



ICAR-NIVEDI News

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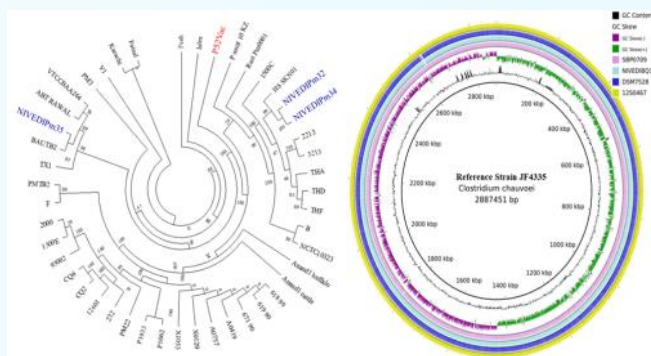
Director's Desk



Happy New Year Greetings to all!

The Year 2022 as UN declared as International Year of Artisanal Fisheries and Aquaculture, Sustainable Development, ICAR-NIVEDI had pitched its sincere efforts for the sustainable scientific temper and activities. In order to review and propose future researchable areas, new QRT members reviewed the progress of institute in earlier proposed research areas and laid down new researchable areas for next 5 years in the second meeting of 5th QRT held during 23-24th June 2022 at ICAR-NIVEDI. Apart from this, the institute scientific research activities were reviewed by IBSC meeting on 25th May, 2022, 19th IAEC meeting on 15th February, 2022. Review meeting of officers and staffs of ICAR HQs, Institutes of ICAR, ASRB and DARE was conducted on 4th January, 2022. In order to improve livestock health, human health, wildlife health, and environmental health by involving stakeholders from various sectors, DAHD launched One Health Pilot project in Karnataka at ICAR-NIANP on 28th June, 2022 and ICAR-NIVEDI team attended the programme. Further, ICAR-ILRI collaborative project meeting was conducted on 4th January, 2022. It is my privilege to witness that during this period ICAR-NIVEDI received Swachhta Pakhwada Award 2021 (First prize) by Indian Council of Agricultural Research from the Hon'ble Shri. Narendra Singh Tomar, Minister of Agriculture and Farmers Welfare, New Delhi and Dr K. P. Suresh, Principal scientist bagged prestigious Prof. P.C. Mahalanobis National Award from Ministry of Statistics & Programme Implementation, Government of India. As part of Azadi Ka Amrit Mahotsava and Swachh Bharath mission, disease surveys were conducted on 12th April, 2022 at Jalige village and concluding discussion session was held on 23rd April, 2022 with advisories to the farmers of Jalige village under the chairpersonship of Dr Rajeswari Shome, Principal Scientist. On 25th May, 2022, ISO 9001:2015 surveillance audit meeting was carried out to ensure ISO certification status. During this period, Dr M. Suresh, Associate Dean for Research and Graduate Training, University of Wisconsin-Madison and Major General (Dr) Srikanth Sharma, Former Vice Chancellor, LUVAS, Hisar and former president of NAVS visited institute on 2nd June, 2022 and on 29th June, 2022, respectively. During this reporting period, Brucellosis outbreak investigation was carried out in Shilubepura village, Bangalore Rural District, Karnataka. Further, capacity building programmes were carried out to various stakeholders including Karnataka DAH sponsored hands on training programme on Tools in Descriptive Veterinary Epidemiology for Karnataka veterinarians in three batches in the month of January and February, ICAR short course on National Animal Disease Emergency preparedness: An Animal Health contingency plan, NCDC sponsored hands on training programme on Diagnosis of Leptospirosis and training programme on Laboratory Biosafety and Biosecurity Practices in Handling Zoonotic Pathogens. Apart from this, institute celebrated Republic day, Women's day, anti-terrorism day and international yoga day. Under SCSP programme of NICRA Project, animal health camps and training for the SC farmers were conducted in different villages in Tamilnadu state.

