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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.

The first Supercomputing Hub for Indian Agriculture- ASHOKA (Advanced Supercomputing Hub for OMICS Knowledge in Agriculture) has been established at IASRI. This supercomputing environment is being developed for high performance computing in the field of agricultural bioinformatics and computational biology under a sub-project "Establishment of National Agricultural Bioinformatics Grid (NABG) in ICAR" of the National Agricultural Innovation Project (NAIP), Indian Council of Agricultural Research (ICAR) New Delhi.

Goat Microsatellite Database (GoSatDb), a web based relational database of microsatellite markers present in the whole genome sequence of goat has been

developed that allows microsatellite search using multiple parameters and the location of the marker on the chromosome. It is available at <http://cabindb.iasri.res.in/goat/>.

In agricultural field experiments, neighbour effects are very common phenomena. Neighbour effects may not only arise from the immediate neighbouring units but also it may extend further as with the spread of inoculum in disease screening trials. To deal with such situations, second order neighbour balanced block designs have been defined and constructed wherein every treatment has every other treatment appearing as both left and right neighbour up to distance two (leaving one plot) a constant number of times.

Under the study on Stochastic Volatility (SV) models through particle filtering, the method of extracting more information from the logarithmic of square observations was studied for the SV model. The correlation between the transition and measurement errors was also studied to have an insight into the relation between state and observation. State space form of SV models where the errors are made independent by making some changes in the two equations was formulated. Comparison of modelling and forecasting performance of SV vis-à-vis GARCH was also carried out.

An econometric study was undertaken to examine irrigation development, structure and determinants of water markets to assess equity, efficiency and reliability in water use under different forms of water markets in North-Western Rajasthan. It was observed that three-fifths of net sown area and two-thirds of gross sown area in North-Western region were irrigated. Although, the region is dominated by canal irrigation, the growth in canal irrigated area was poor in the region during 2000-01 to 2008-09. The water markets are emerging due to shortage of canal water and saline groundwater in most of the deeper aquifers.

Three training programmes were organised, one on Recent Advances in Statistical Modelling Techniques under CAFT sponsored by Education Division of ICAR; one under NAIP on Data Analysis using SAS and one on Data Analysis and Interpretation for ISS probationers of XXXIV batch sponsored by CSO.

Scientists of the institute received various awards & recognitions and have published 14 research papers, 01 popular article, 01 book chapter, 01 e-resource, 01 e-manual and 01 reference manual. Besides, 09 research papers were presented 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

- **First Supercomputing Hub for Indian Agriculture- ASHOKA (Advanced Super-computing Hub for OMICS Knowledge in Agriculture)**

The first supercomputing hub for Indian Agriculture has been established at Centre for Agricultural Bioinformatics (CABin), IASRI. This supercomputing environment is being developed for high performance computing in the field of agricultural bioinformatics and computational biology under a sub-project “Establishment of National Agricultural Bioinformatics Grid (NABG) in ICAR” of the National Agricultural Innovation Project (NAIP), Indian Council of Agricultural Research (ICAR) New Delhi. The facility is set up in a state-of-art data centre and two super-computers of this hub are listed at rank 11 and 24 in the list of top super-computers of India (<http://topsupercomputers-india.iisc.ernet.in/jsp/june2013/index.html>).



This super-computing hub consists of hybrid architecture of high performance computing having (i) 256 nodes Linux cluster with two masters, 3072 cores and 38 Tera Flops computing, (ii) 16 nodes windows cluster with one master, (ii) 16 nodes GPU cluster with one master with 192 CPUs + 8192 GPUs and (iv) SMP based machine with 1.5 TB RAM. Also, this hub has approximately 1.5 Peta Byte storage divided into three different types of storage architecture i.e. Network Attached Storage (NAS), Parallel File System (PFS) and Archival. This hub also consists of super-computing systems at NBAGR Karnal, NBPGR New Delhi, NBFGR Lucknow, NBAIM Mau and NBAII, Bangalore which forms a National Agricultural Bioinformatics Grid in the country. Number of computational biology and agricultural bioinformatics software/workflow/pipelines along with National Biological Computing Portal are in the process of development, which will provide seamless access to these biological computing resources to the biological researchers across the country.

