



IASRI

NEWS



Volume 17

No. 3

October- December, 2012

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

A software "Web Generation of Experimental Designs Balanced for Indirect Effects of Treatments" has been developed which generates randomized layout of series of Neighbour Balanced Block Designs and Crossover Designs. An online catalogue of these designs has also been included in the software. In veterinary experiments, it is important to design trials requiring minimum number of animals to achieve the objectives and to analyze the data using appropriate statistical techniques. Some methods

of constructing designs involving alternating treatments sequences have been developed. Some series of symmetric/asymmetric designs with factorial treatment structure suitable for multi-component drug-drug interaction study in veterinary trials have also been obtained.

One training programme under NAIP Project SSCNARS and four other national training programmes which include Recent Advances in Sample Surveys and Analysis of Survey Data using Statistical Softwares, one Winter School on Recent Advances on Quantitative Genetics and Statistical Genomics sponsored by Education Division of ICAR, one Refresher Training Programme on Agricultural Statistics Sponsored by Govt. of Andhra Pradesh and one Refresher Course on Small Area Estimation sponsored by Ministry of Statistics & Programme Implementation, Government of India were organised. 91 participants attended these training programmes. One Hindi Workshop on MS Excel was also organised.

Scientists of the institute received various awards from Indian Society of Agricultural Statistics during International Conference on Statistics and Informatics in Agricultural Research. Dr. VK Gupta, ICAR National Professor and Dr. VK Bhatia were awarded ISAS Fellows; Dr. Prajneshu received Sankhyiki Bhushan Award; Dr Seema Jaggi received Prof. PV Sukhatme Gold Medal Award; Dr. Hukum Chandra received Dr. DN Lal Memorial Lecture Award and Dr. Ranjit Kumar Paul received Dr. GR Seth Memorial Young Scientist Award. Three research papers published in Journal of Indian Society of Agricultural statistics were awarded Best Paper Award. One more research paper was awarded Best Paper in the National Conference on "NexGen Biotechnology: Amalgamating Science and Technology" at Kurukshetra University. Scientists of the Institute visited various countries on different assignments.

Scientists of the Institute have published 10 research papers, 04 popular articles, 02 book chapters and 02 project reports. 85 research papers were presented in number of conferences/ symposia/ workshops, etc.

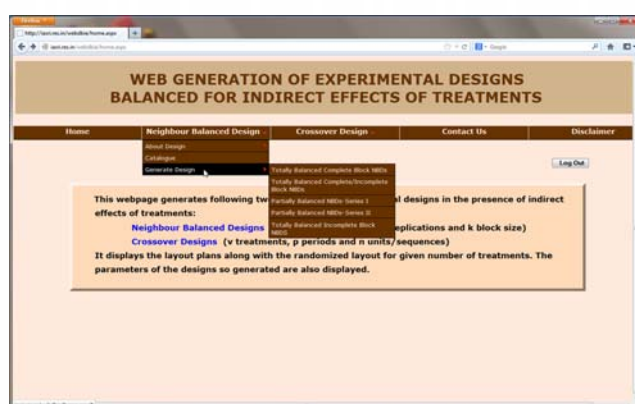
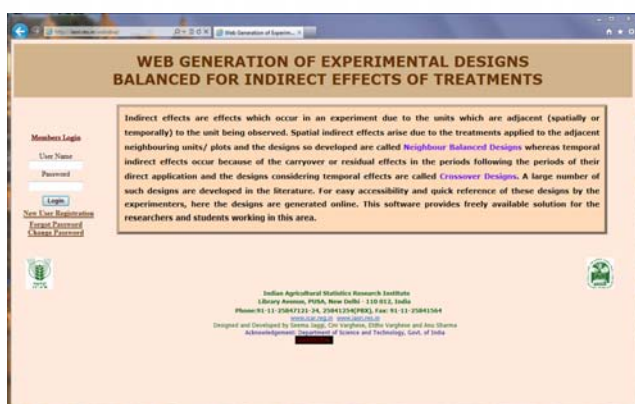
It is hoped that the contents of this document would be informative and useful for scientists in NARS. Any suggestions for improving the contents of the newsletter further would be highly appreciated.

VK Bhatia
(VK Bhatia)

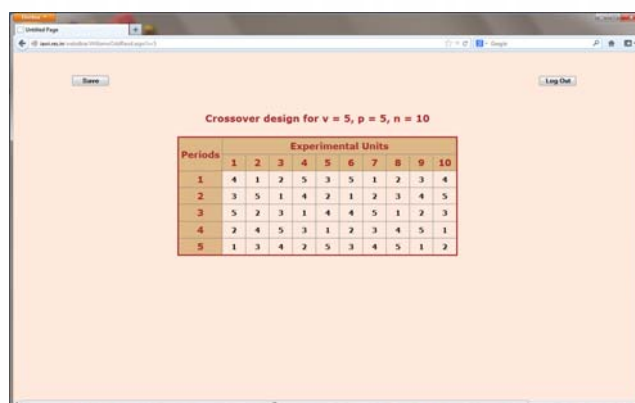
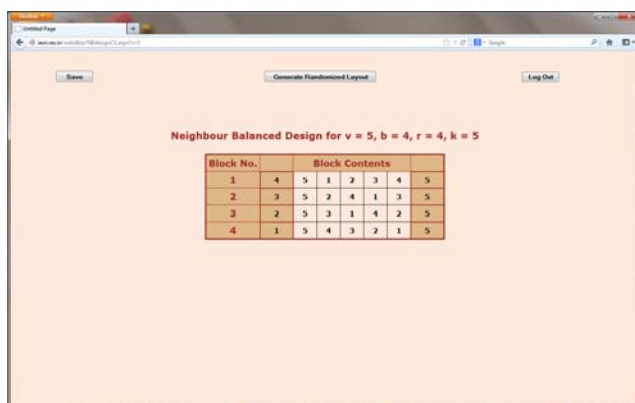
RESEARCH ACHIEVEMENTS

- **Web Generation of Experimental Designs Balanced for Indirect Effects of Treatments.**

- A large number of **Neighbour Balanced Designs** and **Crossover Designs** are developed in the literature. For easy accessibility and quick reference of these designs by the experimenters, a software Web Generation of Experimental Designs Balanced for Indirect Effects of Treatments has been developed and deployed at www.iasri.res.in/webdbie.
- The software generates five classes of Neighbour Balanced Block Designs (v treatments, b blocks, r replications and k block size) and eight classes of Crossover Designs (v treatments, p periods and n units/sequences).



