



# ICAR-IASRI



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## NEWS

October-December, 2014

- Research Achievements
- Human Resource Development
- Awards and Recognitions
- Panorama of Activities
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### From Director's Desk . . .

This newsletter highlights some of the salient research and training achievements made and other significant activities performed during the period under report.

Methods of constructing designs under three way blocking structure for irregular clumps have been developed in which two methods give structurally incomplete designs. The designs obtained are variance balanced and so all the elementary contrasts of treatments effects are estimated with same variance.

Wavelet periodogram was computed of the daily return series of Gram price in Delhi market. On maximizing the spectral likelihood, estimates of parameters have been obtained. Spot price prediction was computed from the prediction of spot price return.

The splice site sequence data were encoded using an encoding approach which is based on the difference between the observed and estimated values of nucleotides. The observed values were taken on the basis of occurrence and non-occurrence of nucleotides and the estimated values were computed on the basis of conditional dependencies between di-nucleotides at donor splice site motifs.

Three trainings under CAFT, one training on Knowledge Enhancement Session and one on Post Go-Live on Knowledge Enhancement Session for MIS/FMS solution under NAIP were organized. International training programme on Importance of Statistical and Experimental Designs, Data Analysis and Biometrical Techniques in Agriculture Research for officials of Ministry of Agriculture, Irrigation and Livestock (MAIL), Afghanistan is also organized.

Scientists of the institute have received various awards and recognitions. During the period one new project was initiated.

Scientists of the Institute have published 32 research papers in National/ International Journals. Besides this, 6 invited lectures were delivered and scientists have participated in different conferences/ symposia/ workshops, etc.

It is hoped that the contents of this document would be informative and useful to scientists in NARS. Any suggestions for improving the contents of the newsletter further would be highly appreciated.

(UC Sud)

## RESEARCH ACHIEVEMENTS

- Designs under three-way blocking for experiments having irregular clumps.** Experimental designs under two-way blocking structure are used to separate out two non-interacting sources of variation in the experimental material. These designs may not be able to mark out features that tend to clump in compact groups. In these situations, where there are three sources of variability, experimental designs under three-way blocking can be advantageously used. Many times the clumps may be irregular, having no uniformity. So, four methods of constructing designs under three way blocking structure for irregular clumps have been developed in which two methods give structurally incomplete designs. First method yields designs having clumps with regular size while all other methods yield designs having non-uniform clumps. The first method is restricted to prime number of treatments, second and third methods are for all natural numbers  $\geq 5$  and the last method is for odd number of treatments. All the designs obtained are variance balanced and the elementary contrasts of treatment effects are estimated with constant variance. List of designs with different parametric combinations has been prepared. Canonical efficiency factor for each design has been worked out by writing SAS code in PROC IML and all the designs are found to be highly efficient for sufficiently larger values of number of treatments.
- Long Memory Stochastic Volatility (LMSV) model using wavelet technique.** To maximize spectral likelihood using wavelets, wavelet periodogram was computed of the daily return series of Gram price in Delhi market and then substituted it in the likelihood equation. On maximizing the spectral likelihood, estimates of parameters have been obtained. Spot price prediction was computed from the prediction of spot price return. The dataset used for model building is from January 2007 to June 2013 and the remaining dataset i.e. July 2013 has been used for model validation. The Mean Absolute Prediction Error (MAPE), Relative Means Absolute Percentage Error (RMAPE) and Root Mean Square Prediction Error (RMSPE) were found to be 237.39, 8.00% and 244.45 respectively. The performance of LMSV model is very appealing as far as modelling and forecasting is concerned. The predicted autocorrelation function (ACF) of estimated log of squared return was very close to the observed ACF of log of squared return series.
- Approach for the prediction of donor splice sites in vertebrate genes.** The splice site sequence of vertebrate genome data were encoded using an encoding approach which is based on the difference between the observed and estimated values of nucleotides. The observed values were taken on the basis of occurrence and non-occurrence of nucleotides and the estimated values were computed on the basis of conditional dependencies between nucleotides. The difference between observed and estimated values is called as conditional error. Computation of conditional error for any nucleotide  $s$  at any position  $i$  given any nucleotide  $t$  at any other position  $j$  ( $j \neq i$ ;  $s, t \in \{A, T, G, C\}$ ) is described as follows:

Let  $S_k = (x_{1k}, x_{2k}, \dots, x_{pk})$ ,  $x_{ik} \in \{A, T, G, C\}$ ;  $i = 1, 2, \dots, p$  be the  $k^{\text{th}}$  sequence in a position-wise aligned sequence dataset of  $N$  sequences having equal length  $P$ . Then, for the  $i^{\text{th}}$  position, the occurrence of any base  $s$  was represented by an indicator variable

$$I_{is} = I(x_{ik} = s) = \begin{cases} 1, & \text{if } s \text{ occurs} \\ 0, & \text{otherwise} \end{cases} \quad \forall i = 1, 2, \dots, P; s \in \{A, T, G, C\}; k = 1, 2, \dots, N.$$

