



NAVS NEWS VIBES

NATIONAL ACADEMY OF VETERINARY SCIENCES (INDIA)

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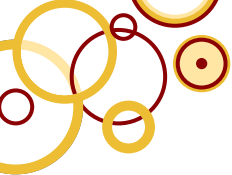
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ISSUE HIGHLIGHTS ...

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8 NAVS (I) successfully conducted its 19th convocation-cum-scientific convention during 24-25 September in virtual mode

7 NAVS decided to give away cash prizes for all the four awards of the Academy effective from 2021



EDITORIAL

What ails veterinary service delivery ...

The fact that India is bestowed with the largest livestock population in the world comes with its own set of traits and tribulations. While the issues related to livestock productivity have always been in focus among the stakeholders, it is healthcare, especially veterinary service delivery, which is often overlooked. There is no denying the fact that advances in veterinary medicine have come a long way from being mostly traditional intervention to modern, state-of-the-art healthcare management. What is lacking at present is the service delivery to reach the last mile.

Effective delivery of veterinary services has three broad aspects which must run cohesively to achieve the healthcare target; competent professionals, adequate supporting technical manpower, and a well-organized infrastructural network. While analysing the issues behind the inadequate and inefficient veterinary service delivery in India, the most important factor compounding the general lack of adequate professional manpower is their skilling through continuing veterinary education; it is one of the important factors responsible for the compromised professional efficiency of field veterinarians. The solution to this lies in greater and sustained collaboration between the state animal husbandry departments and veterinary colleges/universities.

Another issue is the lack of adequate support in terms of technical manpower at various levels. It could be addressed by developing a network of institutions for the generation of trained para-veterinarians with the required skills and ensuring the deployment of well-regulated and effectively supervised para-professionals. Additionally, it is equally important to have a system in place to check the proliferation of ill- and/or half-trained privately operating para-veterinarians, which indirectly brings a bad name to the system as well as the veterinary profession.

In addition to the issues pertaining to manpower, professional as well as technical, the lack of credible infrastructure is another grey area which more often than not cripples the service delivery. Upgradation and/or renovation of hospital buildings, modernization of clinics, sustained provision of routine and emergency medicine and surgical equipment, facilities for cold-chain maintenance; and diagnostic laboratories are some of the aspects that need to be given priority to ensure the much needed infrastructural support for efficient service delivery.

To sum up, there is no dearth of organisational networks or even programmes aimed at ensuring seamless veterinary service delivery. However, it is the inability of the organisations to collaborate with each other and put in place a unified strategy involving manpower and infrastructural management that has made India's veterinary service delivery constrained.

Ashok K. Pattanaik

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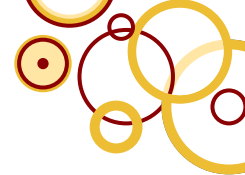
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HORIZON

THE PRESIDENT'S VIEWS & VISION

Respected Honourable Cabinet Minister of Fisheries, Dairying & Animal Husbandry, Shri Parshottam Rupala Ji, Honourable Minister of State for Fisheries, Dairying & Animal Husbandry Shri Dr Sanjeev Kumar Balyan ji, VCI President Dr Umesh Sharma ji, Animal Husbandry Commissioner Dr Praveen Malik ji, DDG Animal Science Dr BN Tripathi ji, Dr ML Madan ji, Dignitaries on-and-off the dias, serving and retired Deputy Director Generals, Animal Husbandry Commissioners, Presidents of Veterinary Council of India, Director Generals of RVC, Vice Chancellors of the Veterinary Universities, Directors of National Institutes, Deans of Veterinary Colleges, Revered Fellows of the Academy, and Ladies and Gentlemen ...

Warm Greetings!

I deem it as a privilege and honour to address Honourable Ministers on the occasion of 19th Annual Convocation-cum-Scientific Convention. I am very grateful to you sir for your presence inspite of your busy schedule.

The Animal Husbandry sector is emerging as an Independent sector instead of subsidiary to Agriculture. The Animal Husbandry sector contributes 30% of GDP of agriculture and is growing at an average growth rate of 5 to 6% per annum as against 1.5 to 2% of agriculture. It is well documented that Animal Husbandry sustains livelihood of farmers even in climatic adversities when agriculture fails thus providing food and financial security to the rural farmers avoiding suicides. The Animal Husbandry sector contributes around Rs. 11 lakh crores to the GDP of the country without much of subsidies from the Government. It is a self sustaining sector to a great extent and has a tremendous potential for growth due to the increased consumption of milk, milk products, eggs, chicken and meat due to the increased affluence of the middle class and preference for protein diets than cereals.

The new Government of India headed by Honourable Prime Minister Shri Narendra Modi Ji has recognized the significant potential of this sector and took a historical decision by carving out an independent Ministry for Fisheries, Animal Husbandry and Dairying from the Ministry of Agriculture in May 2019 but the research and technological innovation still continues to be under the Ministry of



Agriculture which has to be also carved out as Indian Council of Veterinary Research (ICVR).

National Academy of Veterinary Sciences (India) is a premier apex pan Indian body which represents elite Veterinary Professionals of the Country both serving and retired who constantly contribute for the technological innovations in the Animal Husbandry activities to boost the production of milk, eggs and meat which are the vital source of animal protein in the human food chain that prevents protein mal nutrition of the large population of the country.