- The webpage displays the layout plans along with the randomized layout for given number of treatments. The parameters of the designs so generated are also displayed. The details of the designs are also included.



- The online catalogue ($v \leq 20$) of Neighbour Balanced Designs and Crossover Designs has been developed and is included in the software. Search facility of all designs and designs for some particular value of parameters has been provided along with showing the layout of the design.

- This software provides freely available solution for the researchers and students working in this area.

Catalogue Of Crossover Designs

Design	1	2	3	4	5
Design 1	1	2	3	4	5
Design 2	2	3	4	5	1
Design 3	3	4	5	1	2
Design 4	4	5	1	2	3
Design 5	5	1	2	3	4
Design 6	1	2	3	4	5
Design 7	2	3	4	5	1
Design 8	3	4	5	1	2
Design 9	4	5	1	2	3
Design 10	5	1	2	3	4
Design 11	1	2	3	4	5
Design 12	2	3	4	5	1
Design 13	3	4	5	1	2
Design 14	4	5	1	2	3
Design 15	5	1	2	3	4
Design 16	1	2	3	4	5
Design 17	2	3	4	5	1
Design 18	3	4	5	1	2
Design 19	4	5	1	2	3
Design 20	5	1	2	3	4

To generate the design, click on design link.

Catalogue Of Neighbour Balanced Designs

Design	1	2	3	4	5
Design 1	1	2	3	4	5
Design 2	2	3	4	5	1
Design 3	3	4	5	1	2
Design 4	4	5	1	2	3
Design 5	5	1	2	3	4
Design 6	1	2	3	4	5
Design 7	2	3	4	5	1
Design 8	3	4	5	1	2
Design 9	4	5	1	2	3
Design 10	5	1	2	3	4
Design 11	1	2	3	4	5
Design 12	2	3	4	5	1
Design 13	3	4	5	1	2
Design 14	4	5	1	2	3
Design 15	5	1	2	3	4
Design 16	1	2	3	4	5
Design 17	2	3	4	5	1
Design 18	3	4	5	1	2
Design 19	4	5	1	2	3
Design 20	5	1	2	3	4

To generate the design, click on design link.

- **Efficient Experimental Designs for Drug Testing in Veterinary Trials.** For ethical and economic reasons, it is important to design veterinary trials requiring minimum number of animals to achieve the objectives and to analyze the data using appropriate statistical techniques. Some methods of constructing small designs for making comparisons of investigational products with an active control/placebo have been obtained. Designs have also been obtained for comparing investigational products with two controls (one active control and placebo) for facilitating the experimenter to pursue multiple goals in one trial like establishing superiority to placebo and at the same time allowing comparisons of the investigational products with an active control. The efficiency of these designs under a nested model (considering several observational units within each experimental unit), in comparison to an orthogonal design with same number of treatments and number of observations has been studied. Reversal or switch back designs allow for studying the reversal effects of treatments and are useful for seeing short-term effects of treatments on animals. Reversal sequences are also called switch back sequences or alternating treatments sequences. Some methods of constructing designs involving alternating treatments sequences have been developed. Further, in a drug-drug interaction study the purpose of the experimenter is to investigate whether co-administration of two or several drugs will alter the absorption profile of each drug. Some series of symmetric/asymmetric designs with factorial treatment structure suitable for multi-component drug-drug interaction study in veterinary trials have also been obtained.

HUMAN RESOURCE DEVELOPMENT Training Programmes/ Workshop Organised

Details of Training Programmes Organised

S.No.	Title	Venue	Date	Sponsored by	No. of Participants
1.	Recent Advances in Sample Survey and Analysis of Survey Data using Statistical Softwares Course Director: Hukum Chandra Course Co-Director: Kaustav Aditya	IASRI, New Delhi	03-23 October 2012	Education Division, ICAR	18
2.	Refresher training Programme on Agricultural Statistics Course Director: KK Tyagi Course Co-Director: Tauqueer Ahmad	IASRI, New Delhi	30 October to 02 November 2012	Dept. of Agriculture, Govt. of Andhra Pradesh	15
3.	Winter School on Recent Advances on Quantitative Genetics and Statistical Genomics Course Director: AR Rao	IASRI, New Delhi	06-26 November 2012	Education Division, ICAR	25
4.	Three days sensitization programme under the project Strengthening Statistical Computing for NARS Co-ordinators: Samir Farooqui and Dwijesh Mishra	NBAIM, Mau	22-24 November 2012	NAIP	14
5.	Refresher Course on Small Area Estimation	IASRI, New Delhi	03-08 December 2012	Central Statistical Organisation Ministry of Statistics & Programme Implementation	11
6.	One Day Training Programme on Functions and Activities of IASRI Organiser: Seema Jaggi	IASRI, New Delhi	07 December 2012	NASA	08

Details of Workshop Organised

1.	एम.एस.-एक्सेल (हिन्दी कार्यशाला) संयोजक: सिनी वर्गीस एवं सुशील कुमार सरकार	भा.कृ.सां.अ.स., नई दिल्ली	27 नवम्बर 2012	भा.कृ.सां.अ.स., नई दिल्ली	20
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Conference Organized

- **20th Annual Conference and Silver Jubilee of the Agricultural Economics Research Association (AERA) India** on the theme "Agricultural Inputs and Services Delivery System for Accelerating Growth and Improving Farm Income" held at Division of Agricultural Economics, Indian Agricultural Research Institute, New Delhi organized by IARI, NCAP and IASRI during 09-11 October 2012. Dr. VK Bhatia was the Co-chairman of Technical Session II: Agricultural Research, Extension and Input Services and Dr. Seema Jaggi was the panelist in the Plenary Session II on Strengthening Agricultural Policy Research.
- **International Conference on Statistics and Informatics in Agricultural Research (ICSI 2012)** by the Indian Society of Agricultural Statistics as its 66th Annual Conference during December 18-20, 2012 at Indian Agricultural Statistics Research Institute, New Delhi. Dr. VK Gupta was the Organizing Chair, Dr. VK Bhatia was the Organizing Co-Chair and Dr. Rajender Parsad was the organizing secretary for the Conference. The conference was attended by more than 250 delegates from 6 different countries (USA, Canada, Jordan, Sri Lanka, Botswana and India). There were 3 memorial lectures, one keynote address, two plenary talks and 3 distinguished lectures. 20 sessions of invited papers (including one

