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## NIANP NEWS & Views



Happy  
New Year

Director's Desk

2019



A fresh new year is once again upon us. This is the time to be thankful for the blessings of the past year and to recollect of all our achievements. In unison, New Year 2019 is a pristine to start afresh with more enthusiastic since yet another chance has arrived to accomplish over the preceding year.

The impact of climate change on agriculture are being witnessed all over the world, and the countries such as India are more vulnerable in view of the growing population demanding high pressure on agriculture and natural resources. Crop livestock integrated farming system is characteristic of Indian agriculture and livestock sector is the integral part of Indian rural economy. There is a great need for the development of a course of action which could be sustainable and resilient to climate change. ICAR-NIANP is working in the direction of sustainable livestock production by adaption of ameliorative strategies for impact of climate change, development of technologies to minimize methane emissions, and also attention is being paid to improve the performances of different livestock through advanced nutritional and physiological interventions.

I am pleased to share that the Institute has organized two short courses in the field of "climate change and doubling of farmers income" to scientists, academicians and field veterinarians of the country. In addition, in this period progressive farmers of various states such Karnataka, Odisha and Tamil Nadu were trained on management of dairy animals and ration balancing with locally available feed resources. Further, we came up with a product 'Tamarin plus' to reduce the methane production from ruminant animals.

The institute also organized a 21 days winter school in the area of impact of climate change and its ameliorative strategies sponsored by the Indian Council of Agricultural Research and one Model Training Course on 'Farmer smart technologies for improvement of productive & reproductive performance of livestock' sponsored by the Directorate of Extension, Ministry of Agriculture & Farmers Welfare, Govt of India. In addition, we are jointly working on international collaborative projects with Germany, France and Hungary in which the scientists of the institute are provided with an opportunity to exchange ideas on cutting edge research areas.

I am thankful to the entire team of ICAR-NIANP for their genuineness and commitment 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*

**Raghavendra Bhatta**  
Director



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Research News

Red Spectrum of Light Enhances Egg Production in Commercial Layer Farms - a Field Study

The study was conducted to design a novel LED bulb and to establish the effects of different wavelengths of light on egg production in White Leghorn hens in the commercial poultry farm at Mysore. From 28 to 72 weeks of age, 20,000 White Leghorn birds were divided into two groups consisting of 10,000 birds in each group (control n=10000 and treatment n=10000). The birds were housed in cages under a three-tier battery system with free access to ad libitum water. All the birds were fed on the same layer ration as per the standard recommendations and were provided 16 h light and 8 h darkness. In the treatment group, the White Leghorn layers were exposed to red LED lights (650nm of wavelength) whereas the control group birds were exposed to white incandescent light (450nm of wavelength). Daily egg production was recorded for both the groups at the same time for a period of 45 weeks.



The feed intake was lower in the treatment group, but not significantly (P>0.05) affected by the treatment. The mean percentage of egg production was 88.00 in the treatment group as against 85.80 in the control group. Egg production increased significantly (P<0.05) in White Leghorn hens exposed to red LED lights relative to the birds exposed to incandescent light (Fig. 1). The red LED is highly cost effective. The cost economics were calculated based on an anticipated gain in egg production by 0.5% at 85% egg production over 10000 White Leghorn birds from 28 to 72 week (Table 1 A & B). By adopting red LED light and taking advantage of the unique spectral requirements of poultry, farmers can reduce stress and mortality, regulate circadian rhythm, and substantially increase the production of eggs with increased profit while reducing input costs.

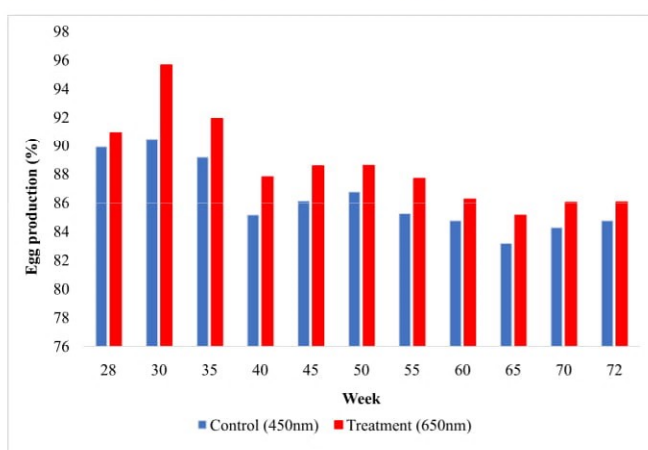


Fig 1. Weekly percentage of egg production between the control white leghorn birds exposed to normal light and white leghorn birds exposed to red LED lights