Research Achievements



The whole genome analysis of Haemorrhagic septicaemia causing *Pastuerella multocida* strains was carried out. Three draft genomes of NIVEDIPm strains consisted of 40-52 contigs with GC content of ~40.4%. The genome size and predicted genes content was ~2.3 Mb and 2811- 2189, respectively. Besides, the presence of various mobile genetic elements, antimicrobial resistance genes and biofilm related genes suggested their vital roles in virulence; further, adaptation to the host immune system as well as host pathogen interaction. Multi locus sequence analysis based on RIRDC scheme showed the presence of ST122 in all the three strains. wgMLST based phylogenetic analysis suggested that HS causing Indian virulent field strains differed geographically and showed diversity from existing HS vaccine strain P52. The phylogenetic tree revealed that North Indian strains share high similarity with strains of Pakistan than South Indian strain. Notably, a high divergence of SNPs between the HS causing circulating virulent strains of India and current HS vaccine strain P52 suggested an imminent need for relook in to HS vaccination strategy for livestock in India. Sequence analysis of black quarter (BQ) causing *Clostridium chauvoei* indicated that genome had 2653 predicted coding DNA sequences, harbored numerous genes, mobile genetic elements for pathogenesis, and virulence factors. Computational analysis revealed that

strain contained 30 virulence-associated genes. An intact genomic region highly similar to the Clostridium phage was present in the genome. Presence of CRISPR systems and the transposon components likely contribute to the genome plasticity. Strain encode diverse spectrum of degradative carbohydrate-active enzymes (CAZymes). Comparative SNP analysis revealed that the genomes of the *C. chauvoei* strains analyzed were highly conserved. Phylogenetic analysis of strains and globally available genome (n = 21) based on whole-genome multi-locus sequence typing (wgMLST) and core orthologous genes showed the clustering of strains into two different clusters suggesting geographical links. Further, study warrants isolation and whole genome analysis of more number BQ causing *C. chauvoei* strains from different geographical regions of India for comprehensive analysis.

Scientific Activities



The 2nd meeting of 5th Quinquennial Review Team (QRT) of ICAR-NIVEDI was held during 23-24th June 2022 under the Chairmanship of Dr Lal Krishna, Former AHC, & ADG(AH), ICAR. The other members present were Dr V.A. Srinivasan, Former Director, IIL, Hyderabad, Dr A. Chakraborty, Former Director (Research), AAU, Dr J.R. Rao, Former Head, Division of Parasitology, ICAR-IVRI, Dr B.R. Shome, Director (A), Dr P.P. Sengupta, Principal Scientist and Member Secretary, and reviewed the research progress made by the Institute.



The 19th Institutional Animal Ethics Committee (IAEC) meeting of ICAR-NIVEDI was held on 15th February 2022 under the Chairmanship of Dr B.R. Shome, Director (A). The other members present were Dr R.K. Shakthi Devan, CPCSEA Main Nominee, Dr Shiva Kumar, Scientist from outside the Institute, Dr R.G. Prakash, socially aware Nominee and other IAEC members from ICAR-NIVEDI attended the meeting.



ITMU and ABI of ICAR-NIVEDI organized a meeting on “Sensitizing the ICAR-NIVEDI Scientists on Different Aspects of IP and Technologies for Commercialization” during the visit of Dr K. Srinivas, ADG (IP&TM), ICAR, New Delhi at ICAR-NIVEDI on 7th May 2022.



Dr M. Suresh, Associate Dean for Research and Graduate Training, University of Wisconsin- Madison, USA visited Biosafety laboratory of ICAR-NIVEDI on 2nd June 2022.



ICAR-NIVEDI Scientists participated in the orientation and launch of One Health Pilot programme held at ICAR NIANP, Bengaluru on 28th June 2022.



Major General Dr Srikanth Sharma, Former Vice Chancellor, Lala Lajpat Rai University of Veterinary and Animal Sciences (LUVAS), Haryana and Former President of National Academy of Veterinary Sciences (NAVS) visited ICAR-NIVEDI on 29th June 2022.

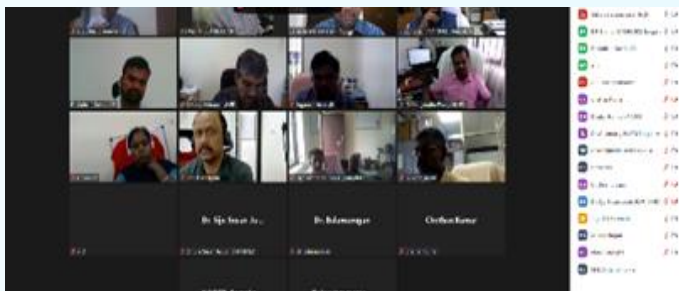
Important Events



ICAR-NIVEDI celebrated the 73rd Republic day by hoisting the National flag by the Director (A) followed by addressing the staff of the Institute on 26th January 2022.