Panel discussion on Knowledge Management in Agriculture) were also organised. More than 140 contributed papers were presented in 14 different sessions. Following sessions were convened by the scientists of the Institute:

Small Area Estimation

Dr. Hukum Chandra

Advances in Statistical Genetics

Dr. VK Bhatia & Dr. AR Rao

HRD in Agricultural Statistics and Informatics:

Current Status and Challenges

Dr. VK Gupta

AWARDS AND RECOGNITION

- Scientists of the Institute received following awards from Indian Society of Agricultural Statistics (ISAS) during its 66th Annual Conference organised as an International Conference on Statistics and Informatics in Agricultural Research at IASRI, New Delhi during December 18-20, 2012.

– ISAS Fellows

Dr. VK Gupta, ICAR National Professor

Dr. VK Bhatia, Director, IASRI

– Sankhyiki Bhushan Award

Dr. Prajneshu, Head

– Prof. PV Sukhatme Gold Medal Award

Dr. Seema Jaggi, Senior Scientist

– Dr. DN Lal Memorial Lecture Award

Dr. Hukum Chandra, Senior Scientist

– Dr. GR Seth Memorial Young Scientist Award

Dr. Ranjit Kumar Paul, Scientist

– Following papers published during 2010-11 in Journal of ISAS were awarded Best Paper Design of Experiments

VK Gupta, AK Nigam, Rajender Parsad, LM Bhar and Subrat Keshori Behera. Resolvable Block Designs for Factorial Experiments with Full Main Effect Efficiency. 65(3), December, 2011, 305-315

Sample Surveys

UC Sud, Hukum Chandra and Raj S Chhikara. Domain Estimation in the Presence of non-Response. 64(3), December, 2010, 343-347

Applied Statistics

KN Singh, Abhishek Rathore, AK Tripathi, A Subba Rao and Salman Khan. Soil Fertility Mapping and its Validation using Spatial Prediction Techniques. 64(3), December 2010, 359-365

- Iqbal, MA, Sarika, Arora, Vasu, Verma, Nidhi, Rai, Anil and Kumar, Dinesh. World's first whole genome based microsatellite DNA marker database of tomato: TomSatDB received first Best Paper Award in National Conference on "NexGen Biotechnology: Amalgamating Science and Technology" at Kurukshetra University, during November 23-24, 2012.
- Dr. B.N. Mandal selected for Indo-Australia Early Career S & T Visiting Fellowship 2012-13.
- Sh. KK Chaturvedi became member of editorial board in International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE, <http://www.ijarcce.com>). ISSN 2278-1021, Journal of Computer Science and Engineering (JCSE, www.journalcse.co.uk). ISSN 2043-9091 and International Journal of Emerging Technology & Advanced Engineering (IJETA, www.ijetae.com). ISSN 2250-2459

VISIT ABROAD

- Dr. Prajneshu visited USA during October 05-07, 2012 and participated in the International Conference on Advances in Interdisciplinary Statistics and Combinatorics held at UNCG, USA.
- Dr UC Sud visited Bangladesh during 16-23 October 2012 and during 18-20 December 2012 for the Consultancy on Harmonization and Dissemination of Unified Agricultural Production Statistics in Bangladesh.

Distinguished Visitors

An Afghan delegation headed by H.E. Mr. Abdul Rahman Ghafoori, President, Central Statistical Organization, Government of the Islamic Republic of Afghanistan visited IASRI, New Delhi on November 26, 2012.

PANORAMA OF ACTIVITIES

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 three guest seminars were delivered by i) Dr. Madan Kr. Bhattacharya, Professor, Iowa State University, USA on One Possible Mechanism involved in Foliar Sudden

Death Syndrome development in Soybean, ii) Dr. Pushpendra Gupta, NASI-Senior Scientist on Recent Advances in Quantitative Genetics and iii) Dr. Shyamal D. Peddada, Biostatistics Branch, National Institute of Environmental Health Sciences (NIH), Research Triangle Park, NC 27709 on Identification of a set of signature cell-cycle genes whose relative phase order is conserved across species.

PUBLICATIONS

Research Papers

1. Banu, Rashia, Singh, Avtar, Malhotra, R, Gowane, G, Kumar, V, Jaggi, Seema, Varghese, E, Gandhi, RS, Chakravarty, AK, Raja, TV (2012). Comparison of different lactation curve models in Karan Fries cattle of India. *Ind. J. Anim. Sci.*, **82(11)**, 1377–1380.
2. Bharadwaj, Anshu and Minz, Sonajharia (2012). Hybrid Approach for Classification using Support Vector Machine and Decision Tree. *Int. J. Adv. Comp. Sci. Appl. - IJCSIA*, **2(3)**, 2250 - 3765, .
3. Dahiya, Shashi, Goyal, RC, Arora, Alka, Pal, Soumen, Singh, Pal, Grover, RB and Gupta, PL (2012). A Management and decision making resource for agricultural education in India. *Int. J. Comp. Appl. Digital Library* URI: <http://www.ijcaonline.org/archives/volume55/number2/8724-2177> ISBN : 973-93-80870-71, October, 2012
4. Dahiya, Shashi, Jaggi, Seema, Chaturvedi, KK, Bhardwaj, Anshu, Goyal, RC and Varghese, Cini (2012). An eLearning system for agricultural education. *Ind. Res. J. Ext. Edu.*, **12(3)**, 132-135.
5. Gautam, Y, Marwaha, S, Singh, Pal and Shirur, M (2012). Web based expert system on mushroom cultivation. *Ind. J. Mushrooms*, **30(1)**, 34-38.