Table 1. The cost economics of using red LED bulbs in poultry layer farm maintaining 10,000 white leghorn birds for 315 days

A. Egg Production				
Normal Total Egg production (85%)	Anticipated Increase (%) 50 eggs / day	Egg Production Increase 50 eggs/day. Eggs for sale per day 40. Total eggs for 315 days 315 x 40 (12,000)	Price of one egg (Rs. 3.55)	Total Amount (in Rs.) 42600
8500	0.50	12000	3.55	42600
The profit from 0.5% increase in egg production for 45 weeks or 315 days = Rs. 42,600				

**Cost Economics of using Red LED lights:** Profit on extra egg production + Electricity saved, = 42,600 + 5,600, = Rs. 48270/-. Therefore, the net profit of using Red LED lights over 10,000 White Leghorn layer birds in a 10,000 flock is about Rs. 48,270/-

**Application at village level:** It would help poultry farmers in meticulous use of lighting for better egg production; a RED LED bulb of 4 watts capacity is sufficient to provide lighting in a 200 sft room at village level. This technology is the best option for being energy efficient and cost effective to poultry farmers.

B. Electricity Saved

	80 White Incandescent	80 Red LED
No. of CFL Watt	13	5
Hours On	5	5
Total (W/d) Kilowatt	5 (80x13x5=5200 watts or approximately 5 KW)	2 (80 x 5x 5 = 2 KW)
No. of TL Watt	6 54 or 40	6 30
Hours On	6	6
Total (W/d)	2 (6x54x6=944 or approximately 2 units)	1 (6x30x6=080 or 1 KW)
No. of Days	315	315
Rate / unit	4.50 (7(5+2) x 315 days x 4.50 =9922.5)	4.50 (3(2+1) x 315 days x4.50 = Rs.4250)
Amount (Rs)	9,920	4,250
Savings	9,920-4,250 = 5,670	

## Events

### ICAR Sponsored Short Course

ICAR-NIANP organized an ICAR sponsored short course on "Technology smart interventions for doubling livestock farmers' income" from 30<sup>th</sup> Jul to 08<sup>th</sup> August, 2018.



### Institute Management Committee

The 39<sup>th</sup> Institute Management Committee meeting was held at ICAR-NIANP on 10<sup>th</sup> July, 2018 under the chairmanship of Dr Ragavendra Bhatta, Director of the institute.



### ICAR Sponsored Short Course

ICAR-NIANP, Bengaluru organized ICAR sponsored short course on "Recent advances in nutritional-physiological approaches for improving reproduction and production in livestock under climate change scenario" from 20<sup>th</sup> to 29<sup>th</sup> August, 2018.



### National Consultation on Sustainable and Remunerative Small Farming

The National Consultation was organized jointly by NIANP, NABARD, NDRI & ATARI at NIANP in the presences of the Hon Agri Minister, Karnataka Mr NH Shivashankara Reddy, Dr JK



Jena, DDG (AS), Dr AK Srivastava, Member ASRB, Dr S Ayyappan, NABARD Chair Professor and Dr Raghavendra Bhatta on 18<sup>th</sup> & 19<sup>th</sup> September, 2018.

### National Consultation on Agri-Start Ups for Smart Farming



The National Consultation was organized jointly by NIANP, NABARD, NDRI & ATARI at NIANP, Bengaluru in the presence of Prof Ramesh Chand, Member, NITI Aayog, Dr S Ayyappan and Dr Mruthyunjaya, Farmer Director, NCAP on 11<sup>th</sup> & 12<sup>th</sup> October, 2018.

### Midterm Institute Research Committee Meeting

The Midterm IRC meeting was held on 29<sup>th</sup> & 30<sup>th</sup> October, 2018.