The Academy is a THINK TANK consisting of cream of the Veterinary Profession i.e., the Vice Chancellors of the Veterinary Universities, Deans of all Veterinary Colleges, Directors of National Veterinary Research Institutes, Outstanding Vets from the army and Corporate Sector, Directors of State and other eminent Scientists involved in the Administration of Veterinary Science and Education Research both at state and national levels.

NAVS (I) was established in 1993 by late Dr CM Singh who was a doyen of the Veterinary profession with similar goals and objectives like National Academy of Medical Sciences and National Academy of Agriculture Sciences. The main objective of NAVS (I) is promotion of knowledge of Veterinary Sciences in India and its practical application to the problems of National Welfare. Dr CM Singh was a great visionary and visualized the importance of Animal Husbandry activities in the human food chain in a populous country like India. He was a founder President of Veterinary Council of India and promoted NAVS (I) as a scientific arm of Veterinary Council of India to support the technological innovations required from time to time to enhance the animal health and production in the Country.

Although NAVS (I) has been established on the same lines of NAMS and NAAS, NAVS (I) did not have the support from the Ministry of Agriculture unlike the support extended by Ministry of Health and Agriculture to their respective Academies. The National Academies cannot discharge their functions unless they are supported by the respective Ministries. The Ministry of Agriculture never recognized NAVS (I) although is originally accepted by the then planning commission and DADF. The result is NAVS (I) after 30 years of existence remains without an office except for the store room like place in NASc complex for the sake of address.

There was no funding from DARE or DADF to NAVS (I) for the last 30 years. In spite of all these difficulties NAVS (I) has been discharging its duties, thanks to the support extended by the Veterinary Universities and some corporate sponsors due to the efforts of the respective Presidents and the Governing Council members.

The Animal Husbandry activities should get its due share of budget for research and extension. Although the contribution to GDP is 30% of Agriculture, the budgetary provision extended for Animal Husbandry research is not even 7%. It has been discussed and signed by many Parliamentarians that there should be an independent council for Veterinary research as Indian Council of Veterinary Research (ICVR) which is very essential for supporting the fast growing Animal Husbandry sector.

I appeal to Honourable Ministers through this forum

- ✿ To recognize the National Academy of Veterinary Sciences (India) on par with the other National Academies like National Academy of Agriculture Sciences and National Academy of Medical Sciences.
- ✿ To provide a temporary office space in DMS complex or Chandralok Building where department has space until VCI building is ready which can be occupied immediately as we don't have any office to sit and work.
- ✿ Minimum financial support of Rs. 30 lakhs per year to start with for discharging the basic avowed functions.
- ✿ The NAVS Fellowship was recognized by ICAR after a lot of representation two years back with two marks in the recoupment process of the Scientist as against four marks awarded to National Academy of Agriculture Sciences Fellowships. Recently we came to understand that the Director General of ICAR has formed a committee with no representation from the Veterinary Scientists and removed the two marks being awarded to NAVS (I) Fellowships currently. We request you to please treat NAVS (I) Fellowships on par with the Fellowships of National Academy of Agriculture Sciences giving the same four marks.

The Academy shall be very grateful to you sir for your concerned decision at the earliest.

Thanking you,
Cordially yours,



(DVR PRAKASH RAO)

TIDBITS

SNACKING ON SNIPPETS

IISc develops low-cost method to trace adulterants in milk

Researchers at the Indian Institute of Science (IISc) have developed a low-cost and effective method to detect adulterants in milk. Their method analyses deposition patterns after evaporation. In the study, which was published in ACS Omega, the researchers used a method that involves analyses deposition patterns after evaporation to test for the presence of urea and water – the most common adulterants. These patterns emerge when a liquid mixture like milk completely evaporates, causing volatile components to dissipate, and solids or non-volatile components to arrange themselves in distinctive patterns. Milk with and without water or urea showed very different evaporative patterns. The IISc team was able to detect water concentrations as high as 30 per cent and urea concentrations in diluted milk as low as 0.4 per cent using this type of pattern analysis. The researchers said that this technique can potentially be extended to test for adulterants in other beverages.

[Source: <https://www.deccanherald.com/city/top-bengaluru-stories/>]

Scientists finally know why wisdom teeth only emerge when we are basically adults

One of the mysteries of human biological development is how the precise synchrony between molar emergence and life history came about and how it is regulated. Researchers from the University of Arizona, turning the bones and teeth of 21 species of primate into 3D models, were able to work out that the timing of our adult molars has a lot to do with the delicate balance of biomechanics in our growing skulls. One important factor constraining the timing of when teeth can appear is space. If the jaw isn't big enough for an adult-sized dental set, there's no point in squeezing them in. It turns out that our jaws grow very slowly, and, in combination with our short faces, delays when a mechanically safe space is available, resulting in our very late ages at molar emergence.

[Source: <https://www.sciencealert.com/>]

Clever diabetes alert dog lets his owner know whenever her blood sugar is too low

A woman named Sam who has Type-1 Diabetes has a dog Korey, a clever yellow Lab, who alerts her when her blood sugar is low. Sam explains, if my blood sugar is low during the day, he will come and nudge me or boop me with his nose ... for high blood sugars during the day, Korey will spin in a circle.... He's very happy to just lay around and spend time with you. No matter what she's doing or where she is, Korey will let her know that she needs to do whatever she needs to do in order to ensure she stays healthy. This includes licking her face to wake her up in bed and physically nudging her to make sure she pays attention. Sam states that Korey and she have an unbreakable bond.