The Details of Seminars Delivered

Category	Type of seminar	Number
Scientist	Project Completed	01
	New Proposal	03
	Foreign Visit	01
Student	Course	12
	ORW	09
	Thesis	02
Guest		03
Total		31

6. Marathi, Balram, Guleria, Smriti, Mohapatra, Trilochan, Parsad, Rajender, M, Nagarajan, Vinod, KK, Atwal, Salwinder S, Prabhu, Vinod K, Singh, Nagender K and Singh, Ashok K. QTL analysis of novel genomic regions associated with yield and yield related traits in new plant type based recombinant inbred lines of rice (*Oryza sativa* L.). *BMC Plant Biology*, doi:10.1186/1471-2229-12-137. <http://www.biomedcentral.com/1471-2229/12/137>
7. Panwar, Sanjeev, Kumar, Anil, Singh, KN, Farooqi, Samir, Rathore, Abhishek (2012). Using nonlinear regression techniques for analysis of onion production in India. *Ind. J. Agril. Sci.*, **82(12)**, 43-46.
8. Sanjukta, Rajkumari, Farooqi, Samir, Sharma, Naveen, Rai, Anil, Mishra, Dwijesh Chandra and Singh, Dhananjaya, P (2012). Trends in the codon usage patterns of *Chromohalobacter salexigens* genes. *Bioinformatics*, **8(22)**, 1087-1095.
9. Sud, UC, Aditya, K, Chandra, H and Parsad, R (2012). Two stage sampling for estimation of population mean with sub-sampling of non-respondents. *J. Ind. Soc. Agril. Statist.*, **66(3)**, 447-457.
10. Tyagi, VK, Kumar, Shiv and Kumar, Anil (2011). A two unit warm standby system with main operating system. *Int. transactions in math. sci. comp.*, **4(2)**, 367-374.

Popular Articles

- Arun, G, Singh, DR, Kumar, Shiv and Kumar, Anil (2012). Canal Irrigation Management through Water Users Associations and its Impact on Efficiency, Equity and Reliability in water use in Tamil Nadu, *Agricultural Economics Research Review*, 25 (Conference Number): 409-419.
- Sharma, Meera, Bedi, Punam, Chaturvedi, KK and Singh, VB, (2012). Predicting the priority of a reported bug using machine learning techniques and cross project validation. *Proceedings of 12th International Conference on Intelligent Systems Design and Applications during 27-29 Nov. 2012 at CUSAT, Kochi (India)*. ISBN:978-1-4673-5118-8_c 2012 IEEE, 539-545.
- Singh, VB and Chaturvedi, KK (2012). Entropy based bug prediction using support vector regression. *Proceedings of 12th International Conference on Intelligent Systems Design and Applications during 27-29 Nov. 2012 at CUSAT, Kochi (India)*. ISBN: 978-1-4673-5118-8_c 2012 IEEE, 746-751.
- Sudeep, Goyal, RC, Malhotra, PK and Arora, A (2012). Decision support system for research project duplication detection. *Proceeding of 12th International Conference on Hybrid Intelligent System*, 978-1-4673-5115-7©2012 IEEE, Pune, India, pp 518-524

Project Reports

- Krishan Lal, Parsad, Rajender, Gupta, VK and Bhar, LM. (2012). Analysis of Experimental Designs with t-Family of Error Distributions. Project Report IASRI, New Delhi. *IASRI/PR-06/2012*.
- Varghese, Cini (2012). Efficient designs for drug testing in veterinary trials. Project Report IASRI, New Delhi. *IASRI/PR-07/2012*.

Book Chapters

- Singh, NP, Iquebal, MA and Sewak, Shiv (2012). Strategic approaches for increasing production of chickpea in India. *Pulses Production Strategies*, Eds. P. M. Boopathi and P. Paramathma, TNAU, Coimbatore, Tamilnadu, ISBN: **81-9233061-3**,85-116.
- Singh, N. Okendro. Environmental Biostatistics. *Introduction to Environmental Sciences, First Edition* (Eds. R.S. Khoiyangbam and Navindu Gupta), TERI Press, New Delhi, INDIA, ISBN: **978-8-1-799345-5-5**, 1-623.

INVITED LECTURES DELIVERED

- Training programme organized by NASA, Greater Noida, UP, for the participants from DES Jammu & Kashmir during 01-12 October 2012.
 - Sud, UC. Small Area Estimation Procedure and its uses in Agriculture Statistics (Two lectures)
- Workshop on Randomised Response Techniques at Govt. Medical Hospital College, Chandigarh on 20 October 2012.
 - Tyagi, KK. Randomized Response Techniques.
- Farmers training programme at NRCSS, Ajmer on 30 October 2012 and at Krishihi Vigyan Kendra, Tabiji, Ajmer under Rajasthan Agricultural University on 31 October 2012
 - Islam, SN. i) Expert System on Wheat and ii) Expert System on Seed Spices and iii) e-Platform for Seed Spice Growers.
- Training programme on Analysis of Experimental Data Using SAS organized at NAARM, Hyderabad under the aegis of NAIP Consortium on Strengthening Statistical Computing for NARS during 02-08 November 2012.
 - Parsad Rajender. Design Resources Server and Indian NARS Statistical Computing Portal through WebEx session (Two lectures)
- Dr. Wasi Alam delivered invited lecture on the topic “Simulation modelling and design of experiments” on 09 November 2012 at IARI, New Delhi.
- 6-days’ training on “Analysis of Design of Experiments using SAS” during 19-24 November 2012 organized by Department of Agricultural Statistics and Social Science, College of Agriculture, Indira Gandhi Agricultural University, Raipur.
 - Lal Krishan. i) Incomplete block designs ii) Factorial experiments, iii) Analysis of Covariance iv) Combined analysis of data v) Response surface designs vi) Experiments with mixtures vii) Analysis of repeated measures and viii) Principal component analysis
- Subject-Matter training under the NAIP funded project “Establishment of National Agricultural Bioinformatics Grid” (NABG) held at NBFGR, Lucknow during 27 November - 07 December 2012.
 - Dr. Dinesh Kumar. i) Analytical tools in Functional and Comparative genomics in Fisheries Domain ii) Bioinformatics tools for genome annotations and iii) Computational approach for germplasm identification at subspecies level in fishes using STR and SNP markers followed by practical on demo dataset of ten experiments.