ICAR-NIVEDI celebrated the International Women Day on 8th March 2022. The guest speaker Dr S. Srinivas, Chief Medical officer highlighted about the post-Covid management. Sister Brahma Kumari Kala, Brahma Kumari Centre, Yelahanka mentioned about the critical role need to be played by the women in the family and the importance of considering the working place as own family. Dr Janaki H. P., Former Deputy Director, Dept. of AH&VS, mentioned about the ways to deal with the challenges in life by quoting examples from own life. Dr Chaithra Rao, Associate Project Director, URSC, ISRO highlighted about the research initiatives going on in ISRO. She motivated the youngsters by mentioning about the prestigious Mangalyaan project in which she was associated with and talked about the selection procedures in ISRO. On the occasion, cultural programs were organized and all the women staff of ICAR-NIVEDI actively participated in the programme.



ICAR-NIVEDI organized the online second surveillance audit of ISO 9001:2015 of Quality Management System on 21st May 2022.



ICAR-NIVEDI organized annual health checkup for the staff members under supervision of Dr S. Srinivas, Chief Medical Officer on 8th April 2022.



ICAR-NIVEDI organized the Institute Joint Staff Council meeting under the Chairmanship of Dr B.R. Shome, Director (A) on 26th April 2022.



ICAR-NIVEDI celebrated the Har Ghar Tiranga on the occasion of 75 years of Independence on 7th June 2022. On this occasion, the Indian national flag was distributed to the farmers in the neighboring villages.



ICAR-NIVEDI celebrated the International Yoga Day with yoga sessions for the staff members on 21st June 2022.

Swachh Bharat Abhiyan



As part of Swachh Bharat Abhiyan programme and also on the occasion of Special Swachhta Campaign, ICAR-NIVEDI organized various activities in the Institute and nearby villages. Special Swachhta campaign was organized by ICAR-NIVEDI on 9th April 2022 and cleaning activities of the institute premises were undertaken by the staff members. ICAR-NIVEDI bagged first prize in Swachhta Pakhwada Award 2021 and received award from the Hon'ble Shri Narendra Singh Tomar, Minister for Agriculture and Farmers Welfare, Government of India during the function held on 13th April 2022.

Scheduled Caste Sub Plan Programme



Organized and inaugurated the Special Livestock Health Camp at Porangal Village, Orathy, Mathuranthagam taluk, Kanchipuram District under NICRA Project on 10th March 2022. During the camp, the animals were given deworming drug, vaccination, reproductive health check-up, Infertility check-up by ultrasonography and distributed mineral mixture, vitamin

tablets, etc., to the SC farmers. A total of around 200 farmers and 300 livestock were benefitted under this programme. On 18th March 2022, organized the Special Livestock Health Camp at Kalmandipuram village, Thalavadi taluk, Erode District. During the camp, the animals including cattle, sheep, goat, dog were given deworming drug, vaccination, reproductive health checkup, and distributed mineral mixture, vitamin tablets, etc., to the SC farmers. A total of around 150 farmers and 300 livestock were benefitted under this programme. The training programme on “Scientific Rearing of Farm Animals in Tamilnadu” was organized in the above villages under SCSP programme and around 60 SC farmers participated in the programme.

Livestock Disease Investigations/ Field visits



ICAR-ILRI project on “Assessment of the economic impact of priority animal diseases and the cost-effectiveness of their control strategies in India- Brucellosis survey” implementation meeting held at Deputy Directors Office, Dept. of AH&VS, Bagalkot, Karnataka on 4th January 2022.



Dr M. Nagalingam carried out surveillance of ovine brucellosis at Bagalkot district during 4-6th January 2022.



Dr J. Hiremath, Dr M. Nagalingam, Dr G.B. Manjunatha Reddy and Dr H.B. Chethan Kumar, Scientists

investigated reproductive failure and piglet mortality in a pig farm in Shilubepura, Bengaluru on 27th January, 8th February, and 5th March 2022.



Dr P. Krishnamoorthy, Senior Scientist interacted with Dr G. Selvaraj, Director, DoAH&AW and Dr M. Mohan, VAS & Co-PI, NADEN, about the tick survey and epidemiological data collection in Puducherry under NICRA Project on 17th February 2022.



Dr P. Krishnamoorthy, Senior Scientist conducted tick survey in various villages in Gadag district under NICRA Project during 3-4th March 2022.



Dr H.B. Chethan Kumar and Dr Vinod Kumar conducted investigation of a suspected anthrax outbreak in humans and animals in Koppal district, Karnataka on 27th April 2022.