- **Goat Microsatellite Database (GoSatDb).** A web based relational database has been developed consisting of 865210 microsatellite markers present in the whole genome sequence of goat. GoSatdb allows microsatellite search using multiple parameters like microsatellite type simple (90.42%) and

compound (9.58%), repeat types viz. mono (62.28%), di (22.20), tri (11.72), tetra (1.55), penta (2.21) and hexa (0.04%) nucleotide, copy number, microsatellite length, pattern of the repeat motif itself and the location of the marker on the chromosome. Microsatellites can be retrieved by specifying the chromosome number (or numbers). The database also searches the specified number of markers in a provided location range on a particular chromosome. The nucleotide sequences of the particular marker are also provided to facilitate primer designing for PCR amplification of any desired microsatellite. It is available at <http://cabindb.iasri.res.in/goat/> for users.



- Second order neighbour balanced block design.** In agricultural field experiments, the response from a particular plot is not only affected by the treatment applied to that plot but also may be affected by the treatments applied to neighbouring plots. Treatments applied to the crop, such as fertilizer, irrigation, or pesticide may spread to adjacent plots causing neighbour effects. Neighbour effects from the adjacent units are thus a serious source of bias in many field and laboratory experiments. Hence for proper model specification, neighbour effects from the adjacent units should be included in the model. In field experiments, neighbour effects may also extend further as in disease screening trials, inoculum may spread to higher distance. Second order neighbour balanced designs have been defined wherein every treatment has every other treatment (excluding itself) appearing as both left and right neighbour up to second order or distance 2 (leaving one plot) a constant number of times. Two series of second order neighbour balanced block designs (one complete and one incomplete) have been obtained for which the information matrix for estimating direct effects of treatments and neighbour effects of treatments have been generalized for highest distance i.e up to distance (k-1) where k is the block size. The variance pertaining to the contrast of direct effects of treatments and neighbour effects of treatments have also been generalized accordingly. Both the series of design are not only variance balanced for estimating direct effects and neighbour effects up to highest distance but are also totally balanced for estimating all the effects as variance pertaining to the contrast of direct effects of treatments and neighbour effects up to distance (k-1) are same.

Further, two series of strongly neighbour balanced block designs (one complete and one incomplete) wherein each treatment also appears as neighbour of itself up to second order a constant number of times have also been obtained. The series of designs so obtained are also found to be totally balanced for estimating direct and neighbour effects up to second order.

- **Stochastic Volatility (SV) models through particle filtering.** The SV model given by Taylor (1994) has been represented in the state space form. The method of extracting more information from the logarithmic of square observations was also studied for the SV model. The correlation between the transition and measurement errors have been investigated to have an insight into the relation between state and observation. State space form of SV models where the errors are made independent by making some changes in the two equations was formulated. The implementation of particle filtering when the disturbances term in the transition as well as measurement equations are dependent was also carried out. The general formula for volatility process on the basis of its lag values has been developed. The prediction error decomposition form of the likelihood for parameter estimation was studied. Parameter estimation of SV was carried out using Matlab 2007 software package. Comparison of modelling and forecasting performance of SV vis-à-vis GARCH was also carried out. The program for implementation of particle filtering for parameter estimation of SV has been developed. The formulae for two-step ahead forecast as well as the conditional variance have been derived. From kernel density estimate of the residuals of SV model, it was observed that the distribution doesn't have mode around zero. The modified estimated threshold type SV model with mean encapsulated the innovation was found to be symmetric around zero. Recursive measurement equation with asymmetric analysis was derived for maximizing the Quasi-maximum likelihood which gave estimates of parameters of SVT model. Further, SV in mean model was fitted to the All-India data of monthly export of spices through particle filtering technique. Also comparison was carried out with GARCH to assess the benefits of using SVM over GARCH.
- **An econometric study on water markets:** An econometric study was undertaken on water markets in canal command area of North-Western Rajasthan where the water resources for agricultural purposes are becoming scarcer. North-Western region of Rajasthan comprising Sri Ganganagar and Hanumangarh districts have witnessed impressive development of canal irrigation and agriculture in the past. However, canal water was not sufficient to meet the growing demand of agriculture in the region and therefore, the farmers have started extraction of groundwater. The water markets are emerging due to shortage of canal water and saline groundwater in most of the deeper aquifers. Therefore, the study was undertaken to examine irrigation development in the region, structure and determinants of water markets, to assess equity, efficiency and reliability in water use under different forms of water markets. It was observed that three-fifths of net sown area and two-thirds of gross sown area in North-Western region were irrigated. Although, the region is dominated by canal irrigation, the growth in canal irrigated area was poor in the region during 2000-01 to 2008-09. On the other hand, the annual growth in groundwater irrigated area was impressive (14 per cent) during the same period. In terms of volume, groundwater development was only 46 and 80 per cent in Sri-Ganganagar and Hanumangarh districts respectively in 2009. Therefore, there is a further scope for regulated and monitored groundwater development as salinity of groundwater in the lower aquifers is a serious problem in the region.

