



# NRCE

**National Research Centre on Equines**  
**राष्ट्रीय अश्व अनुसंधान केन्द्र**



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## From Director's Desk

**D**uring 2016, our efforts for the development of diagnostics and therapeutics for major equine diseases continued; an updated vaccine for equine influenza was released by DG ICAR and diagnostic kits for rhinopneumonitis and piroplasmosis (lateral flow assay) were developed. Some of the newer diagnostic technologies in pipeline include LFA for trypanosomosis, LFA for pregnancy diagnosis, sELISA for equine influenza antigen, synthetic peptide ELISA for EHV1 and r-protein ELISA for glanders. The Centre maintains nationwide vigilance on infectious equine diseases through an ambitious surveillance and monitoring programme. During the year, 143 new cases of glanders were detected and guidelines were issued to 9 states for elimination of positive animals. The Centre developed capacity for detection of EHV1 latency and neuropathogenicity during the year. In our endeavour to develop refined EHV1 vaccine, three novel adjuvants were evaluated for enhancing vaccine protective immunity and we also generated EHV1 bacterial artificial chromosome (BAC) with gE gene deletion for use as an attenuated vaccine. Using reverse genetics approach, recombinant equine influenza virus was generated for evaluation as vaccine candidate. Novel drug molecules against *Theileria equi* and trypanosomosis are being explored. Some of these molecules gave promising results in experimental models and in vitro toxicity trials. Mass spectroscopic analysis was performed to explore novel proteins of therapeutic value in equine milk, which identified 9 and 8 unique proteins in horse and donkey milk, respectively. The work on assessment of risk factors for colic and development of therapeutic interventions against osteoarthritis using nano-delivery vehicles was initiated. In addition, for emergency preparedness and monitoring of exotic equine diseases, we focused on development of diagnostic competence for Venezuelan equine encephalitis and vesicular stomatitis during the year. Monoclonal antibodies were raised against equine chorionic gonadotropin for development of LFA for pregnancy diagnosis in mares.

In the NCVTC, by accessioning 280 new microbes (23 rumen, 26 dairy and 231 veterinary microbes), total tally of microbes reached to 3219. The 231 veterinary microbes accessioned during this period include 164 bacteria, 28 viruses, 29 bacteriophages and 10 recombinant clones. A bacteriophage belonging to family Myoviridae isolated from river Ganges exhibited therapeutic value by eliminating infection of *Klebsiella pneumoniae* in mouse model. Antiviral activity of SERCA inhibitor was evaluated against Pestes-des-petits ruminants virus.

Under lab-to-land programme, Scientist technical Officers interacted with equine owners by participating in three agricultural fairs and conducting 9 equine health camps and provided healthcare to more than 1000 equines. In addition, under mera gaon mera gaurav programme, 24 villages were adopted where scientists made 125 visits and conducted 54 interface meetings and 9 trainings, benefitting 1446 rural families. The Centre organized various activities under directives from Government of India. Yoga camp (13-21 June) to celebrate International Day of Yoga, Hindi Fortnight (14-26 September) to promote Hindi, Sanitation Drive (2-16 October), Vigilance Awareness Week (31 October-5 November), Agriculture Education Day (3 December).

All These have been possible with the active support of Scientists and staff of the centre, stake holders and the council (ICAR). I encourage all the scientists and the staff to be focused and goal oriented in the research and development activities so as improve the equine productivity through better health and production technology.

*B. N. Tripathi*  
Dr. B.N. Tripathi

# NEWSLETTER





## Sectoral News

### Researchers review types of tumours found in donkeys

Horses and donkeys both belong to the genus *Equus*; however, they have many anatomic and physiological differences. For instance, donkeys' oversized ears and a bray rather than a neigh make it easy to visibly and audibly distinguish them from horses. In medical settings, though, the similarities seem to outweigh the differences, and donkeys are often treated similarly to horses. But, appreciating similarities and differences can help us better understand why some diseases affect horses but not donkeys and may shed light on disease processes. Through a recent study on the topic, Davis, a pathologist from Maupin, Oregon, determined that neoplasia (tumors) and the occurrence of specific types of tumors is one area where donkeys differ from horses. The researchers confirmed that donkeys, like horses, are commonly diagnosed with sarcoids. BPV infection causes warts in cattle but results in sarcoid tumors in equines and appears to affect horses and donkeys similarly. Other common horse tumors, however, are not prevalent in donkeys. Differences in diseases that affect these two closely related species are very interesting and should encourage more questions that may illuminate underlying causes of the diseases. The study, "Neoplasia in 125 donkeys (*Equus asinus*): literature review and a survey of five veterinary schools in the United States and Canada," was published in the *Veterinary Journal of Diagnostic Investigation*.