PAPERS PRESENTED

- 20th Annual Conference and Silver Jubilee of the Agricultural Economics Research Association (AERA) India held at Division of Agricultural Economics, Indian Agricultural Research Institute, New Delhi during 09-11 October 2012.
 - G., Arun, Singh, Dharam Raj*, Kumar, Shiv and Kumar, Anil. Canal irrigation management through water users associations and its impact on efficiency, equity and reliability in water use in Tamil Nadu.
 - Jaggi, Seema. Statistics: Tool for Agricultural Policy Research. (Invited Talk)
- VI International Conference on Legume Genetics and Genomics held at Hyderabad during 02-07 October 2012
 - Singh, Nishtha, Sahu, Tanmaya K, Singh, UP, Gaikwad, Kishore, Singh, NK and Rao, AR* (2012). Computational analysis of Heat Shock Proteins (HSPs) to understand the molecular mechanism of heat stress tolerance in legumes and other plant species. (*One minute Oral and poster presentation*).

- National Conference on Managing Threatening Diseases of Horticultural, Medicinal, Aromatic and Field Crops in Relation to Changing Climatic Situation at IISR Lucknow during 03-05 November 2012.
 - Agrawal, Ranjana. Forewarning powdery mildew in Mango. (Theme Paper)
- XXX Workshop of AICRP on Integrated Farming Systems on 16-19 November 2012 at ICAR Research Complex for Goa
 - Kumar, Anil*, Varghese, Eldho and Parsad, Rajender. Progress of the project of OSR experiments and the layout plan randomization procedure for climate change experiment.
- National Conference on “NexGen Biotechnology: Amalgamating Science and Technology” organized at Kurukshetra University, during 23-24 November 2012.
 - Iquebal, MA, Sarika, Arora, V, Verma, N, Rai, A and Kumar, Dinesh. (2012). World’s first whole genome based microsatellite DNA marker database of tomato: TomSatDB. (Oral presentation)
- 6th International Conference on Quality, Reliability, Infocomm Technology and Industrial Technology Management (ICQRITIM 2012) during 26-28 November 2012 at University of Delhi, Delhi (India).
 - Chaturvedi, KK, Kapur, PK, Singh VB and Anand, Samir (2012). Predicting software change complexity using entropy based measures.
- Third International Agronomy Congress organized at IARI, New Delhi during 26-30 November 2012
 - Kumar, Anil*, Kumar, Pramod, Singh, Gyan, Panwar, Sanjeev and Choudhary, Vipin Kumar. Application of multivariate analysis for economic evaluation of cycles of different crop rotations.
- 12th International Conference of Hybrid Intelligent Systems (HIS) at MIT College of Engineering, Pune during 05-06 December 2012.
 - Sudeep. Decision support system for research project duplication detection.
- International Consultative Meeting on Seribiotechnology 2012 (ICMS 2012) at DBT institute IBSD at IITG, Imphal Manipur during 05-07 December 2012.
 - Kumar, Dinesh. Global mapping of Intellectual property of silk genome and its products challenges and issues for India. (Invited lead paper)
- International Symposium on Bioengineering in - 2012 at IIT, Guwahati on 10 December 2012.
 - Kumar, Dinesh. Bioinformatics tools for genome annotations. (Invited talk)
- 66th Annual conference of ISAS “International Conference on Statistics and Informatics in Agricultural Research” during 18-20 December 2012 at IASRI, New Delhi.

Invited Papers

- Agrawal, Ranjana and Kumar, Amrender*. Models for forecasting crop yields, pests and diseases: IASRI approaches.
- Chandra, Hukum*, Gharde, Yogita and Jain, VK. Small area prediction under unit level model. using estimated auxiliary data.
- Devakumar, C* and Gupta, VK. Pedagogical issues in statistics education.
- Gaur, HS* and Parsad, Rajender. Policy issues for HRD in agricultural statistics and informatics
- Ghosh, Himadri. Some stochastic volatility models and their applications.
- Kaul, Sushila. Data requirement for study of women in Indian agriculture.
- Prajneshu. Human resource development (HRD) in agricultural statistics: Current status and challenges
- Rai, Anil. National agricultural bioinformatics grid.
- Sud, UC*, Chandra, Hukum and Gupta, VK. On calibration approach based product estimator.

