and village panchayat were also involved. Games and competitions were held amongst different groups comprising normal and physically challenged/specially abled children. The families of scientists also participated actively. Sweets and gifts were distributed amongst the participants.

National productivity week

National productivity week was celebrated from February 12 to 18, 2017 at ICAR-NRCE, Hisar. A productivity improvement committee was set up to formulate a plan of action for the year (2017-18) for enhancing productivity in the unit. An interactive meet of equine owners, farmers, Sarpanch, social group and scientists was organized, focusing on problems being faced on the

productivity front by the farmers. Special training to the farmers and representative members of Anubhuti, a social group on the “Vermicomposting” was organized wherein campaign for “From waste to profit through Reduce, Recycle & Reuse” taken up at rural and urban areas utilizing animal dung especially equine dung. ICAR-NRCE, Hisar has procured two superior quality Marwari stallions for conservation. The stallions were purchased from breeding tract of the breed. The semen will be collected, cryopreserved and will be distributed to stakeholders for breed improvement. NRCE motivated farmers to open the Horse Riding Schools. Initiative in this regard is taken up by a farmer at village Neoli Kurd, Hisar on 17th Feb, 2017.

Training course on Equine Health and Management

A training programme on “Equine Health And Management” was organized at ICAR-National Research Centre on Equines during September 20 to Oct, 6. (Main campus Hisar: September 20 to 27, 2017; EPC, Bikaner: Sept 28 to Oct, 6, 2017). The veterinary students attended this training programme and received hands-on experience on equine practices.

Mobile app of NRCE

Infoequine is a user-friendly bilingual mobile App in Hindi and English language for equine owners, Veterinary officers, Animal Health department officials, students, industry professionals and other stakeholders. This App allows users to enhance their knowledge in various aspects of equines with regard to breeds, management, nutrition, diseases, artificial insemination, pregnancy diagnosis etc. The basic requirement to operate this App is to have an Android device with net connectivity, and this App (software) Infoequine ' may be downloaded directly from the Google Play Store. A link is given below for smooth download of the app. <https://play.google.com/store/apps/details?id=info.ncrc&hl=en>. After complete installation, a 'Info-equine' icon will appear on a mobile screen. User can select the About us/Breeds/Management/Nutrition/Diseases/Glanders/Services/Technologies.

“World Soil Day” organized at Village Rajli (Hisar)

ICAR-National Research Centre on Equines organized “World Soil Day” on December 05, 2017 at village Rajli, Hisar (Haryana). During this occasion, a team comprising Principal Scientist and technical officers from the centre visited the village. Expert lecture was delivered by Sh. Rajeev Bhatia (Agriculture Development Officer), Dept. of Agriculture, Haryana Govt. About 100 farmers attended the programme. The NRCE team also responded to various queries and answered question of farmers. The toll-free helpline number of ICAR-NRCE 1800-180-1233 was provided to farmers for future assistance.

Foundation Day Celebration

A mobile app “Info-equine” developed by the ICAR-National Research Centre on Equines, Hisar launched on the 33rd foundation day of the Institute on 26th November 2017 by honourable chief guest Dr Ramesh Kumar Yadav, Chairman of Haryana Kisan Ayog.

Dr. M.C Sharma, Former Director of IVRI, Dr Inderjeet Singh, Director CIRB, Hisar graced the occasion. The core team includes Chairman Dr BN Tripathi, Director, NRCE and nodal scientists Dr Anju Manuja, Dr Hema Tripathi and Dr Rajender Kumar (Principal Scientists). The contribution of scientists and staff of NRCE, Hisar and EPC, Bikaner was highly acknowledged.

ICAR-NRCE celebrated Agriculture Education Day in Government Senior Secondary School, Kajla, Hisar.

ICAR-NRCE, Hisar celebrated "Agriculture Education Day" in Government Senior Secondary School, Kajla on the birth anniversary (3rd December) of first Indian Union Agriculture minister (1946) and the first President of Independent India, Dr. Rajendra Prasad. On this occasion the students were apprised about the career opportunities in agriculture, animal husbandry and allied fields through expert lectures. Lectures were delivered on antimicrobial resistance and parthenium control for creating awareness amongst students and teachers. Dr R.K.Vaid, Dr Anju Manuja, Dr Harisankar Singha, Dr Anuradha Bhardwaj, Dr Taruna Anand, Dr BC Bera were the expert Scientists from the Centre. Sixty students of class IX and Xth and faculty members of the school participated in the program.