It was observed that of the total 160 selected farmers, nearly a half were self-users only, two-fifths were self-users plus buyers and only 13 per cent were self-user plus sellers of canal and groundwater in the

study area. Nearly two-fifths of the total farmers were using both canal and groundwater as source of irrigation on their farms. On the other hand, one-third of the total farmers were dependent on canal only. Of the total buyer farmers, nearly a half were purchasing canal water, 29 per cent were purchasing groundwater and 23 per cent were purchasing both canal as well as groundwater. The farm specific technical efficiency was estimated by fitting of frontier production function and it was found that overall technical efficiency was good (80 per cent) in wheat production in the region.

HUMAN RESOURCE DEVELOPMENT

Training Programmes/ Workshop Organised

S.No.	Title	Venue	Date	Sponsored by	No. of Participants
1.	Recent Advances in Statistical Modelling Techniques under CAFT. Course Director: Dr. Ranjit Kumar Paul Course Co-Director: Dr. Bishal Gurung Dr. AK Paul	IASRI, New Delhi	31 May- 20 June 2013	Education Division, ICAR	25
2.	Data Analysis and Interpretation for ISS Probationers of XXXIV Batch. Course Director: Dr. Rajender Parsad Course Co-Directors: Dr. Cini Varghese Dr. BN Mandal	IASRI, New Delhi	03-21 June 2013	Central Statistical Office, Ministry of Statistics & Programme Implementation	31
3.	Data Analysis using SAS Course Director: Dr. Rajender Parsad	IASRI, New Delhi	28-29 June 2013	NAIP, ICAR	21

AWARDS AND RECOGNITIONS

- The research paper “Expert System on Barley Crop Management” by Ravindran Singh, Vijay Kumar Katiyar, SN Islam, Randhir Singh and RPS Verma has received the best poster award in the International Conference on “Impact of Technological Tools on Food Security under Global Warming Scenario (ITTFS 2012)” at Shobhit University, Modipuram during 11-12 May 2013.
- Dr. Rajender Parsad chaired a session on Automation of AICSIP Trials organized during 43rd Annual Group Meeting of All India Coordinated Sorghum Improvement Project held at DSR, Hyderabad on 21 April 2013.
- National Seminar on Recent Advances in Applied Statistics and its Application in Forestry (RAASAF) during 15-17 April 2013 at Tropical Forest Research Institute (TFRI), Jabalpur.
 - Dr. Krishan Lal. Chairman, Session III of Contributed Paper on Sampling Technique and Time Series in Forest Surveys
 - Dr. Ramasubramanian V. Chairman of the workshop on “Importance of Statistical software in Survey Data Analysis”,
 - Dr Hukum Chandra Chairman of invited session on Applied Mathematics and Forest Biometrics

VISIT ABROAD

- Dr UC Sud visited Bangladesh in connection with the third mission on Dissemination Workshop in Bangladesh during 20-30 April 2013.

NEW PROJECTS INITIATED

- Modeling network of gene responses to abiotic stress in rice. A multi institute collaborative research project (w.e.f 01 April 2013).
- Pilot study for estimation of seed, feed and wastage ratios for major food grains (w.e.f. 01 July 2013)
- NAIP project “Engaging Farmers, Enriching Knowledge: Agropedia Phase-II” (w.e.f. 01 April 2009, IASRI Collaboration from 01 April 2013).