### Are equine personality traits heritable?

As researchers learn more about equine personalities, we as horse enthusiasts might become more interested in finding—and even breeding for—the “right horse personality” for us. Whether personality itself is truly hereditary in horses is a question scientists are still striving to answer. However, one group of researchers studying personality trends within certain breed categories is beginning to find evidence suggesting that personality traits might, indeed, be heritable. Researchers in France and Switzerland have already investigated personality in heavy draft breeds and Warmblood horses. Results from their latest study are now revealing what personality traits can be found in horses in between these two breeds. They found that the Franches-Montagnes horse, a light draft mix developed from heavy drafts and warmbloods in Switzerland, has personality traits that fall between those of Warmbloods and heavy drafts. And, the researchers said, the more Warmblood genes one of these horses has, the more “Warmblood personality” it has. “The Franches-Montagnes horse, falling between the draft and the sport horse, provides a strong basis for studying genetic trends in horses and, in particular, personality traits which differ significantly between the draft and the Warmblood. The researchers, including some from the French National Agricultural Research Institute, in Nouzilly, carried out personality testing on 184 Franches-Montagnes horses. These horses ranged from 3 to 23 years old, came from a variety of bloodlines, and were housed in 18 different stables. The scientists used two aspects of the Lansade Temperament Test—the tactile stimulation test (a piece of string laid against the withers) and the fearfulness test (an opening umbrella)—to gather personality information on the test horses. They then compared the results to those already gathered on Warmblood sport horses and on heavy draft horses. They also compared the new results to the individual horses' bloodlines to see how the various mixes of Warmblood and draft might be related to the personality testing. They found that, overall, Franches-Montagnes horses had a medium tactile sensitivity level that fell between that of drafts (low sensitivity) and sport horses (high sensitivity). The Franches-Montagnes breed

had significantly higher fearfulness levels than did draft horses. While their fearfulness did not differ much from that of the sport horses, the more “Warmblood” the horse's mix was, the more fearful he tended to be. This study, found differences between breeds based on two studied personality dimensions. These results are promising for the research into genes influencing horse personality.

## Institute News

### International Workshop on 'Surveillance and Diagnosis of Glanders' 8th-17th February, 2016

ICAR-NRCE, Hisar International Workshop on 'Surveillance and Diagnosis of Glanders' was organized at ICAR-National Research Centre on Equines, Hisar from 8-17 February 2016. The workshop was organized as per approved objectives of OIE Twinning laboratories project on glanders in association with Friedrich Loeffler Institut, Federal Research Institute for Animal Health, Institute of Bacterial Infections and Zoonoses, Jena, Germany (Parent laboratory). Seven international participants from Sri Lanka, Nepal, Pakistan, Bhutan, Bangladesh, Afghanistan, Iran and eight national participants from different regions of India –Jammu & Kashmir, Uttarakhand, Uttar Pradesh, Himachal Pradesh and Punjab participated in the workshop. Aim of the workshop was to provide hands on training in the area of serological diagnosis of glanders like complement fixation test and indirect ELISA and to build network among glanders endemic countries for surveillance of glanders. A training manual and video documentary on glanders was released during the workshop.



### International workshop on 'Surveillance and diagnostics for equine influenza' for delegates from SAARC nations under OIE twinning project on Equine Influenza 16-25 Feb, 2016

An International workshop on 'Surveillance and diagnostics for equine influenza' for delegates from SAARC nations was organized under 'OIE twinning project on Equine influenza' at National Research Centre on Equines, India from 16-25 Feb, 2016. The workshop was attended by 16 delegates: one each from five SAARC countries viz. Sri Lanka, Bangladesh, Bhutan, Nepal, Afghanistan and 11 delegates from India including Jammu and Kashmir, Himachal Pradesh, Punjab, Rajasthan, Uttarakhand, Uttar Pradesh, Gujarat, Maharashtra and Animal Quarantine Station, Mumbai. The training was provided by Experts from NRCE and Animal Health Trust, UK. The training was strictly 'Hands On' training with emphasis on learning on doing. During the inaugural session Dr. B.N. Tripathi, Director, NRCE gave an overview of the research and activities of the institute and Indian scenario of Equine influenza. A training manual was released during the inauguration of the workshop. Participants were trained in various techniques required for isolation of equine influenza viruses in embryonated eggs/ MDCK cells, biosafety and biosecurity, virus titration through haemagglutination, Haemagglutination inhibition assay, Antigenic characterization of EIV by HI assay using ferret antisera,

Monoclonal antibody based Sandwich ELISA for EI Antigen detection, Single step RT-PCR for diagnosis of EI infection, Two step subtyping RT-PCR for HA/NA genes of EIV (H3N8), TaqMan Probe based qRT-PCR for diagnosis of EI infection.



## Research Highlights

### Updated equine influenza vaccine released by ICAR-NRCE

An outbreak of equine influenza occurred during 2008-09 that was caused by equine influenza virus of subtype H3N8 belonging to Clade 2 of Florida sub lineage. The disease resulted in heavy morbidity and led to huge economic loss. Subsequently, the previously developed vaccine was updated using A/eq/Katra (Jammu)/06/08 (H3N8) virus with HA content of 20 µg/dose. The vaccine virus was grown in embryonated chicken eggs, purified by ultracentrifugation and inactivated by formalin. Field trials in 150 horses resulted in development of protective antibody titres, without any adverse reactions or clinical signs, following booster vaccination after four weeks. It will be very useful for vaccinating the animals, which are under continuous movement inside and outside the country. The technology was released to the nation by Secretary DARE & Director General ICAR on August 22, 2016 at ICAR-NRCE, Hisar.