The value (1, 0) of the indicator variable was considered as the observed value for the base  $s$  at  $i^{\text{th}}$  position, whereas the estimated value of base  $s$  at  $i^{\text{th}}$  position given base  $t$  at  $j^{\text{th}}$  position was computed as  $E(I_{is} | I_{jt})$ ,  $j \neq i$ . Since the expectation of an indicator variable is nothing but probability,  $E(I_{is} | I_{jt}) = p(s_i | t_j) \forall j \neq i$ ;  $s, t \in \{A, T, G, C\}$ , which is the proportion of base  $s$  at  $i^{\text{th}}$  position given base  $t$  at  $j^{\text{th}}$  position, the conditional error of base  $s$  at  $i^{\text{th}}$  position given base  $t$  at  $j^{\text{th}}$  position was then computed  $e^c(s_i | t_j) = |1 - p^c(s_i | t_j)| + |0 - \{1 - p^c(s_i | t_j)\}| = 2\{1 - p^c(s_i | t_j)\}; i \neq j$  where  $c \in \{\text{TSS}, \text{FSS}\}$ .

A subset of true splice site (TSS) motif and false splice site (FSS) motifs were used for computing the error matrices, separately. Then, the difference in the error matrices were obtained by subtracting the error matrices of FSS from their corresponding error matrices of TSS. In other words, the element  $e(s_i | t_j)$  of the difference-error-matrix was computed as  $e(s_i | t_j) = e^t(s_i | t_j) - e^f(s_i | t_j) \{t \in \text{TSS and } f \in \text{FSS}\}$ . The encoded training and test datasets were then obtained by passing the sequences of training and test datasets through the error-difference-matrix. Subsequently, the donor splice site prediction was made using support vector machine, neural network and random forest classifiers.

## AWARDS AND RECOGNITIONS

- The following paper received first prize for best poster presentation “SBMDb: under Thrust Area: Bioenergy and Biofuels during 2<sup>nd</sup> Conference on “Converging Technologies Beyond 2020” ( 2CTB-2020) held at University Institute of Engineering and Technology, Kurukshetra University, Kurukshetra during November 28-29, 2014:
  - Iquebal MA, Jaiswal S, Angadi UB, Sablok G, Arora V, Kumar S, Rai A and Kumar D. First whole genome microsatellite DNA marker database of sugar beet for bioenergy and industrial applications.
- Dr. Anil Rai was nominated as Member of “Technical Sub-Committee on Natural Rubber Statistic in India”.
- Dr. Rajender Parsad was Nominated as Member of School Board, School of Sciences, Indira Gandhi National Open University, Maidan Garhi, New Delhi.
- Dr. Sudeep delivered a keynote address in 8<sup>th</sup> International Conference on Mushroom Biology and Mushroom Products held at NASC Complex, New Delhi during November 19-22, 2014.
- Sh. KK Chaturvedi nominated as Member, Editorial Board, International Journal of Current Trends in Engineering and Technology (IJCTET).

## NEW PROJECT INITIATED

- Study on improving methods for estimating crop area, yield and production under mixed, repeated and continuous cropping funded by the Food and Agriculture Organization (FAO) of United Nations. w.e.f. 03 November, 2014.



## HUMAN RESOURCE DEVELOPMENT

### Training Programmes/ Workshops Organised

S.No.	Title	Venue	Date	Sponsored by	No. of Participants
<b>Training Programmes</b>					
1.	Agricultural Web Applications Development using Content Management Tools under CAFT Course Director: Dr. Mukesh Kumar Course Co-Director: Dr. N. Srinivasa Rao	IASRI, New Delhi	24 September to 14 October, 2014	Education Division of ICAR	16
2.	Recent Advances in Survey Design and Analysis of Survey Data using Statistical Software under CAFT Course Director: Dr. Hukum Chandra Course Co-Director: Dr. Kaustav Aditya	IASRI, New Delhi	28 October to 17 November, 2014	Education Division of ICAR	20
3.	Knowledge Enhancement Session or MIS/FMS Solution by IBM Coordinator: Dr. NS Rao	IASRI, New Delhi NAARM, Hyderabad	22-24 December 2014 10-11 October, 2014	NAIP NAIP	28 50
4.	International training programme on Importance of Statistical and Experimental Designs, Data Analysis and Biometrical Techniques in Agriculture Research Coordinator: Dr. Rajender Parsad Co-Cordinator: Dr. Eldho Varghese Dr. Sukanta Dash	IASRI, New Delhi	17 November, 2014 to 07 February, 2015	Ministry of Agriculture, Irrigation and Livestock (MAIL), Afghanistan.	16
					