RADIO TALK

- Dr. Yogesh Gautam delivered a Radio Talk on बच्चों की इन्टरनेट से सुरक्षा on 08 May 2013.

PANORAMA OF ACTIVITIES

Management Committee Meeting

The 62nd meeting of Institute Management Committee was held on 18 June 2013 under the Chairmanship of Dr. UC Sud, Director (A), IASRI. At the outset Dr. UC Sud welcomed the distinguished IMC members Dr. Ravinder Kaur, Dr. Rajni Jain, Dr. Niranjana Prasad and special invitees present in the meeting. Dr. Seema Jaggi, Incharge (PME Cell) made presentation on research and other related activities of the institute. She also presented the achievements of completed as well as ongoing research projects of the institute. Dr. PK Malhotra, Professor(Computer Application) and incharge, Training & Administration Cell made presentation on Teaching and Training Activities of the Institute.

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 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.

During the period, one guest seminar was delivered by Dr. Sarjinder Singh, Department of Mathematics, Texas A&M University-Kingsville, Kingsville, TX 78363 on An Overview of Calibration Approach Techniques in Survey Sampling.

The Details of Seminars Delivered

Category	Type of seminar	Number
Scientist	Project Completed	04
	New Proposal	01
	Foreign Visit	01
Student	ORW	01
	Thesis	08
Guest		01
Others	RFD	01
Total		17

PUBLICATIONS

Research Papers

- Arya, Prawin, Kumar, Shiv, Singh, DR, Kumar, Anil and N, Sivaramane (2013). Market integration in mustard commodities in India. *Glob. J. Fin. Management*, **5(12)**, 44-48.
- Chambers, R and Chandra, H (2013). A random effect block bootstrap for clustered data. *J. Comput. Graphical Statistics*, **23(2)**, 170-178.

- Dash, S, Parsad, R and Gupta, VK (2013). Row–Column designs for 2^n factorial 2-Colour microarray experiments for estimation of main effects and two-factor interactions with orthogonal parameterization. *Agril. Res.*, DOI 10.1007/s40003-013-0059-5.
- Dubey, PP, Sharma, A, Gour, DS, Prashant, Jain, A, Mukhopadhyay, CS, Singh, A and Kumar, D (2013). Sequencing, single nucleotide polymorphisms identification and development of genotyping tests for leptin gene in zebu cattle (*Bos indicus*). *Ind. J. Anim. Sci.*, **83(6)**, 61–63.
- Jain, Rajni and Arora, Alka (2013). Approach for mining multiple patterns from clusters. *J. Ind. Soc. Agril. Statist.*, **67(1)**, 33-42.
- Joshi, I, Kumar, S, Kaur, A, Mukhopadhyay, CS and Kumar, D (2013). Homology modeling of buffalo (*bubalus bubalis*) interferon-tau protein. *Amer. J. Bioin.*, **1(2)**, 79-86.
- Kumar, V, Singh, KH, Chaturvedi, KK, Nanjundan, J (2013). Enhancing access to information on rapeseed-mustard germplasm by implementing of web-based database using LAMP Technology. *Afr. J. Agril. Res.*, **8(11)**, 2733-2743.
- KV, Praveen, Kumar, Shiv, Singh, Dharam Raj, Kumar, Anil, Arya, Prawin and Chaudhary, Khyaliram (2013), An analysis of price levels of selected food commodities under modern and traditional retailing formats in Kochi. *Glob. J. Fin. Management*, **5(10)**, 76-85.
- Patle, GT, Singh, DK, Sarangil, A, Rai, Anil, Khanna, Manoj and Sahoo RN (2013). Temporal variability of climatic parameters and potential evapotranspiration. *Ind. J. Agril. Sci.*, **83(5)**, 518–524.
- Singh, Deepak, Patel, Neelam, Rajput, TBS, Lata and Varghese, Cini (2013). Study of soil water dynamics under bioline and inline drip laterals using ground water and waste water. *J. Soil Water Conservation*, **12(1)**, 55-58.
- Srivastava, Sudhir, Varghese, Cini, Jaggi, Seema and Varghese, Eldho (2013). Diallel cross designs for test versus control comparisons. *Ind. J. Genet. Plant Breed.*, **73(2)**, 186-193.
- Sudeep, Bedi, Punam and Yadav, VK (2013). Diseases and pests identification in maize - A multilingual Scenario, *J. Ind. Soc. Agril. Statist.*, **67(1)**, 107-120
- Tiwari, A, Jha, SK, Pal, RK, Sethi, S and Krishan Lal (2013). Effect of pre-milling treatments on storage stability of pearl millet flour. *J. Food Proc. Preser.*, **37(3)**, 12072-12082.
- Varghese, Eldho, Jaggi, Seema and Sarika (2013). Response surface model with neighbour effects and correlated observations. *Model Assisted Statist. Appln.*, **8(1)**, 41-49.