### Field validation of rapid diagnostic kit for *Theileria equi*

Equine piroplasmiasis is an acute, sub-acute or chronic tick-borne disease of equines, caused by an intra-erythrocytic haemo-protozoa *Theileria equi* or *Babesia caballi*. Significant segment of the Indian equine population (~35%) is latently infected and diagnosis of these animals is of more relevance to prevent spread of the parasitic infection to naïve animals. In an effort to provide a farmer friendly field test kit, the Centre has successfully developed lateral flow assay (LFA) for diagnosis of *T. equi* infection. The kit is based on a recombinant *T. equi* merozoite surface antigen (EMA-2) conjugated with gold-nano particles. Optimum conditions for LFA w.r.t. conjugation, membrane type and pore size, sample dilution, etc., have been standardized. During the year, field validation of LFA kit was done and results were compared with ELISA, cELISA (VMRD, USA format), MASP in vitro culture and PCR. A total 97 bio-samples collected from Haryana, Rajasthan and Gujarat area were tested in LFA and results were compared. Out of total 97 serum samples tested, 73 were found positive in ELISA's and 69 in LFA. *Theileria equi* specific DNA could be demonstrated in PCR in 63 samples, while we were successful in demonstrating live *T. equi* parasites through MASP culture system in 62 blood samples. The diagnostic sensitivity (Dsn) and specificity (Dsp) of LFA vis-à-vis ELISA were 0.945 and 0.916, respectively, indicating its applicability on the field samples.

### Field validation of the LFA kit

### Validation of r-protein ELISA kit for differentiation of EHV1/4 infection

EHV1 and EHV4 together are responsible for equine rhinopneumonitis, an OIE listed disease of equines. EHV1 is also the foremost cause of abortions and



neurological disorders. The differential diagnosis of EHV1 and EHV4 viruses is often complicated due to antigenic cross-reactivity between the two viruses. We developed a recombinant protein based ELISA kit for differential diagnosis of EHV1 & EHV4 infections. This type-specific ELISA has been validated using field serum samples in single dilution format. The ELISA was



employed on 1600 field equine serum samples and a total of 136 (8.5%) samples were found positive for EHV1, while 914 samples (57.12%) were found positive for EHV4. A total of 48 samples (3.0%) were found positive for both EHV1 and EHV4. The ELISA was transformed into a kit format and 659 more serum samples were screened by for detection of EHV1/4 antibodies. A total of 42 serum samples (6.37%) were found positive for EHV-1 while 425 samples (64.49%) were positive for EHV-4. The shelf life of the kit was found to be more than 4 months.

### Transfer of Technologies

#### ELISA for screening of glanders provided to State Diagnostic Laboratories

On the backdrop of emergence of glanders outbreak in India since last one decade, NRCE developed a recombinant protein-based ELISAs. This indirect ELISA is based on recombinant B.mallei protein and has been validated at NRCE. The reproducibility and repeatability of the assays has been tested in six laboratories using blind serum panel and is currently under international validation process in OIE Referral Laboratory on glanders, FLI Germany. In order to develop diagnostic competence of state diagnostic laboratories, training was imparted to veterinary officers from Haryana, Himachal Pradesh and Gujarat. After training, ELISA reagents were provided to start testing at Ahmedabad, Sonapat and Shimla for screening of equine glanders. A total of 5335 samples were tested at Ahmedabad and 1564 at Sonapat laboratory.

#### Field demonstration of vermicomposting of mule dung

Utilization of mules for transport in hilly regions leads to deposition of mule dung on hilly tracks. There is a continuous problem of piles of mule dung on hilly tracks. Shri Mata Vaishno Devi Shrine Board requested NRCE to provide solution for mule dung disposal on pilgrimage route. Accordingly, the technology for vermicomposting of mule dung was standardized at our farm. Subsequently, the technology was field tested in Katra region. The kits for vermicomposting of mule dung were supplied to Katra region and quality of the vermicompost so generated was analyzed.



Vermicompost prepared from mule dung

#### Demonstration of semen cryopreservation technology to equine breeding stud

The Centre has perfected the technology for semen cryopreservation of stallions in field, for use in artificial insemination. Equine Breeding Stud Hisar is currently using fresh semen of the stallions for artificial insemination (AI) showed keen interest in AI using cryopreserved semen. Accordingly, a team of scientists from EPC, Bikaner demonstrated the technique of AI using frozen semen to EBS. Semen was collected from seven exotic stallions and evaluated for seminal characteristics and freezability at EBS, Hisar. On quality verification, the semen from exotic stallions was cryopreserved using conventional v a p o r f r e e z i n g technique.



Demonstration of semen collection and cryopreservation

### Institute News

#### Republic day 2015 and Independence Day 2016

The centre celebrated Republic day (26th January 2016) and Independence day (15th August 2016) with immense fervor. 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.



