



NRCE NEWS



NATIONAL RESEARCH CENTRE ON EQUINES

Two Laboratories being considered for OIE Recognition

The Department of Animal Husbandry and Dairying (DAHD), Ministry of Agriculture, Government of India is considering the request of this centre for recognizing two laboratories, viz., equine rhinopneumonitis and equine piroplasmosis laboratories as *Office International des Epizooties* (OIE) International Reference Laboratories. OIE is a world organization for animal health with 164 member countries and on getting its recognition; these laboratories will be referred by the entire South-East Asian Region for diagnosis, control and management of major equine diseases. A high-powered committee appointed by the DAHD visited this Centre on July 14-15, 2003 and critically evaluated the infrastructure, facilities and expertise available in order to meet the stringent requirements for international recognition. The committee was of the opinion that this Centre has physical facilities and necessary expertise to meet many of the criteria for OIE reference laboratory. The committee suggested the Centre to implement quality

control system and biosafety practices as per international norms.

The Director NRCE, Dr. S.K. Dwivedi informed the experts that for safe handling of potentially hazardous equine pathogens, biosafety level 3 (BSL-3) microbial



Members of the expert committee evaluating equine piroplasmosis laboratory for OIE recognition

and animal containment facilities are being established, for which the planning commission has already sanctioned Rs. 2.60 crores to this Centre.

Dr. Dwivedi nominated as member of ICAR Society

Indian Council of Agricultural Research has nominated Dr. S. K. Dwivedi, Director NRCE as one of the members of prestigious *ICAR Society* as well as *Governing Body of the ICAR Society* for a period of three years w.e.f. October 8, 2003.

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Patent granted to HERP kit

A patent has been granted by the Patent Office, Government of India on application of the Centre (2199/DEL/96) entitled "A method for preparation of a diagnostic kit useful for forecasting Equine Herpes Virus-1 disease". This has been notified on October 25, 2003 in the Gazette of India, classified as 55E, 1891278.

A short course on semen cryopreservation, AI & pregnancy diagnosis organized at Bikaner

A short course on *Cryopreservation of semen, artificial insemination and pregnancy diagnosis in equines* was organized from September 1-10, 2003 at Equine Production Campus, Bikaner. A total of 22 participants from different states joined the course. The course was inaugurated by Dr. M.S. Sahani, Director National Research Centre on Camel, Bikaner. According to Dr. S. N. Tandon, Course



Dr. Parmatma Singh, Vice-Chancellor, RAU, Bikaner addressing the participants during valedictory function

Director, lectures and practicals pertaining to equine behaviour, physiology of reproduction, semen evaluation, artificial insemination, early pregnancy diagnosis, care of young ones, *etc.* were conducted during the course. The participants were given the opportunity to interact with various experts and imparted training in artificial insemination and pregnancy diagnosis using ultrasonography & other serum-based techniques. In the valedictory function,

the chief guest, Dr. Parmatma Singh, Vice-Chancellor, Rajasthan Agricultural University, Bikaner said that the training imparted through such short courses will help in conservation of the endangered breeds of indigenous equines.

Workshop on IT organized at the Centre

NRCE in collaboration with National Informatics Centre, Hisar organized a one-day workshop on *Information technology for dissemination of scientific knowledge in agriculture* on September 17, 2003. Scientists and employees of various ICAR and central government institutes participated in it. The Commissioner Hisar Division, Mr. P.K. Das, was the chief guest. He emphasized upon the need for dissemination of information technology so that the benefits reach to the farmers located in remote areas of the country. Dr. S.K. Dwivedi, Director NRCE highlighted the activities



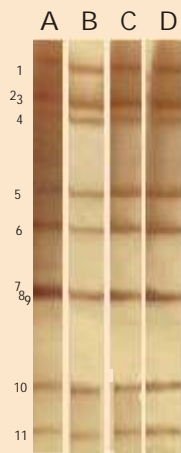
Dr. S.K. Dwivedi, Director NRCE addressing the participants about computer related ailments

and achievements of the Centre and gave an insight on computer related illness and its prevention. Dr. A.K. Jain, Assistant Director General, Agricultural Research Information System, ICAR, New Delhi and Dr. M.V.S. Sharma, Technical Director, National Informatics Centre, New Delhi discussed the present scenario, gaps and thrust areas in India with particular reference to IT Plan and future prospective in agriculture.