[Source: <https://laughingsquid.com/diabetes-alert-dog/>]



TOPICAL ISSUES

STREET DOG MANAGEMENT

Ecology in street dog population management

Rama Kumar V

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Stray or street dogs?

Unlike the west, India has street dogs, not stray dogs. Dogs seen on the street at any point of time include (i) domestic dogs released at night, (ii) dogs left free during the day but retained at night, (iii) unchained dogs sponsored by residents of a street, (iv) dogs that establish a casual companionship with clients of fast food outlets, (v) unchained dogs similarly sponsored by street vendors, pavement shops, taxi drivers or security guards of office buildings, (vi) dogs wandering in slums sponsored by dwellers, and (vii) un-domesticated unsponsored pariah dogs which roam free during the night and go into hiding during the day. Added to these are abandoned animals, including mongrels born from street dogs out of misalliance with purebred dogs and vice versa, and dogs past their prime of age or suffering from chronic diseases.

The community feels that street dogs are aggressive, and their bite or contact can cause rabies. Many assume that dogs reared at home are safe and free from rabies, but data shows that many human cases of rabies are contracted from domestic dogs.

Street dogs seldom come into human contact and do not bite unless provoked. Common reasons for aggression include breeding season, nursing of pups and ganging of dogs (>6 in a locality). Besides, a sudden flash of light at night and speeding vehicles, etc., provoke street dogs to chase or aggress.

There can be many positive roles of street dogs. Street dogs clean up food waste, reducing cats, pigs, and stray cattle crowding in dumping spots. Street dogs prevent rats from surfacing at night to feed. While dogs breed thrice in two years, rats breed every three weeks. Rat urine mixed with water can cause rat fever if exposed to skin aberrations. Dogs limit movement of large rodents like mongoose or bandicoots also, keep reptiles at bay and alarm prowlers.

Street dogs multiply where edible food wastes are dumped. With uncontrolled breeding, a pair of dogs breed into >300 in three years. The community prefers male pups and discard females. The dexterity and survival skills of free-living dogs make catching difficult. Culling dogs without removing wastes attracts dogs from rural areas where exposure to reservoir hosts (fox/ jackal) is possible. Ecology means the scientific study of the interaction of organisms among themselves and with biotic and abiotic

elements in their immediate environment. Ecology provides clues to the causality of disease, deficiencies, crisis, hazards, or disaster. According to the late Prof SJS Odendaal of Pretoria (South Africa), the study of animal behaviour vis-à-vis human behaviour (veterinary ethology) enriched veterinary service and animal welfare. Though commendable research in the medical profession kept the human death rate low due to rabies, vector (dog) birth control rules in India got entangled in controversy with a case still pending in Hon'ble Supreme court of India. While enabled with ecology areas of Thailand and Tanzania reduced the positivity of rabies years of culling, however, failed in Chennai. Un-culled dogs got access to food wastes and produced more pups. Nonetheless, the implementation of Animal Birth Control (Dogs) Rules, 2001 yielded results.

The test of a multi-sector program organized in selected wards of Thiruvananthapuram revealed some helpful information for the future. These include:

- 1) Local bodies alone cannot handle Rabies control.
- 2) The contention of some NGOs that ABC-AR is a simple 20-30 min veterinary intervention also proved wrong.
- 3) ABC Rules will succeed if we (i) study the lifestyle and attitude of the community towards wild, feral and street animals, (ii) count street dogs locality-wise with support of local residence, (iii) train staff to use equipment(s) to catch dogs compassionately and safely, (iv) establish facility to sort compatible dogs, hold, clinically attend, feed, manage and release them, (v) train para-vets on operation theatre (OT) routines, viz. control shave, scrub, sterilize, clean, maintain and account surgical packs, (vi) train vets on minimally invasive surgery strictly to ensure timely return (delay causes hierarchy problems and migration), (vii) train one anaesthetist per two surgical teams, (viii) train vets specifically for vet-PR to engage and educate the public.
- 4) To perform 15 or more surgeries per day, provide sufficient operation tables, shadow-less lamps, instrument trollies, exhaust fans and ACs, scrub room with two or more scrub-sinks with an elbow or foot-operated water taps, preparation and recovery rooms for animals, stretchers to carry them into and out of OT complex.

- 5) As free-living animals from various regions (with zero health attendance and possible zoonotic diseases) are handled, independent OTs with facility for fumigation, washing and cleaning instruments and sundries is inevitable.
- 6) Every person involved need to be provided immunization and personal protection gear.

The rabies virus can remain in a host for 90-95 days. The virus appears in saliva 5-6 days before symptoms appear. Hosts die by the next 5-10 days. Only bites of rabid dogs during these days can cause rabies.

ABC-AR program has to be done strictly territory-wise. Catch, neuter, vaccinate and release (CNVR) 75% of street dogs of a locality between breeding seasons. Haphazard neutering is wasteful and ineffective. A notch on the left ear helps the public identify a neutered and vaccinated dog and avoid arbitrary vaccination of victims. Killing a dog on suspicion will deny the opportunity to identify rabies.