#### राष्ट्रीय अश्व अनुसंधान केन्द्र में स्थापना दिवस समारोह का आयोजन

हिसार स्थित राष्ट्रीय अश्व अनुसंधान केन्द्र में 26 नवंबर, 2016 को 32वां स्थापना दिवस मनाया गया। इस अवसर पर मेजर जनरल (डॉ) श्रीकांत, सेवा मेडल, विशिष्ट सेवा मेडल (रिटायर्ड), संस्थापक कुलपति, लुवास, हिसार, मुख्य अतिथि के रूप में उपस्थित थे स्थापना दिवस कार्यक्रम में गणमान्य अतिथि के रूप में डॉ एस के द्विवेदी, भूतपूर्व निदेशक, राअनुकेन्द्र, हिसार एवं ब्रिगेडियर एस

एस कश्यप, कमानडेंट, ईबीएस, हिसार विशिष्ट अतिथि के रूप में उपस्थित थे। स्थापना दिवस के उपलक्ष्य पर केन्द्र में स्थापना दिवस व्याख्यान एवं पशुचिकित्सकों और वैज्ञानिकों के मध्य परिसंवाद का आयोजन किया गया। केन्द्र के निदेशक डॉबी.एन. त्रिपाठी ने अपने उद्बोधन में केन्द्र द्वारा पिछले वर्षों में किये गए शाघे कार्यों एवं विस्तार गतिविधियों के बारे में अवगत कराया। उन्होंने ये भी बताया कि केन्द्र अतिरिक्त रूप से अश्व विज्ञान के क्षेत्र में उत्कृष्ट अनुसंधान एवं नैदानिक सेवाएं प्रदान करवाने के लिए अद्वितीय संस्थान है। निदेशक महादय ने पिछले तीन दशकों में केन्द्र के विकास एवं उपलब्धियों के लिए राअनुकेन्द्र के सारे स्टाफ को उनके अथक प्रयास के लिए बधाई दी।



### EDUCATION AND TRAININGS

#### Hands on training on pregnancy diagnosis to ITBP officers

A two-day hands-on-training on 'Pregnancy diagnosis by ultrasonography' was organized for the Officers from the Indo-Tibetan Border Police from 25-26 October 2016. In this training, seven participating veterinarians were delivered lectures and imparted practical training on pregnancy diagnosis by rectal examination and ultrasonography.



#### ITBP officers with the Director NRCE

#### Biosafety training for NRCE staff and students

Basic biosafety training was organized on 15 October 2016 at NRCE, Hisar. In this, 36 scientists, technicians, students and other project staff were imparted training on laboratory biosafety and a lecture-cum-practical demonstration on Biosafety in research laboratories was conducted.

### RAC, IRC AND REVIEW MEETINGS

#### Institute Research Committee

Annual IRC meeting of ICAR-NRCE was held during May 2-3, 2016 under the chairmanship of Dr. B.N Tripathi, Director to review and discuss achievements in various research projects at the Centre. There are 31 on-going research projects, including 11 in equine health, 10 in equine production and 10 in NCVTC. The scientists presented the progress made in these projects and provided inputs for further improvement. Five new research proposals were also discussed and approved, including development of area-specific mineral mixtures for equines, risk assessment for colic & laminitis, and management of equine reproductive problems.



### Annual Review of Network Units of NCVTC

The seventh annual review meet of Network Units of NCVTC was organized at ICAR-NDRI-Karnal on January 09, 2017. The meeting was chaired by Dr H. Rahman, DDG (Animal Science) in presence of Dr A.K. Srivastava, Director, ICAR-NDRI, Karnal and Dr Ashok Kumar, ADG (Animal Health). Dr B.N. Tripathi, Project Coordinator, NCVTC presented an overview of NCVTC and apprised the members that NCVTC repository has now collection of more than 3000 microbes distribution of cultures to stakeholders has been initiated from this year. Investigators from the 18 network units presented the progress during the year on rumen, dairy and veterinary microbes. The committee recommended for identification and conservation of vaccine & challenge strains for important veterinary pathogens from buffalo, cattle & pigs and to organize a workshop for training for adoption of uniform culture deposition and accessioning procedures.



### RAC meeting at the Centre

The XIX meeting of Research Advisory Committee of the Centre was organized on March 25, 2017 to review the research priorities of the Centre and to advise on new initiatives. Welcoming RAC members, Dr B.N. Tripathi acknowledged the guidance of the members during last three years for achieving the goal of NRCE. He presented action taken report on RAC recommendations and research achievement of the Centre during 2016-17. The progress made in each Unit of NRCE was presented by in-charges of each section. Dr Gowda, Chairman RAC emphasized that scientists at Equine production campus, Bikaner should focus on applied research to address the issues faced by equine keepers in breeding, reproduction, nutrition and shelter management for sustainable equine production. The committee recommended undertaking research for development of new generation vaccines, bedside diagnostics and herbal drugs for quick diagnosis, control and treatment of equine diseases. The RAC also applauded the initiatives of the Centre for development of area-specific mineral mixtures, parentage testing in equines and bacteriophage therapy. The RAC encouraged to adopt multidisciplinary approach for better utilization of country's infrastructural resources and quality research output and to develop R&D linkages with other institutes and stakeholders.



RAC members discussing research priorities

### AWARDS, RECOGNITIONS AND PERSONAL MILESTONES

#### Diplomate of ICVP award to Dr Nitin Virmani

Dr Nitin Virmani successfully cleared examination of "Indian College of Veterinary Pathologists" and awarded "Diplomate of ICVP" during XXXIII Annual Meeting of Indian Association of Veterinary Pathologists held at Department of Veterinary Pathology, College of Veterinary Science & Animal Husbandry, Anjora, Chhattisgarh on 09-11 November 2016.