Popular Articles

- शर्मा, अनु, लाल, एस.बी. और राय, अनिल । कृषि कीट विज्ञान में जैव सूचना का अनुप्रयोग । *नई उम्मीद*, **5(1)**, 22 ।
- Singh, VB, and Chaturvedi, KK (2013). Improving the quality of software by quantifying the code change metric and predicting the bugs". *Lecture Notes in Computer Science (LNCS)*. **7972**, 408–426, © Springer-Verlag, Berlin Heidelberg.

E-Resource

- Chandra, H, Sud, UC, Aditya, K, Gupta, VK and Bharadwaj, A (2013). Recent advances in sample survey and analysis of survey data using statistical softwares. Available at <http://iasri.res.in/ssrs/e-books.html>
- Paul, Ranjit Kumar, Gurung, Bishal and Paul, AK (2013). Recent advances in statistical modeling techniques. Available at <http://iasri.res.in/cbp/EBook.aspx>

Book Chapter

- Singh, NP, Sewak, Shiv and Iquebal, MA (2013). Chickpea. In Book entitled: Solving the Pulses Crisis. Eds. Anil Kumar Singh and B. Gangwar, New India Publishing Agency, New Delhi 110088

Reference Manual

- Data analysis and interpretation (2013, Eds. Rajender Parsad, Cini Varghese and BN Mandal).
- Recent advances in statistical modeling techniques (2013, Eds. Ranjit Kumar Paul, Bishal Gurung and AK Paul).

E-Manual

- Data Analysis and Interpretation (2013, Eds. Rajender Parsad, Cini Varghese and BN Mandal).

INVITED LECTURES DELIVERED

- Training programme on Statistical Software R held at the Computer Science and Applied Maths Department, South Asian University, New Delhi on 13 April 2013
 - Chandra, Hukum. (i) R Software: An overview, and (ii) Data Analysis using R (2 lectures)
- Delhi Technical University on 10 April 2013.
 - Gajula, MNV Prasad. Application of Protein modeling.
- CIFE (Deemed University, ICAR), Mumbai to M.F.Sc. and Ph.D Scholars: Fish Bioinformatics: theory and practical(s) on 30 April 2013 and 01 May 2013)
 - Kumar, Dinesh. i). Quality checking of DNA sequencing data/ chromatogram, ii) Gene Bank submission tools, iii) Primer designing for (a) real time PCR (b)SNP (c)STR genotyping, iv) SNP mining tools, v) STR data generation using window based tools, vi) Microarray probe designing tools, vii) PCR-RFLP test development tools, viii) STR based tools for DNA signature of fish breeds/ varieties, ix) Phylogenetic tree making tools for SNP and STR data and x) SNP genotyping tools for tetra arm PCR
- Summer School on Recent advances in Bioinformatics for quality livestock production organized at Bioinformatics Centre, Tamil Nadu Veterinary and Animal Sciences University (TANVASU), Chennai during 02-22 May 2013.
 - Kumar, Dinesh. i) Role of bioinformatics in animal and crop improvement and Practical on Genome Annotation and ii) Bioinformatics tool for DNA signature of breeds and Practical on SNP Mining and primer designing (two lectures)
- Training Programme at SCERT, Solan (HP) during 06-13 May 2013.
 - Gautam, Yogesh. i) Cyber Law and ii) Information Technology Act 2000. (two lectures)
- Dayanand College, Ajmer on 17 May 2013.
 - Krishan Lal. Research, Teaching and Training activities of IASRI.

