



ICAR-DPR

Newsletter

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Sardar Patel Outstanding ICAR Institution

Director's Column

Dear Readers,

The small scale rural poultry farming has been recognized as an effective tool in improving livelihoods and nutritional security among the rural, tribal and underdeveloped remote locations of the country. The improved varieties developed by the Directorate for this sector have been well recognized and accepted across the country. It is heartening to share that Dr. Trilochan Mohapatra, Secretary, DARE & DG, ICAR laid foundation stone for the exclusive facility meant for supply of the improved varieties in the name of Animal House at the new campus. I sincerely wish the facility will come up at the earliest and give a fillip to the germplasm supply of this Directorate.



The research leads obtained during the period are noteworthy. The differential expression of PRRs (TLRs, NLRs, RLRs and CLRs) genes as well as some of the immunological genes in peripheral blood mononuclear cells of indigenous and White Leghorn chicken breeds has been elucidated. Con A based sandwich ELISA with non-purified Newcastle disease whole virus antigen with single serum dilution format has been developed and validated. Oreganol, a plant extract showed promising results in overcoming adverse effects of heat stress in broiler chicken.

The Directorate participated in agricultural fairs, exhibitions and kisan melas to propagate and disseminate technologies for different stakeholders. In addition, the Directorate is actively involved in Mera Gaun Mera Gourav program and Swatcha Bharat Mission. I am glad to present this issue of DPR News Letter.

(R.N. Chatterjee)

DG, ICAR LAID FOUNDATION STONE OF ANIMAL HOUSE AT THE NEW CAMPUS



Dr. Trilochan Mohapatra, Secretary (DARE) and Director General (ICAR) laid the foundation stone of 'Animal House' at the new campus of the Directorate at Budvel, Hyderabad on 31st August 2016. Dr. Mohapatra was accompanied by Dr. H. Rahman, Deputy Director General (Animal Science); Dr. J. K. Jena, Deputy Director General (Fisheries Science); Directors of local ICAR institutes, Dr. V. Prabhakar Rao, former Vice Chancellor, SVVU, Tirupati; Dr. A. Padma Raju, former Vice Chancellor,

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ANGRAU, Hyderabad; Dr. R.P. Sharma, former Director, DPR and other distinguished dignitaries.

In his address to the staff, Dr. Mohapatra appreciated the Institute activities and advised to utilize the new facility being created at the new campus to cater to the need of the farmers. Dr. H. Rahman, DDG (Animal Science) appreciated the Institute activities and highlighted the role of the Institute in popularizing the backyard poultry in the country. Other dignitaries also spoke on the occasion. Dr. R.N. Chatterjee, Director conveyed the gratitude to the Vice Chancellors of PVNR Telangana Veterinary University and ANGRAU, Hyderabad for providing land to the Institute.



A glimpse of foundation stone laying ceremony for new campus by Dr. T. Mohapatra, Secretary, DARE & DG, ICAR

RESEARCH HIGHLIGHTS

Pattern Recognition Receptors - gene expression profiling in chicken breeds

Pattern recognition receptors (PRRs) play a critical role in innate immune-competence in chickens. A study was carried out to elucidate the differential constitutive expression of PRRs (TLRs, NLRs, RLRs and CLRs) genes as well as some of the immunological genes in peripheral blood mononuclear cells (PBMCs) of indigenous (Ghagus and Nicobari) and White Leghorn (WLH) chicken breeds. Out of total 14 genes studied, constitutive expression of 10 genes was significantly different among the breeds after normalization with reference genes. Ghagus breed showed significantly higher expression levels of TLR1LB, TLR7, NOD1, NOD5, B-Lec, IFN β , IL1 β and IL8 genes when compared to Nicobari breed. Further, Ghagus showed significantly higher expression of TLR1LB, MDA5, LGP2, B-Lec, IL1 β and IL8 genes as compared to WLH breed. Significantly higher expression of LGP2 and MDA5 genes was

observed in Nicobari than those seen in WLH breed while higher expression of TLR7, NOD1, NOD5 and IFN β genes was observed in WLH as compared to Nicobari breed. No difference was observed in the expression of TLR1LA, TLR3, B-NK and IFN α genes among the breeds. Ghagus breed seems to have better innate immune-competence followed by WLH and Nicobari breeds as evidenced by the better expression profile of PRRs genes.