#### Dr Baldev R Gulati conferred IVS Fellowship

Dr Baldev R. Gulati, Principal Scientist has been elected for Fellow of Indian Virological Society (FIVS-2016) for his outstanding contribution to the field of veterinary virology. This award was conferred on him during International Conference of Indian Virological Society (IVS) on "Global Perspectives in Virus Disease Management" at Indian Horticulture Research Institute, Bengaluru, Karnataka during December 8-10, 2016.



#### Societal Innovation Award to Dr Naveen Kumar

Societal Innovation Award for the development of indigenous vaccine against Johne's Disease in Domestic Livestock was given to Dr Naveen Kumar, Senior Scientist along with scientists from CIRG, Makhdoom (Singh SV, Gupta S, Chaubey KK, Bhattacharya) in 43rd Meritorious Invention Awards Ceremony & Conference on "Leveraging innovation ecosystem for accelerating startups" at Indian National Science Academy, New Delhi during 24-25 March, 2017.



#### Young Scientist Award to Dr. Sanjay Ravi

Dr Sanjay K. Ravi, Scientist received "Young Scientist Award" for the paper entitled "Effect of fish oil supplementation on certain biochemical parameters in mares" in "XXXII Annual Convention of the Indian Society for the Study of Animal Reproduction at College of Veterinary Science, Sri Venkateswara Veterinary University, Tirupati during 6-8 December, 2016.

#### Dr Anuradha completes PG diploma

Dr Anuradha Bhardwaj, Scientist completed one year post

graduate diploma in Technology Management in Agriculture (PGD-TMA) with distinction from University of Hyderabad and ICAR-NAARM, Hyderabad, Telengana.

### VISIT OF DIGNITARIES

#### Dr R S paroda appreciated NRCE work

Dr R S paroda visited NRCE on 1st February 2016 and appreciated the development and research output of NRCE in the previous years. He interacted with all the scientists and emphasized to do output oriented research for the maximum benefit of stakeholders and clients.



#### Sh Mohanbhai Kalyanjibhai Kundariya, applause NRCE achievements

Union Minister of State for Agriculture and Farmers Welfare, Govt of India, Sh Mohanbhai Kalyanjibhai Kundariya, visited NRCE, Hisar on 31st May 2016. Dr B. N. Tripathi, Director, NRCE explained about



various research achievements and ongoing activities of the institute to the Hon'ble Minister.

#### Dr Mohapatra appreciates NRCE R&D activities at NRCE Campus

Dr Trilochan Mohapatra, Secretary DARE and Director General ICAR, New Delhi visited NRCE on 22 August 2016. During his visit, Dr B.N. Tripathi, Director NRCE briefed him about ongoing research activities at the Centre. Dr Mohapatra visited all the laboratories and emphasized the need to publish papers in high impact journals and commercialization of technologies. He congratulated NRCE staff for excellent maintenance and upkeep of the campus.



DG-ICAR addressing staff of NRCE and CIRB

#### Dr Srivastava motivates scientists for team work

Dr A.K. Srivastava, Member Agricultural Scientists Recruitment Board and Dr Rameshwer Singh, Ex-Director, Directorate of Knowledge Management in



Agriculture visited NRCE on 4 February 2017. The dignitaries were briefed about the research activities of NRCE-Hisar by the Dr B.N. Tripathi, Director, NRCE. Delivering motivational address, Dr Srivastava asked the scientists to believe in self and work in a collaborative mode to achieve the higher goals.



**Dr Srivastava addressing scientists at NRCE**

**Director General RVS applauds contributions of NRCE**

Lt Gen A.J. Singh, Director General, Remount Veterinary Services visited the centre on 11 November 2016. Lt Gen Singh complimented the scientists of NRCE for the yeomen service to the nation in the field of equine research, investigation and control of diseases and for improvement in the management and breeding practices. He emphasized the need for more collaborative efforts between RVC and NRCE for addressing reproductive problems in equines.



**DG, RVS addressing scientists of NRCE**

**Dr Rahman visits EPC, Bikaner**

Dr H. Rahman, Deputy Director General (Animal Science), ICAR, New Delhi visited Equine Production Campus, Bikaner on 16 May 2016. Dr Rahman inaugurated the newly constructed animal quarantine shed, sick animal shed and rest house facilities. He was accompanied by Prof A.K. Gahlot, Vice Chancellor, Rajasthan University of Veterinary & Animal Sciences, Bikaner and Dr B.N. Tripathi, Director NRCE. Dr Rahman appreciated the equine sanctuary being maintained at the Campus and asked scientists to work with greater vigour for conservation of different equine breeds.



**Chairman ASRB during visit to Bikaner Campus**

**Dr Gurbachan Singh emphasize on research with global imprint**

Dr Gurbachan Singh, Chairman, Agricultural Scientists Recruitment Board visited Bikaner campus on 21 January 2017. Welcoming Dr Singh, Dr B.N. Tripathi, Director,

NRCE apprised about the activities of NRCE and efforts being done for conservation of indigenous equine breeds by NRCE. Dr Singh encouraged the scientists to reap benefits of early promotions through direct selection. He congratulated the scientists for their efforts in conservation and propagation of indigenous equine breeds and encouraged them to carry out cutting edge research in equine management to make a global imprint.