PAPERS PRESENTED

- National Seminar on Recent Advances in Applied Statistics and its Application in Forestry (RAASAF) during 15-17 April 2013 at Tropical Forest Research Institute, Jabalpur.
 - Pradhan, UK, Lal, Krishan*, Parsad, Rajender and Gupta, VK. Optimum conditions for mixture experiments with process variable for the expected response with minimum variability.
 - Parsad, Rajender, Gupta, VK and Lal, Krishan*. Design Resources Server.
 - Chandra, H*. and Sud, UC (2013). Importance of statistical software in survey data analysis. (Invited talk).
 - Aditya, K* and Sud, UC (2013). Estimation of domain total for unknown domain size is the presence of non-response.
 - Kumar, Amrendra. Forewarning Models for Pests and Diseases

- International Conference on Impact of Technological Tools on Food Security under Global Warming Scenario (ITTFS 2012) at Shobhit University, Modipuram during 11-12 May 2013.
 - Singh, Ravindran, Katiyar, Vijay Kumar, Islam, SN*, Singh, Randhir and Verma, RPS. Expert system on barley crop management. (poster presentation)
- World Congress on Business, Finance, Marketing and Industrial Management for Sustainable Development (BFMIMSD - 2013) at JNU, New Delhi during 25-26 May 2013.
 - Arya, Prawin*, Kumar, Shiv, Singh, DR, Kumar, Anil and N, Sivaramane. Market integration in mustard commodities in India.
 - KV, Praveen, Kumar, Shiv, Singh, Dharam Raj, Kumar, Anil, Arya, Prawin* and Chaudhary, Khyaliram. An analysis of price levels of selected food commodities under modern and traditional retailing formats in Kochi.
- National seminar on Today's Innovations-Tomorrow's Sustainability in Allied Sciences, Technology, Management and Education organized at Dehradun during 25-26 May 2013.
 - Bhowmik, Arpan* and Varghese, Eldho. Statistical issues in Experimental Data Analysis. (invited talk)
- First International and Third National Conference on Biotechnology, Bioinformatics and Bioengineering (BBB-2013) at Tirupati, Andhra Pradesh. during 28-29 June 2013.
 - Iquebal, MA, Sarika, Dixit, SP, Rai Anil and Kumar, Dinesh* (2013). BISGoat: Molecular markers based breed identification server for goat.

PARTICIPATION

Conferences / Workshops / Seminars / Symposia etc.

- One day workshop for Data Controllers on Open Government Data under National Data Sharing and Accessibility Policy (NDSAP) Implementation held at India Habitat Centre, New Delhi on April 04, 2013 organized by National Informatics Centre (NIC), Department of Electronics & Information Technology (DeitY), Ministry of Communication & Information Technology (Dr UC Sud, Dr. AK Chaubey and Dr. Seema Jaggi).
- 43rd Annual Group Meeting of All India Coordinated Sorghum Improvement Project held at DSR, Hyderabad during 20-22 April 2013 (Dr. Rajender Parsad).
- Annual Day Function of National Centre for Agricultural Economics and Policy Research (NCAP) preceded by 6th Professor Dayanatha Jha Memorial Lecture on Inclusive Growth: Reflection on Concept and Indian Experiences by Prof. Sukhdeo Thorat, Chairman Indian Council of Social Science Research on 01 May 2013. (Dr UC Sud)
- Plant Genome Saviour Community Awards (2011-12), Farmer Reward & Recognition (2012) Function organized by Protection of Plant Varieties & Farmers' Rights Authority, Ministry of Agriculture, Government of India, held at NASC Complex, ICAR, New Delhi on 22 May 2013. (Dr. Susheela Kaul)
- 2nd Annual Workshop of NICRA held during 17-19 June 2013 at IARI, New Delhi. (Dr. Ranjit Kumar Paul)

- Training-cum-Workshop on Breed Survey and ISS Methodology organized by Department of Animal Husbandry, Dairying and Fisheries, MoA, Govt. of India at India International Centre, New Delhi during 05-07 June 2013 (Also made a presentation on Methodology of Integrated Sample Survey and Sample Selection before the participants on 07 June 2013). (Dr UC Sud and Dr KK Tyagi)