RESEARCH HIGHLIGHTS

Foal rotaviruses isolated and characterized from diarrheic foals

Forty diarrheic foal stool samples from an organized farm at Hisar collected during June-September 2003 were tested for foal rotavirus by both RNA-PAGE and ELISA. Four of these samples (10%) were positive for foal rotavirus (FRV) by both the tests. Attempts for isolation in MA104 cell line from RNA-PAGE positive samples yielded two FRV isolates that produced characteristic cytopathic effects in cell culture. The electrophoretic



**RNA electrophoretic profile of foal rotaviruses
(Lanes A & C : stool samples; lanes B & D : cell culture isolates)**

patterns of both the isolates were identical, confirming their origin being from the same outbreak. This is the first report of isolation of FRV from India.

(Baldev R. Gulati, Rajender Kumar & Praveen Malik)

Cyanide toxicity in horses due to sorghum feeding

A problem of frequent retention of urine in a few horses was observed during July-August 2003. The clinical and laboratory examination revealed the accumulation of urine in the bladder. In the urine samples, increased epithelial casts and albumin was detected. Thickening (inflammation) of bladder wall was observed by ultrasonography. Feed sample analysis showed toxic

amount of cyanide ($326.66 \pm 1.24 \mu\text{g/g}$) in the fodder (Sorghum spp, variety MP Chari) fed to these animals.

These findings confirmed cyanide toxicity in horses. Immediate withdrawal of contaminated fodder and treatment with nalidixic acid @ 40 mg/kg body weight daily for 7 days and supplementation of cobalt sulfate @ 5 mg/kg daily for one month was found effective in overcoming the problem.

(S. Dey, S.K. Dwivedi & Jitender Singh)

Immune response to an indigenous EHV-1 vaccine candidate in mice

In a pilot study, the response to indigenous vaccine against Equine Herpes Virus-1 being developed at the Centre was tested by challenge studies in mice. For this, female BALB/c mice were immunized intraperitoneally with two different doses i.e. $6.25 \mu\text{g}$ and $12.5 \mu\text{g}$ EHV-1 immunogen (Hisar-90-7 strain) emulsified in mannide monooleate. After booster immunization, animals were allowed to mate. A good booster response was observed in vaccinated mice by virus neutralization and ELISA. On 14 days post-gestation, the animals were challenged with virulent EHV-1 (Rajasthan strain) intranasally. The mice immunized with $12.5 \mu\text{g}$ dose withstood EHV-1 challenge virus dose better as compared to the mice immunized with $6.25 \mu\text{g}$ dose. Non-vaccinated control mice did not withstand the challenge virus dose and showed clinical signs including dyspnoea, crouching in corners, vaginal discharge and abortions. The trials in equines are being undertaken before the vaccine is released for field use.

(B.K. Singh & N. Virmani)

Standardization of methodology for semen cryopreservation of Marwari horses

Majestic look of Marwari horses attracts not only Indians but also foreigners. The population of true-to-

breed Marwari horses is reducing, primarily due to indiscriminate breeding by equine farmers. We standardized the technique for cryopreservation of Marwari stallion semen to be used for *ex situ* conservation of Marwari horses. In order to get optimum post-thaw motility, various primary and secondary extenders were tried. Out of five primary extenders tested, citrate-EDTA and sucrose solution gave better pre-freezing motility i.e. 60-70% and 70-80%, respectively. Of various secondary extenders, lactose-glucose-egg yolk extender and sugar based extender gave better post-thaw motility i.e. 20-40% and 20-30%, respectively. Lactose-glucose-egg yolk extender was found best freezing medium. The cryopreserved Marwari semen is being tested under field conditions through artificial insemination.

(Yash Pal, R.A. Legha, S.K. Khurana & S.N. Tandon)

Babesiosis in Marwari horses

Clinical form of babesiosis caused by *Babesia equi* was reported from an equine farm in Village Sarangpur (Hisar). The horses had signs of high fever, haemoglobinuria, severe anaemia and colic. *Hyalomma anatolicum anatolicum* tick infestation was observed on physical examination of horses. The *Babesia equi* infection was detected in 2 of 9 horses by blood smear examination and in 6 of 9 animals by complement fixation test. All these animals were treated with imidocarb dipropionate @ 2 mg/kg body weight at 72 h interval, in combination with buparvaquone @ 4 mg/kg (once only) as specific therapy besides parenteral supplementation of haematinics and B- complex. The animals recovered within 72 h.

(S. Dey, Rajender Kumar & S.K. Dwivedi)

Investigations on infectious causes of infertility in mares

Fifty-seven infertile mares were investigated by exfoliative cytology and isolation patterns to determine

the cause of infertility. The uterine aspirate from the affected animals revealed medium to large number of live as well as degenerating neutrophils, lymphocytes, monocytes, epithelial cells, erythrocytes, bacterial and fungal organisms depending upon the stage of infection. Following organisms could be isolated from the uterine aspirate: *Streptococcus zooepidemicus* (18), alpha haemolytic streptococci (4), *Staphylococcus* spp. (10), *E. coli* (3), and *Candida* spp (2). There was a positive correlation between exfoliative cytological picture and isolation of organisms. Endometrial cytology was found to be a simple, safe and reliable technique for ascertaining the infectious causes of infertility in mares.

