



ICAR-IASRI



NEWS

Volume 23

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July-September, 2018

- Research Activities
- Awards and Recognition
- Human Resource Development
- Panorama of Activities
- Publications
- Lectures Delivered
- Participation
- Consultancy/Advisory Services
- Personnel

From Director's desk.....

This Newsletter highlights salient features on training programs conducted, workshops organized and other significant activities performed at the Institute during the period under report.

R-package “corrDNA” (<https://cran.r-project.org/web/packages/corrDNA/index.html>) has been developed for finding associations among different positions in a position-wise aligned sequence dataset. The approach adopted for finding associations among positions is based on the latent multivariate normal distribution.



Sampling methodology for estimation of quantitative harvest and post-harvest losses separately for horticultural crops (fruits and vegetables) and for has been developed under FAO funded project. Under this study, separate suitable sampling methodologies for estimation of quantitative harvest and post-harvest losses of fruits and vegetables have been developed which will provide reliable estimates of quantitative harvest and post-harvest losses of fruits and vegetables at different stages/ channels of supply chain i.e. from production to consumption at agro-climatic zone level and national level. A suitable sampling design has been proposed for selection of respondents in order to collect the data for assessment of harvest and post-harvest losses. Estimation procedure has been developed as per the proposed sampling design for different channels/ operations. Separate sampling design, sample size and estimation procedure have been proposed for “on-farm” and “off-farm” assessment of losses. The developed methodology will provide estimates of percentage loss along with percentage standard error of the estimates at agro-climatic zone level and national level. The developed methodology will be helpful for FAO in achieving Sustainable Development Goals (SDG) 12.3 which seeks to halve food waste at the retail and consumer levels and decreasing post-harvest losses as an internationally agreed methodology is not yet developed and data are largely unavailable.

An appropriate sampling methodology for estimation of quantitative harvest and post-harvest losses have been developed. Three training programmes were organized at the Institute in this quarter. During the period under report, the Institute received two copyrights on Software for Small Area Estimation and Vortal for Training Program Management under Capacity Building Program- CBP Vortal. Two scientists visited Zambia for imparting training in a training programme funded by FAO.

Scientists of the Institute have provided Consultancy/Advisory services and participated in different Conference/ Symposia/ Workshop etc. in various capacities and also delivered invited lectures. It is hoped that the contents of the document would be informative and useful. Any suggestion for improving the contents of the newsletter further would be highly appreciated.

(Lal Mohan Bhar)

RECOGNITIONS

1. Hukum Chandra ACTED Expert Member Core Group, National Testing Agency, Department of Higher Education, Ministry of Human Resource Development, Government of India, 2018.
2. Hukum Chandra ACTED Member Secretary, Quinquennial Review Team (QRT) of ICAR-IASRI, New Delhi for the Period 2011-16.
3. RamasubramanianV., acted as Member (Outside Expert) in Selection Committee for recruiting one SRF in project entitled "Satellite based value added met product for early warning to farmers" being conducted at ICAR-NCIPM, New Delhi on 10 August, 2018.
4. Anil Rai acted as member of the Institute Management Committee of ICAR-INDIAN INSTITUTE OF AGRICULTURAL BIOTECHNOLOGY Ranchi.
5. K.K. Chaturvedi Chaired the session "Data Warehousing, Data Mining and Analytics" in 8th International Conference on. Reliability, Infocom Technologies and. Optimization (ICRITO 2018) on 31 August 2018 at Amity University, Noida.
6. K.K. Chaturvedi Member, Technical Program Committee, 7th International Conference on. Reliability, Infocom Technologies and. Optimization (ICRITO 2017). (Trends and Future directions) during 29-31 August,2018.
7. Alka Arora received appreciation letter from Joint Secretary (Policy), Ministry of Agriculture & Farmers Welfare for developing Dashboard in KVK Portal for real time progress monitoring of Krishi Kalyan Abhiyan activities.
8. Hukum Chandra, acted as Expert Member, Maas Institute of Development Studies and Department of Economics and Statistics, Govt. of Tamil Nadu, Chennai
9. Hukum Chandra was Invited Speaker at Indian Institute of Technology, Delhi, New Delhi. Delivered guest lecture on "Spatial Non-Stationary Generalized Linear Mixed Model for Counts" on 26 September, 2018.
10. Hukum Chandra, Member, Group of Experts for deliberating the national factsheet prepared by pooling data from DLHS-4 and AHS, Ministry of Health and Family Welfare, Govt of India, New Delhi.
11. As Chairman of selection committee, Hukum Chandra conducted interview for one position of Research Associate in the National Fellow's project "Robust and Efficient Small Area Estimation Methods for Agricultural and Socio-economic Surveys and Their Application in Indo-Gangetic Plain", at ICAR-IASRI, New Delhi on 24 September, 2018.