5.	Advances in omics data analysis: Learning by Examples under CAFT Course Director: Sh. Sanjeev Kumar Course Co-Director: Dr. DC Mishra	IASRI, New Delhi	03-23 December 2014	Education Division of ICAR	22
6.	Post Go-Live on Knowledge Enhancement Session for MIS/FMS Solution Coordinator: Dr. Mukesh Kumar Co-Cordinator: Dr. AK Choubey	IASRI, New Delhi	22-24 December 2014	NAIP	28
<b>Workshops</b>					
7.	Workshop on NISAGENET for Appraisal cum Validation of Data	CSAUA&T, Kanpur UP	11-12 November 2014		
8.	Sensitization Workshop on ICAR Unified Communication Services Cordinator: Dr. Alka Arora Co-Cordinator: Dr. N Srinivasa Rao	IASRI, New Delhi	19 November 2014		
9.	Workshop on Software Licensing for the Scientists of the Institute under the aegis of Institute Technology Management Unit Cordinators: Dr. Rajender Parsad Dr. Tauqueer Ahmad	IASRI, New Delhi	01 November, 2014		
10.	Workshop on NISAGENET for Appraisal cum Validation of Data	Rajasthan University of Veterinary & Animal Sciences	16-17 December 2014		

## VISIT ABROAD

- Dr. Hukum Chandra Visited Chiba, Japan during December 15-18, 2014 to attend the training programme at United Nations Statistical Institute for Asia and the Pacific on Assessing Training Needs of the Statistical Workforce in Agricultural Statistics.
- Dr. Sanjeev Panwar visited Addis Ababa, Ethiopia as a resource person in the training course on “Advanced Experimental Designs, Data Analysis and Management for Breeding Trials” during November 03-08, 2014.

## PANORAMA OF ACTIVITIES

- Meeting of Institute Joint Staff Council was held on 16 December 2014 under the Chairmanship of Director, IASRI.
- Meeting of ICAR Staff Welfare Fund was held on 21 October 2014 under the Chairmanship of Director, IASRI.

## Seminars Delivered

Seminars on different areas of Agricultural Statistics, Computer Application and Bioinformatics were delivered. These seminars include presentation of salient findings of the completed research projects and proposal of the new projects by the scientists, Thesis/ORW/Course seminars of students of M.Sc. and Ph.D. (Agricultural Statistics), M.Sc. (Computer Application) and M.Sc. (Bioinformatics) and Guest seminars.

The Details of Seminars Delivered

Category	Type of seminar	Number
Scientist	Project Completion	01
	Project Proposal	01
	Foreign Visit	01
Student	Course	20
	ORW	13
	Thesis	01
	Open	02
<b>Total</b>		<b>39</b>

## PUBLICATIONS

### Research Papers

- Alam, W, Chaturvedi, A, Singh, KN, Kumar, A, Paul, AK, Paul, RK and Sinha, K (2014). Maximum likelihood and uniformly minimum variance unbiased estimation of  $p(y < x)$  for Gompertz distribution. *Int. J. Agril. Statist. Sci.*, **10(2)**, 267-274.
- Alam W., Chaturvedi, A. and Kumar, A. (2014). Estimation of survival function under type II censoring using a generalized family approach. *Int. J. Agril. Statist. Sci.*, **10(1)**, 17-19.
- Ahmad, T, Rai, A, Bathla, HVL and Sharma, SD (2014). Methodological issues relating to horticultural surveys in India. *Adv. Appl. Res.*, **6(1)**, 01-11.
- Behera, BK, Das, P, Maharana, J, Paria, P, Mandal, S, Meena, D, Sharma, A, Jayarajan, R, Dixit, V, Verma, A, Vellarikkal, S, Scaria, V, Sivasubbu, S, Rao, AR and Mohapatra, T (2015). Draft genome sequence of the extremely halophilic bacterium *Halomonas salina* sp. Strain CIFRI1 isolated from East Coast of India. *Genome Announcements*, **3(1)**:e01321-14., doi:10.1128/genomeA.01321-14.
- Behera, BK, Das, P, Maharana, J, Meena, DK, Sahu, TK, Rao, AR, Chatterjee, S, Mohanty, BP, Sharma, AP (2014). Functional screening and molecular characterization of halophilic and halotolerant bacteria by 16S rRNA gene sequence analysis. *Proceedings of the National Academy of Sciences, India Section B: Biological Sciences*. (DOI: 10.1007/s40011-014-0440-6).