(Nitin Virmani, A.S. Panisup, Praveen Malik & S. Dey)

INSTITUTIONAL ACTIVITIES

Institute Management Committee meeting

Twenty-third meeting of the Institute Management Committee was held on August 30, 2003 under the chairmanship of Dr. S.K. Dwivedi, Director NRCE. Various decisions including purchase of equipments for the current financial year, reduction of testing fee for equine infectious anemia to Rs 250/- for indigenous equines belonging to non-profit making bodies including Border Security Force and Police horses were approved in the meeting.



23rd IMC meeting in progress to discuss important management issues

Quinquennial Review Team (QRT) reviewed NRCE activities

The QRT under the chairmanship of Dr S.S. Rathore, Ex-Dean, College of Veterinary Sciences, PAU, Ludhiana visited the Centre on September 4-5, 2003 to review the work done by the Centre during last five years. Other members of QRT included Dr. P.N. Khanna, Ex-Joint Director, IVRI, Dr J.M. Nigam, Ex-Dean, College of Veterinary Sciences, Palampur, Dr. R.P. Mishra, Ex-FAO Expert and Dr. H.C. Joshi, former Professor & Head, Division of Veterinary Medicine, Pantnagar. QRT members visited different laboratories and interacted



QRT under the chairmanship of Dr. S. S. Rathore reviewing research activities of the Centre

with the scientists individually about the progress made during the last five years. QRT members appreciated the ongoing research activities under the dynamic leadership of Dr. S.K. Dwivedi and excellent team spirit among the scientists of NRCE.

Staff Research Council meeting

The half yearly SRC meeting was held under the chairmanship of Dr. A.K. Gupta, Director In-charge on December 10, 2003 to discuss the progress of undergoing various research projects in the area of equine health and production. The house reviewed the research projects and made their specific recommendations for different ongoing research projects.

MISCELLANEOUS ACTIVITIES

Equine Health Camp at Churu (Rajasthan)

To address the health problem of donkeys, NRCE organized a health camp on October 29, 2003 at Churu (Rajasthan), a donkey populated area of the country. A total of 96 donkeys and 5 mares were examined and treated for various ailments including lameness, wounds, digestive and reproductive disorders. The donkey owners showed great interest in the camp and were educated about the common health problems of donkeys. Literature on management of equines was distributed among farmers. Blood and serum samples were collected



NRCE scientists treating sick animals in an equine health camp at Churu (Rajasthan)

from all the animals for serological testing of various viral, bacterial and parasitic infections.

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VISIT OF DIGNITARIES

Dr. J.B. Chowdhury visited the Centre

Dr. J.B. Chowdhury, Chairman, Committee of Agricultural & Scientific Experts, Ministry of Agriculture, visited on December 6, 2003 to evaluate the worth of research work being done at NRCE. During his visit, he personally evaluated the research work of all the laboratories. Welcoming Dr. Chowdhury, Dr. A.K. Gupta, Director In-charge highlighted the activities and achievements of NRCE. Dr. Chowdhury was impressed with the excellent infrastructural facilities available at the Centre and complimented the scientists for progress made in diagnosis and control of equine diseases.

Secretary DAHD visited NRCE

Smt. Radha Singh, Secretary, Department of Animal Husbandry & Dairying, Ministry of Agriculture visited this Centre on December 22, 2003. She was accompanied by Dr. V.K. Taneja, Deputy Director General (Animal Sciences), Ms. Nita Chowdhury & Smt. Neerja Rajkumar, Joint Secretaries DAHD, Dr. A.L. Chaudhary, Chairman, and Dr. K.S. Dangi, Managing Director of Haryana Livestock Development Board, Chandigarh. During her visit, Smt. Singh examined the experimental and animal containment facilities at the Centre. Dr. A.K. Gupta, Director In-charge explained significant achievements of the Centre to the dignitaries.



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Smt. Radha Singh, Secretary (DAHD) examining experimental animal facilities at the Centre

PERSONALIA

Dr. S.K. Dwivedi visited Colombo (Sri Lanka)

Sri Lanka Equestrian Association invited Dr. S.K. Dwivedi to Colombo on September 26, 2003. During his visit, he delivered a talk on various aspects related to infectious diseases of equine, quarantine requirements and monitoring & surveillance of equine diseases to veterinarian and quarantine officers. He also attended an equine show of Marwari Horses exported from India. Dr. Dwivedi also met the Minister of Commerce, Govt. of Sri Lanka and discussed about the export of Marwari Horses from India.