BEYOND THE BOUNDARIES SISTER SCIENCES

Scientists develop antibodies for use as non-hormonal contraceptive
 Findings from a really by scientists at the University of North Carolina at Chapel Hill suggest that contraceptives based on antibodies may offer women a non-hormonal option to prevent pregnancies. It involves precision targeting of monoclonal antibodies for a new type on non-hormonal contraception that targets to immobilize sperm before it can reach an egg. The researchers have engineered ultra-potent antibodies, that during animal testing, effectively trapped and blocked more than 99.9 per cent of human sperm. The antibody under investigation was isolated form an infertile woman and targets a unique surface antigen present in human form; when added to sperm, it quickly clump together. Using highly multivalent IgG platform, the researchers have engineered antibodies that were more than 10 to 16 times more potent at agglutinating sperm and reducing sperm permeation through mucus than the best-known antibody.

[Source: <https://www.aninews.in/news/science/>]

Racing heart may alter decision-making brain circuits
 In an effort to understand how psychiatric disorders influence the brain's decision-making processes, scientists at the Icahn School of Medicine at Mount Sinai found that two of the brain's decision-making centres contain neurons that may exclusively monitor the body's internal dynamics. Anxiety, addiction, and other psychiatric disorders are often characterised by intense states of what scientists call arousal: the heart races, blood pressure readings rise, breaths shorten, and "bad" decisions are made. Furthermore, a heightened state of arousal appeared to rewire one of the centres by turning some decision-making neurons into internal state monitors. Basically, a little bit of arousal, such as that experienced after a cup of coffee, might produce peak performance. But too much or too little arousal increases the chances that the brain will make slow or incorrect decisions.

[Source: <https://www.devdiscourse.com/article/science-environment/>]

Climate change could be devastating to global human health
 A new study confirms that climate change does directly affect human health. Not addressing the problem could mean an increase in respiratory diseases, heatstroke, and mosquito-borne illnesses like chikungunya and West Nile virus. According to a study published JAMA, 20 years of evidence confirms that climate change is linked to illnesses such as heatstroke and asthma. The researchers predict an increase in the number of days with extreme heat that could worsen many health conditions. The researchers predict that by 2050, many United States cities will experience more frequent extreme heat days. This increased heat may make heat-related disorders, such as heat stress, worse. It may also reduce work capacity. Adverse health impacts of climate change may include: respiratory disorders, including those made worse by pollution, such as asthma and allergic diseases; infectious diseases, including mosquito-borne diseases and water-borne diseases, such as childhood gastrointestinal diseases; food insecurity, including reduced crop yields and an increase in plant diseases; mental health disorders, such as post-traumatic stress disorder and depression, that are associated with natural disasters.

[Source: <https://www.healthline.com/health-news/climate-change-threatens-global-health-092314/>]

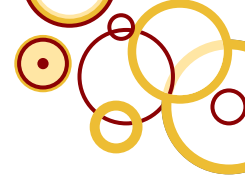
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CORPORATE LIFE MEMBERS



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THE ACADEMY EVENTS & ENDEAVOURS

Governing Council Meeting of the Academy

The 6th Governing Council (GC) meeting of NAVS (I) was held on 09 Sep 2021 at 11.30 AM through virtual mode. All the GC- and Ex-Officio-members attended the meeting with Maj Gen Shri Kant (Past President), and Dr SS Honnappagol (Former AHC) as Special Invitees. The followings were the key issues discussed during the meeting.

- ⊗ *Cash Prize for Dr CM Singh Award:* Dr AC Varshney brought out the point that we are already paying cash award for Young Scientist and Dr Vallabh Mandokhot Memorial awards. It is therefore imperative to make similar arrangement for Dr CM Singh Award. He suggested an amount of Rs. 51,000/- for the same. The suggestion was accepted.
- ⊗ *Convocation-cum-Scientific Convention:* There was detailed discussion on conduct of Convocation-cum-Scientific Convention to be held on Sep 24-25, 2021 in virtual mode, including discussion on chief guest, guest of honour, technical sessions and invited speakers.

Annual General Body Meeting of the Academy

The General Body Meeting of the Academy was held on 24 Sep 2021 at 1.00 pm on a virtual platform. The following agenda items were discussed:

- ⊗ Minutes of the last General Body Meeting held on 27 Dec 2019 at 3.30 PM in the INFLIBNET Centre, Gandhinagar, Gujrat were confirmed.
- ⊗ Treasurer's report: Dr SK Gupta, Treasurer apprised the house about the financial position of the Academy.

Pending points from last GB:

- ⊗ *NAVS (I) Office Space:* The President of NAVS (I) met the DG-ICAR in Mar 2021 with a request to allot suitable office in Pusa Complex. Since there was no response from DG-ICAR, the President along with EC Members of the Academy met Dr Sanjeev Balyan, Hon'ble Minister of State on 29 Jul 2021 with a request for allotment of office space to the Academy in DMS Building, Krolbagh. We are yet to get a response from the Minister's Office.
- ⊗ *Revision and updating of Rules and Regulation of NAVS (I):* The committee constituted under chairmanship of Maj Gen Shri Kant SM, VSM (Retd), Past President, has submitted their recommendations. A webinar is proposed to be conducted to deliberate and finalize it.

