



NAVS NEWS VIBES

NATIONAL ACADEMY OF VETERINARY SCIENCES (INDIA)

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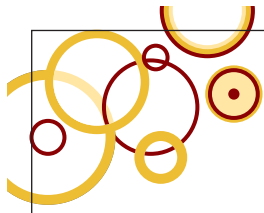
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EDITORIAL

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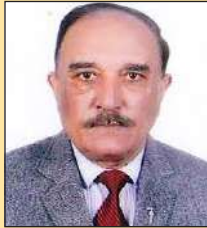
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Dr. L.D. Singla

Dear esteemed Fellows

As we enter the new year 2023, I would like to express my gratitude for the invaluable support, strategic insights and guidance you have provided over the past year. Your dedication and commitment has enabled us to achieve our goals and realize the NAVS (I) mission of benefitting the society.

National Academy of Veterinary Sciences (India) [NAVS(I)] has undergone a great struggle for its subsistence since its inception. As per the history of NAVS (I), the Academy started functioning in 1993 from the Veterinary Council of India (VCI) premises at 16/15, Western Extension Area, Karol Bagh, New Delhi under the leadership of Founder President Dr CM Singh who was also the President of Veterinary Council of India (VCI) at that time. Later VCI office moved to August Kranti Bhawan, Bhikaji Cama Place, New Delhi. In May 2003, the VCI asked the NAVS to relocate its office. However, the Governing Council meetings of the Academy were allowed to be held in the VCI premises. The Academy temporarily started operating from its facilities at Hind Agro Industries Ltd, B-3, Friend's Colony (West), Main Mathura Road, New Delhi, under the newly elected President of the Academy, Dr SK Ranjhan. However, the Academy could not find a suitable location during his tenure as well as during the next Governing Councils elected for the periods 2007-10 and 2010-13. The Governing Council meetings were held during this period in the premises of VCI, IDA, RVS, NASC etc. Governing Council and General Body meetings of the Academy were also held during NAVS Convocation-cum-Conventions held at various institutions in different states of India. The next Governing Council (elected for 2014-2016), which took charge on January 1, 2014 was headed by then DDG (Animal Science), ICAR (Dr KML Pathak) who successfully got an office allocated to NAVS in the NASC Complex, New Delhi by the Secretary, DARE and Director General, ICAR, Dr S Ayyappan. During this period the Academy got an office after 20 years of its inception. The NAVS office was soon equipped with essential furniture and fixtures for its proper functioning.

After a long pursuit, our President and his team have been able to get recognition of NAVS (I) from the Department of Animal Husbandry & Dairying, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India by getting a permanent place for the secretariat of NAVS for its efficient functioning. This is a great achievement of the Academy. The current postal address of NAVS (I) is Rashtriya Kamdhenu Aayog, Admin Block, Room No - 5, DMS Complex, Shadipur, West Patel Nagar, New Delhi - 110008.

I look forward with excitement, hope and belief that together we can make a real difference in the lives of the people we serve with. Thank you again for your valuable support and we look forward to working together to create a better future for everyone.

I humbly request all the members and fellows of the Academy as well as other professionals to share their outstanding professional achievements (awards, honors, important assignments etc.) with high quality color images in png/jpg/jpeg format for inclusion in upcoming issues of the newsletter.

(Kindly send the information to : ldsinglanavs@gmail.com; ldsingla@gmail.com;))

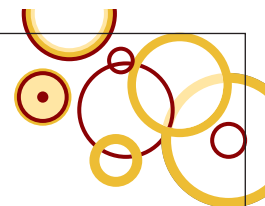
I look forward to receive your crucial annotations and beneficial suggestions to make **NAVS News Vibes** more informative, enriched and effervescent in the future.

Best regards

L.D. Singla

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HORIZON PRESIDENT'S VIEWS & VISION

My dear distinguished Fellows of the Academy,
Warm greetings!

I feel proud to inform you that after a long struggle, we are able to get recognition of NAVS (I) by Department of Animal Husbandry & Dairying, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India. The Ministry has allotted fully furnished three room office space to the Academy at a notional rent in DMS Complex. This is an outstanding achievement and an important milestone in the history of the Academy. A MoU has been signed between the Academy and the Ministry of Fisheries, Animal Husbandry & Dairying and the office orders have been issued for the same.

Distinguished Fellows, I made a representation on December 05, 2022 to Hon'ble Union Minister, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India requesting him to provide suitable office space to NAVS (I) in DMS Complex, New Delhi for maintaining its office and to organize periodical meetings and interactions etc. The request submitted by NAVS was examined in the division Rastriya Kamdhenu Aayog (RKA), Department of Animal Husbandry & Dairying (DAHD). Since, NAVS (I) is one of the Scientific / Professional Bodies registered vide No. S/24471 of 1993 dated 07.07.1993 under Societies Registration Act XXI of 1860 consisting of academicians and other scholars working in the field of veterinary science, the Competent Authority in the Department considered and approved the request of NAVS vide file no R/3/2022-DD(E-23725).

The DAHD has decided to provide three rooms (earlier occupied by RKA) to NAVS (I) at DMS complex on the following terms and conditions:

1. NAVS will use the furniture / fixtures in the rooms "as is where is" basis for the official purposes.
2. NAVS will use the existing electricity, telephone and water connections in the rooms on payment of charges to the concerned departments from the date of its occupancy.
3. NAVS will make necessary security arrangements and will be solely responsible for the maintenance of rooms, inventories etc. and will be liable for the damage/ theft/ losses if any, during its occupancy.
4. In the case of DAHD requiring the rooms for any of its activities / requirements the DAHD will give 10 days' notice period to NAVS and NAVS shall vacate and handover the rooms with all the listed inventories to DAHD.
5. NAVS shall pay Rs10,000 per month (Rupees ten thousand only) as notional rent to DAHD for using the facilities. The account details and the mode of payment of rentals to the Department/ DMS will be decided soon.
6. NAVS shall have no right to make alterations in the rooms, sub letting of rooms or using the facilities for activities other than agreed upon by DAHD.

The NAVS (I) and DAHD have agreed to these conditions and signed this understanding as MEMORANDUM OF



UNDERSTANDING (Between NAVS (I) and DAHD) on 02 January, 2023.

Further, the orders for grant of approval to provide office space to (NAVS (I) in the earlier occupied rooms by RKA at DMS Complex, New Delhi by the Competent Authority in the Department of Animal Husbandry & Dairying, Government of India have been issued on 05 January, 2023. The details of the orders are as under:

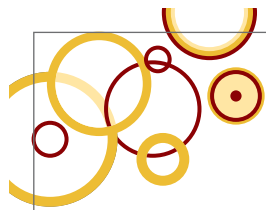
1. The Secretary, Animal Welfare Board of India who is presently holding the charge of the rooms and the Inventories will arrange to list out the details and give possession of the space/ rooms to NAVS (I) as per MOU signed between the NAVS (I) and Department of Animal Husbandry & Dairying.
2. The details of existing connections viz. electricity, telephone, water, internet etc. in the rooms will be shared with the Secretary NAVS(I) for record and payment of monthly charges as need be, by NAVS(I) till the time NAVS uses the facilities.
3. The General Manager, DMS, DAHD has been informed and requested to provide the banking details to the Secretary, NAVS (I) for making timely payment of notional rentals of Rs10,000 per month to DMS as decided by the Competent Authority. However, the notional rent is subject to revision as need be, by the Competent Authority.
4. Other Terms and Conditions will remain same as per the Memorandum of Understanding (MOU) dated 02 January, 2023,

The orders have been issued with the approval of Secretary, DAHD vide E-File No R/3/2022-DD (E-23725).