VISITS ABROAD

- Tauqueer Ahmad and Anil Rai visited and provided training at Zambia during 23-29 September, 2018 for FAO funded "Study on field testing of development guideline on estimating post harvest losses of horticultural crop, livestock products and fish and fish product" for field testing of methodology of Livestock Products (Meat and Milk).
- Tauqueer Ahmad visited Mexico for a FAO funded "Study on field testing of development guideline on estimating post harvest losses of horticultural crop, livestock products and fish

and fish product” for field testing of methodology of horticultural crops (Fruits and Vegetables).

NEW PROJECTS/ SCHEMES/ PROGRAMME/ CENSUS/ SAMPLE SURVEYS/ EVALUATION STUDIES/ INITIATED/ COMPLETED

- Ms. Anuja A. R. presented new project proposal entitled “Crop Diversification: Pattern, Determinants and its Impact on Nutritional Security” in open seminar on 18 August, 2018 as PI with Mr. Rajesh T, Harish Kumar H. V. and Mrinmoy Roy as Co-PIs.
- Ms. Anuja A. R. submitted the Research Project Proposal-I entitled “Crop Diversification: Pattern, Determinants and its Impact on Nutritional Security” on 14 August, 2018
- HarishKumar H V presented new project proposal titled “Modelling Non-Performing Assets in Indian Agriculture” at institute level on 8 august, 2018.

HUMAN RESOURCE DEVELOPMENT

Training Programmes/Workshop Organized

S.N.	TITLE	VENUE	PERIOD	NUMBER OF PARTICIPANTS
1.	Bioinformatics tools and techniques for genomic data analysis <i>Co-ordinator</i> U. B. Aangadi	ICAR-IASRI, New Delhi	11.09.2018 to 15.09.2018	--
2.	Time Series Analysis, Forecasting techniques and R software <i>Co-ordinator</i> Achal Lama <i>Co Co-ordinators</i> Mrinmoy Ray, HarishKumar HV	ICAR-IASRI, New Delhi	10.09.2018 to 29.09.2018	--
3.	CAFT Training Programme on Recent Trends in Data Analytics and Knowledge Management <i>Co-ordinators</i> Anshu Bharadwaj Soumen Pal	ICAR-IASRI, New Delhi	06.09.2018 to 26.09.2018	--

CONFERENCES/ WORKSHOPS/ SEMINARS/ SYMPOSIA/MEETINGS ETC. ORGANIZED

1. Organized jointly a three day workshop in association with IGKV, Raipur on “Next Generation Sequence (NGS) Data Analysis and Application – A Practical Perspective” at Department of Plant Molecular Biology and Biotechnology, IGKV, Raipur during 07-09 August 2018. (Sanjeev Kumar, DC Mishra and Neeraj Budhlakoti)
2. Organized Planning Meeting of Quinquennial Review Team (QRT) meeting for the period of 2011-12 to 2015-16 under the chairmanship of N.S. Rathore, DDG (Agricultural

- Education) at ICAR-IASRI, New Delhi on 17 July, 2018. (Hukum Chandra, As Member-Secretary)
3. Organized meetings of the Quinquennial Review Team (QRT) of our institute for the period of 2011-12 to 2015-16 at ICAR-IASRI, New Delhi during 20-21 August, 2018. (Hukum Chandra, as Member- Secretary)
 4. Organized National Workshop on “Artificial Intelligence in Agriculture: Status and Prospects” (30-31 July, 2018) Organized by ICAR-IASRI, New Delhi jointly with ICAR-NAARM, Hyabad and ICAR-IIWM, Bhubaneswar.
 5. Organized Quinquennial Review Team (QRT) meeting for the period of 2011-12 to 2015-16 under the chairmanship of GC Manna, Ex-DG, CSO Ministry of Statistics & Programme Implementation, Govt of India at ICAR-IASRI, New Delhi during 17-18 July, 2018. (Hukum Chandra, As Member-Secretary)
 6. Organized one day Hindi Workshop on “कृषि में संगणक का अनुप्रयोग” dated 25th July, 2018. (Pal Singh and Sudeep Marwaha)