**Chairman ASRB during visit to Bikaner Campus**

**Dr Prasad appreciates research activities of the Centre**

Dr C.S. Prasad, former Director NIANP, Bangalore and Dr S.V.N. Rao, Professor & Head, Veterinary & Animal Husbandry Extension Education, Rajiv Gandhi College of Veterinary and Animal Sciences, Puducherry visited NRCE on 26 October 2016. Dr Prasad appreciated excellent infrastructure facilities and good research being done at the Centre.



**Dr Prasad interacting with scientific staff of NRCE**

**Dr Yadav appreciates research on equine diseases**

Dr M.P. Yadav, Former Director ICAR-NRCE, Former Director ICAR-IVRI, Former Vice-chancellor, DUVASU, Mathura visited the Centre on 29 October 2016. During the visit he interacted with scientists of the institute and applauded the role of Centre in the development of diagnostics and vaccines for management of infectious equine diseases. He also appreciated efforts of the Centre in conservation of microbial diversity at NCVTC.



**Dr Yadav interacting with scientists of NRCE**

**Visitors from Abroad**

\* Dr. Shaikh Mohammad Bokhtiar, Director and Md.

Nure Alam Siddiky, Senior Program Officer (Livestock) from SAARC Agricultural Centre, Dhaka, Bangladesh visited the Centre on 23 August, 2016. During the visit, they were briefed about the activities and achievements of the Centre. They were highly impressed by the laboratory facilities at NRCE and expressed the need to explore collaborations in the area of equine infectious diseases.

\* Dr Oleksandr Tashyrev and Dr Vera Govorukha from Zabolotny Institute of Microbiology and Virology, National Academy of Science, Ukraine visited the Centre on 16 September 2016. During the visit, they interacted with scientists and visited different laboratories.

\* Professor Stacey Shultz-Cherry, St Jude Graduate School of Biomedical Sciences, Memphis, USA, Professor Ann Cullinane, Irish Equine Centre, Ireland and Professor Thomas Chambers, Gluck Equine Research Centre, Kentucky, USA visited NRCE on 17-18 October 2016 as a part of the team from International Society for Influenza and Respiratory Virus Diseases (ISIRV). They were impressed by the research being carried out at NRCE and showed keen interest in the activities.



**Visitors assessing NRCE for international meeting**

**Workshop, Seminar and Institutional activities**

**World Veterinary Day celebrated with equine farmers at Umra**

The Centre organized an equine health camp-cum-interactive meet at village Umra, Hisar (Haryana) on the occasion of "World Veterinary Day" on April 30, 2016 on the theme 'promoting use of science for the welfare of farmers'. Scientists educated equine owners about latest developments in equine husbandry and provided solutions to problems faced by equine owners in housing, hoof care, shoeing and grooming of animals. On this occasion, sick equines were examined by a multidisciplinary team of veterinarians and free of cost treatment was provided for parasitic infestations, wound



**infection and lameness. Animal health camp at Umra, Hisar**

**Yoga camp on International Yoga Day**

A nine day Mass Yoga Performance Camp was organized at NRCE Hisar from 13-21 June 2016. In this Camp, all



employees of NRCE and their family members practiced Yoga and Pranayama as per Common Yoga

Protocol developed by Ministry of Ayush, GoI. On International Day of Yoga on 21 June, expert lectures on "Yoga and Health" and "Yoga for Peace and Harmony" were also organized.



### केन्द्र में आयोजित हिन्दी पखवाड़ा 14-28 सितम्बर, 2016 का विवरण

भारत सरकार की राजभाषा की विकासनीति के अंतर्गत गत वर्षों की भांति इस वर्ष भी राजभाषा कार्यन्वयन समिति के तत्वावधान में राजभाषा के प्रचार-प्रसार एवं सरकारी काम-काज में हिन्दी के प्रयोग को अधिकाधिक प्रोत्साहित करने के लिए राष्ट्रीय अश्व अनुसंधान केन्द्र में हिन्दी पखवाड़े का आयोजन डॉ० भूपेन्द्र नाथ त्रिपाठी, निदेशक की अध्यक्षता में 14 से 28 सितम्बर, 2016 तक किया गया। इस दौरान विभिन्न ज्ञानवर्धक एवं रूचिपूर्ण हिन्दी प्रतियोगिताओं क्रमशः निबंध प्रतियोगिता (विषय: हिन्दी का वैज्ञानिक दृष्टिकोण), हिन्दी परिच्छेद अनुवाद, हिन्दी श्रुत लेख, हिन्दी आशुभाषण, हिन्दी प्रश्नोत्तरी, हिन्दी कविता पाठ एवं सुलेख, हिन्दी टंकण आदि का आयोजन किया गया। हिन्दी पखवाड़ा का समापन समारोह पर मेजर जनरल (डॉ०) रंजीत सिंह, अति विशिष्ट सेवा मैडल, विशिष्ट सेवा मैडल (रिटायर्ड), कुलपति चौधरी रणबीर सिंह विश्वविद्यालय, जीन्द, हरियाणा, पूर्व कुलपति हरियाणा केन्द्रीय विश्वविद्यालय, जीन्द, हरियाणा, पूर्व मुख्य अतिथि के रूप में कार्यक्रम को शोभायमान किया साथ ही श्री महेन्द्र पाल कुलश्रेष्ठा, निदेशक, राष्ट्रीय