Contributed Papers

- Aditya, Kaustav*, Sud, UC and Chandra, Hukum. Estimation of domain total for unknown domain size in the presence of nonresponse.
- Ahmad, Tauqueer *, Bathla, HVL, Rai, Anil, Sahoo, Prachi Misra, Gupta, AK and Jain, VK. Statistical evaluation of methodology for estimation of cotton production in India.
- Ahuja, Sangeeta*. Statistical package for agricultural research - Version 3.0 (SPAR 3.0).
- Alam, Wasi*, Paul, AK, Singh, NO and Singh, Pal. Maximum likelihood and uniformly minimum variance unbiased estimation of $P(Y < X)$ for Gompertz distribution.
- Arora, Alka*, Malhotra, PK, Goyal, RC and Sudeep. Approach for duplication detection in research project documents.
- Arya, Prawin*, N, Sivaramane, Singh, DR and Kumar, Anil. Vertical Integration of value-chain in edible oils markets in India
- Bharadwaj, Anshu*, Islam, SN and Singh, DR. OLAP cubes construction of 61st round NSSO data using multidimensional modeling
- Bhowmik, Arpan*, Jaggi, Seema, Varghese, Cini and Varghese, Eldho. Trend resistant second order neighbour balanced block designs.
- Biswas, Ankur*, Rai, Anil and Ahmad, Tauqueer. Spatial estimation procedure for agricultural surveys.
- Chandra, H*. Some Innovative Approaches for Small Area Estimation. (Delivered Dr. DN Lal Memorial Lecture).
- Chaturvedi, KK*, Rai, Anil and V, Ramasubramanian. Decision support system for insurance products for agriculture.
- Dahiya, Shashi*, Bharadwaj, Anshu, Narwal, Sneha and Bajpai, Shalini. Online software for decision tree classification using simple CART.
- Dasgupta, Pratyush* and Bhar, Lalmohan. Robustness of balanced incomplete block designs for multi-response experiments against missing data.
- Dash, Sukanta*, Parsad, Rajender and Gupta, VK. Row-Column designs for 2^n factorial 2-colour microarray experiments for estimations of main effects and two factor interactions for orthogonal parameterization.
- Datta, Anindita*, Jaggi, Seema, Varghese, Cini and Varghese, Eldho. Some series of Row-Column designs with multiple units per cell.
- Farooqi, Samir*, Sanjukta, RK, Mishra, DC, Singh, DP, Rai, Anil, Chaturvedi, KK and Sharma, Naveen. Gene expression analysis and synonymous codon usage patterns in *Rhizobium etli*
- Gautam, Y*, Sudeep, Singh, Pal and Shirur, M. On-line Decision support system for mushroom cultivation.
- Gupta, AK*, Chandra, Hukum and Sud, UC. Estimation of meat production in north east hilly region
- Gurung, Bishal *, Ghosh, Himadri and Prajneshu. Fitting exponential autoregressive nonlinear time-series model using extended kalman filtering technique.
- Iqbal, MA*, Prajneshu and Sarika. Nonlinear support vector regression technique for modelling and forecasting maize crop yield.
- Islam, Shahnawazul*, Chaturvedi, KK, Farooqi, Samir. Sabir, Naved, Sharma, Kirti, Agarwal, Hari Om, Sharma, JP, Sharma, RK, Shoran, Jag, Sharma, AK, Singh, Randhir and Gupta, RK. Expert system for the identification and control of weeds in wheat crop.

- Jaggi, Seema*, Varghese, Cini, Varghese, Eldho and Sharma, Anu. Web generation of experimental designs balanced for indirect effects of treatments.
- Jain, VK* and Gupta, AK. Harvest and post harvest losses of food grain crops.
- Kaul, Sushila. International trade in Indian agriculture and its impact on Indian economy
- Khanduri, OP. Information system for designed experiments.
- Kumar, Amrender*, Singh, KN, Chattopadhyay, C and Vennila, S. Trend analysis of climate variables and their effects on pests of *Pigeonpea*.
- Kumar, Anil* and Chaturvedi, Ajit. Bayesian estimation procedures for the reliability function and $P(X > Y)$ of inverse weibull distribution.
- Kumar, Prakash*, Lal, Krishan, Parsad, Rajender and Gupta, VK. Construction of balanced confounded symmetrical factorial nested row column designs.
- Kumar, Raju*, Wahi, SD and Sud, UC. Estimation of population ratio using calibration approach.
- Kumar, Sanjeev*, Rani, Ruchi, Bhati, Jyotika, Chaduvula, Pavan, Marla, Soma and Rai, Anil. In-silico prediction of salt-responsive genes in *Zea Maize*.
- Kumar, Suresh, Singh, DR*, Kumar, Shiv and Kumar, Anil. Estimation of farm level efficiencies in wheat cultivation under sprinklerirrigation in Rajasthan: An application of data envelopment analysis
- Kumari, Vandita*, Agrawal, Ranjana and Kumar, Amrender. Use of ordinal logistic regression in crop yield forecasting.
- Lal, Krishan*, Parsad, Rajender, Gupta, VK and Bhar, LM. Robust designs of two-way elimination of heterogeneity with *t*-family of error distribution.
- Lal, SB*, Sharma, Anu, Chandra, Hukum and Rai, Anil. Web based software for survey data analysis (SSDA2).
- Mandal, BN*, Parsad, Rajender and Gupta, VK. Construction of binary incomplete block designs with specified concurrence matrix through multi-step linear integer programming approach.
- Mazumder, Chiranjit*, Jha, Girish K, Bharadwaj, Anshu and Kumari, Jyoti. Nonlinear principal component based fuzzy clustering: A case study of lentil genotypes.
- Meher, Prabina Kumar*, Sahu, Tanmaya Kumar and Rao, AR. Prediction of donor (5') splice sites based on di-nucleotide dependency difference using random forest (RF): A *de novo* approach.
- Mishra, DC*, Farooqi, Samir, Sanjukta, RK, Kumar, Sanjeev, Rai, Anil and Sharma, Naveen. Comparative study on gene classification using synonymous codon usage.
- Panwar, Sanjeev*, Singh, KN, Kumar, Anil and Sivaramane, N. Forecasting of growth rates of wheat yield of Uttar Pradesh through nonlinear growth models.
- Paul, AK*, Raman, RK and Wahi, SD. Empirical comparison of the performance of linear discriminant function under multivariate non-normal and normal data.
- Paul, Manju Mary*, Rai, Anil and Kumar, Sanjeev. Classification of cereal proteins related to abiotic stress based on their structural composition using support vector machine.
- Raman, Rohan Kumar*, Sud, UC, Chandra, Hukum and Gupta, VK. On calibration approach based ratio estimation with sub-sampling the nonrespondents.
- Ranganath, HK*, Prajneshu and Ghosh, Himadri. Linear regression models for symbolic interval-valued data.
- Ray, Mrinmoy*, V, Ramasubramanian, Kumar, Amrender and Ramasundaram, P. Time-series intervention modelling for forecasting cotton yield in India.
- Sadhu, Sandip Kumar*, V, Ramasubramanian, Rai, Anil and Kumar, Adarsh. Decision tree based models for classification in agricultural ergonomics.