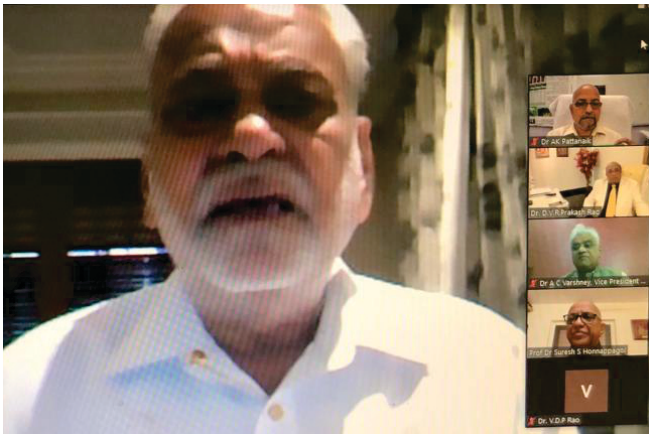
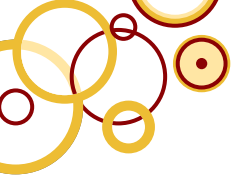
Agenda points:

1. Post-facto approval of GB of the following Awards was accorded for cash award for the Academy's awards as per the followings:
 - a. *Dr CM Singh Award for Excellence in Veterinary Sciences:* Rs. 51,000/-
 - b. *Young Scientist Award in Veterinary Sciences:* Rs. 31,000/-
 - c. *Dr Vallabh Mandokhot Memorial Award for Outstanding Young Woman Veterinarian (with a Corpus of Rupees Ten Lakhs):* Rs.41,000/-.
 - d. *Dr DVR Prakash Rao Life Time Achievement Award cum Late Smt Sundari Prakash Rao Memorial Endowment Lecture in Animal Health & Production (a Corpus of Rupees Twelve Lakhs):* Rs. 51,000/-.
2. Post-facto approval of the GB for the following Institutional/Corporate Membership of the Academy:
 - a. Kerala Veterinary and Animal Sciences University
 - b. Guru Angad Dev Veterinary and Animal Sciences University
 - c. Bentoli Agri Nutrition India Private Limited
 - d. International Healthcare Limited
 - e. Agriculture Skill Council of India (NGO)
3. Post-facto approval of the GB was accorded for the increase in number of annual intake of Fellows from 15 to 25 in view of substantial increase in Veterinary Graduates in the country and the disproportionate vacancies accrued by deceased fellows annually. The consonance was to increase the annual intake of fellows from 15 to 20 initially, to be reviewed subsequently.
4. *Venue for the next Convocation-cum-Scientific Convention:* Dr Ashish Patankar, Vice Chancellor, MAFSU offered Nagpur as venue for the next Convocation-cum-Scientific Seminar, which was agreed upon.

19th Annual Convocation-cum-Scientific Convention of the Academy

The 19th Annual Convocation- cum-Scientific Convention of the Academy was held in Virtual Mode on Sep 24-25, 2021 on the topic '*Transforming Livestock Health and Production with Innovative Technologies and Policy Reforms to Boost Farmers Income*'.

The online event was held over two days. The Scientific Convention was held on 24 Sep 2021 which comprised of a technical session and an Industry-Institute Interface. A total of nine invited speakers deliberated on various



contemporary topics related to the theme of the convention.

The convocation was held on 25 Sep 2021. The event was marked by the presence of Shri Parshottam Rupala, Hon'ble Union Minister of Fisheries, Animal Husbandry and Dairying as the Chief Guest and Shri Sanjeev Kumar Balyan, Hon'ble Minister of State of Fisheries, Animal Husbandry and Dairying. Other speakers of eminence included Dr Umesh Sharma, President, VCI, Dr BN Tripathi, DDG (Animal Science), ICAR and Dr Praveen Mallik, AHC, GoI. The deliberations began with the opening remarks and welcome address by the President, NAVS, Dr DVR Prakash Rao. Shri RS Sodhi, Managing Director, GCMMF (AMUL) delivered the keynote address. The award ceremony was conducted by Dr MP Yadav, GC Member, NAVS (I), Maj Gen Srikant Sharma, Past President, NAVS (I) and Dr S K Gupta, Treasurer, NAVS (I). The session on the conferment of Fellowship, Associate Fellowship and Membership was conducted by Maj Gen M.L Sharma, Secy. Gen., NAVS (I).

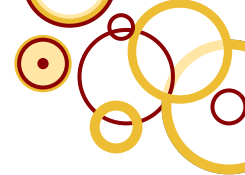


Recommendations of the technical session:

India has attained production levels required to meet the per capita availability of milk as per ICMR recommendation, though the availability of meat and eggs is just about half of the recommended requirements. Thus warranting more emphasis on enhancing quality meat, egg and milk production, distribution and utilization.

- ❁ Livestock germplasm needs further improvement in order to match the global level of productivity. Artificial insemination with sex-sorted semen should be used cautiously in herds attaining at least 50% conception rates with conventional semen.
- ❁ Use of digital technology and artificial intelligence together with mechanisation, hygiene, traceability and biosecurity are key to future strides keeping in tune with international developments for accelerated growth and climate-resilient animal husbandry.
- ❁ Alternate therapies, including ethno-veterinary practices, Ayurveda, Phase therapy, antimicrobial peptides and stem cell therapy need to be explored for future-ready authenticated remedies with needed funding, research and human resource development.
- ❁ Climate smart technologies with lower environmental footprint, lower dependence on natural resources, through judicious use of chemicals, water, power and other resources need to be roped in for animal husbandry and related operations.
- ❁ Regular meat inspection needs to be strictly enforced for proper utilization of animal by-product, traceability, together with infusion of funds in developing infrastructure in the form of green abattoirs, fool-proof cold chain, on-line trading and doorstep delivery services.