### ICAR Sponsored 21 Days Winter School

A winter school was organized on “Climate change led biotic and abiotic stress in farm animals and amelioration using nutritional and physiological approaches” 1<sup>st</sup> to 21<sup>st</sup> November, 2018.



### Directorate of Extension Sponsored Model Training Course

ICAR- NIANP, Bengaluru organized a Model Training Course sponsored by Directorate of Extension, Ministry of Agriculture & Farmers Welfare, Govt of India from 6<sup>th</sup> to 13<sup>th</sup> December, 2018.



### Institute Foundation Day

ICAR-NIANP celebrated its Foundation Day, Dr Trilochan Mohapatra, Secretary (DARE) & Director General (ICAR) and Dr Joykrushna Jena, Deputy Director General (Fy & AS) have graced this occasion. In his address, DG advised to extend the concept of Area Specific Mineral Mixture to other states of the country and also to prepare the enteric methane emission inventory and modeling for ameliorative strategies with different feeding regime. Further, DG also emphasized the



revisiting of the nutrient requirement of animals prepared by NIANP.

### Inauguration of Infrastructure Facility at ICAR- NIANP, Bengaluru



Dr Joykrushna Jena, Deputy Director General (Fy & AS) inaugurated the newly constructed feed unit, poultry and sheep shed at ICAR- NIANP, Bengaluru on 24<sup>th</sup> December, 2018.

## Visitors

### Additional Chief Secretary, Government of Haryana

The Additional Chief Secretary, Government of Haryana, Dr Sunil Kumar Gulati, IAS visited ICAR-NIANP on 28<sup>th</sup> July, 2018.



### Chief Executive Officer, Agrinnovate India Ltd

The chief executive officer, Agrinnovate India Ltd Mr Ravinderjit Singh visited ICAR-NIANP and discussed with the Director on commercialization of NIANP technologies.



### Commercialization of NIANP Technology

ICAR-NIANP, Bengaluru Commercialized Small Ruminant Mineral Mixture (Patent No 294494) to M/s Kamdhenu Feeds, Saharanpur, Uttar Pradesh on non-exclusive basis through Agrinnovate India, New Delhi on 6<sup>th</sup> August, 2018.



ICAR-NIANP also Commercialized Sheep and Goat Mineral Mixture to M/s Shakti Livestock Feeds (Pvt. Ltd), Meerut, Uttar Pradesh on non-exclusive basis through Agrinnovate India, New Delhi on 13<sup>th</sup> August, 2018.



### Memorandum of Understanding

ICAR-NIANP signed Memorandum of Understanding (MoU) with Jain University for six years until 2024. Meeting was held in presence of Director, ICAR- NIANP, Dr Raghavendra Bhatta and Heads of the divisions along with Pro-Chancellor Dr Sandeep Shastri, and Registrar Prof NVH Krishnan of Jain University.



### Awards

Dr Raghavendra Bhatta, Director, NIANP, Bengaluru received "Outstanding Researcher Award" for 2018 from Animal Nutrition Association, during ANA Conference held at Patna.



Certificate of appreciation to NIANP by ICAR, New Delhi for implementing ICAR Research Data Management Guidelines on 4<sup>th</sup> December 2018 at New Delhi.



Dr A Mishra, Sr Scientist received ICAR-NIANP-Best Research Paper Award for the year 2016-17



Dr A Dhali, Pr Scientist received ICAR-NIANP-Best Research Paper Award for the year 2017-18



Dr M Bagath, Scientist received Best Oral Presentation Award in biotechnology and climate change during SAPICON-2018 at ICAR-NDRI, Karnal.



Dr PK Malik, Sr Scientist visited George-August University, Gottingen and University of Kassel, Germany under Indo-German collaborative project on "Optimized use of feed



Dr S Selvaraju & his team was awarded with "GB Singh Memorial Award 2018" in recognition of meritorious contribution to the research in Animal Reproduction by ISSAR.

Master degree students Ms Aleena Joy & Ms PR Archana from ACCER, KAU, who have pursued their desertation work at NKIP Lab, ICAR-NIANP were awarded with the prestigious Graduate Research Scholarship to pursue doctorate program at Australia.



resources for high lifetime productivity of dairy cows and consequences on enteric methane release" from 2<sup>nd</sup> to 9<sup>th</sup> November, 2018.