ICAR-NRCE organized three days hands on training in Bioinformatics tools & their application in biological research from

A "Bioinformatics Infrastructure Facility" has been created at NCVTC, NRCE, Hisar under DBT-Bioinformatics Infrastructure Facility-Biology Teaching through Bioinformatics (BIF-BTBI) program. This facility was created with the aim of providing teaching in the area of bioinformatics to the students and scientific staffs through providing practical trainings/workshops. Training XXXXXXXX was conducted under the patronage of DBT-BIF Program sponsored by Department of Biotechnology, Govt. of India, New Delhi in collaboration with ICAR-National Research Centre on Equines, Hisar. The Vice-Chancellor of Guru Jambheshwar University Prof. Tankeshwar Kumar was the chief Guest. The chairman of the organising committee and Director, NRCE, Dr B. N. Tripathi emphasized on the increasing importance of bioinformatics in data analysis and creation of knowledge for betterment of livestock health. Prof Tankeshwar K u m a r congratulated the trainees and emphasized on the need of developing Hisar as academic hub.



Emerging Scientist award presented to Dr. Anju Manuja

Dr. Anju Manuja, Principal Scientist, ICAR-NRCE, has been conferred "Emerging Investigators Award" by Elsevier "Nanostructures and Nano Objects (NANOSO). The award was presented on 12th Feb 2017 during Fourth International Conference on Nanostructured Materials and Nanocomposites (ICNM 2017), jointly organized by International and Inter University Centre for Nanoscience and Nanotechnology (IIUCNN), Mahatma Gandhi University, Kottayam, Kerala, Wuhan University, China, Beijing University of Chemical Technology, China and Wroclaw University of Technology, Poland supported by Elsevier NANOSO.

Women Scientist award presented to Dr. Anuradha Bhardwaj

Dr Anuradha Bhardwaj received "Women Scientist Award-2017" of the Society for Bioinformatics and Biological Sciences (SBBS)-2017 International Conference on "Recent Trends in Bioinformatics and Biotechnology for Sustainable Development" on 12-13 October, 2017 at Faculty of Veterinary Sciences & Animal Husbandry, SKUAST-J, R.S. Pura, Jammu J&K (India).

NRCE participated in Krishi Unnati Mela-2017 organized by Indian Agricultural Research Institute at Pusa, New Delhi w.e.f. 15-17 March, 2017 and Krishi Mela (Rabi) -2017 organized by CCS Haryana Agricultural University at Hisar w.e.f. 18-19 Sep, 2017.

NRCE scientists showcased NRCE activities and technologies developed for the benefit of different stakeholders. Farmers, Students and various dignitaries visited the NRCE stall and showed keen interest in NRCE technologies and appreciated.



Participated in Exhibitions to show case NRCE technologies

NRCE Organized Equine Health Camps

ICAR-National Research Centre on Equines organized equine health camp and interactive meet of equine owners at the village Kaimeri Hisar (Haryana) on July 12, 2017. During the equine health camp 07 equines were examined for various ailments by a multidisciplinary team of scientists and technical officer from the centre. Veterinary officer and staff at Veterinary Hospital Kaimeri assisted the NRCE team in organization of the equine health camp. De-worming tablets and mineral mixture were provided to available equine owners free of cost and treatment was provided on the spot to three equines suffering from allergy. The bio-samples were also collected from all animals for disease epidemiological studies. The

N R C E t e a m responded to various queries and answered questions of equine owners on health and management of equines. Information was given on deworming schedule, prevention and management of ticks, colic, lameness and feeding practices in equines. The equine owners were also briefed about management, housing, hoof care, timely shoeing and grooming of animals.



Equine health camp and interactive meet of equine owners organized at Village Kaimeri (Hisar)



Dr. A. K. Srivastava visit on 04-02-2017 at ICAR-NRCE, Hisar

Visit of dignitaries

Dr. H. Rahman and Dr. Jimmy smith DG ILRI, Ethiopia Visit at



NRCE on 23-June 2017

Addl. Secretary, DARE & Secretary ICAR Shri ChhabilendraRoul Visit at NRCE on 04-05-2017



New joining and transfers

1. Dr Sandeep K. Khurana, Principal Scientist has been transferred to ICAR- CIRB, Hisar on 31 March 2017.
2. Dr Vijay Kumar, Scientist has been transferred to ICAR- CSWRI, Avikanagar on 31 March 2017.





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Director

ICAR-National Research Centre on Equines, Hisar

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