Attention should be given to analyse the burden and impact of various animal diseases in livestock. Animal health and production status by using sensor-based technology must be assessed in order to solicit the requisite governmental support. There is need for developing implantable immunogens for sustainable immunity against dreaded animal diseases.



- ❁ Pen-side diagnostic kits/tests need to be improved with emphasis on the availability of diagnostic antigen in the laboratories and capabilities in the field, thereby increasing the accuracy of disease diagnostic. The molecular, genomics and proteomics research aspects on pathological agents need to be emphasised, through intensive trainings, research grants and awards.
- ❁ More emphasis should be given to poultry sector with special emphasis to backyard poultry production with predictable models to analyse cost of production and FCR.
- ❁ Apart from funds infusion for improved AH sector and product processing infrastructure in the country, entrepreneurship trainings should be provided to unemployed educated youth for self-employment and improved socio-economic status through dairy, poultry, piggery and goat/ sheep rearing.
- ❁ NAVS platform should play a key role to integrate industry partners with government institutions to meet R&D requirement for promotion of Veterinary Ayurveda.
- ❁ As the process of formal MOU on Veterinary Ayurveda by MOFAHD with Ministry of Ayush has started, industry should join hands with academic institutions for regular interaction and more interfaces for drafting the teaching curriculum / training modules for veterinarians.
- ❁ Limited institutions are presently involved in industry R&D and there is need for the involvement of many more institutions in the areas of vaccines, diagnostic, new drug development including research on alternative to antibiotics.
- ❁ Industries dealing with Indian herbal products should come out with qualitative and quantitative aspects of resource materials including efficiency of extraction procedures of phyto-genic feed additives with scientific validation model involving continuous industry-institution dialogues.
- ❁ There is a need to work on binding efficiency and specificity of probiotics and role of probiotics in elimination of chelated mycotoxin products, apart from antimicrobial activity and immunomodulation of probiotic through R&D institutions.
- ❁ Overall, there is a need for out-of-box thinking for forging industry-institutional collaborations for the improvement in physical, digital, biologicals and policy aspects to fulfil the ambitious program of GOI, i.e., local to global products through inhouse R&D and farm trials.

REFLECTIONS

THE ISSUE THAT WAS

- ❁ Congratulations Dr Pattanaik for bringing out a very informative new vibes of NAVS. Also for garnering full page advertisements from five reputed industries!! Also to our dynamic President NAVS!!! Best wishes.... [Dr Inderjeet Singh, Ludhiana; inderjeet.dr@gmail.com]
- ❁ Thanks for the nice format and good coverage... [Dr Veer Singh, Patna; veersinghgau@gmail.com]
- ❁ Congratulations for transforming NAVS activities particularly its mouthpiece i.e., NAVS News Vibes. Great job done... [Dr. Ashis Kumar Samanta, Dhaka; drashiskumarsamanta@gmail.com]
- ❁ Dr Pattanaik you are bringing out nicely. Only thing is in some places justification of paras is lacking. please take care in future issues... [Dr TS Chandrasekhar Rao, Tirupati; tammineedirao@rediffmail.com]
- ❁ Thank you so much for the sending the latest issue. I appreciate your hard work and congratulate you for incorporation of very rich and latest info in the current issue. The NAVS Newsletter has now become a very good medium for dissemination of latest information. Wishing you all the best... [Dr RK Singh, Bareilly; rks_virology@rediffmail.com]
- ❁ I thank you very much for sending me July 2021 issue of National Academy of Veterinary Sciences News Vibes that contains several latest information on varied topics. I highly appreciate your sincere efforts to bring excellent issue of NAVS NEWS VIBES. My hearty congratulations for this noble job that you are doing for our Academy... [Dr Mahendra Pal, Anand; palmahendra2@gmail.com]
- ❁ Dear Dr. Pattanaik, I thank you for your email dated September 15, 2021 attaching therewith NAVS News Vibes which have been brought out nicely and it covers wide ranging issues and information on the subject. I compliment you and your team for this good effort. With Best Wishes... [Dr AK Srivastava, New Delhi; aksrivastava.asrb@gmail.com]
- ❁ Excellent compilations. Heartiest congratulation... [Dr Neelesh Sharma, Jammu; drneelesh_sharma@yahoo.co.in]

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FOOD FOR THOUGHT
WORLD OF THE VETS
Study suggests companion dogs might be the key to solving dementia

In a recent study, scientists find that cognitive dysfunction in dogs models several key aspects of human dementia, underscoring the suitability and usefulness of companion dogs as an animal model for ageing studies. Companion dogs recently emerged as exciting new models for human ageing because they share the human environment, they are exposed to similar risk factors, they age roughly ten times faster than humans, and a subset of dogs spontaneously develop canine dementia in old age. The molecular features of Alzheimer's disease in humans include the deposition of a peptide in the brain, called amyloid-beta 42 (Ab42). The canine Ab42 peptide is identical to the human form. According to the findings of the research done at the University of Washington, when researchers measured Ab42 in companion dog brains they found that higher abundance is associated with increased cognitive decline. They found significant positive correlations between Ab42 and age in all three investigated brain regions (while Ab42 in the cerebrospinal fluid negatively correlated with age), and brain Ab42 abundance in all three brain regions was also correlated with the Canine Cognitive Dysfunction Scale score. The relationship between cognitive impairment and Ab42 abundance may mirror a similar trajectory in the ageing dog, as in humans.

