

NIANP NEWS & Views



Director's Desk

A recent report in "The Indian Express" states that with 20% of agriculture output value, milk overtakes foodgrains. The report also mentions that "today, not only does the White Revolution's contribution to farm incomes surpass that of the Green Revolution, but every fifth rupee generated in the farm sector, which includes the total output value of crops livestock produce and fisheries, comes from milk. Indeed it is a great achievement for all the professionals and policymakers who are dedicately involved in uplifting the performances of the animal sector and farmers/enterprenures associated with the sector. Since last 23 years, we too are also focusing to improve the performances of different livestock through nutrional and physiological intervnetions.

In the recent past, we have experinced fluctuating seasonal availability of feeds and foddors in different parts of our conuntry due to chaging seasonal pttrens. Therefore, it is important to realize surplus/deficit of feed and fodder resources in different parts of India in realtime, even in advance. Further, these information alongwith realtime livestock census data would help in forecasting the availability of these resources in real time. Such estimate will be crucial to identify the surplus/deficit areas and to plan movement of the feeds and foddors accordingly. To address this issue, our scientists have designed a website for real time estimation of livestock, feed and fodder resources availability in India. I am sure that our policymakers will adopt and implement this important tool in the coming days.

I am pleased to share that the Institute has recently launched the Farmer First Project on "Improving Livelihood Security of Farmers Through Technological Interventions for Sustainable Livestock Farming" at different locations of South and North Bengaluru. This programme provides opportunities to the farmers to come forward and bring their problems to the notice of scientists for developing appropriate solutions in the form of technologies.

I am extremely thankful to the entire team of ICAR-NINAP for their sincerity and dedication for transforming this Institution into a centre of excellence. I complement the editorial team for bringing out this issue of the NIANP News Letter.

Raghavendra Bhatta
Director

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Research News

Real Time estimation of livestock feed and fodder resources availability in India

Feed and fodder plays an important role in animal production with feed alone constituting more than 60% of the cost of animal products. Hence, it is important to know in advance about the surplus/deficit of feed and fodder resources in different parts of India. At present feed and fodder resources availability projections are being made for the country as a whole. This is partly due to the fact that data at micro level is not readily available. Another hurdle in this process is the non-availability of data in time. India is a vast country with 35 states and union territories comprising of 635 districts. Collecting primary data regarding the livestock population and its compilation is a huge task. To estimate the feed and fodder requirements for livestock population, the timely availability of livestock census data is a prerequisite.

Livestock Enumeration Portal

Address : NIANP
District : Nicobars
Taluk: Campbell Bay
8th December 2017

select a census year
1972
1977
1982
1987
1993
1997
2003
2007
2012
2017

Select...
Nodal Officers Info.
Edit Personal Data
Livestock Census Data Entry
Fodder Crop Data Entry
New Fodder Crop Entry
New Village Data Entry
Data Retrieve

Choose...
Village-1
Village-2
Village-3
Village-4
www
Belligatti

Data Entry for Village : Village-2

1	BUFFALO	Male<1 Yr	<input type="text"/>
2	BUFFALO	Male : 1-3 Yrs	<input type="text"/>
3	BUFFALO	Male > 3 Yrs	<input type="text"/>
4	BUFFALO	Use for Breeding	<input type="text"/>
5	BUFFALO	Use for Agri	<input type="text"/>
6	BUFFALO	Use for Bullock	<input type="text"/>
7	BUFFALO	Others	<input type="text"/>

Livestock Enumeration Portal

District : Nicobars
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select a census year
1972
1977
1982
1987
1993
1997
2003
2007
2012
2017

Select...
Nodal Officers Info.
Edit Personal Data
Livestock Census Data Entry
Fodder Crop Data Entry
New Fodder Crop Entry
New Village Data Entry
Data Retrieve
ID/Password Change
Logout

New Fodder Crop:

Submit

Data Entry for Village : Village-2

Sl no	Crop Name	Production	Area	Yield
1	Maize(Makka)	<input type="text"/>	<input type="text"/>	<input type="text"/>
2	Jowar (Chari)	<input type="text"/>	<input type="text"/>	<input type="text"/>
3	Bajra	<input type="text"/>	<input type="text"/>	<input type="text"/>
4	Oat (Jai)	<input type="text"/>	<input type="text"/>	<input type="text"/>
5	Barley(Jau)	<input type="text"/>	<input type="text"/>	<input type="text"/>
6	Teosinte(Makchhari)	<input type="text"/>	<input type="text"/>	<input type="text"/>

The present system of livestock census enumeration is a time consuming process entailing approximately 2 years. If the census data enumeration and compilation can be made real time, the forecasting of the feed and fodder resources can be made in real time or in advance. Once a forecast of the requirements is available, it is easy to identify the surplus/deficit areas and movement of the feed resources can be planned accordingly. To ensure real time collection and compilation of livestock data, a website has been designed, based on open source software platform.