- Sahoo, PM*, Ahmad, T, Singh, KN and Gupta, AK. Prediction of missing information in satellite images using GIS.
- Sahu, Tanmaya Kumar*, Bajetha, Garima, Rao, AR and Rai, Anil. Cattle genomic resource information system (C-GRIS): A comprehensive portal for conservation of cattle genetic resources.
- Sarika*, Iquebal, MA, Rai, Anil and Kumar, Dinesh. *In-silico* identification of salt stress genes of grape.
- Sarkar, Kader Ali*, Jaggi, Seema, Bhowmik, Arpan, Varghese, Eldho and Varghese, Cini. Series of trend resistant balanced bipartite block designs.
- Sarkar, Susheel Kumar*, Lal, Krishan and Gupta, VK. Construction of linear trend-free multi-level factorial experiments.
- Sharma, Anu*, Varghese, Cini and Jaggi, Seema. WS-PBIBD: A web solution for partially balanced incomplete block designs.
- Sharma, NK. Fertilizer response ratios for rice-rice and rice-wheat crop sequences on farmers field based on initial soil test values
- Sharma, Richa* and Hanagal, David D. Modeling heterogeneity in diabetic retinopathy data by inverse Gaussian distribution using Bayesian approach.
- Shekhar, Shashi * and Bhar, Lalmohan. Incomplete block designs for parallel line assays.
- Shekhar, Shashi and Bhar, Lalmohan*. Incomplete block designs for asymmetric parallel line assays.
- Singh, N Okendro*, Bhar, LM, Singh, KN, Singh, N Gopimohon and Paul, AK. A method of reparameterization for aphid population growth model.
- Singh, Nishtha*, Sahu, Tanmaya Kumar, Wahi, SD and Rao, AR. Epigenetic database of agriculturally important species.
- Singh, Pal* and Sudeep. E-learning solution: Management system PG School, IARI.
- Sivaramane, N*, Mathur, VC, Singh, DR and Jha, Girish. Competitiveness and dynamics of India's rice exports from India.
- Srivastava, Sudhir*, Varghese, Cini, Jaggi, Seema and Varghese, Eldho. Augmented partial diallel cross plans involving two sets of parental lines.
- V, Ramasubramanian* and Bishop, Peter C. Applications of technology forecasting methods for cotton in India.
- Varghese, Cini*, Jaggi, Seema and Sarkar, Kallol. A series of incomplete factorial Row-Column designs.
- Varghese, Eldho*, Jaggi, Seema and Varghese, Cini. Row-Column designs balanced for neighbour effects.
- 26th National Conference on Agricultural Marketing during 20-22 December 2012 held at Gokhale Institute of Politics and Economics, Pune.
 - Praveen, K.V., Shiv Kumar, Dharam Raj Singh, Prawin Arya*, Khyaliram Chaudhary and Anil Kumar. A study on economic behaviour, perception and attitude of households towards traditional and modern food retailing formats in Kochi.
- 8th International Triennial Calcutta Symposium on Probability and Statistics, Calcutta during 27-30 December 2012.
 - Chandra, H*, Sud, UC, Chambers, R and Salvati, N. Spatial nonstationarity in small area estimation. (Invited talk).
- JNKVV, Jabalpur on 28 December 2012.
 - Prajneshu. Nonlinear statistical models and their applications. (Invited talk)

PARTICIPATION

Conferences / Workshops / Seminars / Symposia/ Trainings etc.

- Training programme on Statistical Model for Forecasting in Agriculture offered by IASRI under CAFT from 11 September – 01 October 2012. (Dr. Eldho Varghese)
- 21 days CAFT's training programme on Recent Advances in Sample Survey and Analysis of Survey Data Using Statistical Softwares held at IASRI, New Delhi during 03-23 October 2012. (Dr. N. Okendro Singh)
- One day workshop on National Data Sharing and Accessibility Policy on 05 October 2012 organized by National Informatics Centre (NIC) at CGO Complex, New Delhi. (Dr. VK Bhatia, Dr. Seema Jaggi and Dr. Alka Arora)
- Management Development Programme on Leadership Development (a Pre-RMP Programme) training programme organized by NAARM, Hyderabad during 08-19 October 2012. (Dr. Rajender Parsad and Dr. KN Singh)
- 4th Organisation for Economic Cooperation and Development (OECD) World Forum during 16-19 October 2012 at New Delhi. (Dr Hukum Chandra)
- Workshop on Wireless Security organized by the Department of Electronics and Information Technology on 17 October 2012 at Electronics Niketan, CGO Complex, New Delhi. (Sh. S.N Islam, Sh. Virendra Kumar and Sh. Sunil Bhatia)
- Foundation Day Lecture by Sh PK Basu, former Secretary, DAC on the 39th Foundation Day Function of ASRB, organized IARI on 01 November 2012. (Dr KK Tyagi)
- Short term course on Soft Computing Techniques Applications during 05-09 November 2012 at G. B. Pant University of Agriculture and Technology. (Dr. Mir Asif Iquebal)
- XXX Workshop of AICRP on Integrated Farming Systems during 16-19 November 2012 at ICAR Research Complex for Goa. (Dr Anil Kumar and Sh. NK Sharma)
- 26th Workshop on Developing Winning Research Proposals organized by NAIP at NAARM, Hyderabad during 22-23 November 2012. (Dr. Dinesh Kumar, Dr. Anil Rai and Sh Sanjeev Kumar)
- Training course on field trial & QTL Analysis using R & R/QTL at ICRISAT Hyderabad from 03-06 December 2012. (Dr. Susheel Kumar Sarkar)
- National training on Project formulation, risk assessment, scientific report writing and presentations (NAIP funded) in the division of Agricultural Engineering, Indian Agricultural Research Institute from 11-15 December 2012. (Dr. Ramasubramanian V, Sh. Arpan Bhowmik)
- International Conference on Reviving Growth organized by Ministry of Finance (GoI), CII and NIPFP under Delhi Economics Conclave-2012 and held at Hotel Taj Palace, New Delhi during 14-15 December 2012. (Dr DR Singh and Dr Prawin Arya)
- 26th Annual Conference of Indian Society of Agricultural Marketing held at Pune during 20-22 December 2012. (Dr. SP Bharadwaj)

Meetings

- Review meeting of project entitled "Establishment of National Agricultural Bioinformatics Grid in ICAR (NABG) on 04 October, 2012.