ICAR-NIVEDI organized Farmers Scientists interaction meeting at Jalige village, Bengaluru rural district on 23rd April 2022. On this occasion, created awareness about the livestock diseases in the village after screening the clinical samples collected on 12th April 2022.

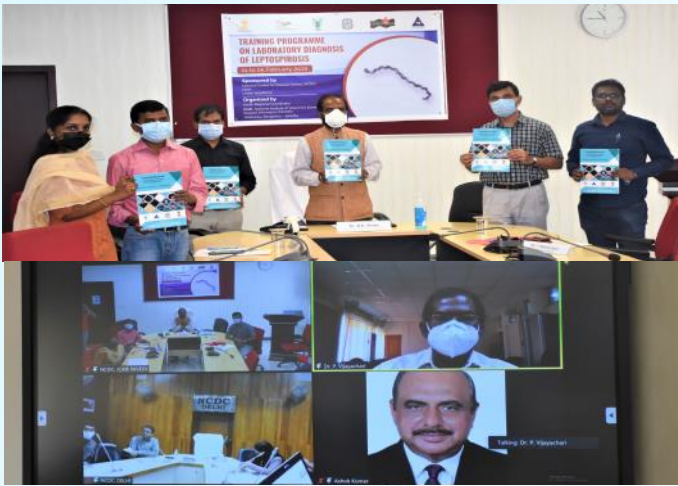


Farmers-Scientist interaction meeting and awareness campaign was organized by ICAR-NIVEDI at Chanarayapatna village, Devanahalli taluk, Bengaluru rural district on 28th April 2022.

Human Resource Development



ICAR-NIVEDI organized hands on training programme on Tools in descriptive veterinary epidemiology for Veterinarians, Department of Animal Husbandry and Veterinary Services, Government of Karnataka in three batches during 3-5th and 10-12th January, and 14-16th February 2022.



NCDC sponsored training programme on Laboratory diagnosis of Leptospirosis for the benefit of laboratory personnel involved in Leptospirosis diagnosis organized at ICAR-NIVEDI during 1-5th February 2022.



ICAR-NIVEDI organized ICAR sponsored short course on “National Animal Health Emergencies Preparedness-An animal health contingency plan” during 14-23rd March 2022.



ICAR-NIVEDI organized training programme on Laboratory Biosafety and Biosecurity Practices in Handling Zoonotic Pathogens during 28-30th March 2022.



Dr S.S. Patil, Principal Scientist awarded IAVMI Fellow award for his contribution to the Veterinary Microbiology in the IAVMI conference held on 27th May 2022.



Dr P. Krishnamoorthy, Senior Scientist was awarded De Facto Member and Diplomate of Indian College of Laboratory Animal Medicine (ICLAM) by ICLAM of Laboratory Animal Scientists Association (LASA) of India on 2nd June 2022.



Dr M. Nagalingam, Senior Scientist secured 3rd position in oral presentation award in the 22nd Indian Veterinary Congress, XXIX Annual Conference of IAAVR & National Symposium on Advancements in veterinary medical research contributing to one health for betterment of animal and public health organized by IAAVR held at Udaipur, Rajasthan held during 8-9th April 2022.

Awards and Recognition



Dr K.P. Suresh, Principal Scientist received Prof. P.C. Mahalanobis National Award from Ministry of Statistics and Programme Implementation, Government of India, New Delhi on the occasion of Statistics Day held on 29th June 2022.

Participation in Meetings/Seminars/Symposia/Trainings

1. Dr M. Nagalingam, Senior Scientist participated in the virtual training program on ‘Metagenomic data analysis’ organized by ICAR-IASRI, New Delhi during 19-24th January 2022.
2. Dr V. Balamurugan, Principal Scientist attended online PPR consultation meeting for South Asia organized by OIE/FAO during 20-21st January 2022.
3. Dr R. Sridevi, Senior Scientist participated in online International Conference on Transforming Livestock Economy through Innovations in immunology and Biotechnology, organized by ISVIB and GADVASU, Ludhiana during 4-5th February 2022.