PUBLICATIONS

Research Papers

1. Chandra, H, Aditya, K and Kumar, S (2018). Small Area Estimation under a Log Transformed Area Level Model. *Journal of Statistical Theory and Practice*. 12(3): 497-505.
2. Singh, D, Singh, CK, Kumari, S, Tomar, RS, Singh, KS, Singh, R, Singh, R, Sarkar, SK, Pal, M (2018) Evaluation of cultivated and wild genotypes of Lens species under alkalinity stress and their molecular collocation using microsatellite markers. *PLoS ONE* 13(8):e0199933. <https://doi.org/10.1371/journal.pone.0199933>
3. Kumari, R, Singh, K, Jha, SK, Singh, R Sarkar, SK and Bhatia, N (2018) Nutritional composition and popping characteristics of some selected varieties of pearl millet (*Pennisetum glaucum*). *Ind. Jour. Ag. Sci.*, 88 (8): 1222–6.
4. Kumar, S, Sangeetha, V, Singh, P, Burman, RR and Bhowmik, A (2018). Constraints Experienced by Agricultural Scientists and Extension Personnel in Rice Knowledge Management and its Delivery. *Journal of Krishi Vigyan*, 6(2), 22-26.
5. Sharma, D, Tiwari, A, Sood, S, Jamra, G, Singh, NK, Meher, PK and Kumar, A (2018). Genome wide association mapping of agro-morphological traits among a diverse collection of finger millet (*Eleusine coracana* L.) genotypes using SNP markers. *PLoS ONE*, 13(8): e0199444.
6. Kumar, DK, Ramasubramanian, V, Nisar, U, Kumar, RS and Vinay, A (2018). Parity in socio-economic status of fishers and primary producers of coastal India, *Indian Journal of Economics and Development*, 6(8), August, ISSN (online): 2320-9836.

7. Mukherjee, A, Singh, P, Ray, M, Satyapriya and Burman, RB (2018). Enhancing Farmers Income through Farmers Producers Companies in India: Status and Roadmap. *Indian Journal of Agricultural Sciences*. 88 (8): 1151-61.
8. Alam, W, Sinha, K, Kumar, RR, Ray, M, Rathod, S, Singh, KN and Arya, P (2018). Hybrid linear time series approach for long term forecasting of crop yield. *Indian Journal of Agricultural Sciences*. 88 (8), 1275-79.
9. Thakre, M, Verma, MK, Singh, K, Awasthi, OP, Sharma, RR and Ray, M (2018). Proposal and validation of colour index for Kinnow mandarin (*Citrus nobilis* × *Citrus deliciosa*). *Indian Journal of Agricultural Sciences*. 88 (8): 1179-83.
10. Varshney, R, Budhlakoti, N and Ballal, CR (2018). Functional response of *Geocoris ochropterus* Fieber (Hemiptera: Geocoridae) to different egg densities of *Helicoverpa armigera* (Hübner) (Lepidoptera: Noctuidae). *Phytoparasitica*. DOI: <https://doi.org/10.1007/s12600-018-0687-1>.
11. Vennila, S, Paul, RK, Bhat, MN, Yadav, SK, Vemana, K, Chandrayudu, E, Nisar, S, Kumar, M, Tomar, A, Rao, MS and Prabhakar, M (2018b). Abundance, infestation and disease transmission by thrips on groundnut as influenced by climatic variability at Kadiri, Andhra Pradesh. *Journal of Agrometeorology*, **20** (3): 227-233.
12. Ghosh, H and Prajneshu (2018). Gompertz Stochastic Differential Equation Growth Model with Exogenous Variables and Time-Dependent Diffusion. *Journal of the Indian Society of Agricultural Statistics*, **72**(2): 97-104.
13. Yashavanth, BS, Singh, KN, Paul, AK and Kumar, A (2018). An Empirical Evaluation of Parameter Shrinkage Techniques for Vector Autoregressive Models. *Journal of the Indian Society of Agricultural Statistics*, **72**(2),:113-120.
14. Kumar, P, Bhar, LM, Paul, AK, Das, S and Roy, HS (2018). Development of Composite Stability Measure using Multi Criteria Decisions Making (MCDM) Techniques. *Journal of the Indian Society of Agricultural Statistics*, **72**(2), 121-128.
15. Mishra DC, Kumar, S, Lal, SB, Saha, A, Chaturvedi, KK, Budhlakoti, N and Rai, A (2018). TAGPT: A Web Server for Prediction of Trait Associated Genes using Gene Expression Data. *Annals of Genetics and Genetic Disorders*. 1(1): 1003.
16. Aswal, K, Jaggi, S, Varghese, E and Varghese, C (2018). Neighbour balanced designs for diallel cross experiments. *Journal of the Indian Society of Agricultural Statistics*, **72**(2), 89-96.
17. Pandirwar, AP, Kumar, A, Mani, I, Gaikwad, BB, Sawant, CP and Bhowmik, A (2018). Soil Bin Studies on Plug and Finger-type Onion Seedling Transplanting Mechanisms. *Journal of Agricultural Engineering*. 55 (1): 1-14.
18. Rajaiah, P, Mani, I, Kumar, A, Lande, SD, Parray, RA, Singh, AK and Varghese, C (2018). Comparative study of mechanical and electronic paddy planter for direct seeding. *International Journal of Current Microbiology and Applied Sciences*, **7**(9): 1284-1294.