I welcome the precious recommendations from all the Governing Council Members, Fellows, Associate Fellows and members of the Academy, to assist us to march ahead and make the Academy a completely practical, vibrant and highly acknowledged expert body.

Cordially yours

(DVR PRAKASH RAO)



THE ACADEMY

EVENTS & ENDEAVOURS

14th Governing Council Meeting of the Academy

The 14th Governing Council (GC) meeting of NAVS (I) was held at Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana on 13 Nov, 2022 at 05.30 PM in hybrid mode.

The meeting started with the welcome address by Dr DVR Prakash Rao, President NAVS (I). The President expressed his thanks to all the GC members, Ex Officio members of the Academy and the special invitees (Maj Gen Shri Kant SM, VSM (Retd), Past President, and Dr Inderjeet Singh, VC GADVASU, Ludhiana) for taking out time from their busy schedules for attending the meeting. The President apprised the house regarding his meeting with Dr Mohan Bhagwat, President "Rashtriya Swyam Sevak Sangh" during his recent visit to Chennai; where, he had the opportunity to reiterate the key issues of the Academy i.e. establishment of Indian Council of Veterinary and Fisheries Research and irrational appointments of Non Vets in Veterinary Institutes of ICAR.

Proposal for organizing a workshop on Role of CSO's in promoting one health: The Brooke India (BI) has proposed for organizing a joint workshop on Role of CSO's in promoting one health on 14 Feb, 2023 in collaboration with NAVS (I) and International Livestock Research Institute at NASC Complex. BI has requested for a lead speaker from the Academy and Secretary General to be the Panelist. The BI will bear the expenses of the participants. The Secretary General suggested holding GC meeting a day prior to the above workshop. The proposal was accepted.

"The issues pertaining to the revision of rules and regulations of the Academy and amendments of rules/ guidelines for various awards, were deliberated and the necessary changes were approved by the GC. The same will be circulated among Fellows before the next GB meeting."

15th Governing Council Meeting of the Academy

The 15th Governing Council (GC) meeting of NAVS (I) was held on 09 Dec, 2022 at 11.30AM (Online Mode). The meeting started with the welcome address by Dr DVR Prakash Rao, President NAVS (I). The President expressed his thanks to all the GC members of the Academy and the special invitees (Maj Gen Shri Kant SM, VSM (Retd), Past President, and Dr LD Singla, Director Human Resource Management Centre (HRMC), GADVASU, Ludhiana) for taking out time from their busy schedules for attending the meeting.

Two minutes mourning was observed to pay tribute to the departed souls of the Fellows of the Academy, who passed away.

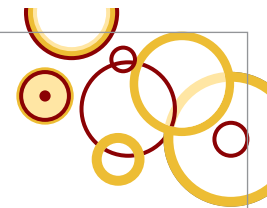
The President apprised the house that keeping in view the overall expenditure in past eight months (Rs. 1.8 lakhs per month), the Academy need to have Rs 2.0 crore in the form of FD's (Corpus fund) for smooth running of the Academy. He appealed to the GC members to look into the ways & means to enhance the Corpus fund from Rs.1.5 crore to Rs. 2.0 crore by their active involvement for bringing in more Corporate/ Institutional Members.

The Vice-President suggested that we should review our day to day expenditure and explore the possibilities of enhancing income from various sources.

The President conveyed his thanks and appreciations to Dr Inderjeet Singh, Honourable Vice-Chancellor, GADVASU, Ludhiana for the successful conduct of Brainstorming Session-cum-Seminar on "Strategy on Control & Eradication of Formidable Trans-Boundary Viral Diseases of Livestock - Foot and Mouth disease (FMD), Lumpy skin disease (LSD), African Swine Fever (ASF)" and "Leptospirosis a neglected disease".

The following agenda points were discussed:

- 1. Progress on Redesigning of NAVS (I) Website:** Mr Ankit Srivastava website designer gave a brief presentation on the progress of NAVS (I) website and requested support of some of the members during development stages for which Dr SK Gupta, Dr Ravindra Sharma, Maj Gen ML Sharma (Retd) and Dr AC Varshney gave their consent to help the web designer.
- 2. Appointment of Editor, NAVS (I):** Dr DVR Prakash Rao, President informed the house that Dr AK Pattanaik, Editor has shown inability to provide his services to the Academy because of his busy schedule in the new assignment. Dr DVR Prakash Rao, President appreciated Dr AK Pattanaik for the excellent work done by him in designing & publishing NAVS (I) Newsletter. Dr DVR Prakash Rao, President proposed Dr LD Singla, Director HRMC, GADVASU for appointment as new Editor of the Academy, who has given his consent to take over the assignment of Editor. The GC approved appointment of Dr LD Singla as new Editor.
- 3. GC member's feedback on efforts made to enhance awareness among potential candidates for applying for various Awards:** The President thanked GC members for their efforts in enhancing the awareness among potential candidates for applying for various awards. Since, the numbers of applications received so far were not adequate, the date of receipt of applications of all awards was extended to 31 Jan, 2023.



Two Days National Workshop and Brainstorming

NAVS (I) and Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana jointly organized a two days National Workshop and Brainstorming session on "Strategy on control and eradication of formidable Trans-boundary viral diseases of Livestock- Foot and Mouth disease (FMD), Lumpy skin disease (LSD) and African Swine Fever (ASF)" from 14 to 15 November, 2022. There was an overwhelming response, the event was attended by experts from Academia, Industry, Policy framing organizations, farmers, scientists from prestigious institutions, animal health professionals, vaccine manufacturers, progressive farmers from dairy & piggy associations. This workshop was conducted under dual mode (online & physical).



Expert Panelists of National Workshop

The basic aim of the event was to discuss the emerging animal health challenges and their possible prevention and control in India. In the inaugural session, Dr Inderjeet Singh, Vice-Chancellor, GADVASU formally welcomed all the eminent speakers, delegates and other participants. Dr Singh, thanked the NAVS (I) for entrusting GADVASU with the opportunity to host this National Workshop and Brainstorming. He presented the brief scenario of emerging diseases including FMD, LSD and ASF those are causing substantial economic impact on the livestock economy and thus stressed on effective disease control and management strategies. It was pointed out that although vaccination programs against FMD are in place since past many years, the country is still far away from achieving the goal of FMD eradication. Dr Singh shared his own experiences starting from the initiation of FMD vaccination and the challenges involved in the vaccination program. He shared his concerns on the quality of vaccines, vaccination process, cold chain maintenance and disease under-reporting. He advocated need of strong bio-security measures, stakeholder awareness and participation so that the FMD, LSD and ASF-free status could be achieved. During the inaugural session, the dignitaries released an Android App prepared by GADVASU on 'Vaccine Preventable Livestock Diseases'.



Release of the Android App on 'Vaccine Preventable Livestock Diseases'

Dr DVR Prakash Rao, President NAVS (I), India thanked GADVASU for taking initiative in organizing National Workshop and Brainstorming on the important theme. He wished that the scientific deliberations will help policy development on the prevention and control of transboundary animal diseases. He highlighted the initiative of the government of India for conducting intensive FMD vaccination programs to make India FMD-free by 2025-2030. He emphasized the importance of vaccination, vaccine quality and cold chain maintenance to generate sufficient antibodies to develop protective herd immunity.

On the first day deliberations and discussions were focused on FMD. Dr R P Singh, Director, ICAR-Directorate of Foot and Mouth Disease, Odisha briefed about the current status and different FMDV serotypes prevalent in India. The data on the year-wise, region-wise, month-wise, species and state-wise outbreaks of FMD and virus serotypes involved were also presented. Dr. Singh also discussed the ongoing FMD control programs, and the national network of FMD laboratories. He opined that transmission in other species will come down if FMD is tackled in cattle and buffalo.