Meetings

- 19th meeting of Statistical Methods for Quality and Reliability Sectional Committee, MSD3 on 08 April 2013 at Bureau of Indian Standards, Manak Bhawan, New Delhi. (Dr UC Sud)
- Executive Council meeting of the Indian Society of Agricultural Statistics, at Krishi Bhawan, New Delhi on 23 April 2013 (Dr. Rajender Parsad, Dr. PK Malhotra, Dr. Alka Arora, Dr. Hukum Chandra, Dr. AK Paul, Dr. Sangeeta Ahuja, Sh. K.K. Chaturtvedi, Dr. Sudeep, Sh. SB Lal).
- High Level Technical Coordination Committee meeting organized by Board of Revenue, Ajmer (Rajasthan) at Jaipur on 26 April 2013 (Dr KK Tyagi)
- Meeting under the Chairmanship of Secretary, Food Processing Industries, Govt. of India in which the progress of the on-going Post harvest losses project was reviewed and the highlights of the previous study was presented and discussed at length on 03 and 09 May 2013 at Panchsheel Bhawan, New Delhi. (Dr Tauqueer Ahmad)
- 3rd ASEAN-INDIA Working Group Meeting in Agriculture and Forestry” held at NASC Complex, ICAR, New Delhi during 06-07 May 2013.(Dr. Susheela Kaul)
- First meeting of the Committee to examine methodological issues relating to fixing Minimum Support Prices (MSPs) on 09 May 2013 at Krishi Bhawan, New Delhi. (Dr UC Sud)
- Meeting on Post- Harvest losses under the Chairmanship of Secretary, Ministry of Food and Processing at Panchsheel Bhawan, New Delhi on 13 May 2013. (Dr. Anil Rai)
- Cost of cultivation survey meeting on 20 May 2013, Directorate of Economics & Statistics, Jaipur. (Dr UC Sud)
- Empowered Committee meeting for implementation of the scheme Awards and Fellowships for Outstanding and Meritorious Research Work in Statistics on 27 May 2013 at Ministry of Statistics and Programme Implementation, CSO, Sardar Patel Bhawan, New Delhi. (Dr UC Sud)
- Executive Council meeting of Farming Systems Research and Development at Project Directorate for Farming Systems Research, Modipuram on 28 May 2013. (Dr. Anil Kumar)
- Meeting of the Committee on ARS under the Chairmanship of Director General, ICAR at Krishi Bhawan, New Delhi on 11 June 2013. (Dr UC Sud)
- Meeting on ICT in Agriculture at ICAR, New Delhi on 11 June 2013. (Dr. Anil Rai)
- Institute Management Committee of NBPGR, New Delhi on 12 June 2013. (Dr. Rajender Parsad)
- The preparatory meeting under the Chairmanship of Shri U. Venkateswarlu, Joint Secretary, Ministry of Food Processing Industries, Govt. of India held on 17 June 2013 at New Delhi in which the modalities of holding a One-day workshop for sharing of protocols of the study was discussed at length. (Dr Tauqueer Ahmad)

- Meeting on Harvest and Post-Harvest Losses in Ministry of Food Processing Industries on 17 June 2013. (Dr. Anil Rai)
- Meeting with Director, NSC, Curator & Head, NSC, New Delhi and Director (Works), ICAR at NASM, New Delhi on 19 June 2013 (Dr. Susheela Kaul)
- 2nd Sub Committee of the Kerala State Strategic Statistical Plan (KSSSP) Implementation Expert Committee (Agricultural Statistics) at Thiruvanthapuram on 19 June 2013. (Dr UC Sud)
- Meeting of the Committee for updation of the Rates and Ratios used in the compilation of estimates of Domestic Product, Capital Formation and other aggregates of NAS at Sardat Patel Bhawan, New Delhi on 28 June 2013. (Dr UC Sud)