[Source: <https://www.hindustantimes.com/>]

IVRI-led study identifies a second non-steroidal painkiller for animals that is also safe for vultures

The veterinary use of diclofenac, a non-steroidal anti-inflammatory drug (NSAID), turned out to be fatal for vultures that feed on dead animals that were treated with the drug for providing immediate relief. This led to the testing of other drugs to determine how safe they were, and in 2006 one of the drugs, meloxicam, was found to be effective on cattle and safe for vultures too. Now, a second drug 'tolfenamic acid' has been identified as safe for vultures through a systematic safety testing study led by the Indian Veterinary Research Institute with the Bombay Natural History Society and the Royal Society for the Protection of Birds. Tolfenamic acid as the second confirmed vulture-safe NSAID after meloxicam. It will reduce the pressure to use toxic alternatives such as aceclofenac, ketoprofen, flunixin and nimesulide, which are still available and legally used in the region.

[Source: <https://frontline.thehindu.com/>]

New study highlights differences in New Zealand beef

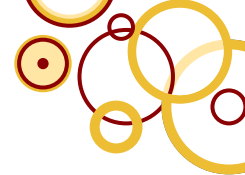
Pasture-raised beef is the cornerstone of the New Zealand meat industry. A new research indicates there are differences in meat quality relating to health and digestion, depending on how the animal is raised. The research team from Massey University, has compared pasture-raised beef to grain finished beef, and a plant-based alternative. They found differences in the fat content of the beef, potentially leading to better health outcomes. While the protein from both the pasture-raised and grain-finished cuts of beef digested in a similar way, significant differences were observed for fat or lipid digestion. Digestion of meat from pasture-raised animals released greater levels of good fats, relative to the generally considered "bad" fats. Meat digested from pasture-raised beef, showed higher total amounts of free long-chain w-3 polyunsaturated fatty acids (PUFAs) and lower amounts of free, long chain saturated fatty acids (SFAs), than meat from grain-finished cattle. The role of long chain SFAs in increasing the risk of cardiovascular disease and conversely that of w-3 PUFAs in providing health benefits is well established.

[Source: <https://phys.org/news/>]

Breakthrough in animal feed industry, a further step toward reduction on carbon and external dependence

A research at the Feed Research Institute of the Chinese Academy of Agricultural Sciences (CAAS) has made a major breakthrough in the field of biosynthesis, marking the world's first synthesis of carbon monoxide to protein. The new breakthrough will provide a solution to the excessive external dependence of feed protein, and at the same time support China's "dual carbon" targets. The natural synthesis of protein involves complex genetic expression, biochemical synthesis and other factors, while the conversion efficiency of material and energy is relatively low and the final accumulated protein content is also not high. However, the new technology breakthrough may well cope with such problem. The present research has made an important progress on the core key technology by greatly increasing the reaction speed and creating conditions for industrial scale. While the experiment offers a good possibility, there is still a gap to reach actual mass production. From an experimental point of view it is very meaningful but, more observation is needed, especially when it comes to conversion rate and cost efficiency.

[Source: <https://www.globaltimes.cn/>]



SPLENDOUR SHINING FELLOWS

Prof ML Madan selected for Haryana Vigyan Ratna award 2020

Prof Moti Lal Madan, a distinguished veterinarian and reproduction biotechnologist, has been selected for the prestigious Haryana State Vigyan Ratna Award for 2020. The highest state science and technology award is given to honour eminent scientist who has made outstanding contribution in the field of science and technology and carries a cash prize of Rs. 4 lakhs, a citation and a trophy. Innovating invitro fertilization (IVF) technology among buffaloes, Prof Madan, produced for the first time in the world a buffalo IVF calf. An academician and research manager, he worked in NDRI, Karnal for 28 years in various capacities before being elevated to the position of DDG (Animal Science) at ICAR, New Delhi. He has also served as Vice Chancellor of DUVASU, Mathura and PDAU, Akola. NAVS (India) congratulates Prof Madan, a Fellow of the Academy, for this commendable achievement.



relentless courage by walking the path less trodden and initiating a wave of change in the society. Dr. Saxena has also been bestowed with Dr. S. Radhakrishnan Distinguished Professor Award on the National Teachers' Day 2021 by the Centre for Professional Advancement, a unit of International Multidisciplinary Research Foundation registered with the Niti Aayog NGO Darpan. NAVS (India) congratulates Prof Saxena, a Fellow of the Academy, for this praiseworthy achievement.

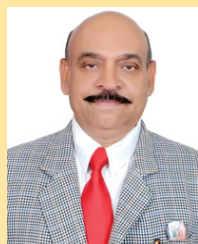
Dr Ramachandra appointed as Director, NARFBR, Hyderabad

Dr. Ramachandra SG, who was working as Chief Research Scientist at Indian Institute of Science, Bangalore has been appointed as Director of National Animal Resource Facility for Biomedical Research at Hyderabad recently. This institute is under the Indian Council of Medical Research, Ministry of Health and Family Welfare, Govt. of India and is dedicated for pre-clinical research activities on animals. NAVS (India) congratulates Dr Ramachandra, a Fellow of the Academy, for this worthy achievement.