Dr Anirban Guha, Assistant Commissioner, DAHD presented the mandate of the livestock health division and current scenario of livestock diseases. He discussed about the challenges due to diseases of large and small ruminants, pigs and poultry. Dr Naveen Kumar, NRC Equine, Hisar briefed on the LSD virus genome, circulating strains, introduction of virus in 2019, and current scenario of LSD in India in different animal species. He mentioned that Kenyan type LSD is prevailing in India, affecting 2 million animals and causing approximately 1 lakh deaths.

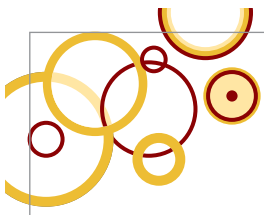
Dr NN Burman, COVS, Khanapara shared in detail his experience on African Swine Fever in the Indian North Eastern Region. He presented an update on emergence of ASF in NE states, its history, susceptible hosts, structural properties of complex ASF virus, mode of infection in pigs, patho-mechanism, molecular characterization and temporal-spatial distribution. Movement of animals and animal products was identified as the primary reason of virus spread.

Dr JPS Gill, Director Research and Co-organizing secretary in his address ensured that all the stakeholders engaged in the livestock production such as veterinarians, dairy farmers, vaccine manufacturers, and policy makers will be immensely benefitted from the National Workshop recommendations and these will aid in the ongoing TADs prevention and control programs in India.

Dr YPS Malik, Dean, College of Animal Biotechnology and Co-organizing secretary revealed that this programme will help in developing recommendations and roadmap to work upon in future. The deliberations will also pave the way to handle these diseases in an effective manner. The workshop concluded with several recommendations for the prevention and control of transboundary animal diseases such as FMD, LSD and ASF in India.

Two policy papers compiled and released

Based on the scientific deliberations and recommendations of a two days National Workshop and Brainstorming two policy



papers were compiled and released. In the past decade, many novel transboundary and emerging animal diseases have been reported in India. The policy papers on "Trans-boundary viral diseases of Livestock- FMD, LSD and ASF" and "Leptospirosis- a neglected disease" were released on 04 January, 2023 by Shri Parshottam Rupala, Union Cabinet Minister of Fisheries, Animal Husbandry and Dairying, Government of India and Dr DVR Prakash Rao, President NAVS (I).



Release of NAVS policy paper on "Trans-boundary viral diseases of Livestock- FMD, LSD and ASF" by Shri Parshottam Rupala, Union Cabinet Minister and Dr DVR Prakash Rao



Release of NAVS policy paper on "Leptospira-a neglected disease" by Shri Parshottam Rupala, Union Cabinet Minister and Dr DVR Prakash Rao

President at National Congress of Parasitology

The 31st National Congress of Parasitology was organised by Indian Society of Parasitology (ISP) on the theme Global technological advancements in the diagnosis and sustainable control of parasitic diseases, at Tamil Nadu Veterinary & Animal Sciences University (TANUVAS), Chennai from 10-12 November, 2022. There were more than 500 national and international participants along with various eminent speakers from different institutes and universities. Dr DVR Prakash Rao President, NAVS (I) along with Dr K N Selvakumar, Vice-chancellor, TANUVAS inaugurated the conference and released the conference compendium along with Professor Sukhbir Kaur, President, Dr J K Saxena, Secretary, ISP. Dr R Karunakaran, Dean, Madras Veterinary College and Dr. C Soundararajan, Organising Secretary and Director, Centre for Animal Health Studies, Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) were also present.



Prof Dr KN Selvakumar Vice-Chancellor, TANUVAS delivered the presidential address and Dr DVR Prakash Rao President NAVS (I) delivered special address as guest of honour.

Dr LD Singla, Editor NAVS (I) received Dr BP Pandey Memorial Oration award for his outstanding contribution to teaching in Parasitology. He also chaired the Plenary Session during the conference.



L to R 1. Dr L D Singla 2. Dr J K Saxena, Secretary ISP 3. Dr Sukhbir Kaur, President ISP 5. Dr. A M Khan Vice-President IPS 5. Dr C Soundararajan, Organising Secretary

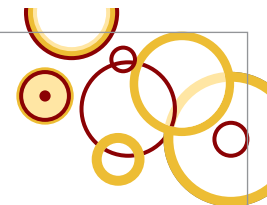
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Emphasis must be laid on utilization of byproducts: President

The inaugural function of 19th Biennial International Conference of Animal Nutrition Society of India on "Nutritional Technologies to Augment Livestock, Poultry, Canine and Fish Production for Global Competitiveness" held from 16-18 November, 2022 at GADVASU was graced by Dr DVR Prakasha Rao, President NAVS(I) as Chief Guest.

Dr Rao in his address stated that emphasis must be laid on utilization of byproducts emerging from agriculture and livestock sector in animal feed. The market for quality animal feed is expected to surge in a big way. Growing animal productivity and increased knowledge of high-quality meat, milk, and other related goods for human consumption are key reasons for enhancing the market's growth.



Dr Inderjeet Singh, Vice-Chancellor, GADVASU emphasized that the livestock contribute a major share in the national GDP and it should further be strengthened by coordinated efforts. He advised that progressive farmers with innovations in animal feeding must be recognized. He emphasized that the varieties of crops must be selected for animal feeding with new experiments related to quality of crops.



Dr DVR Prakash Rao was conferred with the Life Time Achievement Award of Animal Nutrition Society of India during the inaugural function of this 19th Biennial International Conference.

Veterinarians asked to take up entrepreneurship by Chief Guest Dr DVR Prakash Rao

During the oath taking ceremony for passing out veterinary graduates organized at Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishvavidyalaya, Chief Guest Dr DVR Prakash Rao, President, NAVS (I), asked veterinarians not to look for jobs but become entrepreneurs. Dr Rao said that animal husbandry sector was fast growing sector and technological intervention can play an important role in it. He said that animal protein has huge demand in the country and associated industries have come up providing large number of jobs. The Chief Guest asked veterinarians to access the future

needs and start ventures as capital is readily available. He provided detailed information about enterprises, startups and animal husbandry based industries.



In his presidential remarks, Prof HK Chaudhary, Vice-Chancellor while congratulating the neo-graduates asked them to serve the livestock keepers and society with complete dedication. He said that as animals cannot speak so they need much care and compassion. The Vice-Chancellor said that livestock keepers face multiple challenges and artificial insemination by untrained personnel have aggravated their problems. "Abandoned cattle on roads needs introspection by the ones who have taken professional oath", asked the Vice-Chancellor. He asked all concerned to accord due status of 'mother' to cows. Prof Chaudhary discussed issues like entrepreneurship, balanced nutrition and timely vaccination of cattle, sheep, goat, etc. The Vice-Chancellor asked veterinarians to adopt traditional knowledge and system too.

The chief guest Dr Rao and Vice-Chancellor distributed internship completion certificates to neo-graduates.



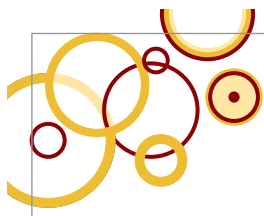
Dr Mandeep Sharma, Dean, Dr G C Negi College of Veterinary and Animal Sciences administered professional oath to neo-graduates. Besides the parents of neo-graduates, all Statutory Officers and scientists attended the solemn ceremony.