CONSULTANCY /ADVISORY SERVICES PROVIDED

- Dr. Eldho Varghese advised Dr. Dipakar Mahanta, Scientist, VPKAS, Almora on the use of contrasts analysis for comparing specific treatment effects and explained the procedure of contrasts analysis using SAS.
- Dr. BN Mandal provided advisory services to Dr Abhijit Kar, Division of Post Harvest Technology, IARI on analysis of experimental data using randomized complete block design and on graphical representation of analysed results.
- Dr. Pankaj Sharma, Sr. Scientist, Directorate of Rapeseed-Mustard Research (DRMR), Bharatpur was advised on the development of forewarning models for percentage of Sclerotinia rot incidence (disease in mustard) for different date of planting in mustard crop.
- Dr. Rajender Parsad advised Dr. Subhdra Singh, Senior Scientist, Department of Genetics, CCS HAU, Hisar on the analysis of data pertaining to an experiment conducted using α -design with parameters $v = 105$, $b = 30$, $r = 2$, $k = 7$ for evaluating 105 RILs of Wheat crop on 13 characters conducted for two years 2010-11 and 2011-12 in normal sown and late sown conditions. Analysis of Variance was advised for each of the 13 characters in each of the 4 environments along with contrast analysis for RILs vs checks, path analysis, canonical correlation analysis, estimation of genotypic and phenotypic variance-covariance, correlations and heritability coefficient.
- Dr. Eldho Varghese advised Dr. Ahammed Shabeer TP, Scientist from NRC for grapes, Pune on the use of multiple comparison procedures and explained the procedure using SAS for the analysis of data pertaining to a study on biochemical characterization of oxidative enzyme activity from grape to raisins. He also advised Sh. Rajesh Bishnoi, a student from the discipline of Agricultural Extension, IARI on the use of Wilcoxon-Mann-Whitney's tests for comparing various agricultural and animal husbandry activities of male and female as a part of studying the influence of climate change on gender of Rajasthan. Further Sh. Ashish Khandelwal, a student from Agricultural Chemicals was advised on use of two-way ANOVA for studying the mobility behaviour of kresoxim methyl in soil and further the procedure of multiple comparison along the SAS code for doing the same.
- Sh. Arpan Bhowmik and Dr. Eldho Varghese advised Ms. Anshida Beevi, a student from the discipline of Agricultural Extension, IARI on the use of Wilcoxon-signed-rank test for studying the change in the livelihood pattern of people in Lakshadweep during the last decade.

PERSONNEL

Congratulations on your Appointment

Name	Designation	Effective Date of Joining IASRI
Sh. Kanchan Sinha	Scientist	12.04.2013
Sh. Samrender Das	Scientist	12.04.2013
Sh. Upendra Kumar	Scientist	12.04.2013

Congratulations on your Promotion

Name	Designation	Effective Date
Sh. Prem Prakash	Private Secretary	18.04.2013
Smt. Kamlesh Vij	Private Secretary	18.04.2013
Sh. Gaya Prasad Pal	AAO	27.04.2013

Wish you Happy Retired Life

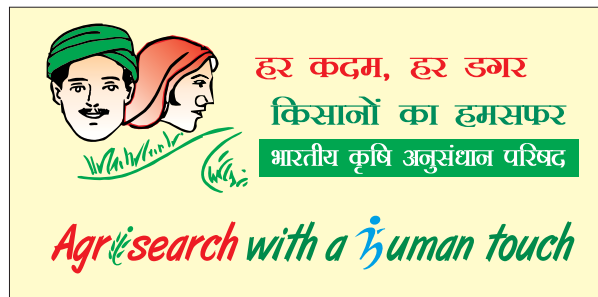
Name	Designation	Effective Date
Smt. Kusum Lata Gupta	Technical Officer (T-6)	30.04.2013
Sh. PS Rai	AAO	30.04.2013
Sh. Gaya Prasad Pal	AAO	30.04.2013
Sh. Som Datt	Technical Officer (T-7-8)	31.05.2013
Sh. Satbir	Assistant	31.05.2013
Dr. RC Goyal	Principal Scientist	30.06.2013
Sh. Ram Singh Pal	Technical Officer (T-7-8)	30.06.2013

Resignation

Name	Designation	Effective Date
Dr. Richa Sharma	Scientist	25.04.2013

OBITUARY

The Director, Staff and Students of IASRI deeply condole the death of Sh. Prem Singh, Skilled Supporting Staff who expired on 03.06.2013



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Director, IASRI (ICAR)

Library Avenue, Pusa, New Delhi - 110 012 (INDIA)

E-mail: director@iasri.res.in, pme@iasri.res.in

Website: www.iasri.res.in

Phone: +91 11 25841479

Fax: +91 11 25841564