19. Kumar, P, Kumar, A, Panwar, S, Dash, S, Sinha, K and Ray, M (2018). Role of Big Data in Agriculture-A Statistical Prospective, *Annals of Agricultural Research*, 39 (2): 210-215.
20. Kumar, A, Singh, MP, Dash, S, Dash, Sachikanta, and Panwar, S(2018). An Application of Weibull Process in Reliability Theory, *Journal of the Indian Society of Agricultural Statistics*, 72(2): 157–163.
21. Upadhyaya, L, Burman, RR, Sangeetha, V, Lenin, V, Sharma, JP and Dash, S (2018). Factors affecting digital divide in ICT-led agricultural information delivery: A comparative analysis, *Journal of Community Mobilization and Sustainable Development*, 13(2): 296-300,
22. Chakraborty, D, Sehgal, VK, Dhakar, R, Varghese, E, Das, DK and Ray, M (2018). Changes in daily maximum temperature extremes across India over 1951-2014 and their relation with cereal crop productivity. *Stochastic Environmental Research and Risk Assessment*. (Online published) <https://link.springer.com/article/10.1007/s00477-018-1604-3>
23. Das, B, Sahoo, RN, Biswas, A, Pargal, S, Krishna, G, Verma, R, Chinnusamy, V, Sehgal, VK and Gupta, VK. (2018). Discrimination of rice genotypes using field spectroradiometry. Geocarto International, DOI: 10.1080/10106049.2018.1506507
24. Qureshi, NW, Krishnan, M, Wani, SA, Ramasubramanian, V, Sivaramane, N and Sundaramoorthy, N (2018). Does information change attitudes? The case of restoration of indigenous fishery in Dal Lake, Kashmir, India, *Indian Journal of Fisheries*, 65(2): 113-118. DOI: 10.21077/ijf.2018.65.2.70964-14.
25. Mitra, D, Paul, RK, Paul, AK and Bhar, LM (2018). Forecasting Time Series Allowing for Long Memory and Structural Break. *Journal of the Indian Society of Agricultural Statistics*, 72(1), 49-60.
26. Das, K, Pooniya, V, Choudhary, AK, Swarnalakshmi, K, Bana, RS, Parihar, CM, and Sarkar, SK (2018). Effect of integrated crop management modules on crop productivity and soil physico–chemical and biological properties under direct-seeded basmati rice (*Orzya sativa*). *Ind. Jour. Ag. Sci.*, 88 (7): 1142–6.
27. Dalal, M, Sahu, S, Tiwari, S, Rao, AR and Gaikwad, K (2018). Transcriptome analysis reveals interplay between hormones, ROS metabolism and cell wall biosynthesis for drought-induced root growth in wheat. *Plant Physiology and Biochemistry*, 130, 482-492, doi: 10.1016/j.plaphy.2018.07.035
28. Prajapat, RK, Singh, P, Tiwari, P, Mainkar, P, Sahu, S, Rao, AR and Kansal, R (2018). In Silico Analysis and Molecular Docking Studies of *Cajanus cajan* Lectin against Aminopeptidase-N Receptor from *Acyrtosiphon pisum*. *International Journal of Current Microbiology and Applied Sciences*, 7(06), 959-967. doi: 10.20546/ijcmas.2018.706.114.
29. Purru, S, Sahu, S, Rai, ., Rao, AR and Bhat, KV (2018). GinMicrosatDb: a genome-wide microsatellite markers database for sesame (*Sesamum indicum* L.). *Physiology and Molecular Biology of Plants*. doi: 10.1007/s12298-018-0558-8.