Santosh Haunshi

Evaluation of dimethylformamide as cryoprotectant for chicken semen

A study was carried out to evaluate the effect of cryoprotectant dimethylformamide (DMF) at 6% and 9% concentrations and two different diluents (Lake and Ravie diluent and TES/NaCl diluent) in cryopreservation of PD1 chicken semen by pellet method. Semen was evaluated pre and post cryopreservation for progressive motility, live and abnormal sperm. Semen

pellets were stored in cryovials for at least seven days before examination and insemination. Thawed semen was inseminated using a dose of 150 million sperm in 0.1ml volume. Insemination was repeated six times at four days interval. Freshly collected semen served as control. Eggs collected post inseminations were incubated and fertility recorded. All the parameters studied were significantly less ($P < 0.05$) in cryopreserved semen. Semen diluted in Lake and Ravie diluent had significantly ($P < 0.05$) higher post thaw live sperm percent and fertility than TES/NaCl diluent. DMF concentration at 6% produced higher ($P < 0.05$) sperm motility than at 9%. The percent fertility in control, 6% LR and 9% LR were 77, 1.19 and 1.38, respectively. There were no fertile eggs from the semen cryopreserved using TES/NaCl diluent. In conclusion, DMF was a poor semen cryoprotectant for preserving PD1 chicken semen by pellet cryopreservation method.

Shanmugam M. and R.K. Mahapatra

Concanavalin A - sandwich - ELISA for detection of antibodies against Newcastle Disease virus in chicken serum

Concanavalin A (Con A), a lectin interacts with carbohydrate moieties of viruses and provides stable and sensitive detection when used as a capture agent. Con A based sandwich ELISA with non-purified Newcastle disease (NDV) whole virus antigen with single serum dilution format has been developed and validated. Microplates were coated with predetermined optimum concentration of ConA (1 mg/ml; 50µg per well) and incubated for 18h at 4°C. After washing, allantoic fluid with NDV LaSota (HA titre, 210) at a constant predetermined dilution (1: 2; 50µl) was coated and incubated for 45 min at 37°C, followed by blocking with 2 % bovine serum albumin for 45 min at 37 °C. The antigen coated plates were used in the detection of antibody titre against NDV in serum samples at single serum dilution of 1:500. Then, wells were added with goat anti-chicken IgG horseradish peroxidase conjugate and incubated for 1h at 37 °C, followed by addition of TMB substrate and the plates were read spectrophotometrically at 650 nm. ELISA antibody titres were determined by standard serial dilution of positive sera and endpoints were calculated by a subtraction method. By using positive negative threshold curve (PNT), intercept and slope of the standard curve were calculated. A total of 271 random chicken serum

samples were analyzed for antibodies against NDV by HI assay, indirect ELISA and compared with the Con A-S- ELISA. The Con A-S-ELISA showed a high coefficient of correlation ($r=0.85$, $n=60$, $P < 0.01$) and an agreement of $\kappa=0.80$ with the commercially available Indirect-ELISA. The relative sensitivity and specificity were 95% and 93% respectively in comparison to HI test. Hence, the Con A-S-ELISA promises to be a simple, easy and cost-effective tool for monitoring serum antibody levels against NDV.

T.R. Kannaki

Oreganol, a plant extract improved broiler performance in summer

Harsh climate variables reduce feed intake, nutrient digestibility and utilization, and increase disease susceptibility besides hampering the anti-oxidant mechanism in chicken. A series of experiments were conducted at the Directorate to minimize adverse effects of heat stress in chicken through dietary modulations. Nutrient modifications, fortification of diets with natural herbs, nutraceuticals and novel ingredients and nutrients were attempted. Results from one of the experiments indicated that oreganol (plant extract from *Oregano vulgaris*) is rich in essential oils (thymol, carvicrol) and acts as a potent anti-oxidant. Supplementation of oreganol at 200 mg/kg diet significantly (about 4.5%) improved the body weight gain and reduced serum lipid peroxidation in broilers and Vanaraja chicken during 1-42 d of age, indicating that this compound can be used as performance enhancer and also as an anti-oxidant in chicken diet.