- Bhardwaj, SP, Paul, RK, Singh, DR and Singh, KN (2014). An empirical investigation of ARIMA and GARCH models in agricultural price forecasting. *Economic Affairs*, **59(3)**, 415-428.
- Chaturvedi, A, Alam, W. and Chauhan, K. (2013). Robustness of the sequential testing procedures for the parameters of zero-truncated negative binomial, binomial and Poisson distributions. *J. Ind. Statist. Asso.*, **51(2)**, 313-328.
- Dash, S, Parsad, R and Gupta, VK (2014). Efficient row-column designs with two rows. *J. Ind. Soc. Agril. Statist.*, **68(3)**, 387-400.
- Datta, Anindita, Jaggi, Seema, Varghese, Cini and Varghese, Eldho (2014). Structurally incomplete row-column designs with multiple units per cell. *Statistics and Applications*, **12(1&2)**, 71-79.
- Ghosh, Himadri, Gurung, Bishal and Prajneshu (2014). Kalman filter based modeling and forecasting of stochastic volatility with threshold. *J. Appl. Stat.* DOI : 10.1080/02664763.2014.963524
- Ghosh, Himadri, Gurung, Bishal, and Prajneshu (2014). Fitting EXPAR models through the extended Kalman filter. *Sankhya B.* DOI: 10.1007/s13571-014-0085-8
- Goyal, RC, Arora, Alka, Marwaha, Sudeep, Malhotra, PK, Grover, Rajni B and Alam, AKM Samimul (2014). Online progress monitoring of Agricultural Scientists: e Initiative. *J. Ind. Soc. Agril. Statist.*, **68(3)**, 419-427.
- Gurung, B, Paul, RK and Ghosh, H (2014). Fitting smooth transition autoregressive nonlinear time-series model using particle swarm optimization technique. *J. Ind. Soc. Agril. Statist.*, **68(3)**, 327-332.
- Gurung, B, Paul, RK and Lepcha, L (2014). Volatility and co-integration in export of livestock and marine products of India. *Ind. J. Anim. Sci.*, **84(11)**, 104-107.
- Iquebal, MA, Prajneshu and Sarika (2014). Nonlinear support vector regression methodology for modelling and prediction: An application. *J. Ind. Soc. Agril. Statist.*, **68(3)**, 369-374.
- Kulhari, Alpna, Sheoran, Arun, Chaodhury, Ashok, Sarkar, Susheel and Kalia, Rajwant K (2014). Quantitative determination of guggulsterone in existing natural population of *Commiphora wightii* (Arn.) Bhandari for identification of germplasm having higher guggulsterone content. *Physiol Mol Biol Plants*, DOI 10, 1007/s12298-014-027-1
- Lapcha, L, Gurung, B, Paul, RK and Sinha, K (2014). Stochastic model for sticklac forecasting in India. *Economic Affairs*, **59(3)**, 479-483.
- Mahajan, GR, Pandey, RN, Datta, SC, Kumar, Dinesh, Sahoo, RN and Parsad, Rajender (2014). Fertilizer nitrogen, phosphorus and sulphur prescription for aromatic hybrid rice (*Oryza sativa* L.) using targeted yield approach. *Proceedings of the National Academy of Sciences, India - Section B: Biological Sciences*, **84(3)**, DOI: 10.1007/s40011-013-0268-5.
- Meher, PK, Rao, AR, Wahi, SD and Thelma, BK (2014). An approach using random forest methodology for disease risk prediction using imbalanced case-control data in GWAS. *Current Medicine Res. Prac.*, **4**, 289-294.
- Meher, PK, Sahu, TK, Rao, AR and Wahi, SD (2014). A statistical approach for 5' splice site prediction using short sequence motifs and without encoding sequence data. *BMC Bioinformatics*, **15**, 362 DOI:10.1186/s12859-014-0362-6.
- Meher, PK, Sahu, TK, Rao, AR and Wahi, SD (2014). Determination of window size and identification of suitable method for prediction of donor splice sites in rice (*Oryza sativa*) genome. *J. Plant Biochem. & Biotech.*, DOI: 10.1007/s13562-014-0286-2.