The website is designed on Java platform using HTML 5 standard. It is a clustered MYSQL DB solution, which can be extendable and configurable, so that future modification can be done easily. This would enable the use of the program across platforms in PC or mobile.

Website is currently hosted at Ashoka server of ICAR-IASRI, New Delhi ([http:// webtom.cabgrid.res.in/lcde/](http://webtom.cabgrid.res.in/lcde/)). The demonstration of the website has also been done at a meeting of ICAR officials at NASC complex, New Delhi emphasizing its possible implementation through DAHDF, Govt of India.

Events

Interactive meeting of DG-ICAR with scientists

Dr Trilochan Mohapatra, Secretary, DARE and Director General, ICAR, visited the Institute on 14 January, 2017 to take part in an interactive session with all the scientists of the Animal Science Institutes of ICAR located in Bengaluru. He critically reviewed Institute-wise research outputs during the past one year and identified road map for specific research targets for the coming 6 to 12 months period. Dr J Jena, Deputy Director General (Fisheries Science) also graced the occasion.



Scientist-Farmer Interface Meeting

A Scientist-Farmer Interface Meeting was organized at the Institute on 15 March, 2017. Dr S Ayyappan, Former DG, ICAR and Prof NABARD chair was the chief guest and Dr V Veerabhadraiah, Former Director (Extension), UAS, Bengaluru was the Guest of Honor. Dr S Ayyappan mentioned that Farmers experience is more valuable to come out with appropriate technologies. He also emphasized the importance of integrated farming systems in current scenario of green fodder shortage and climate conditions. The technical sessions included some of the topics on reproductive management of animals, animal disease control, fodder production and conservation, feeding management in summer season etc. Demonstrations of aeroponics, azolla cultivation and silage making were also organized during the event.



Model training course on "Climate Smart Novel Approaches and Technologies for Sustainable Livestock Production"

A model training course on 'Climate Smart Novel Approaches and Technologies for Sustainable Livestock Production' was organized at the Institute from 22 February

to 1 March, 2017. A total of 14 Veterinary Officers from various States such as Kerala, Andhra Pradesh, Tamil Nadu, Rajasthan, West Bengal and Delhi attended the training programme. The training covered various important areas such as global warming, methane emission and amelioration, climate smart approaches for minimizing early embryonic loss, metabolic stress and its impact on fertility, environmental stress and livestock production, climate variability on feed resources production, climate smart



strategies for sustainable livestock production etc. Dr K Pradhan, Chancellor, Shiksha O Anusandhan University, Bhubaneswar, in his valedictory address, highlighted the role of veterinarians in disease prevention and animal husbandry practices.

Release of updated version of "Livestock Feed Resources Inventory in India"

An updated version of "Livestock Feed Resources Inventory in India, Current Status and Future Scenario" was released on 25 February, 2017. The document contains latest information on availability of feed resources and feed balance and future demand.



Training for skilled supporting staff on "Fundamentals of Computers"

A week long In-house computer training for the skilled supporting staff of the Institute was conducted from 13-18 March, 2017. The training aimed to create computer awareness among them. Emphasis was given on various parts of computers and how to handle them. Participants were trained for proper handling of a terminal, create a new folder, delete a folder, access folder, open and to create documents in it etc.

Short term research cum training under “CV Raman International Fellowship”

Dr OM Sogunle, Senior Lecturer, Department of Animal Production and Health, Federal University of Agriculture, Abeokuta, Nigeria, completed his short term research cum training under the “CV Raman International Fellowship for African Researchers, DST, Govt of India”.



Launching of Farmer First Project

The farmer first project on “Improving Livelihood Security of Farmers Through Technological Interventions for Sustainable Livestock Farming” was launched on 29 January, 2017. Dr Raghavendra Bhatta, Director of the Institute inaugurated the workshop and appealed farmers to come forward and bring their problems to the notice of scientist so that a solution in the form of technology could be provided to them.



Stem cuttings of Co-5 variety of hybrid napier bajra and root slips of Rhodes grass were distributed to over 200 dairy farmers.



Easy and low cost NIANP method of sprouts production on crop residue bedding through modified hydroponic method was demonstrated at KVK, Hadonahalli village. This contingency measure helped dairy farmers to mitigate the adverse effect of green fodder shortage during the summer season of 2017.