30. Chandra, H (2018). Localised Estimates of Incidence of Indebtedness in Rural Households by Combining Survey and Census Data- An Application of Small Area Estimation Technique. *Agricultural Economics Research Review*. 31(1) : 29-44.
31. Das, S, Chandra, H and Chambers, R (2018). Robust Mean Squared Error Estimation for the ELL based Poverty Estimates under Heteroskedasticity - An Application to Poverty Estimation in Bangladesh. *Statistics and Applications*. 16 (1) : 375–397.

Popular Articles

1. अचल लामा, के. एन. सिंह, विशाल गुरुंग, रविन्द्र सिंह शेखावत और एच. एस. राय (2018) "समय श्रृंखला के मोडल का अवलोकन" by in *Bhartiya Krishi Anusandhan Patrika*, Volume 33, 58, 61.
2. अखिलेश झा, सिनी वर्गीस, सीमा जग्गी, मोहम्मद हारुन एवं देवेन्द्र कुमार (2018)। आदेशात्मक सहवासी प्रभावो हेतु समाधेय खण्ड अभिकल्पनाएं। *भारतीय कृषि अनुसंधान पत्रिका*, 33(2), 113–115 ।
3. सुमित सौरव सिनी वर्गीस, एल्दो वर्गीस, सीमा जग्गी एवं देवेन्द्र कुमार (2017)। परस्पर आयतीय लैटिन वर्ग के उपयोग से समाधेय बहु सत्रीय-अभिकल्पनाएं संवेदी। *भारतीय कृषि अनुसंधान पत्रिका*, 32(4), 313–316 ।
4. अनु शर्मा, ज्योतिका भाटी, शशि भूषण लाल, कृष्ण कुमार चतुर्वेदी, मोहम्मद समीर फारूकी और अनिल राय (2018), संगणनात्मक विधियों के द्वारा अरहर से माइक्रो-आर.एन.ए. की पहचान एवं उसका विवरण, *भारतीय कृषि अनुसंधान पत्रिका*, 33(1), 51–57 ।
5. मुकेश कुमार, सुदीप मारवाहा अलका अरोड़ा, अंशु भारद्वाज, ए. के. चौबे एवं शशि दहिया, भारतीय कृषि अनुसंधान परिषद (आईसीएआर) में एंटरप्राइज रिसोर्स प्लानिंग सिस्टम (आईसीएआर-ईआरपी) का कार्यान्वयन, सांख्यिकी-विमर्श 2017–18 अंक-13 पृष्ठ संख्या 116–123
6. एस. बी. लाल, अनु शर्मा, के. के. चतुर्वेदी, एम. एस. फारूकी, द्विजेश चन्द्र मिश्र, संजीव कुमार और अनिल राय, इंटरनेट ऑफ थिंग्स (आई. ओ. टी.) और कृषि एवं अवलोकन, सांख्यिकी विमर्श, भा. कृ. अनु. प.-भारतीय सांख्यिकी अनुसंधान संस्थान, नई दिल्ली
7. एस. बी. लाल, अनु शर्मा, के. के. चतुर्वेदी, एम. एस. फारूकी, द्विजेश चन्द्र मिश्र, संजीव कुमार और अनिल राय, इंटरनेट ऑफ थिंग्स (आई. ओ. टी.) और कृषि एवं अवलोकन, सांख्यिकी विमर्श, भा. कृ. अनु. प.-भारतीय सांख्यिकी अनुसंधान संस्थान, नई दिल्ली
8. Ray, M, Tomar, RS, Ramasubramanian, V, Singh, KN (2018). Forecasting Sugarcane Yield of India using ARIMA-ANN Hybrid Model. *Bhartiya Krishi Anusandhan Patrika*, 33(2): 120-127.