विश्वविद्यालय ने मुख्य अतिथि के रूप में कार्यक्रम को शोभायमान किया साथ ही श्री महेन्द्र पाल कुलश्रेष्ठा, निदेशक, राष्ट्रीय



सूचना केन्द्र, हिसार एवं श्री पी के पाण्डेय, निदेशक, उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान, ट्रैक्टर नगर, सिरसा



रोड, हिसार विशिष्ट अतिथियों के रूप में मौजूद थे। समापन समारोह के दौरान सरकारी कर्मचारियों के लिए कविता पाठ एवं हिन्दी शब्दानुवाद प्रतियोगिता का आयोजन एवं पुरस्कार वितरण किया गया।

### केन्द्र में आयोजित हिन्दी कार्यशालाओं का विवरण

राष्ट्रीय अश्व अनुसंधान केन्द्र की राजभाषा कार्यन्वयन समिति के द्वारा वर्ष 2016-17 के दौरान चार हिन्दी कार्यशालाओं का आयोजन किया गया जिसमें केन्द्र के वैज्ञानिकों जिसका विषय वैज्ञानिकों, तकनीकी अधिकारियों, तकनीकी सहायक वर्ग एवं प्रशासनिक वर्ग के अधिकारियों एवं कर्मचारियों ने सक्रिय रूप से भाग लेकर उन्हें सफल बनाया। हिन्दी दिवस (14 सितम्बर, 2016) के अवसर पर एक हिन्दी कार्यशाला का आयोजन किया गया जिसमें स्थानीय ठाकुरदास भार्गव सीनियर सैकेण्डरी स्कूल के हिन्दी विभाग के अध्यक्ष डॉ० भाम सिंह मुख्द वक्ता के रूप में उपस्थित थे। इस अवसर पर हिसार के जाने-माने साहित्यकार एवं गजलकार श्री महेन्द्र जैन

विशिष्ट अतिथि के रूप में उपस्थित थे। हिन्दी की तीन कार्यशालाएँ 3 मार्च 2016, 22 मई 2016 और 17 दिसम्बर 2016 को करवाई गईं 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 22 कर्मचारियों को हिन्दी टंकण का अभ्यास करवाया गया। इस कार्यशाला से प्रतिभागियों को हिन्दी में कार्य करने के लिए प्रोत्साहित किया गया तथा हिन्दी के प्रयोग में आने वाली कठिनाईयों को दूर करने के प्रयास किए गए।



### केन्द्र की राजभाषा कार्यन्वयन समिति की बैठकें

केन्द्र में राजभाषा कार्यन्वयन 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। जनवरी 2016 से दिसम्बर 2016 तक की गई बैठकें (29 फरवरी, 2016, 11 मई, 2016, 1 सितम्बर, 2016 व 27 दिसम्बर, 2016 को) आयोजित की गईं।

### Farmers meet at EPC, Bikaner on Foundation Day

Equine Production Campus, Bikaner organized an equine owners-farmers-scientists interactive meet on 28 September 2016 to celebrate its Foundation Day. Addressing equine owners, Chief Guest Brig S.S Kashyap, Commandant, Equine Breeding Stud, Hisar emphasized the need for conservation of indigenous breeds of equines. Dr B.N. Tripathi, Director NRCE explained the role of Bikaner campus in conservation and characterization of indigenous equines and asked farmers to use services of artificial insemination for superior equine production.



### Brig. Kashyap addressing farmers

### Sanitation drive launched to clean NRCE campus

Under Swachh Bharat Mission of Government of India, employees of the Centre participated in 21 weekly cleaning activities during 2016-17. In addition, campaign for promoting cleanliness was also spread to rural areas by educating the farmers about cleanliness under Mera Gaon Mera Gaurav program of the centre. NRCE also organized fortnight cleanliness drive from 2-16 October 2016, with taking a pledge for cleanliness. During the fortnight drive, daily activities were taken for cleaning the campus both at Hisar and Bikaner.

### Swachhta pakhwada 16 to 30th May 2016.

ICAR-National Research Centre on Equines, Hisar initiated the Swachhta Pakhwara by taking the Swachhta Pledge on 16th May 2016.



### Vigilance awareness week celebrated for promoting integrity

The Vigilance Awareness Weeks was celebrated from 31 Oct to 5 Nov. 2016 on the theme "Public participation in promoting integrity and eradicating corruption". On this occasion, all employees were administered the pledge for promoting integrity and eradicating corruption. Addressing staff members, Dr. B.N. Tripathi, Director, ICAR-NRCE emphasized on changing our system to prevent corruption and asked to orient towards education of customers, clients and the users of the services" provided by the Centre.