S.V. Rama Rao

EVENTS ORGANISED

Independence Day celebrated

The Independence Day was celebrated on 15th August 2016. The Director hoisted the National flag and addressed the gathering. On the occasion, he narrated the contributions of the freedom fighters for the Independence. He also highlighted the research and development efforts



Director addressing the staff after hosting National Flag

of DPR and impacts of its technologies on the livelihood of poor and marginal farmers in the country.

Hindi Implementation Activities

The Directorate conducted two quarterly meetings of Official Language Implementation Committee on 8th September 2016 and 9th December 2016 in which different issues related to effective implementation of Hindi Language in office were discussed. The Directorate also conducted two Hindi workshops on 17th September 2016 and 16th December 2016 for upgrading the Hindi skills of staff in their day to day official work.

The Directorate also celebrated Hindi Fortnight celebrations during 14-29 September 2016 and Hindi Day on 14th September 2016. During these celebrations, different literary competitions were conducted for the staff. Dr. R.P. Sharma, former Director, DPR, Hyderabad graced the occasion as the Chief Guest and highlighted the importance of Hindi language and its history. All the winners of different competitions were awarded with prizes and certificates on this occasion. Two Hindi publications, Poultry Science Dictionary: English to Hindi and Srinidhi brochure (Hindi) were also released.



Dr. R.P. Sharma releasing DPR publication on Hindi Diwas

The Directorate also received Town Official Language Implementation Committee Award (3rd prize) for the better Hindi Implementation in the institute, which was presented by the DG, NIRDPR, Hyderabad on 15th November, 2016.



Director and Hindi staff receiving the TOLIC Award

Swachh Bharat Activities

Under the aegis of Swachh Bharat Abhiyan, the Directorate conducted Swachhata Pakhwada from 16 - 30 October 2016. During this period, the staff members actively participated in the events, which included taking Swachhta Pledge, quiz competition, cleaning activities inside the premises of the institute and in adopted village, forming a human chain, besides spreading awareness in the adopted village and



Directorate staff cleaning institute premises and forming human chain

school children on the benefits of being clean and keeping the surroundings clean. A waste management pit for proper disposal of bio-degradable wastes was created in the institute premises. Further, efforts were made for making the institute activities transparent. To achieve this, necessary steps have been taken to do the work online. In relation to improving the work efficiency and cleaning at Administrative Block, steps have been initiated for weeding out of very old files so that rooms are clean and easy to locate the files for further processing and efficiently getting the things done. With regard to use of clean energy, the institute made significant progress by installing Solar Panels for tapping solar energy, which is being used for lighting street lights in the campus. Further, all the street lights have been fitted with LED bulbs. Besides this, regularly once in a week cleaning activities inside and outside the campus were conducted where the staff members actively participated.

TRANSFER OF TECHNOLOGY

Regional Farmer Fair

Regional Farmer Fair “Kshetriya Krishi Kumbh – 2016” was organised during 28-30 November 2016 by ICAR-IIFSR at GIC Campus, Muzaffarnagar. Honourable Minister Dr. Sanjeev Balyan inaugurated the event. More than 100 stalls of ICAR Institutes, private firms and vendors were erected in the exhibition. Technical sessions were also organised for the benefit of farmers by the organisers. More than 400 farmers visited the DPR stall, where information regarding different backyard poultry birds developed by the Directorate was displayed. Printed literature was provided to the farmers and the queries raised by the



farmers regarding poultry husbandry were answered. A majority of the queries were about hands on training regarding backyard poultry production and availability of germplasm developed by the Directorate in Western Uttar Pradesh. Dr. Gaya Prasad, Vice Chancellor, SVPUAT, Meerut and other dignitaries also visited the stall and appreciated the efforts being made by the Directorate for uplifting the economy and nutritional status of the resource poor farmers by way of backyard poultry production.