4. Dr V. Balamurugan, Principal Scientist attended meeting for discussion on 'National Zoonotic Diseases Surveillance and Information System Website' under National One Health Program for Prevention and Control of Zoonoses, NCDC, Delhi by virtual mode on 9th February 2022.
5. Dr V. Balamurugan, Principal Scientist participated in the virtual training program on 'Collection of brain sample & laboratory diagnosis of rabies in animals' organized jointly by NCDC, New Delhi and KVAFSU-CVA Rabies Diagnostic Laboratory, OIE Reference Laboratory for Rabies, Veterinary College, Hebbal, Bengaluru during 17-18th February 2022.
6. Dr V. Balamurugan, Principal Scientist participated in the workshop on 'Zoonotic diseases with special reference to Japanese Encephalitis (JE) and Leptospirosis' under DBT-flagship program entitled 'Genomics assisted pathobiology to identify novel targets for diagnosis and therapeutic interventions of Japanese encephalitis and Leptospirosis' organized by NIAB on 10th March 2022.
7. Dr P. Krishnamoorthy, and Dr M. Nagalingam, Senior Scientists participated in the online International workshop on 'Antimicrobial resistance in food borne pathogens: Safety concern' organized by Indo-UK collaborative project on AMR funded by DBT during 14-16th March 2022.
8. Dr Chethan Kumar H.B, Scientist participated in the Sydney ID Distinguished Lecture Series: 'JEV Outbreak in Australia-important insights for clinicians' organized by the University of Sydney Institute for Infectious Diseases (Sydney ID) virtually on 17th March 2022.
9. Dr Siju Susan Jacob and Dr Sathish Gowda, Scientists participated in the ICAR short course on 'National Animal Disease Emergency preparedness: An Animal Health contingency plan' organized by ICAR-NIVEDI during 14-23rd March 2022.
10. Dr K.P. Suresh, Principal Scientist participated in the workshop on 'Research proposal writing for grant inviting' organized by Central Ayurveda Research Institute (CARI), Bengaluru on 23rd March 2022.
11. Dr V. Balamurugan, Principal Scientist and Dr M. Nagalingam, Senior Scientist participated in the National conference on 'Emerging and Re-emerging Viral Diseases – Climate Change Impacts and Mitigation' organized by Indian Virological Society - VIROCON 21 at AIIMS, Hyderabad by virtual mode during 26-28th March 2022.
12. Dr Chethan Kumar H.B, Scientist participated in the webinar on 'Japanese encephalitis information session for horse vets' organized by animal health Australia and Agriculture on Victoria on 5th April 2022.
13. Dr M. Nagalingam, Senior Scientist participated in the 22nd Indian Veterinary Congress and XXIX Annual Conference of IAAVR & National Symposium on Advancements in veterinary medical research contributing to one health for betterment of animal and public health organized by IAAVR held at College of Veterinary Science, Navania, Udaipur, Rajasthan during 8-9th April 2022.
14. Dr Chethan Kumar H.B, Scientist participated in the webinar on 'Japanese encephalitis virus – International One Health perspectives' jointly organized by the University of Sydney Institute for Infectious Diseases (Sydney ID), Australasian Society of Infectious Diseases (ASID), Zoonoses Special Interest Group (ZooSIG), and Australian Veterinary Association (AVA) Veterinary Public Health Special Interest group (AVPH-SIG) on 21st April 2022.
15. Dr P. Krishnamoorthy, Senior Scientist participated in the 10th International conference of Laboratory Animal Scientists Association (LASA) India organized by National Institute of Animal Biotechnology and National Animal Resource Facility for Biomedical Research, Hyderabad held during 2-4th June 2022.
16. Dr Chethan Kumar H.B, Scientist participated in the webinar on 'Japanese encephalitis: One Health in Action' organized by Centre for Infectious Diseases and Microbiology - Public Health (CIDM-PH) on 3rd June 2022.
17. Dr M. Nagalingam, Senior Scientist participated in the webinar on 'Genomics in precision medicine' organized by Centre for DNA Fingerprinting and Diagnostics (CDFD), Hyderabad on 15th June 2022.