### Staff taking pledge for eradicating corruption

### Scientist-Veterinarian Interface meeting on NRCE Foundation Day

The 32nd Foundation Day of NRCE was organized on 26th November 2016. On this occasion, a Scientist-Veterinarian interface meeting was also organized to create awareness on Glanders, Influenza and other infectious diseases. In the inaugural function, Maj Gen (Dr) Shri Kant, Vice-Chancellor, LUVAS, Hisar, Chief Guest appreciated that NRCE has made its mark in diagnosis and control of equine diseases at international level. Dr S.K. Dwivedi, Former Director NRCE and Brigadier S.S. Kashyap, Commandant, EBS, Hisar graced the occasion as Guests of Honor. Dr BN Tripathi, Director NRCE apprised about the steps taken by NRCE in timely diagnosis and control of outbreaks of glanders and equine influenza. In the interface meeting chaired by Dr S.K. Dwivedi, 16 veterinarians interacted with NRCE scientists on management of emerging outbreak of infectious equine disease.



### Experts interacting in Scientist-Veterinarian Interface meeting

### Career opportunities in Agriculture discussed on Agriculture Education Day

The Centre celebrated "Agriculture Education Day" on 3rd December, 2016 in villages Siswala and Rawalwaas,



Hisar. Dr Anuradha Bhardwaj and Dr Anju Manuja delivered lectures to the school students and their guardians about career opportunities in agriculture. The students were encouraged to take agriculture and animal husbandry as an optional subject in senior secondary school. The students were provided guidance on procedure for obtaining admission in professional courses in agriculture and veterinary sciences.



Scientists addressing the students at village Rawalwaas

**Profitable use of farm waste promoted during National Productivity Week**

National Productivity Week was celebrated from February 12 to 18, 2017 at ICAR-NRCE, Hisar. To increase the income of farmers and equine owners, training on 'Use of farm waste and equine dung for vermicomposting' was given to the farmers and women belonging to a social group of Anubhuti. An interactive campaign on "From waste to profit through reduce, recycle & reuse" was taken up in rural areas promoting profitable utilization farm waste and animal dung, especially equine dung.



Farmers during training on vermicomposting

**NRCE outreaches to farmers in farmer's fairs in different institutes**

The Centre participated in three farmer fairs organized by different ICAR institutes to showcase our activities to farmers. In three-day regional agriculture fair "Krishi Kumbh-2016" organized by ICAR-Indian Institute of Farming Systems Research during 28-30 November 2016 at Muzaffarnagar (Uttar Pradesh), In this fair, NRCE scientists interacted with farmers and demonstrated technologies generated by NRCE to the farmers and stakeholders, who showed keen interest in horse rearing.



**Participating in Krishi Kumbh-2016 at Muzaffarnagar**

NRCE participated in a three-day farmers' fair, Krishi Unnati Mela, organized by Indian Agricultural Research Institute, New Delhi from 15-17 March 2017. In the fair,

NRCE scientists showcased equines and technologies developed for the benefit of equine owners, with an objective of development, empowerment and progress of the farmers. NRCE also participated in Buffalo Fair organized by Central Institute For Research on Buffaloes, Hisar on February 4, 2017 and displayed NRCE activities to participating animal owners.



**Dignitaries visiting NRCE stall at IARI and CIRB**

Scientists of Bikaner campus participated in Western Regional Agriculture Fair-2017 at Swami Keshwanand Rajasthan Agricultural University, Bikaner from 18-20 February 2017 disseminated the knowledge to the equine farmers about equine rearing and its prospects.



Participating in Agriculture fair at RAU, Bikaner

**Mera Gaon Mera Gaurav programme**

My Village My Pride scheme - Mera Gaon Mera Gaurav - was launched by the Hon'ble Prime Minister on July 25, 2015 with an aim to promote the direct interface of scientists with the farmers to hasten the lab to land process and to provide farmers with required information, knowledge and advisories on regular basis by adopting villages. NRCE has adopted 24 villages through six teams of scientists. Between April 2016 and March 2017, scientists made 125 visits to various villages, where 54 interface meetings and 9 trainings were conducted benefitting 1446 rural families (Table 1). Linkages were established with different State departments including local authorities for tackling problems related to farmers. Awareness on different Agricultural and Animal husbandry practices and cleanliness were created. Dr Ashok Kumar Gupta was the nodal officer of the MGMT program.



**NRCE Scientists interacting with farmers in villages around Hisar and Bikaner**

**New joining and transfers**

1. Shri Ashok Kumar, SSS joined at EPC- Bikaner on 23 July 2016.

**Promotions**

1. Dr Balvinder K. Manuja has been promoted to the

post of Principal Scientist with effect from 13 August 2014.

2. Dr Anju Manuja has been promoted to the post of Principal Scientist with effect from 8 August 2014.
3. Dr Ramesh K. Dedar has been promoted to the post of Scientist (Sr. Scale) with effect from 8 January 2012.
4. Dr Prokasananda Bala has been promoted to the post of Scientist (Sr. Scale) with effect from 8 January 2012.
5. Dr Tirumala R. Talluri has been promoted to the post of Scientist (Sr. Scale) with effect from 7 January 2013.
6. Dr Riyesh Thachamvally has been promoted to the post of Scientist (Sr. Scale) with effect from 28 August 2014.
7. Dr Sanjay K. Ravi has been promoted to the post of Scientist (Sr. Scale) with effect from 29 August 2014.
8. Shri Sajjan Kumar, Sr. Technical Assistant has been promoted to the post of Technical Officer with effect from 29 June 2016.
9. Shri Suresh Kumar, Sr. Technical Assistant has been promoted to the post of Technical Officer with effect from 29 June 2016.

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