SPLENDOUR SHINING FELLOWS

Fulbright Fellowship Awarded to Prof Sanjita Sharma

Dr Sanjita Sharma, Professor & Head at Post Graduate Institute of Veterinary Education & Research (PGIVER), RAJUVAS, Jaipur has received prestigious "Fulbright-Nehru Fellowship" for International higher education. She has completed her fellowship programme at George Washington State University, Washington D.C. This prestigious fellowship was awarded after a vigorous selection process by US Fulbright commission. Dr Sanjita Sharma is through out gold medalist and served the Institute as Dean. Her research interest is 'milk quality and safety' and she developed a Centre of Excellence on Milk Quality and Safety.





IN FOCUS:

LUMPY SKIN DISEASE



Tania Gupta

Lumpy Skin Disease: India's cutting-edge situation

Department of Veterinary Microbiology
Guru Angad Dev Veterinary and Animal Sciences University,
Ludhiana



Deepti Narang

Lumpy Skin Disease (LSD) an emerging viral, transboundary disease of cattle and buffalo is categorized by World Organization for Animal Health as a notifiable disease. It is caused by a double-stranded DNA virus with cytoplasmic replication, complex symmetry and having a brick-shaped structure belonging to the genus *Capripoxvirus*, subfamily Chordopoxvirinae, and family Poxviridae. Sheeppox virus and goatpox virus, members of the *Capripoxvirus* genus, are closely related viruses to the LSD virus.

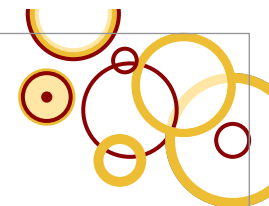
The disease was first reported in Zambia in 1929. Initially the disease was endemic in African countries and has spread to other parts of the world. In South Asia, the disease first appeared in July 2019, when an outbreak was reported in Bangladesh. In August 2019, it was reported from Odisha, India. Later, the disease wreaked a havoc in around 22 states of India, including Rajasthan, Gujarat, UP, Madhya Pradesh, Haryana, Punjab, Himachal Pradesh, and Jammu and Kashmir. LSD is usually not associated with high mortality, but recent outbreaks of LSD were unusual and associated with high mortality. About 2.5 million animals were affected till October 2022, with over 110,000 deaths as per the Department of Animal Husbandry and Dairy, Government of India report. As discussed by the Union Minister for fisheries, animal husbandry and dairying in Lok Sabha, some 184,447 cattle died due to LSD across India [Down to earth. <https://www.downtoearth.org.in/news/governance/as-told-to-parliament-february-7-2023-184-447-cattle-died-due-to-lumpy-skin-disease-in-2022-23-87559>]. The direct livestock and production losses due to LSD in the Asian countries are estimated to be worth up to \$1.46 billion. LSD is an epizootic but not a zoonotic disease. Vectors such as ticks, biting flies, and mosquitoes spread the disease mechanically from infected to healthy animals. Other sources of infection include the intrauterine route, semen, contaminated milk, and contaminated needles. Direct contact is less effective in transmitting the virus.

Status in India

The LSD is spreading its root in the population of cattle and buffalo in the Indian subcontinent. There have been outbreaks reported in India since 2019. A mild disease with only dermal infection was reported during the first outbreak (2019) in Odisha. The outbreak caused low morbidity (7.1%) without any mortality. The second wave (2020-2021) of the

disease affected most of the southern states along with some central states of the country with milder outbreaks and a number of deaths. The virus evolved further and became more virulent during the third wave (2021-2022) that resulted in higher mortality rate (15%) especially in Rajasthan. This virus caused serious disease involving systemic infection of the respiratory system. The domestic and stray animals were equally affected. The reported morbidity and mortality rate was higher in unvaccinated cattle as compared to vaccinated cattle. Rajasthan recorded highest number of deaths (76,030) followed by Maharashtra (34,711) and third in Karnataka (30,297). The genome analysis of the virus isolated from recent outbreak depicted a large number of variations as compared to the genome of the strain from 2019 outbreak. As per the reports, a total of 177 unique variations were detected in the six isolates from the Rajasthan region. Interestingly, the virus seems to have evolved within the host as sequence data from nasal and skin samples from same animal had variations. The evolution of new variants might have led to increased mortality in recent outbreaks. As the virus has already mutated in India, the question arises whether the current available vaccines will remain effective against the virus. Further, as it is a vector borne disease, the seasonal variations also play an important role. It was observed in the 2022 outbreaks that the cases typically increased during the monsoon because of increased vector population due to breeding season. Therefore, the control of the LSD becomes a challenge in India due to the sub-variant evolution of virus and seasonal variation in population of vectors.

LSD is not only restricted to cattle in India. The disease has been reported from the unnatural host i.e., camel from Bikaner, Rajasthan. Camels had a history of close contact with LSD infected cattle. Self-limiting skin nodules of 4 to 8 mm was observed on the neck, shoulder, flank and hind leg region of the infected camels. On further investigations, the LSDV was detected from the skin nodules, anti-LSDV antibodies were also detected. On phylogenetic analysis of sequenced genes of the virus showed relationship with the historical NI-2490/Kenya/KSGP-like field strains circulating in India. The infection in camels could be due to the high density of infection in Rajasthan area and close contact with the highly infected cattle population that led to the adaptation of virus in camels [<https://doi.org/10.1016/j.actatropica.2023.106922>].



Clinical Signs

The clinical signs include fever, nasal discharge, lachrymation, enlargement of superficial lymph nodes, body weight loss, skin nodules of 2 to 7 cm in diameter all over the body, loss of appetite, reduced milk production, and depression. In a mild case of the disease, nodules of 1 to 5 cm appear on the muzzle, nares, back, legs, and nasal and oral mucosa. In the severe form, nodules last 7-12 days and are accompanied by a high fever and several nodules of similar size all over the body. The nodules involve the epidermis, dermis, cutis, and musculature. These nodules are raised from the surrounding skin and separated by a narrow ring of haemorrhage. These may slough off, exposing the raw tissue that can lead to secondary infection. The sloughed away skin lesion appears as an inverted conical zone of necrosis known as "sit fast". Nodules may also develop in the mucous membranes of the mouth and alimentary tract, particularly the abomasum, and in the trachea and the lungs, resulting in primary and secondary pneumonia. The nodules on the mucous membranes of the eyes, nose, mouth, rectum, udder, and genitalia quickly ulcerate, and by then all secretions, including ocular and nasal discharge and saliva, contain the LSD virus. The limbs may be oedematous, and the animal is reluctant to move. Sometimes nodules appear in the cornea of one of both eyes, leading to blindness. Abortion can be caused by the LSD virus. The necrotic nodules can lead to secondary bacterial infections.

Diagnosis

Under field conditions, typical clinical characteristics i.e. presence of skin nodules, fever and lymph node enlargement should be indicative of the disease, but that should be further confirmed by detection of a virus or antigen. Samples viz. blood in EDTA (in the early viraemic stage), a skin biopsy, saliva, nasal swabs or ocular swabs should only be sent under secure conditions and to authorised laboratories to prevent the spread of the disease. Various tests help to confirm the presence of viruses or antigens.

Conventional and real-time PCR have been developed for efficient and rapid diagnosis. Differentiation of LSDV from other capripoxviruses can be made by real-time PCR.

For confirming the disease in new niches, virus isolation is an important requirement. Virus isolation can be done from skin biopsies from early lesions, buffy coat of blood collected into EDTA or heparin during the viraemic stage of the disease. Different cell culture systems of bovine, ovine, or caprine origin can be used for the isolation of the virus. Bovine dermal cells or lamb testis cells are the most susceptible cells. It causes a characteristic cytopathic effect and intracytoplasmic inclusion bodies.