Sh. R.A. Parashar wins Zonal Chess Competition

Sh. R.A. Parashar, AF&AO represented NRCE chess team in ICAR Zone V Sports Meet held at Central Soil Salinity Research Institute, Karnal from December 15-18, 2003 and won the first position jointly in chess competition.

Participation in conference/symposia

- Dr. Nitin Virmani (Scientist) presented a research paper in the National Symposium on *Basic Pathology and Animal Diseases- A Need for Fresh Approach in Indian Scenario* held at Jabalpur from November 12-14, 2003.
- Dr. Nitin Virmani (Scientist) and Dr. A. Arangasamy (Scientist) participated in XIXth Annual Convention & National Symposium on *Current Reproductive Technologies for Improvement of Livestock Production in India* held at Kolkata from August 22-24, 2003.

Participation in Trainings

- Sh. R.A. Parashar (AF&AO) attended an *Internal Auditor's Training Programme on ISO 9001:2000 QMS* organized by Consultancy Development Centre, New Delhi from August 28-29, 2003.
- Sh. Hawa Singh (Assistant) participated in *41st Advanced Workshop on Implementation of*

Establishment Rules, Regulations, Procedures & Administration for Govt. Departments, Public Sectors & other Organizations organized by Third World Development Centre at Ootacamund, Tamil Nadu from September 1-5, 2003.

- Sh. D.D. Sharma (LDC) participated in *48th Competence and Skill Building Workshop for Personal Secretaries, Personal Assistants, Executive Assistants, Executive Secretaries, Stenos & other secretarial staff* organized by Third World Development Centre at Ootacamund, Tamil Nadu from September 1-5, 2003.
- Dr. Jitender Kumar (T-3) participated in a short course on *Cryopreservation of semen, artificial insemination and pregnancy diagnosis in equines* organized by Equine Production Centre, NRCE, Bikaner from September 1-10, 2003.
- Sh. Ram Pal (Assistant), Sh. S.P. Kaushik (Assistant) & Sh. Subhash Chander (UDC) participated in a training programme on *Computer Application for Administrative and Financial Management* organized by National Academy of Agricultural Research Management, Hyderabad from September 16-23, 2003.
- Sh. R.A. Parashar (AF&AO) attended a training programme on *New Formats of Accounts prescribed by CGA for central autonomous bodies (non-profit organizations)* organized by National Institute of Financial Management, Faridabad, from October 13-17, 2003.
- Sh. Dilip Kar (AAO) participated in a training programme on *Establishment and Personnel Matters* conducted by Institute of Secretariat Training & Management, New Delhi from November 3-7, 2003.
- Dr. Praveen Malik (Scientist) participated in a training course on *Management of Microbes as an Instrument of SPS Compliance and International Livestock Trade* organized by ICAR Centre of Advanced Studies in Veterinary Microbiology, CCS Haryana Agricultural University, Hisar from November 18-December 8, 2003.



FROM DIRECTOR'S DESK

I feel immense pleasure in forwarding the second issue of NRCE News 2003. As is reflected in this issue, during this period NRCE has been evaluated by various expert committees including Department of Animal Husbandry & Dairying for OIE recognition; QR Team for research activities of last five years; and by the Committee of Agricultural & Scientific Experts, Ministry of Agriculture for evaluating the worth of research work being done at NRCE. The recommendations of these committees will be guiding force for the future research and development at the Centre. It is a matter of great satisfaction that these high-powered committees applauded the technical excellence of this Centre.

During this period, a patent filed by the Centre for EHV-1 diagnostic kit was granted by the patent office, Government of India. A short course on *Cryo-preservation of semen, artificial insemination and pregnancy diagnosis in equines* was organized at Bikaner Campus and a workshop on *Information Technology for dissemination of scientific knowledge in agriculture* was conducted. Almost entire administrative staff was sent to various trainings for their skill up-gradation.

I would like to record my sincere thanks to Indian Council of Agricultural Research, New Delhi, particularly Dr. Mangla Rai (DG, ICAR), Dr. V.K. Taneja (DDG, Animal Sciences) and Dr. Lal Krishna (ADG, Animal Sciences) for their continuous support to this Centre to improve equine health and production. I complement the efforts of publication committee for giving new look and for timely printing of this newsletter.

(S.K. Dwivedi)

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Printed by : **Dorex Offset Printers**
D.N. College Road, Hisar Ph. : 01662-230117, 284441