MEETINGS/WORKSHOPS/TRAININGS CONDUCTED

Institute Research Committee Meeting

Half yearly IRC meeting for the year 2016-17 was held at the Directorate on 17th December 2016. The meeting was chaired by Dr. R. N. Chatterjee, Director and Dr. T. K. Bhattacharya was the Member Secretary. Principal investigators presented the achievements of their respective projects. All the projects were deliberated at length. Chairman, IRC suggested measures for overcoming the difficulties in achieving desired targets.



Half-yearly IRC Meeting

Training Programme for Agripreneurs

ICAR-DPR in collaboration with National Institute of Agricultural Extension Management (MANAGE), Hyderabad organized two Refresher Training Programmes on “Modern poultry management for established Agripreneurs” during 12th to 16th July and 16-20 August 2016.

The program was sponsored by MANAGE, Hyderabad under Agri-Clinics and Agri-Business Centres (AC&ABC) scheme. A total of 38 agripreneurs from different states attended the training programmes. The participants were exposed to various aspects of poultry production such as breeding, nutrition, management and health care practices. The training module had practical demonstrations and hands on experience on farm and hatchery operations. A field visit to a commercial poultry unit of 4 lakh layer capacity was arranged for the benefit of the participants. The participants expressed their satisfaction on the training program and methodology adopted during the training programme. The Director expressed the need for more capacity building programs for agripreneurs as part of skill development programs.



Sponsored Training Programme

A training programme on “Poultry Health management and disease control” was organised during 26th to 28th September 2016, which was attended by 10 participants. The programme was sponsored by M/s Intervet India Pvt Ltd.



Model Training Course

A model training course on “Advances in Poultry Health and Disease management” was organized from 15th to 22nd November 2016. The course was sponsored by the Directorate of Extension, Govt. of India and attended by 21 senior veterinary officers from different states.



Technical Seminars

A “Technical Seminar” and a “Scientists - Farmers Interface” were organized in collaboration with AP (Hyd) Chapter of IPSA on 26th October 2016 and 27th December 2016, respectively wherein veterinarians, industry personnel and poultry farmers, besides the scientists and technical staff of the Directorate actively participated. Invited lectures by eminent poultry professionals were delivered on current issues of poultry industry including disease management, breeder management, layer management, EC housing etc.



Scientists-Farmers Interface in progress

PARTICIPATION IN SYMPOSIA/CONFERENCES/SEMINARS/WORKSHOPS

Sl. No.	Symposia / Conferences / Seminars / Meetings / Workshops	Scientist(s)/Officer(s)	Duration	Venue
1	Poultry Farmer Education Program	Dr. S. V. Rama Rao, Pr. Scientist	6 July 2016	Raipur, Chattisgarh
2	Poultry Skill Advisory Board meeting	Dr. U. Rajkumar, Pr. Scientist	22 July 2016	ASCI, New Delhi
3	Networks: Basics and Management	Shri V.V.Rao, ACTO	25-30 July 2016	IASRI, New Delhi
4	XXV World's Poultry Congress (WPC2016) organised by World's Poultry Science Association (China branch)	Dr. M. V. L. N. Raju, Pr. Scientist	5-9 September 2016	Beijing, China
5	In-Silico drug discovery and designing: Insights of protein-ligand interactions	Dr. D. Suchitra Sena, Pr. Scientist	01 October 2016	Select Biosciences India Pvt Ltd., Bangalore
6	National Training program on Good Laboratory Practices	Smt. Minakshi Dange, ACTO	17 – 22 October 2016	NDRI, Regional station Bangalore
7	III AAHP Convention and National Symposium on Poultry Health and Welfare	Dr. R. N. Chatterjee, Director Dr. M. V. L. N. Raju, Pr. Scientist Dr. M. R. Reddy, Pr. Scientist Dr. U. Rajkumar, Pr. Scientist Dr. Santosh Haunshi, Sr. Scientist Dr. T. R. Kannaki, Scientist Dr. K. S. Rajaravindra, Scientist Dr. S. K. Bhanja, CTO	20-22 October 2016	ICAR-CCARI, Goa
8	Technical seminar conducted jointly by IPSA A P (Hyd) Chapter and DPR	Director, Scientific and technical staff	26 October 2016	ICAR-DPR, Hyderabad
9	National workshop on Doubling the farmers income	Dr. U. Rajkumar, Pr. Scientist	2-3 November 2016	MANAGE, Hyderabad
10	XXXIII Annual Conference of Indian Poultry Science Association & National Symposium	Dr. R. N. Chatterjee, Director Dr. M.Niranjan, Pr. Scientist Dr. Shanmugam M, Scientist Dr. T.R. Kannaki, Scientist Dr. K. S. Rajaravindra, Scientist Dr. S. K. Bhanja, CTO	3-5 November 2016	College of Veterinary Science, Assam Agricultural University, Guwahati, Assam
11	III International Phytate Summit, jointly organized by University of Illinois, AB Vista and University of Arkansas	Dr. S. V. Rama Rao, Pr. Scientist	7 - 10 November 2016	Miami, Florida, USA
12	X Biennial Animal Nutrition Association Conference	Dr. M.V.L.N. Raju, Pr. Scientist Dr. S.K. Verma, Sr. Scientist Dr. B. Prakash, Sr. Scientist	9-11 November 2016	College of Veterinary Science, SVVU, Tirupati, AP
13	Training cum Workshop on strengthening Extension policy Interface	Dr.U.Rajkumar, Pr. Scientist	9-11 November 2016	MANAGE, Hyderabad
14	Management development program on "Leadership Development" (a pre RMP program)	Dr. N. Anand Laxmi, Pr. Scientist Dr. R.K. Mahapatra, Pr. Scientist	19-31 December 2016	NAARM, Hyderabad
15	Scientists-Farmers Interface conducted jointly by IPSA A P (Hyd) Chapter and DPR	Director, Scientific and technical staff	27 December 2016	ICAR-DPR, Hyderabad