- Mohammad Samir Farooqi, Sanjukta, RK, Mishra, Dwijesh Chandra, Singh, Dhananjaya Pratap, Rai, Anil and Chaturvedi, Krishna Kumar (2014). In silico analysis of synonymous codon usage pattern of rhizobium etli CFN 42, *Proc. Nat. Acad. Sci., India, Sect. B Biol.Sci.* DOI 10.1007/s40011-014-0457-x
- Nigam, Deepti, Kumar, Sanjeev, Mishra, DC, Rai, Anil, Smita, Suchi and Saha, Arijit (2014). Synergetic regulatory networks mediated by microRNAs and transcription factors under salinity, heat and drought stress in *Oryza Sativa spp.* *Gene.* DOI: 10.1016/j.gene.2014.10.054.
- Parsad, Rajender, Agarwal, Niti, Sreenath, PR and Mandal, BN (2014). Balanced treatment block designs with nested rows and columns. *J. Combinatorics, Info. Sys. Sci.*, **39(1-2)**, 103-116.
- Paul, Manju Mary, Rai, Anil and Kumar, Sanjeev (2014). Classification of cereal proteins related to abiotic stress based on their physicochemical properties using support vector machine. *Current Science*, **107(8)**, 1283-89.
- Paul, RK (2014), Forecasting wholesale price of pigeon pea using long memory time series models. *Agricultural Economics Research Review*, **27(2)**, 167-176.
- Paul, RK and Bhar, LM (2014). Robust analysis of experimental data: An application of LMS technique. *Int. J. Agril. Statist. Sci.*, **10(2)**, 387-392.
- Rawat, R, Kumar, S, Chadha, BS, Kumar, D and Oberoi, HS (2014) An acidothermophilic functionally active novel GH12 family endoglucanase from *Aspergillus niger* HO: Purification, characterization and molecular interaction studies. *Antonie van Leeuwenhoek*, **107(1)**, 103-117.
- Sahoo, PM, Omiam, G, Handique, BK, Rai, A and Ahmad, T (2014). Land use land cover mapping of West Garo Hills district of Meghalaya using remote sensing. *J. Agril. Phy.*, **14 (1)**, 113-119.
- Sarika, Iquebal, MA, Arora, Vasu, Rai, Anil and Kumar Dinesh (2015). Species specific approach for development of web-based antimicrobial peptides prediction tool. *Computer and Electronics in Agriculture*, **111**, 55-61.
- Sharma, Naveen, Mohammad Samir Farooqi, Chaturvedi, Krishna Kumar, Lal, Shashi Bhushan, Grover, Monendra, Rai, Anil and Pandey, Pankaj (2014). The Halophile protein database, Database (Oxford). *Oxford J.*, doi:10.1093/database/bau114
- Shinogi KC, Rao, DUM, Srivastava, Sanjay, Varghese, Eldho and KG, Rosin (2014). Sustainability of tribal farming: The case of natural farming model in the Parambikulam wildlife sanctuary of Kerala. *Int. J. Agric. and Food Sci. Tech.*, **5(7)**, 795-800.
- Tandon, Gitanjali, Sarika, Iquebal, M A , Kumar, Sunil, Kaur, Sukhdeep, Rai, Anil and Kumar, Dinesh (2014). Evidence of Salicylic Acid pathway with EDS1 and PAD4 proteins by molecular dynamics simulation for Grape improvement. *J. Biomolecular Structure and Dynamics.* DOI: 10.1080/07391102.2014.996187

## INVITED LECTURES DELIVERED

- Training programme on Advances in Pest Forecast Models and Decision Support System for Crop Protection in Changing Climate Scenario organized at CRIDA, Hyderabad for plant protection scientists and agro-meteorologist during October 29-November 18, 2014.
  - Parsad, Rajender. i) Web Resources for Designed Experiments and ii) Indian NARS Statistical Computing Portal (2 lectures using Webinar)

- Faculty Development Programme 2014 at Ramanujan College, University of Delhi, on November 01, 2014.
  - Chandra, Hukum. Statistical Computing using R.
- Training programme on Analysis of Experimental Data organized at NAARM, Hyderabad during November 10-15, 2014.
  - Parsad, Rajender. i) Advanced Designs and Pooled Analysis and ii) Response Surface Designs. (2 lectures using Webinar)
- CAFT training on Functional Genomics and Proteomics - Techniques and Tools for Crop Improvements on November 24, 2014 at IARI New Delhi.
  - Rai, Anil. Bioinformatics and its Applications in Agriculture
- CAFT training program on Strategies to Enhance Oilseed Brassica Production under Climate & Resource Constraints Scenario on November 28, 2014 at DRMR, Bharatpur, Rajasthan;
  - Rai, Anil. i) Statistical Data Mining Tools for Strategic Analysis and ii) Spatial Analysis through GIS and Geo-statistics. (2 lectures)
- 4<sup>th</sup> One Week Research Methodology Course on “Applied Research Techniques using SPSS in Social Sciences” during December 8-13, 2014 at Centre for Jawaharlal Nehru Studies Jamia Millia Islamia (Central University) New Delhi.
  - Sarkar, Susheel Kumar. i) Discriminant Analysis, ii) Factor Analysis and iii) Cluster Analysis (03 lectures )