Reference Manual /Manual/ E-manual/Pamphlet

- Published reference manual entitiled "Next Generation Sequencing (NGS) Data Analysis: A Practical Perspective" for training programme entitiled Next Generation Sequencing

(NGS) Data Analysis: A Practical Perspective organized at IGKV, Raipur during 7-9, August, 2018.

Project Reports

- Arpan Bhowmik, Seema Jaggi, Eldho Varghese and Sunil Kumar Yadav (2018). Some investigations on Trend Resistant Row-Column Designs. IASRI Project Report, IASRI/PR-04/2018.

Book Chapters

- Anu Sharma, S.B. Lal, Mohammad Samir Farooqi and K.K.Chaturvedi. Exploration of Metagenomics Tools for Analysis of Forest Soil Microbial Diversity and its Annotation in book entitled Advances in Statistical Methods and Applications in Forestry and Environmental Sciences for possible publication.
- S.B. Lal, Anu Sharma, K. K. Chaturvedi, M. S. Farooqi and Anil Rai. Internet of Things (IoT) in Forestry and Environmental sciences in book entitled Advances in Statistical Methods and Applications in Forestry and Environmental Sciences for possible publication.

Agricultural Research Data Book

- Ahmad,T., Sahoo, P.M., Biswas, A., Singh, D., and Basak, P. (2018). Agricultural Research Data Book 2018. ICAR-IASRI, New Delhi Publication.

LECTURES DELIVERED

1. Cini Varghese delivered invited lectures on (i) crossover designs in animal sciences and (ii) Analysis of repeated measures data in a ICAR funded Summer School on “Applied Aspects of Statistical Modeling and Inferences in Veterinary and Animal Sciences” organized by the Department of Animal Genetics and Breeding, College of Veterinary Science, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana during 21 Aug-10 Sept, 2018.
2. K.K.Chaturvedi delivered an invited lecture “Application of bioinformatics in agricultural food processing” on 13 August 2018 in CAFT program “Soft Computing Tools for Applications in Food and Agricultural Processing” at ICAR-CIAE Bhopal during 01-21 August, 2018.
3. K.K.Chaturvedi delivered a lecture Democratizing High Performance Computing - ATCx 2018 in Le Meridian Delhi on 01 Aug 2018.
4. S .B. Lal delivered lecture on “Applications of ANN in food and agricultural processing” on 10 August, 2018 in CAFT training programme on “Soft Computing Tools for Applications in Food and Agricultural Processing” organized at ICAR-CIAE, Bhopal during 01-21 August, 2018.
5. Neeraj Bhudlakoti (as Course Co-cordinator) delivered lectures on the topics Genome Wide Association Study and conducted practical session on Introduction to BLAST, Genome Assembly and Annotation and GWAS in Training Programme entitled "Next

Generation Sequencing (NGS) Data Analysis: A Practical Perspective" during 7-9 August, 2018 at IGKV, Raipur.

6. D.C.Mishra (as Course Co-coordinator.) delivered lectures with practicals on the topics viz BLAST and Multiple Sequence Alignment, NGS data and its preprocessing, Genome Assembly and RNAseq Data Analysis in Training Programme entitled "Next Generation Sequencing (NGS) Data Analysis: A Practical Perspective" during 07-09 August, 2018 at IGKV, Raipur.
7. D.C.Mishra delivered an invited lecture on the topic "Overview of Next Generation Sequencing Data and Its Application in Agriculture" in training programme entitled "Advancement of physiological strategies for Crop Improvement against abiotic stresses" on 27, August, 2018 at ICAR-CSSRI, Karnal.
8. Sanjeev Kumar (as Course-Cordinator) conducted the following lectures and practical session in the workshop "Next Generation Sequence (NGS) Data Analysis and Application-A Practical Perspective" during 07-09, August, 2018 at IGKV, Raipur. i) Introduction to Bioinformatics and its application in Agriculture (Lecture). ii) Basics of Sequence Analysis (Lecture) iii) NGS transcriptome assembly and analysis (Lecture and Practical). iv) Introduction to Genome Annotation (Lecture and Practical)
9. P.K. Meher delivered one day lecture on "R-software for Bioinformatics" in a workshop cum hands-on-training on "Recent Trends in Bioinformatics and its application in Crop Improvement", which was organized by the Department of Molecular Biology, Biotechnology and Bioinformatics, CCS Haryana Agricultural University, Hisar, during 17-21 July, 2018.
10. Ramasubramanian V. delivered a lecture (along with practical session demonstration) on "Regression Analysis and Diagnostics" in a CAFT training programme on "Emerging Issues in Markets, Institutions and Resource use planning for Sustainable Agriculture" held during 12 July, 2018 to 01 August, 2018 at Division of Agricultural Economics, ICAR-IARI, New Delhi on 18 July, 2018.
11. Anil Kumar delivered invited lecture on 19 July, 2018 on "Overview and Hands on SPSS" in a training programme entitled Emerging Issues in Markets, Institutions and Resource use planning for Sustainable Agriculture organized by the division of Agricultural Economics, ICAR-IARI, New Delhi during 12 July-01 August 2018
12. Rajender Prasad delivered an invited talk on Usefulness of Design of Experiments to the participants of the Workshop on Promoting Quality- Role of Standards based on Statistical Methods" organized by Bureau of Indian Standards, New Delhi on September 11, 2018.