Negative staining of biopsy specimens taken from affected skin or mucous membranes will demonstrate the LSD virion of the 320 x 260 nm oval virus within a few hours of receipt of the specimens.

Serological tests like ELISA, virus neutralisation tests,

fluorescent antibody tests, and the agar gel immunodiffusion test can detect antibodies to the LSD virus. As most serological tests cannot differentiate antibodies from other members of capripoxvirus, the OIE considers the tests for herd testing only.

Treatment:

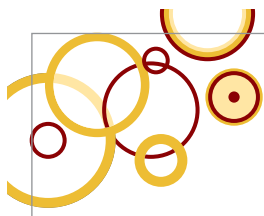
There is no specific antiviral drug for the disease. The treatment for the disease is only symptomatic, targeting the prevention of secondary bacterial infections. A combination of antibacterial, anti-inflammatory, and anti-septic solutions and supportive therapy can prevent the complications of LSD and secondary infections.

Supportive therapy includes dressing skin lesions with an antiseptic-solutions and using fly repellent to prevent myiasis. Use of enrofloxacin along with antihistamines, antipyretics, and multivitamins for 3 to 10 days can be an effective treatment. In some cases, ivermectin was recommended for the treatment as it strongly inhibits in-vitro replication of the LSD virus.

Control and Prevention:

To control the disease, effective measures need to be implemented and followed.

- Awareness campaign for the farmers and veterinarians for identifying the disease and reporting it to higher authorities.
- Effective surveillance measures should be prepared to detect LSD over a distance of at least 20 kilometres from an infected country or zone.
- Restrict the movement of healthy cattle into infected regions and segregate clinically affected animals.
- Vector control methods can also be useful to prevent the disease. Regular cleaning of the farms and their surrounding premises is an important measure to restrict the breeding of vectors.
- In the absence of homologous vaccine against LSD, goatpox vaccine, a heterologous vaccine, was included in the management strategy during the emergency in India as it provides cross-protection against LSD infection. The vaccine gives partial protection against the LSDV. Ring vaccination was advisable, covering a 5 km radius of the outbreak, especially near the border areas. Live attenuated homologous vaccine provides good protection for cattle. The homologous vaccine strains are limited to South Africa, and Turkey. Within a short time, India has developed an indigenous, homologous vaccine, Lumpi-ProvacInd, using Ranchi strain of LSDV isolated from a sick-cattle in 2019. The Indian Council for Agriculture Research-National Research Centre on Equines (ICAR NRCE), Hisar (Haryana), in collaboration with the ICAR-Indian Veterinary Research Institute (IVRI), Uttar Pradesh, has developed this vaccine. As compared to Neethling or KSGP strain,



Indian strain vaccine has high safety. The estimated cost per dose for the vaccine is ₹1-2. Vaccine technology has since been released by ICAR to Indian Immunological Ltd, Hyderabad and Biovet Pvt Ltd, Malur, Karnataka and the vaccine is in the testing stage before its commercial production.

Conclusion

Understanding the epidemiology behind the massive change in the LSD status in India is crucial as it is related to the country's animal welfare and economic status. Further epidemiology of the disease should not only be restricted to the cattle population. The detection of LSD virus in camel and production of anti-LSDV antibodies in camel further necessitates the inclusion of camel in the epidemiological studies. The vaccine production using homologous strain of LSD virus should be commercialized as earliest before the beginning of the new waves of the disease.

MoU signed for commercial production of indigenously developed vaccine "Lumpi-ProVac"

An MoU for commercial production of "Lumpi-ProVac" vaccine was signed in Nagpur on 29th December, 2022 in the presence of Shri Parshottam Rupala, Union Minister of Fisheries, Animal Husbandry and Dairying and the Chief Minister of Maharashtra Shri Eknath Shinde .

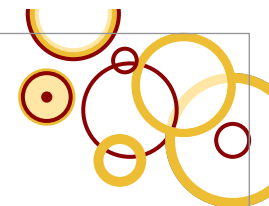


Shri Parshottam Rupala said "The indigenously developed vaccine is going to be a game changer in ongoing effort of government to control and eradicate the Lumpy Skin Disease" (<https://www.pib.gov.in/PressReleaseDetail.aspx?PRID=1887700>)

REFLECTIONS:

THE ISSUE THAT WAS

- Dear Prof. Singla, Heartiest Congratulations for accepting the challenge of Editorship of NAVS(I) News Letter. I am very happy to see your first edited NAVS Newsletter, having good contents with nice coverage as well as being compiled and printed in a very simple design. Wish you all the best. Warm regards. [Dr Veer Singh, BASU, Patna; veersinghgau@gmail.com]
- Dear Prof. Singla, Heartiest Congratulations for NAVS News Vibes Volume 2. I am extremely happy to see your first edited NAVS Newsletter, having good contents with nice coverage as well as being compiled and printed in a very simple design. Best wishes. [Dr PK Gupta, Rajendra Nagar, Bareilly; drpkg1943@gmail.com]
- Happy to see that, as I expected, you have taken quick action of clearing the backlog. The issues published deserve appreciation from the readers. I am sure you would have also got them uploaded on the website. Wish you all the best. My best wishes and blessings will always be with you. [Dr Raghu Nath Kohli, Vasant Kunj, New Delhi; 09968920200 (M)]
- Namaste Dr Singla, Thank you for sharing the NAVS bulletin and I congratulate you for editing the same. With best wishes and regards for you and your family. Sincerely from Satpal [Dr Satpal Ahuja, Sunnanvag 6M, 1704, 222 76 Lund Sweden; satpal.ahuja@gmail.com]
- Thank you very much Dr Singla for sharing the NAVS News Vibes of October 2022 issue. It is quite impressive having important news items coverage [Dr MP Yadav, Gurugram; 9810820093]
- Dear Prof Dr Singla, Many thanks for sending me the July and October 2022 issue of NAVS News Vibes that contain a variety of information useful to the veterinary profession. I heartily congratulate you and your team for this excellent job of publishing NAVS NEWS Vibes. Stay safe and healthy. With kind regards, [Prof Dr Mahendra Pal, Founder Director of Narayan Consultancy on Veterinary Public Health and Microbiology, Bharuch, Gujarat; Email address; palmahendra2@gmail.com]
- Dear Dr Singla, Gone through the two newsletter of NAVS vibes. The presentation is excellent and with exciting ideas. Additionally, the letters are highly informative and rich in content. It would be beneficial to start upcoming events. Keep it up. [Prof Dr Prayag Dutt Juyal, Dehradun; juyalpd54@rediffmail.com]
- Thanks Dr Singla for sending me the printed copies of July and October 2022 issues of the NAVS newsletters to me. As an editor you have done a praiseworthy job in bringing out these two issues. I recognize your hard work to make it an excellent medium to disseminate the information associated with Veterinary Science and congratulate you for incorporation of very rich and latest information in these newsletters. I do hope you will continue doing this job successfully. [Dr. Khushdev Kumar Baxi, BRS Nagar, Ludhiana; 8360001557]



LEST WE FORGET

OBITUARY

Prof Dr Ram Raksha Shukla [Fellow Elected 1996; Veterinary Microbiology], former President NAVS (I) from February 28, 2008 to October 31, 2010, left for heavenly abode on November 11, 2022. He was Born in Allahabad, Uttar Pradesh on 31 December 1933; did his B.V.Sc. & A.H. from UP College of Veterinary Sciences, Mathura, Post Graduation from College of Animal Sciences, IVRI, Mukteswar; D.Sc. (Microbiology) from University of Paris, Sarbonne, Paris, France. He was Consultant Visiting Professor, University of Zambia, Lusaka, Zambia 2002-2004; Consultant to set a Vaccine Production Institute Luanda, Angola, 1987; Director National Institute of Animal Health-cum-FAO Country Resident Representative, Nongteng, Laos, 1977-1982; Professor-cum-Vice Dean, Department of Bio-pathology, I/c Disease Diagnostic Laboratory University of Congo, Lubumbasi, Republic of Congo, 1974-1977; Veterinary/Livestock Adviser, Kathmandu, Nepal, 1973-1974; Senior Scientist (Animal Health) at ICAR, Krishi Bhawan, New Delhi, 1971-1972; Assistant Bacteriologist-cum-Assistant Professor, IVRI, Mukteswar, 1961-1966. NAVS (I) conveys heartfelt condolence to the bereaved family and prays Almighty to grant peace to the departed noble soul.