Trainings/ Workshops/Meetings organized

1. ICAR-NIVEDI organized training programme on 'Tools in descriptive veterinary epidemiology, for the veterinarians from Karnataka' sponsored by Department of Animal Husbandry and Veterinary Services, Government of Karnataka under ASCAD scheme during 3-5th January 2022, 10-12th January, 2022 and 14-16th February 2022.
2. ICAR-NIVEDI organized sensitization meeting/workshop on 'Economics of brucellosis' with Deputy Director (DAH & VS) and other district veterinary officers under ICAR-ILRI project on 'Assessment of economic impact of priority animal disease and the cost effectiveness of their control strategies in India-Brucellosis' at Bagalkot on 4th January 2022.
3. ICAR-NIVEDI organized training programme on 'Laboratory Diagnosis of Leptospirosis' sponsored by NCDC during 1-5th February 2022.
4. ICAR-NIVEDI organized 10 days ICAR short course on 'National Animal Disease Emergency preparedness: An Animal Health contingency plan' during 14-23rd March 2022.
5. ICAR-NIVEDI organized training programme on 'Hands on training on laboratory biosafety and biosecurity practices in handling zoonotic pathogens' sponsored by NCDC during 28-30th March 2022.
6. ITMU and ABI, ICAR-NIVEDI organized a meeting on 'Sensitizing the ICAR-NIVEDI scientists on different aspects of IP and technologies for commercialization' during the visit of Dr K. Srinivas, ADG (IP&TM), ICAR, New Delhi on 7th May 2022.

Awards and Recognition

1. ICAR-NIVEDI received Swachhta Pakhwada Award 2021 (first prize) by ICAR from the Hon'ble Shri. Narendra Singh Tomar, Minister of Agriculture and Farmers Welfare, Government of India, New Delhi on 13th April 2022.
2. Dr K. P. Suresh, Principal Scientist received Prof. P.C. Mahalanobis National Award from Ministry of Statistics & Programme Implementation, Government of India on Statistics Day, 29th June 2022.
3. Dr V. Balamurugan, Principal Scientist received NAVS (I) Associate Fellowship Award 2021 during the 20th NAVS Convocation-cum- Scientific Convention held at MAFS&U, Nagpur during 20-21st June 2022.
4. Dr S. S. Patil, Principal Scientist received 'IAVMI 2022 Fellow Award' at 34th Annual Convention of IAVMI and National Conference on Current Trends in Immunodiagnosics & Vaccinology for health of Livestock and Poultry organized by LUVAS, Hisar, Haryana during 27-28th May 2022.
5. Dr R. Sridevi, Senior Scientist received third best poster presentation Award in the online International Conference on Transforming Livestock Economy through Innovations in immunology and Biotechnology organized by ISVIB & GADVASU, Ludhiana during 4-5th February 2022.
6. Dr M. Nagalingam, Senior Scientist received third best oral presentation award in the 22nd Indian Veterinary Congress and XXIX Annual Conference of IAAVR organized by College of Veterinary Science, Udaipur, Rajasthan during 8-9th April 2022.

Joining/Promotion/ Transfer

Mrs. Saranya A, Stenographer Grade-III promoted as Assistant with effect from 1st January 2022.

Distinguished visitors

1. Dr K Srinivas, ADG (IP & TM), ICAR, New Delhi
2. Dr V. A. Srinivasan, Former Director, Indian Immunologicals, Hyderabad
3. Dr K.C Veeranna, Vice Chancellor, KVAFSU, Bidar, Karnataka
4. Maj. Gen. (Dr) Shrikant Sharma, Former Vice Chancellor, LUVAS, Hisar
5. Dr Lal Krishna, Former Assistant Director General (AH), ICAR, New Delhi
6. Dr S.P. Manjunath, Director, AH&VS, Bengaluru
7. Dr M. Suresh, Associate Dean, University of Wisconsin-Madison, USA.
8. Dr A. Chakraborty, Former Director (Research), AAU, Khanapara, Assam
9. Dr Chaitra Rao, Associate Project Director, NISAR, URSC, ISRO, Bengaluru
10. Dr J. R. Rao, Former Head, Division of Parasitology, ICAR-IVRI, Izatnagar
11. Dr T. Thippeswamy, Additional Director (LH), Dept. of AH&VS, Bengaluru
12. Dr M.K. Sudarshan, Chairman, Technical Advisory Committee (TAC), Bengaluru
13. Dr D. Swarup, Former Head, Center for Wildlife, ICAR-IVRI, Izatnagar
14. Dr Janaki, H.P., Former Deputy Director, AH&VS, Karnataka
15. Sis. Brahma Kumari Kala, Brahma Kumari Centre, Yelahanka, Bengaluru

Concept and Guidance : **Dr B.R. Shome**, Director (Acting), ICAR-NIVEDI

Editor : **Dr P. Krishnamoorthy**, Senior Scientist

Co-Editors : **Dr G. Govindaraj**, Principal Scientist ; **Dr R. Sridevi**, Senior Scientist ;
Dr M. Nagalingam, Senior Scientist and **Dr Siju Susan Jacob**, Scientist

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