PARTICIPATION

Conference/ Workshop/ Seminar/ Symposia/Training/Foundation Course/ Annual Day/ Lectures

1. S.B. Lal participated the India Altair Technology Conference on 01 August, 2018 held at Hotel Le Meridien, Windsor Place, New Delhi.

2. Tauqueer Ahmad and Prachi Misra Sahoo attended Crop Insurance Review workshop on 04 September, 2018 at NRL Auditorium, IARI Campus, New Delhi organized by the Credit Division, DACFW, MoAFW, Govt. of India and presented work relating to the Crop Insurance .
3. Prachi Misra Sahoo attended ESRI Users Conference during 10-11 September, 2018.
4. Prachi Misra Sahoo attended the Training cum workshop/meeting of Nodal Officers of State Horticulture Statistics Authority on Invitation of Adviser Horticulture and made presentation on Spices proposal in Goa on 25 September, 2018.
5. Mukesh Kumar and Anshu Bharadwaj attended User Conference organized by ESRI India during 10-11 September, 2018 at Gurugram, Haryana.
6. Alka Arora attended INDIA Data Summit organized on 11th September, 2018.
7. Rajender Parsad participated in Workshop on Fine-tuning the Proforma for Ranking ICAR Institutes organized by NAAS at ICAR-NAARM, Hyderabad on July 20, 2018.
8. Rajender Parsad participated in Brainstorming Session on Development of Proforma for Ranking ICAR Institutes organized by NAAS at New Delhi on July 28, 2018.
9. S .B. Lal participated a five day International Workshop on Applied Deep Learning held at Indian Institute of Technology Mandi, Himachal Pradesh during 16-20 July, 2018.
10. K.K. Chaturvedi participated in "International Workshop on Applied Deep Learning" at IIT Mandi (HP) during 16-20 July 2018.
1. Achal Lama has been awarded Krishi Vigyan Gaurav (2018) by Bharatiya Krishi Anusandhan Samati, Karnal.
2. Seema Jaggi received Panjab Rao Deshmukh Outstanding Woman Scientist Award-2017 of ICAR during the Foundation Day of ICAR held at NASC New Delhi on 16 July, 2018.
3. Anindita Datta received Jawaharlal Nehru Award for P.G. Outstanding Doctoral Thesis Research in Agricultural and Allied Sciences 2017
4. Anindita Datta the authors of following paper were Awarded with Krishi Vigyan Gaurav (Honorary Title) by Bhartiya Krishi Anusandhan Samiti and Agricultural Research Communication Centre (ARCC), Karnal.
5. Anu Sharma को भारतीय कृषि अनुसंधान समिति तथा कृषि अनुसंधान संचार केंद्र (ARCC) के द्वारा राष्ट्र भाषा कि सेवा करने के लिये "कृषि विज्ञान गौरव" २०१८ की मानद उपाधि से अलंकृत किया गया।
6. D.C. Mishra, Neeraj Budhlakoti, Sanjeev Kumar S.B. Lal, and Anil Rai received first prize for presenting a paper entitled " टी ए जी पी टी : जीन एक्सप्रेसन डाटा पर आधारित ट्रेट से सम्बन्धित जीन की पहचान के लिए वेब सर्वर" in Sodh Patra Pratiyogita held on 11 Sept., 2018 at ICAR-IASRI, New Delhi.
7. शशि भूषण लाल*, अनु शर्मा, सारिका और अनिल राय (2018). जीन पूर्वानुमान, वंशावली विश्लेषण और प्राइमर डिजाइनिंग के लिये समानान्तरित कार्य प्रवाह. डिजिटल हिन्दी शोध पत्र प्रस्तुति प्रतियोगिता में तृतीय पुरस्कार