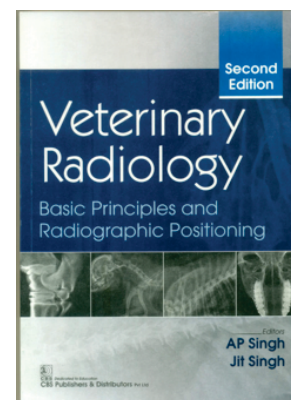
Prof Veer Singh received Fellowship of ISNS

Prof. Veer Singh, Director Resident Instruction-cum-Dean Post Graduate Studies, Bihar Animal Sciences University, Patna is conferred with Fellowship of International Society for Noni Sciences (FISNS) for year 2020 in recognition of his contributions in the field of Veterinary Sciences and honoured with citation and certificate. NAVS (India) congratulates Prof Singh, a Fellow of the Academy, for this notable achievement.



Dr Jit Singh published a book on Veterinary radiology Singh, A.P. and Singh, J. (Eds.) 2019. *Veterinary Radiology: Basic Principles and Radiographic Positioning*, 2nd ed. CBS Publishers and Distributors Pvt Ltd., 300 p. [ISBN: 978-939-07-0994-6]

The first edition of the book was received well with several reprints. The second edition continues with the same basic aim to provide relevant information on basic principles in simple and illustrative language. All chapters on basic principles have been updated. Latest information on contrast materials has been provided. A new chapter on digital radiography dealing with computed and direct digital radiography has been added. Ultrasound imaging is now an independent chapter with two sections-basic understanding and ocular ultrasonography. Section on computed tomography has been rewritten. New sections on nuclear magnetic resonance imaging and interventional radiology have been added. NAVS (India) congratulates Dr Singh, a Fellow of the Academy, for this commendable achievement.



Prof HM Saxena wins global recognition

Dr. Hari Mohan Saxena, former Head of Department and retired Professor of Immunology from Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana has been awarded gold medal of the Golden Door Awards 2021 for Truth and Integrity in a global literary competition for his poem entitled, "The Immune System". He has also been selected for the Golden Door – Rex Karmaveer Truth Writer Fellowship and Chakra Award for being a champion of change based on his lifetime contributions in science. The Karmaveer Chakra Award is a global civilian honour given by the International Confederation of NGOs in partnership with the United Nations to the people across the globe. It recognizes commitment and



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 (EWP) 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:

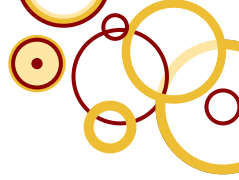
- Advocating the revision of Glander's Compensation- From INR 50 to 25,000 for horses and INR 16000 for mules/donkeys
- Inclusion of Equids in Livestock under the National Livestock Mission Schemes and thereby making them eligible for equine insurance.
- Advocating the issue of Animal Welfare Board of 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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Soil Fertility



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Animal Health



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Awareness Program



Awareness Program



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Five key principles for Milk fever control in commercial dairy

1. Oral supplementation of easily absorbed ionic calcium around calving
2. Peripartum magnesium supplementation
3. Low calcium feed in last weeks of pregnancy.
4. Anionic salt supplementation in the last weeks of pregnancy
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CALVEDA Gel reduces Risk factors associated with Hypocalcemia

3 fold increase in risk of

- Dystocia
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- Metritis
- Abomasal displacement

9 fold increase in

- Mastitis
- Decrease in milk production

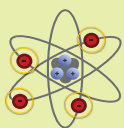
Calveda

Combination of best bio available ionic calcium, magnesium with herbal extracts (Jivanti, Shatavari & Jatamasi)

A nutritional supplement to prevent subclinical and transient Hypocalcemia

Feeding Recommendations:

- First bottle: 6-12 hours before calving
- Second bottle: 6-12 hours after calving.
- Third bottle: 18-24 hours after calving
- one bottle a day for next 3-5 days.



METAION

Unique blend of anions, lowers the anion-cation balance promoting an acidogenic effect, counters Hypocalcemia and related health disorders.

Feeding Recommendations:

Feed Metaion one 50 g sachet daily for 20 days before calving



For the management of Hypocalcaemia



ANABOOST

Multi gluconeogenic high energy supplement fortified with Vitamin B complex and Minerals. Significantly decreases chances of negative energy balance.

Feeding Recommendations:

100 to 200 ml orally once daily for 5 days before and after calving



Ideal Feed Supplement for Pre & Post Calving Period

With best compliments from



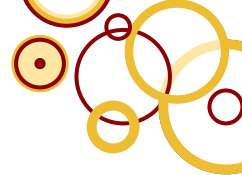
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- * State Export Awards (First Prize) by State Govt. of U.P.
- * AIMA - Dr. J.S. Juneja Award in for Creativity and Innovation by All India Management Association, Delhi.
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Daily dose and rate of infusion 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) :

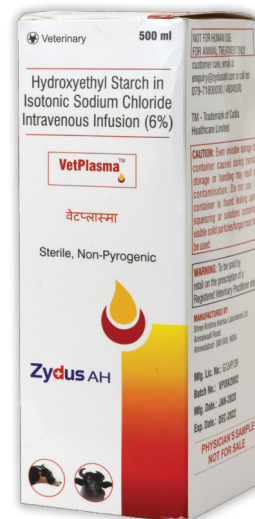
10-20 ml/kg body weight/day

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

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250 ml & 500 ml plastic bottle.



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