## PAPERS PRESENTED

- National Conference on Recent Advances in Statistical and Mathematical Sciences and their Applications (RASMSA-2014) at Kumaon University, Nainital during October 04-06, 2014.
  - Bharadwaj, Anshu. Geostatistics in forestry: An overview. (Invited talk)
  - Chandra, H. Small area estimation under transformation. (Invited talk)
  - Lal, SB\*, Sharma, Anu, Chandra, Hukum and Rai, Anil. Software for Survey Data Analysis SSSA Ver 2.0. (Invited talk)
  - Paul, Ranjit Kumar. M-estimation and LMS estimation techniques for designed experiments.(Invited talk)
  - Pradhan,UK and Lal, K. Efficient Designs for Mixture Experiments with Process Variable in smaller number of runs. (Invited talk)
  - Varghese, Eldho\* and Varghese, Cini. MERC designs involving diallel crosses incorporating specific combining abilities for test lines versus control line comparisons.(Invited talk)
- Workshop on Next Generation Sequencing (NGS) Techniques of DNA at Institute of Advanced Study in Science and Technology (IAAST), Guwahati, Assam during October 20-22, 2014
  - Kumar, Dinesh. How NGS technology can be used for genetic improvement and management of germplasm. (Invited talk)
- 2<sup>nd</sup> Conference on Converging Technologies Beyond 2020 ( 2CTB-2020) at Institute of Engineering and Technology, Kurukshetra University, Kurukshetra during November 28-29, 2014.
  - Kumar, Dinesh. Genomics approach to enhance Indian agricultural productivity and role of super computer. (Invited talk)



- ISPRS Technical Commission VIII symposium on Operational Remote Sensing Applications: Opportunities, Progress and Challenges and Annual Conventions of ISRS and ISG & Joint Sessions with ISPRS TC IV & VI during December 09-12, 2014 at Hyderabad.
  - Sahoo, PM, Ahmad, T, Singh, KN and Gupta, AK. Spatial Imputation techniques for predicting missing information in satellite images.
- International Conference on Innovative Research in Applied Physical, Mathematical/Statistical, Chemical Sciences, Environmental Dynamics, Integration of Life Sciences and Engineering held at Jawaharlal Nehru University, New Delhi, during December 27 – 28, 2014.
  - Alam, Wasi. Sequential probability ratio test for the parameters of limiting form of discrete distributions.

## Participation

### Conferences / Workshops / Trainings/ Seminars / Symposia etc.

- Aurovet Knowledge Symposium held at AP Shinde Symposium Hall, NASC Complex, New Delhi during October 08-09, 2014. (Sh. Pal Singh)
- National Seminar on Maximizing Systems for Improving Food and Nutrition Security held at AP Shinde Symposium Hall, NASC Complex, New Delhi on October 16, 2014. (Sh. Pal Singh)
- RFD Workshop organized by Engineering Division, ICAR to review the progress of April-September, 2014 related to RFD 2014-15 on October 21, 2014. The Mid-term achievements of the Institute presented in the workshop. (Dr UC Sud and Dr AK Mogha)
- National Workshop on Appraisal cum Data Validation of NISAGENET and Awareness Seminar on e-learning portal on Agricultural Education organized at CS Azad University of Agriculture & Technology, Kanpur, UP from November 11-12, 2014. (Sh. Pal Singh and Dr. Sudeep).
- 8<sup>th</sup> International Conference on Mushroom Biology and Mushroom Products held at NASC Complex, New Delhi during November 19-22, 2014. (Sh. Pal Singh)
- Workshop on Smart Infrastructure held at Shastri Bhawan, New Delhi on November 24, 2014. (Dr. UC Sud)
- International Conference on Innovation in Indian Agriculture: Ways Forward organised at India International Centre, New Delhi during December 04-05, 2014., (Dr. Ranjit Kumar Paul, Dr. Wasi Alam and Dr. Sanjeev Panwar)
- Third Annual Workshop of National Knowledge Network (NKN) “NKN:(Encourage, Empower, Enable, Enrich) NGN” during 15-17 December, 2014 at IIT, Guwahati. (Dr. AK Choubey and Sh. Rakesh Kumar Saini)
- 31<sup>st</sup> biennial workshop of AICRP\_IFS organized at TNAU, Coimbatore during December 22-24, 2014. (Dr. Cini Varghese and Dr. Susheel Kumar Sarkar)

## Meetings

- Meeting related to CHAMAN project with Adviser (Hort.) and Director (Hort.) at Shastri Bhawan, New Delhi on October 08, 2014. (Dr. Tauqueer Ahmad and Dr. Prachi Misra Sahoo)
- Meeting to review the training program on MIS-FMS system conducted for the staff of NAARM, CRIDA, DOR, DSR, PDR, NRCM, and DRR at NAARM, Hyderabad during October 10-12, 2014. (Dr. N. Srinivasa Rao)
- Meeting for formulation of policy in utilization of infrastructural resources in the Council through NAIP on October 17, 2014. (Dr. Anil Rai)
- Meeting of All India Survey on Higher Education (AISHE) officials chaired by Secretary, MHRD in Shastri Bhawan, New Delhi on October 28, 2014. (Dr. Sudeep)