DISTINGUISHED VISITORS

1. Dr. T. Mohapatra, Secretary (DARE) and Director General (ICAR), New Delhi
2. Smt. V. Usha Rani, Director General, MANAGE, Hyderabad
3. Dr. H. Rahman, Dy. Director General (AS), ICAR, New Delhi
4. Dr. J.K. Jena, Dy. Director General (Fisheries), ICAR, New Delhi
5. Dr. B.S. Prakash, ADG (AN&P), ICAR, New Delhi
6. Dr. V. Praveen Rao, Vice Chancellor, PJTSAU, Hyderabad
7. Dr. D. Rama Rao, Director, NAARM, Hyderabad
8. Dr. V.V. Kulkarni, Director, NRCM, Hyderabad
9. Dr. B. Sarath Babu, Officer I/c, NBPGR Station, Hyderabad



Dr. T. Mohapatra and other dignitaries at new campus

10. Dr. V. Ravindra Babu, Director, IIRR, Hyderabad
11. Dr. A. Vishnu Vardhan Reddy, Director, IIOR, Hyderabad
12. Dr. Vilas A. Tonapi, Director, IIMR, Hyderabad
13. Dr. R.N. Srinivas Gowda, Former Vice Chancellor, KVAFSU, Bidar
14. Dr. A. Padma Raju, Former Vice Chancellor, ANGRAU, Hyderabad
15. Dr. R.P. Sharma, Former Director, DPR, Hyderabad
16. Dr. P. Sudhakara Reddy, Registrar, SVVU, Tirupati

AWARDS/RECOGNITIONS

Dr. T.R. Kannaki, Scientist received the Best Oral presentation award in the AAHP 2016 Conference held at Goa during 20-22 October 2016 and the Second Best Oral presentation Award in the IPSACON 2016 held at AAU, Guwahati during 3-5 November 2016.



Dr. T.R. Kannaki receiving the award in AAHP 2016, Goa

Edited by

Dr. M. Shanmugam
Dr. M.V.L.N. Raju
Dr. U. Rajkumar
Dr. S.P. Yadav

To



Published by Director

ICAR - Directorate of Poultry Research

Rajendranagar, Hyderabad - 500 030, Telangana, India
Ph.: +91 (40) 2401 5651 / 7000 / 5652 / 8687 Fax: +91 (40) 2401 7002
Email: pdpoult@nic.in Website: www.pdonpoultry.org