Dr Narendra Singh Parihar [Fellow Elected 1998; Veterinary Pathology], a renowned Veterinary Pathologist, disease diagnostician, and a great academician passed away on November 15, 2022 following a brief illness in Bareilly, UP. He was born on July 01, 1939, in District Damoh, MP, did his BVSc in 1960 and his MVSc (Veterinary Pathology) in 1963 at the MP Veterinary College, University of Jabalpur, and completed his PhD (Veterinary Pathology) in 1970 at the Haryana Agricultural University under the guidance of Dr CM Singh. He started his career as a Veterinary Assistant Surgeon, followed by Research Associate at Veterinary College, Jabalpur, and as a Graduate Assistant at the IVRI, Izatnagar. Dr Parihar served the Division of Pathology, IVRI in different capacities as Pathologist. He remained as Head of the Division of Pathology at IVRI for almost a decade and also worked as an Acting Joint Director, Centre for Animal Disease Research and Diagnosis, IVRI, Izatnagar. Dr Parihar received International and National recognition such as IVRI Faculty's Best Teacher Award in 1995; Dr Ganti A Sastry Award for 1991; Professor Nils Lagerlof Memorial Award, 2000; Dr CM Singh-Salihotra Samman, 2004, and Association of Indian Zoo and Wildlife Veterinarians' Professional Excellence Award in 2007. He is survived by his wife, one son, and a daughter. The NAVS (I) extends heartfelt condolences to bereaved family for their unimaginable loss and prays Almighty God for eternal peace to departed soul.

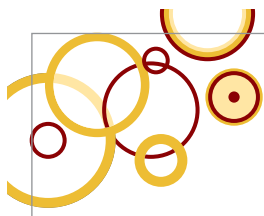


Dr Surjeet Singh Dhillon [Fellow Elected 1996; Veterinary Microbiology], former Professor and Head, Department of Microbiology, Punjab Agricultural University (PAU), Ludhiana passed away on November 27, 2022. Dr Dhillon was born on October 10, 1932 in a town in Punjab which is now in Pakistan. After Partition in 1947, his family settled at Sri Ganganagar in Rajasthan. He did Graduation in Veterinary Science from Punjab Veterinary College, Hisar in 1957 and completed MVSc from Punjab University. He joined Punjab Veterinary College Hisar as faculty. The College subsequently became a constituent College of PAU. Dr Dhillon was most likely the first scientist who have cultured FMD virus in goat tissue culture for developing vaccine in India. He did his Ph D in Virology from Ohio State University, USA in 1965. On bifurcation of PAU in 1969, he shifted to newly created Veterinary College at PAU, Ludhiana as Associate Professor and Head, Department of Microbiology, subsequently became Professor and Head in the same Department. He chose to migrate to USA in 1974 and established himself as practicing Veterinarian. He is survived by his wife two daughters and one son. NAVS (I) conveys deepest condolence to the family and pray that departed soul may rest in peace.



Prof Janki Mohan Nigam [Fellow Elected 1998; Veterinary Surgery], Former Dean, College of Veterinary Sciences, Palampur, left for heavenly abode on December 03, 2022 after a brief illness. Prof Nigam was born in Satna, (MP) on 5 October, 1938. After early education at Satna (MP) and Allahabad (UP), he graduated from College of Veterinary Science and Animal Husbandry, Mhow (MP) in 1960 and completed MVSc in Veterinary Surgery & Radiology in 1963 from the same institution. In 1964, when Doctoral programme in Veterinary Surgery & Radiology started for the first time in India at College of Veterinary Medicine, PAU, Hisar Campus, Dr Nigam was the first scholar to register for doctoral programme in Veterinary Surgery and completed Ph D degree in 1967. He completed Fellowship of Royal College of Veterinary & Agriculture, Copenhagen, Denmark in 1969 and Post-doctoral programme in Veterinary Anaesthesia from School of Veterinary Medicine, University of Cambridge, UK, in 1974. He started his carrier from Veterinary College Mhow, MP (1960-64) and subsequently served in various positions at Veterinary College, HAU Hisar (1967-1988), Dean, College of Veterinary Sciences, HPKVV Palampur (1988-1998) and Scientist Emeritus (200-2002) JNKVV Jabalpur. He was founder Secretary of Indian Society of Veterinary Surgery. He is survived by his wife, son and daughter. NAVS (I) conveys heartfelt condolence to the family and pray that departed soul may rest in peace.





FOOD FOR THOUGHT

ANIMAL DISEASE CONTROL

Guidelines for livestock vaccination campaigns: From collection to injection

Vaccination is one of the main pillars in disease prevention. However, its effectiveness largely depends on appropriate delivery, such as adequate cold chain and hygienic injection. The success of large vaccination campaigns should be in such details that will ensure appropriate immunity and prevent livestock diseases. The guidelines presented here offer in a concise and succinct way the most important aspects for consideration when planning and executing livestock vaccination campaigns.

The information provided in these guidelines will be easy to take into the field and to implement, and by this way will contribute to the fight against the spread of livestock diseases including zoonotic ones. (Ferrari, G. and Mariano, V. 2022. Guidelines for livestock vaccination campaigns - From collection to injection. FAO Animal Production and Health Guidelines No. 31. Rome, FAO. <https://doi.org/10.4060/cc3038en>)

Animal Quarantine Certification Services Inaugurated in Bengaluru

As part of the National Milk Day celebrations on 26th November, 2022, Animal Quarantine Certification Services (AQCS) were inaugurated in Hassergata, Bengaluru by Dr. Sanjeev Kumar Balyan, the Minister of State of Fisheries, Animal husbandry and Dairying, Government of India, in the presence of the Secretary, Department of Animal Husbandry and Dairying.



AQCS, Bangalore was initiated in August 2009, and the station has been functioning from the airport satellite office at Alpha 3, Kempegowda International airport, Bengaluru. The station has seen a substantial increase in its workload and the movement of livestock and livestock products has increased manifold. In the absence of a Quarantine facility, the import of Live animals like Horses, cattle, Sheep, Goats, etc. was not allowed. This station will facilitate region in the country, especially the Southern States, to import and export livestock and livestock products and boost trade. AQCS will be equipped with an online clearance system for import of livestock products and livestock in due course and be a game changer for local economy. (<https://currentaffairs.adda247.com/animal-quarantine-certification-services-inaugurated-in-bengaluru>).

DISCLAIMER:

The views expressed by various authors in this publication are their own and not necessarily that of the NAVS(I). Further, news items related to selected scientific and academic advances published in this newsletter are sourced from varied sources, including scientific journals, newspapers, websites etc. They are solely meant for developing educational awareness among the members of the Academy.