- Meeting to discuss the project proposal on Pilot Study for Developing State Level Estimates of Crop Area and Production on the Basis of Sample Sizes Recommended by Professor Vaidyanathan Committee Report organized by DES, Ministry of Agriculture, Govt. of India at Krishi Bhawan, New Delhi on October 28, 2014. (Dr. UC Sud and Dr. Hukum Chandra)
- Meeting on Recruitment of Consultants (Statistics) on Contractual Basis at Ministry of Agriculture, Department of Animal Husbandry, Dairying and Fisheries, New Delhi on October 29, 2014. (Dr. UC Sud)
- Meeting of Standing Committee on Scholarship, Financial Assistance and Academic progress at IARI, New Delhi. (Dr. Anil Rai)
- Meeting with State Horticulture Departments of the eight states (six states under IASRI Component of the CHAMAN project and two states being considered under two new proposals) held on November 05, 2014 at Krishi Bhawan, New Delhi, under the Chairmanship of Additional Secretary (A&C), Ministry of Agriculture, Govt. of India, in which the detailed project proposal i.e. IASRI Component of the CHAMAN programme and Work plan of the project were discussed. (Dr. UC Sud and Dr. Tauqueer Ahmad)
- Meeting with Mission Directors of State Horticulture Mission of two states namely, Haryana and Madhya Pradesh to be considered for the new studies along with 3-4 officials of State Horticulture Department of both the states held on November 05, 2014 at Krishi Bhawan, New Delhi under the Chairmanship of Additional Secretary (A&C), Ministry of Agriculture (MoA), Govt. of India in which the two new draft project proposals to be funded by the respective State Govts were discussed. (Dr. UC Sud and Dr. Tauqueer Ahmad)
- 12<sup>th</sup> meeting of the Technical Monitoring Committee for Central Sector Scheme on Strengthening of Database and Geographical Information System for the Fisheries Sector on November 07, 2014 at Guwahati. (Dr. UC Sud)
- Kerala State Strategic Statistical Plan (KSSSP) Implementation - Expert committee (Agriculture Statistics) - 2<sup>nd</sup> Sub Committee meeting at Thiruvanthapuram on November 12, 2014. (Dr. UC Sud)
- Second Meeting of Technical Sub-Committee on Natural Rubber Statistic on November 13, 2014 at Spice Board of India at Kochi. (Dr. Anil Rai)
- XXIII meeting of the ICAR Regional Committee No.V held at PAU, Ludhiana (Punjab) during November 14-15, 2014. (Dr. UC Sud)
- Meeting of Committee in Education Division of ICAR for providing online payment gateway facility of UG, PG,&SR (PGS) on November 17, 2014. (Dr. Anil Rai)
- Review meeting of MIS/FMS under the chairmanship of Mr. Devender Kumar Director, Finance, ICAR at Krishi Bhawan, New Delhi on November 18, 2014. (Dr. AK Choubey, Dr. Alka Arora, Dr. Anshu Bharadwaj, Dr. Mukesh Kumar and Dr. NS Rao)
- Meeting under the project Modeling network of gene response to abiotic stress in rice with team of CDAC at Pune during November 19-20, 2014. (Dr. Anil Rai, Rai, Sh. Sanjeev Kumar and Sh. SB Lal)

## CONSULTANCY /ADVISORY SERVICES PROVIDED

- Dr. Rajender Parsad advised i) Dr. Jitendra Kumar, Director, Directorate of Medicinal and Aromatic Plants, Anand on fitting of Ritger and Peppas' equation for determination of diffusion components of 11 different formulations of each of carbofuran and imazethapyr for their release in soil and water and ii) Dr. KP Singh, Senior Scientist, Agricultural Mechanization Division, CIAE, Bhopal was advised on the analysis of data generated using a Split Plot Design on Maize-Soybean sequence.

- Dr. Rajender Parsad and Dr. Eldho Varghese advised Dr. Mamrutha, Scientist at DWR Karnal on the layout of alpha design for an experiment to be conducted to test and compare the 250 genotypes of wheat. Two different layouts: (i)  $v=250$ ,  $b=30$ ,  $r=3$ ,  $k=25$  and (ii)  $v=250$ ,  $b=75$ ,  $r=3$  and  $k=10$  were suggested.
- Dr. Sukanta Dash advised Dr. Neeta Singh and Dr. Kalyani of NBPGR, IARI, in factorial CRD of two factor at level 11 and 8 for response variable MTS and LEH percentage.
- Dr. Arpan Bhowmik advised Mr. Debasish Chakraborty, Scientist, Division of Agricultural Engineering, ICAR research complex for NEH region, Umiam, Meghalaya on the use of split plot design with Agro advisory and without Agro advisory as the two main plot treatments and farmer's practice along with modern agronomic practice as the two sub plot treatments.
- Dr. RK Paul advised Dr. MH Wani, Professor, Rajiv Gandhi Chair, SKUAST-K, Srinagar in cointegration analysis and causality testing for the data of Apple price in different markets of India.
- Shri Samarendra Das advised i) Ms. Prativa Sahu, scientist, NRC on Pomegranate, Solapur. The pollen germination data on male and bisexual flowers, collected from two different position of plant (Nodal and Axile) and kept under 4 different durations in cryopreservation for 5 different cultivars as well as 5 wild germplasms were analysed as Factorial CRD. To get the optimal combinations of flower type, flower position and cryopreservation temperature, the data were analysed using Response surface methodology and ii) Dr. N.B. Singh, Scientist, NRC on Pomegranate, Solapur on different growth traits to study the performance of pomegranate hardwood cuttings after 90 and 180 days of four different AMF (arbuscular-mycorrhizal fungi) inoculation were analyzed using ANOVA, correlation and regression methodologies.
- Sh.UK Pradhan advised i) Dr. (Ms) Aarti Bairwa, Scientist, Central Potato Research Station, Muthurai, Udagamandalam (Tamil Nadu) to study the population dynamics of nematode in different crops and for different seasons. This experiment has been conducted for eight different crops such as potato, carrot, radish, beat root, cauliflower, cabbage garlic and French bean and ii) Ms. Shilpa HB, Scientist NRC on Pomegranate, on Genotype-Phenotype association.