### Trainings

**Fodder Cultivation and Dairy Cattle Feeding to the Field Staff of ILRI**



### Overseas Visits

Dr V Sejian, Sr Scientist was invited to deliver a keynote address on "Adaptation of animals to heat stress" in the International Symposium on the Nutrition of Herbivores (ISNH 2019) held at Clermont Ferrand, France between 2<sup>nd</sup> to 6<sup>th</sup> September, 2018.



ICAR-NIANP, Bengaluru conducted a two day Trainers' training program on "Fodder cultivation and dairy cattle feeding" for the field staff of ILRI on 26<sup>th</sup> & 27<sup>th</sup> October, 2018.

**Training cum Field Visit of Tamil Nadu Farmers**

Twenty dairy farmers from Virudhunagar district of Tamil Nadu along with two officials of Agriculture department visited ICAR-NIANP under ATMA programme on 15<sup>th</sup> November, 2018 for training cum field visit.



## Hindi Programmes

Hindi workshops were organized on noting and drafting in official work on 25<sup>th</sup> September, 2018 and the Simplification of OL implementation and E-implementation on 14<sup>th</sup> December, 2018. The quarterly meetings of the Official Language

## A Technical Workshop on Use of Areca Sheath as Dry Fodder

A technical workshop on “use of areca sheath as dry fodder” was organized by ICAR-NIANP at KVK, Hirehalli on 22<sup>nd</sup> December, 2018 and around 70 farmers from Tumkur milk union attended.



Implement Committee (OLIC) of the institute were held on 29<sup>th</sup> September, 2018 for July-September and 27<sup>th</sup> December, 2018 for October-December.

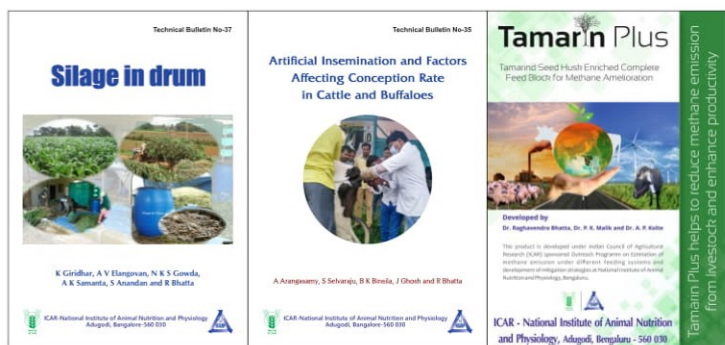


## Swachhta Pakhwada

ICAR-NIANP, Bengaluru observed “Swachhta Pakhwada” from 15<sup>th</sup> September to 2<sup>nd</sup> October, 2018 and from 16<sup>th</sup> to 31<sup>st</sup> December 2018. Institute organized various events such cleaning activities, essay writing on 'Swachh Bharat in my opinion', debate on 'cleanliness is a prerequisite for disease free India, poster competition on 'cleanliness in our daily life' and awareness programmes on 'cleanliness awareness campaign in Institute residential area' during these periods.



## Publications & Product



## Personnel

**Joining:** Ms Vijayalakshmi YC, joined as Technical Assistant (T-3) (Computer Operator) on 6<sup>th</sup> December, 2018.



## Participation in ICAR Sports Meet

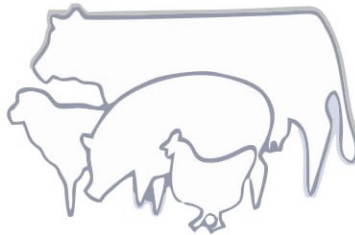
Institute staff participated in the ICAR South Zone Sports Meet at Kakinada organized by ICAR-CTRI, Rajahmundry during 5<sup>th</sup> to 9<sup>th</sup> September, 2018. Fifteen contingents from the institute participated in badminton, table tennis, shot put, discus throw, carrom and kabaddi.





*Come ! And Pledge to Keep India Clean*

*Balanced Nutrition - Enhanced Production*



संतुलित आहार - प्रवृद्ध उत्पादन

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