INSTITUTIONAL LIFE MEMBERS



Lala Lajpat Rai University of Veterinary & Animal Sciences Hisar



Dau Shri Vasudev Chandrakar Kamdhenu Vishwavidyalaya, Durg



Uttar Pradesh Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go-Anusandhan Sansthan, Mathura.



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Maharashtra Animal & Fisheries Sciences University Nagpur



Bihar Animal Sciences University Patna



Karnataka Animal, Fishery & Veterinary Sciences University, Bidar



Sri Venkateshwara Veterinary University Tirupati



Kamdhenu University Gandhinagar



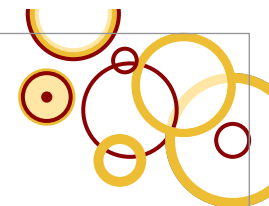
Kerala Veterinary and Animal Sciences University Pookode



Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana



Khalsa College of Veterinary & Animal Sciences Amritsar



ACADEMIA

SCHOLASTIC CONNECTIONS

Ninth Regional Meeting of Vice-Chancellors on National Education Policy-2020

Ninth Regional Meeting of Vice-Chancellors of Indian Agricultural Universities Association (IAUA) was held at Navsari Agricultural University (NAU), Gujarat on the theme 'National Education Policy-2020: Importance and feasibility of Short Term and Certified courses in Agricultural Universities' from November 23-25, 2022. The inaugural ceremony was blessed with the presence of Hon'ble Minister of State for Agriculture and Farmers' Welfare, Government of India. Shri Kailash Choudhary as a Chief Guest. Dr. Rameshwar Singh, President of IAUA and Vice-Chancellor, Bihar Animal Sciences University, Patna and Dr. Dinesh Kumar, Executive Secretary of IAUA were the special guests. Delegates of about 30 universities from Himachal Pradesh, Jammu and Kashmir, Maharashtra, Gujarat, Bihar, Rajasthan, Punjab, Karnataka, Chhattisgarh, Jharkhand, Haryana, Tamil Nadu, Andhra Pradesh attended the meet.



Dr ZP Patel Vice-Chancellor, NAU, welcomed all the dignitaries and mentioned the importance of skill development in Indian youths through certified courses. While inaugurating the meeting Shri Kailash Choudhary put forward the futuristic approach regarding agricultural education. Dr Rameshwar Singh, President of IAUA shared that the motto of formation of the association as a bridge between Agricultural Universities, ICAR and Government of India. He said "we have to take efforts to attract youth in agriculture to reduce the global issues like food crisis and climate change".



Dr Sarvpreet Singh Ghuman (Fellow, NAVS) and Dr LD Singla (Fellow-cum-Editor, NAVS) said it as a landmark event on entrepreneurship, skill development and implementation of NEP 2020 in agriculture and livestock sector.

ICAR-NIANP, Bengaluru Celebrates Foundation Day

The National Institute of Animal Nutrition and Physiology, Bengaluru celebrated its 27th Foundation Day on 29th Dec. 2022. In a function organized on this occasion, Chief Guest, Dr Jagmohan Sharma, IFS, Director General, Environmental Management and Policy Research Institute (EMPRI), Govt. of Karnataka, lauded the contributions of NIANP in the field of research in Animal Nutrition, Animal Physiology and Bioenergetics & Environment. Addressing the gathering, he said that Agricultural and Animal Science research were as important as space science, which can play a big role in increasing the income of the farmers and contribute to economical development of the nation. He also thanked the scientific community working in these areas, whose efforts have contributed in making the nation self sufficient in food production and in a position to export our products to even developed countries. Cautioning the scientists about the environmental impact the production and productivity cause, he said that our aim should be towards maintaining the ecological balance while continuing to increase productivity. He also pointed out the importance of conserving national resources and giving importance to native breeds of animals, which are resilient to climate changes and making them as productive as hybrid breeds.

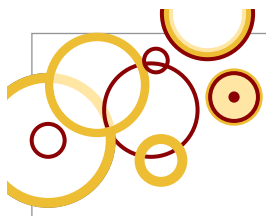
Dr SS Honnappagol, former Vice-Chancellor, KVAFSU, Bidar and former Animal Husbandry Commissioner, Govt. of India and the Guest of Honour, speaking on the occasion, recalled his long association with the NIANP and expressed his happiness over the progress the Institute has made since its establishment and hoped that the Institute will sustain its path of progress and development in the cause of farmers, livestock owners, feed industry and would carry out appropriate research activities in the backdrop of climate change issues. He emphasized that the Institute should involve in training the farmers and translate our research to the field level.

Earlier, Dr Raghavendra Bhatta, Director of the Institute made a brief presentation of the progress, scientific achievements and activities of the Institute and attributed its success to the collective efforts of scientists and other categories of staff.

On this occasion, some of the entrepreneurs with whom MoUs had been signed for commercialization of technologies, which the NIANP had developed, were felicitated. To encourage the performance of staff members and support good work culture, some of the staff members and contract workers were given away monetary Awards, based on the performance of work and conduct during the year.



Besides the staff members, former Director and many retired staff of NIANP, the event was attended by the Directors of ICAR Institutes and Heads of Regional Stations located in Bengaluru.



TIDBITS SOUPCON

Monkeys near human settlements act as infectious disease "super spreaders"

Animals, specifically wild monkeys that live in large groups alongside human settlements, may act as infectious disease "super spreaders", a team of researchers has warned. The cautionary note comes on the basis of the behavioural data collected from 10 separate groups of macaques across three Indian and Malaysian locations. The study is published in the journal 'Scientific Reports'. The research that has mapped how infectious diseases spread among wildlife populations in areas where humans and wildlife live in close proximity found that monkeys with the most human interactions are responsible for the largest outbreaks. "It is at these human-wildlife hotspots that monkeys closely interact with humans they wouldn't regularly mix with, leading to larger outbreaks," said Dr Krishna Balasubramaniam of Anglia Ruskin University (ARU), the lead author of the study. (Scientific Reports volume 12, Article number: 11600 (2022); https://doi.org/10.1038/s41598-022-15713-6)

COVID-19 in ANIMALS: Nearly 1200 horses tested for antibodies against Covid-19 virus in California study

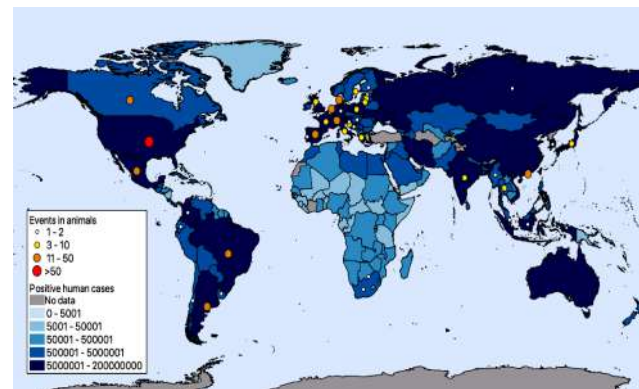
A study involving 1186 horses presented for various conditions to a veterinary teaching hospital in California showed that 3.5% of them carried antibodies against the virus responsible for Covid-19 in humans. The horses were most likely exposed to the SARS-CoV-2 virus through human contact, Kaila Lawton and her fellow researchers published in the journal 'Viruses'. "While horses can become infected with SARS-CoV-2 via the occasional spillover from Covid-19 individuals, clinical disease expression remains subclinical, making horses an unlikely contributor to the spread of SARS-CoV-2," they said. Knowledge of animal reservoirs or intermediate hosts of the virus is continuing to increase with the ongoing Covid-19 pandemic. Understanding which animal species can carry and transmit SARS-CoV-2 is important to control its spread, and to protect vulnerable animal populations, both in the wild and under human care. (Viruses 2022, 14, 2497. https://doi.org/10.3390/v14112497)

COVID-19 (SARS-CoV-2) in ANIMALS: FAO updates on SARS-CoV-2 in Animals

Situation: Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), a virus that is spreading globally through human-to-human transmission, has also demonstrated its ability to infect multiple animal species (from Bovidae, Canidae, Cebidae, Cercopithecidae, Cervidae, Cricetidae, Felidae, Hominidae, Hyaenidae, Mustelidae, Procionidae, Viverridae, Hippopotamidae, Myrmecophagidae families) with spillover potential from one animal species to another. In

rare occasions, spill-back from animals to humans has been evidenced (mink-to-human in the Netherlands and in Denmark; hamster-to-human in Hong Kong Special Administrative Region (China).