## PERSONNEL

### Congratulations on your Appointment

Name	Designation	Effective Date
Dr. UC Sud	Director	19.11.2014
Dr. Lal Mohan Bhar	HD (Statistical Genetics)	22.10.2014
Dr. Hukum Chandra	National Fellow	28.10.2014
Ms. Vandita Kumari	Scientist	10.10.2014
Sh. Kader Ali Sarkar	Scientist	13.10.2014
Sh. Raju Kumar	Scientist	13.10.2014
Sh. Santosh Rathore	Scientist	13.10.2014
Sh. Prakash Kumar	Scientist	13.10.2014
Sh. Mrinmoy Ray	Scientist	13.10.2014

### Congratulations on your Promotion

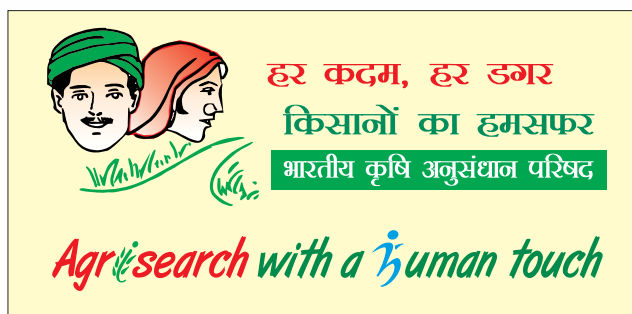
Name	Designation	Effective Date
Smt. Kanta Bahl	Assistant (3 <sup>rd</sup> ACP)	08.06.2014
Smt. Neelam Sethi	Assistant (3 <sup>rd</sup> ACP)	27.07.2014
Sh. Anis Wadhwa	UDC (2 <sup>nd</sup> ACP)	19.07.2014
Sh. Trilok Saini	UDC (2 <sup>nd</sup> ACP)	26.07.2014
Sh. Raj Kumar Verma	UDC (2 <sup>nd</sup> ACP)	21.07.2014
Sh. Fabian Minz	UDC (2 <sup>nd</sup> ACP)	19.07.2014
Sh. Basant Kumar	UDC (2 <sup>nd</sup> ACP)	19.07.2014
Smt. Rajni Gupta	Assistant (3 <sup>rd</sup> ACP)	07.08.2014
Smt. Alka Naiyar	Steno Gr.-III (2 <sup>nd</sup> ACP)	20.08.2014
Smt. Sunita	Steno Gr.-III (2 <sup>nd</sup> ACP)	27.08.2014
Smt. Suman Khanna	Steno Gr.-III (2 <sup>nd</sup> ACP)	31.08.2014
Sh. Raj Kumar Verma	Assistant	31.10.2014
Sh. Basant Kumar	Assistant	31.10.2014
Sh. Vikram Singh	PS	03.11.2014
Sh. Nanak Chand	PA	12.11.2014
Sh. PC Thakur	AAO	28.11.2014
Sh. Khushiyal	Assistant	12.12.2014
Sh. Amar Singh	Assistant	12.12.2014
Sh. Dev Murti Prasad	UDC	12.12.2014
Sh Satyavir Singh-II	UDC	12.12.2014
Sh. Sunil Kumar-I	UDC	12.12.2014

## Transfer

Name	To	Effective Date
Dr. Ajit, Principal Scientist	IASRI, New Delhi	10.11.2014

## Wish you Happy Retired Life

Name	Designation	Effective Date
Sh. Prem Narain	Assistant	30.10.2014
Sh. Rajender Kumar	Assistant	30.10.2014
Sh. OP Khanduri	Scientist	13.11.2014 (VRS)
Sh. SK Sublania	MTO (Chief Technical Officer)	31.11.2014



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