Farmers’ Centric Activities

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ಜನವರಿ 2017

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

ಮಾಹಿತಿ ಮತ್ತು ಸಹಾಯ: 080-25711304



A workshop/demonstration was held at Shivanahalli village in the second week of January, 2017 for training the dairy farmers to prepare silage in plastic drums. The farmers understood the importance of fodder conservation to mitigate green fodder deficit during the lean months. Later, plastic drums were distributed to 10 farmers for making silage, using hybrid napier bajra being grown by them.

Over 4,000 copies of NIANP calendar -2017 with technical information on various aspects of livestock farming in Kannada were distributed.

Award



Best Annual Report Award 2015-16

The Institute received the ICAR Best Annual Report Award for the year 2015-16 under the Small Institute Category.



CV Raman award

Dr Raghavendra Bhatta, Director was bestowed with the Sir C V Raman Award for the year 2015-16 by the Karnataka State Council for Science and Technology for his outstanding contributions in the category of Agriculture Sciences and Animal Husbandry



ICAR National Fellow

Dr S Selvaraju received the prestigious ICAR National Fellow (2017-2022) for the project entitled "Development of Buffalo Bull Fertility Diagnostic Chip Based on Sperm Transcripts Signatures".

International Collaboration

- ▶ The Institute became a partner of the ILRI-ICAR collaborative research project on "Multi-dimensional Improvement of Food-feed Crops Including Deconstruction of Ligno-cellulose Bonds for Improving Digestibility of Crop Residues". Participating organizations: ICAR-IGFRI, Jhansi; ICAR-NIANP, Bengaluru; ICAR-IIMR, Hyderabad and ILRI, CGIAR.
- ▶ The Institute has Developed collaboration with Germany, formulated and subsequently granted a joint collaborative research project entitled "Optimized Use of Feed Resources for High Lifetime Productivity of Dairy Cows and Consequences on Enteric Methane Release".
- ▶ The Institute is recently awarded Indo-Hungary collaborative research project sanctioned by DST on "Strategic improvement of efficiency of Vitrification of preantral follicles and embryos of sheep and buffalo: Genomic changes with reference to apoptosis and developmental competence"

Overseas visit



Dr Raghavendra Bhatta, Director and Dr PK Malik, Senior Scientist visited Shinshu University, Nagano, Japan and National Institute of Livestock and Grassland Science, Tsukuba, Japan, under the Indo-Japan (DST- JSPS) collaborative project, 5-11 Mar, 2017.

Activities of Staff Welfare Club



The Republic day was celebrated on 26 January, 2017



International Day of Yoga was celebrated at the Institute on 20 June, 2017



The Club organized farewell ceremony for Dr K S Ramachandra on occasion of his superannuation



The Club organized farewell ceremony for Shri BH Venkataswamy on occasion of his superannuation

Laboratory Profile

Stress Physiology Laboratory

Concept and approach

The abiotic stress significantly reduces performance efficiencies of livestock in India, which is a major cause of enormous economic loss to the farmers and livestock industries. The laboratory was established in 2006 to gratify the needs of research on the effect of abiotic stress on livestock performances and developing suitable ameliorative measures. The laboratory primarily focuses on the following thrust areas.

- ▶ Identification and detection of potential biomarkers of stress.
- ▶ Molecular and genomic aspects of stress induced proteins and transcription factors for understanding the mechanism of thermo-tolerance and adaptation strategy.
- ▶ Amelioration of stress through physiological and nutritional intervention for augmenting production performances.
- ▶ Comparative fundamental studies in thermal resistance, inflammation and immuno-suppression in indigenous and cross-bred animals.

Salient Achievements

- ▶ The study on poultry broiler birds illustrating the kinetics of heat shock protein70 (HSP70) in different visceral organs revealed the mechanism of thermo-tolerance under acute heat stress condition.
- ▶ Detection of HSP70 as potential biomarker of stress in different tissues through highly sensitive chemiluminescence based Western Blot technique
- ▶ Standardized the ELISA technique for quantification of HSP70 in blood plasma.
- ▶ The expression study of HSP70 mRNA provided deeper insight in understanding the mechanism of thermo-tolerance in poultry birds during acute thermal stress.
- ▶ Established that HSP70 can act as most potential biomarker of heat stress along with corticosterone, tri-iodothyronine(T_3) and thyroxine(T_4) level in blood plasma under hyper-thermic state in poultry birds.
- ▶ Evaluated the amelioration strategies of heat stress in poultry broiler birds through supplementation of electrolytes and vitamins in drinking water.





A nation that destroys its soils destroys itself. Forests are the lungs of our land, purifying the air and giving fresh strength to our people.

- Franklin D Roosevelt



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