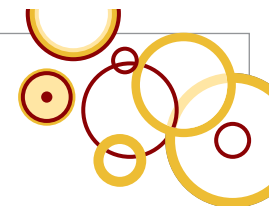
Reported human cases: As of 5 December 2022, there have been 641 435 884 confirmed cases of COVID-19 including 6 621 060 deaths reported to WHO. Since the beginning of the pandemic in March 2020, 233 countries, states, and territories reported COVID-19 human cases across five geographic regions including Africa (57), the Americas (57), Asia (46), Europe (50), and Oceania (23). Cumulative COVID-19 cases reported in humans globally are presented in Map 1.



Map 1. Results of published SARS-CoV-2 events in animals up to 6 December 2022 at national level, over a cumulative COVID-19 human cases background map.

Countries and territories with reported findings in animals (virological findings): in order of first reported occurrence): France, Switzerland, Hong Kong SAR (China), Belgium, Netherlands, Germany, Russia, United States of America, Denmark, Japan, United Kingdom of Great Britain and Northern Ireland, Chile, Canada, Brazil, Sweden, Italy, Spain, South Africa, Greece, Argentina, Lithuania, Mexico, Slovenia, Estonia, Bosnia and Herzegovina, Latvia, Poland, Portugal, Puerto Rico, Croatia, Thailand, Uruguay, Myanmar, Indonesia, Singapore, Colombia, Finland, India, Ecuador.

Situation in Animals: Map 1 shows SARS-CoV-2 events (Events include animal cases officially reported by national authorities and the World Organization of Animal Health, or positive findings referred to in scientific publications) in animals up to 6 December 2022 at national level, over an estimated cumulative COVID-19 human cases distribution map. Circles indicate countries reporting positive events in animals; circle size is proportional to the number of events reported in each country (see legend). The background layer map includes cumulative number of COVID-19 human cases according to WHO, 2022. (Animal Disease Outbreaks and News - Asia, Vol 201, 13 December 2022)



BROOKE HOSPITAL FOR ANIMALS (INDIA)

An Organisation Committed to Equine Health & Welfare and the Development of the Marginalised Equine Owning Community

Brooke Hospital for Animals (India) or Brooke India (BI) is an affiliate of the Brooke, which is a United Kingdom-based international equine charity, focusing on the welfare and care of equines (horses, donkeys and mules). Brooke's vision is of a world in which working horses, donkeys and mules are free from suffering and have a life worth living.



Renu Devi, equine owner from Sonipat, with her mule

BI's journey in India towards equine welfare started two decades back when it was registered as a Section 8, Not for Profit Company under the Companies Act. Equids in India mostly work in harsh environments like Brick Kilns and face never-ending health troubles. This situation was mainly due to a lack of financial resources and knowledge on good management practices amongst the equine owners and insufficient understanding of equine health care by Local Health Providers (LHP).

BI's initial step as an intervention involved providing free veterinary services at different congregation points and organising Intensive Equine Care Camps (IECC) to spread awareness on welfare oriented husbandry practices and preventable injuries & diseases. From 2006 onwards, BI started focusing on establishing permanent intervention units and started expanding its operations to other states such as Andhra Pradesh, Rajasthan, Hyderabad and other parts of Uttar Pradesh. The BI team also introduced Community Engagement for exploring sustainable solutions for equine welfare and community development. This period saw the formation of male and female Self Help Groups called Equine Welfare Groups, the use of Participatory Rural Appraisal tools and increasing community participation. BI team saw the congregation of equines, equine owners, traders and local service providers at Equine Fairs as an excellent opportunity for a large-scale intervention. BI teams intervened to spread awareness on equine welfare issues, provide quality training on equine care and ensure equine welfare-friendly facilities and resources at these fairs.



IECC Camps Luniyavas donkey fair

BI teams also focused on strengthening the local service delivery system for working equines, including quality farriery services for hoof care, accurate and appropriate veterinary first aid during health emergencies, hair clipping, and welfare-friendly saddlery material. They also ensured compassionate handling while

delivering any of the services. These interventions were incorporated in Brooke's Theory of Change, in 2016. This theory promotes strengthened animal health policy environment and thriving equine owning communities.



Equines working at Brick Kilns

Currently, BI operates directly through 32 Equine Welfare Projects (EWPs) across 10 States and Union Territories in India, thereby reaching out to approximately 3.16 lakhs working equids and the equine owning community that owns/rears them. BI has multi-disciplinary teams with core strengths in Animal Health & Welfare, and Community Development, including Human behaviour Change, Gender Empowerment, Livelihoods and Resilience. Some of the notable achievements made by the team over the years include:

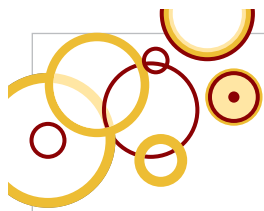
- Advocating the revision of Glander's Compensation- From INR 50 to 25,000 for horses and INR 16000 for mules/donkeys
- Inclusion of Equids in Livestock under the National Livestock Mission Schemes and thereby making them eligible for equine insurance.
- Advocating the issue of Animal Welfare Board of India (AWBI) advisories for Equine Fairs, Shrines & Pilgrim sites
- Introducing BI's innovative projects for ensuring sustainable availability of green fodder, through Azolla cultivation and Hydroponics techniques successfully across its intervention areas.
- BI teams worked throughout the COVID 19 pandemic. They supported the community by providing emergency treatments, alternative livelihood options, first aid kits and feed & fodder for the equines.

In the upcoming years, BI will focus on strengthening the Community Based Organisations, linkages with government welfare schemes, have robust disaster response capacity, advocate policy revisions on equine welfare issues, and enhancing the knowledge and skills of veterinary students on animal welfare, compassionate handling and upskilling the local farriers and animal health providers.



Quality Farriery Services

BI's team is proud of its journey and aspire to keep bringing a positive change for vulnerable and marginalised working equines and the rural communities, whose lives we have not touched yet.



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INDICATIONS AND USAGE

VetPlasma is used primarily to treat acute hypovolemia & shock in conditions like Blood loss, diarrhoea, etc

DOSAGE AND ADMINISTRATION

Daily dose and rate of infusion depend on the animal's blood loss, hemodynamics and on the hemodilution effects

Recommended Dose:

Large Animals (Cattle & Horse) :

8-10 ml/kg body weight/day, up to maximum 20 ml/kg

Small Animals (Dog, Cat, Pig, Sheep & Goat) :

10-20 ml/kg body weight/day

Administer by intravenous infusion only.

The initial 10 to 20 ml should be infused slowly, keeping the animal under close observation due to possible anaphylactoid reactions

PRESENTATION

250 ml & 500 ml plastic bottle.



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