मंगलवार, ११ सितम्बर, २०१८. कृषि जैव सूचना केंद्र, भा. कृ. अनु. प. - भारतीय कृषि सांख्यिकी अनुसन्धान संस्थान, नई दिल्ली से प्राप्त किया ।

CONSULTANCY/ ADVISORY SERVICES PROVIDED

1. U.B. Angadi consultancy service project with International Livestock Research Institute (ILRI) is in progress and total consultancy fee is Rs.3,96,750/- for 23 man-days
2. U.B. Angadi new consultancy service proposal "Development database and analysis tool for feed demand-supply assessment in Mali, West Africa" has been prepared with ILRI South_Asia Region, New Delhi and submitted the same for approval. Total consultancy fee is Rs.4,42,500/- for 25 man-days.
3. Anindita Datta provided advisory services to Sh. Aradwad Pramod Pandurang, Scientist, Agricultural Engineering, ICAR- IARI on the procedure of analysis using SAS of an experiment using two way ANOVA.
4. Arpan Bhowmik provided advisory services to Sanjeev Kumar, Scientist, ICAR-NI, Karnal on the use of ANOVA for studying the Effect of Integrated K Management on Productivity and Nutrient Use Efficiency of Maize-Wheat Cropping System.
5. Sukanta Dash provided advisory service to Mr. Saurabh Singh, a Ph.D. student of vegetable Science regarding Line \times Tester analysis. The experiment contain 20 tester, 6 lines, 4 checks with 3 replications each. There are 16 response variable based on which Line \times Tester analysis and Heterosis analysis has been carried out.
6. Himadri Shekher Roy provided advisory services to M. C. Gupta Sr. Breeder-Mustard(R&D), Rasi Seeds (P) Lt.d. towards calculating ANOVA, GCV, PCV, Heritability, Combined analysis of Variance and Divergence analysis.
7. Achal Lama advised to Sangay Domo, MSc student of BCKV, Mohanpur to use Factorial RBD to analyze data using SAS software.
8. Ramasubramanian V. gave advisory service to Mr. K. Nirmal, Ph.D. student of ICAR-CIFE, Mumbai on test of difference of means of the groupings viz., male, female and ovi-female using Chisquare test for goodness of fit on fisheries data (hermit crab Diogenes alias) on 14 August, 2018.
9. Anil Rai conducted consultancy project "The study on field testing of the developed guidelines on estimating post-harvest losses of horticultural crops, livestock products and fish and fish products" Funded by FAO, Rome.
10. M. A. Iquebal advised Praveen Jadhav, Assistant Professor, PDKV, Akola regarding sample collection regarding transcriptome data analysis.
11. Sarika advised Swarnalakshmi K., Senior Scientist, IARI, New Delhi regarding metagenome experiment and data analysis.
12. Arpan Bhowmik advised Mr. Partha Pratim Maity, a Ph.D scholar of Centre for Environmental Science and Climate Resilient Agriculture, PG School, IARI, New Delhi regarding analysis of data pertaining to Nitrogen transformation in rice soil.

SOFTWARE DEVELOPED

Statistical and Geographic Information System/ Data bases/mobile apps developed

- U.B. Angadi, M.A. Iquebal, Sarika, Anil Rai and Dinesh Kumar:
 - R package mbFerns finalized and uploaded to CRAN and under review process to publish in CRAN
 - Vigna-SSR database and web portal updated

PATENT/ COPYRIGHTS RECEIVED

- **Software For Small Area Estimation**
(SW-10788/2018, received on 31/5/2018)
(Hukum Chandra, Kaustav Aditya and SB Lal)
- **Vortal for Training Program Management under Capacity Building Program- CBP Vortal**
(SW-10580/201801/05/2018)
(Alka Arora and Sudeep Marwaha)



एक कदम स्वच्छता की ओर



हर कदम, हर डगर
किसानों का हमसफर
भारतीय कृषि अनुसंधान परिषद

Agrisearch with a human touch

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