- Meeting with M/s. PricewaterhouseCoopers Pvt. Ltd. (PwC) (who has been selected by NAIP PIU as consultant to undertake “Outcome Focused Impact Evaluation of NAIP” relating to the project “Strengthening Statistical Computing for NARS” on 26 October 2012.(Dr. Ramasubramanian V.)
- Meeting held with Chief Statistician and Commissioner of Agriculture, Commissionerate of Agriculture, Govt. of Maharashtra, Pune and their team in their office at Pune on 11 October 2012 (Dr Tauqueer Ahmad)
- Meeting held with Director, Directorate of Economics and Statistics, Hyderabad and his team in his office at Hyderabad on 12 October, 2012. (Dr Tauqueer Ahmad)
- Meeting of the Technical Committee of Direction for Improvement of Animal Husbandry and Dairying Statistics (TCD) for the year 2012 under the chairmanship of DG (CSO) organized by the Department of Animal Husbandry, Dairying & Fisheries at New Delhi during 29-30 October 2012. (Dr UC Sud).
- Meeting constituted to review transfer of internet services of Institute to NKN on 05 November 2012. (Dr Hukum Chandra)
- 5th meeting of Technical Advisory Committee of Forest Survey of India (FSI) Dehradun on 06 November 2012. (Dr UC Sud)
- Meeting related to Establishment of HPC and related infrastructure with HP team to discuss about the preliminary plan of HP for complete implementation held on 06 November 2012 (Sh. SB Lal)
- Meeting regarding review of catch assessment survey methodology of inland fisheries under central sector scheme on ‘Strengthening of database and geographical information system for fisheries sector’ at CIFRI, Barrackpore, Kolkata (WB) on 17 November 2012. (Dr UC Sud).
- BOS meeting on 19 November 2012 at Division of Agricultural Economics, Indian Agricultural Research Institute, New Delhi (Dr. DR Singh)
- First meeting of the Expert Committee for the revision of the present methodology being followed by Department of Economics & Statistics and for examining other aspects in respect of Agricultural Statistics as a part of Kerala State Strategic Statistical Plan (KSSSP) at the Govt. Guest House, Thycaud, Thiruvananthapuram, Kerala on 21 November 2012.(Dr UC Sud)
- Expert Consultation Meeting of National Agricultural Bioinformatics Grid Project of NAIP held at National Bureau of Agriculturally Important Microorganism (NBAIM) Mau on 26 November 2012. (Dr. Dinesh Kumar, Dr. Anil Rai, Dr. DC Misra and Sh. MS Farooqi).
- Meeting of Committee for Updating of Rates and Ratios for compilation of estimates of Domestic Product, Capital Formation and other aggregates of NAS under the Chairmanship of Sh. Ashish Kumar, ADG (NAD) at Central Statistics Office (CSO), Sardar Patel Bhawan, Sandad Marg, New Delhi on 27 November 2012. (Dr UC Sud)
- Meeting of Central Board of Secondary Education (CBSE) Committee on finalization of modalities for normalization of JEE (Main), 2013, Govt. of India on 30 November 2012.. (Dr Hukum Chandra)
- Executing Council meeting of the Indian Society of Agricultural Statistics, at Krishi Bhawan, New Delhi, 04 December 2012
- General Body Meeting of the Indian Society of Agricultural Statistics, at IASRI, New Delhi, December 19, 2012
- M.F. Sc. (Fisheries Sciences) syllabus revision committee meeting at Division of Genetic and Biotechnology, CIFE, Mumbai on 22 December 2012. (Dr. Dinesh Kumar)

CONSULTANCY /ADVISORY SERVICES PROVIDED

- Dr. Charanjit Kaur, Professor, Division of Post-harvest technology, IARI, New Delhi was advised on the analysis of Box-Behnken design to study the effect of enzyme concentration, incubation temperature and extraction time for the enhanced juice yield and recovery of total anthocyanins from black carrot. Further, multi-response optimization technique was suggested to identify the optimum input combination for the maximum juice yield and total anthocyanine content. (Dr. Seema Jaggi Jointly with Dr. Eldho Varghese)
- Dr. SV Singh, Principal Scientist and Head, Animal Health Division, Central Institute for Research on Goats, Makhdoom, PO-Farah, District Mathura, UP, was advised relating to planning and execution of sample survey to be conducted in a new project proposal (Dr KK Tyagi).

COMPUTING FACILITIES

Wide Area Network

Internet services have been provided to the users and the website of IASRI is being updated regularly. This site has been visited 193836 times since 01 April 2012 and 1236147 times since 05 September 2003.

REORGANISATION OF DIVISIONS OF THE INSTITUTE

On the recommendations of Quinquennial Review Team (QRT) and with reference to Council's letter No. 5-10/2011-IA-II(A.E.) dated 06.12.2012, the following two Divisions of the Institute were renamed.

1. Division of "Biometrics and Statistical Modeling Techniques" is renamed as "Statistical Genetics".
2. Division of "Forecasting & Econometrics Techniques" is renamed as "Forecasting & Agricultural Systems Modeling".

PERSONNEL

Congratulations on your Appointment

Name	Designation	Effective Date of Joining IASRI
Ms. Richa Sharma	Scientist	08.10.2012
Sh. Ankur Biswas	Scientist	10.10.2012
Sh. Arpan Bhowmik	Scientist	10.10.2012
Sh. Prabina Kumar Meher	Scientist	10.10.2012

Congratulations on your Promotion

Name	Designation	Effective Date
Sh KPS Gautam	CAO	29.05.2010
Dr. Ved Prakash	T-9	03.02.2012
Dr. Surendra Singh	T-9	03.02.2012
Dr. AK Mogha	T-9	03.02.2012
Sh. PP Singh	T-9	03.02.2012
Sh. Narain Singh	T-9	03.02.2012
Smt. Abha Kanta	T-9	03.02.2012
Km. Vijay Bindal	T-9	03.02.2012
Sh. GM Pathak	T-9	03.02.2012
Sh. Santosh Kumar	T-9	03.02.2012
Sh. Devendra Pal Singh	T-9	03.02.2012
Sh. Dharam Pal Singh	T-9	03.02.2012
Sh. UP Singh	T-9	03.02.2012
Sh. Rajendra Kumar	T-9	03.02.2012
Sh. Anil Garg	T-7-8	01.07.2011
Sh. Ram Singh Pal	T-7-8	03.02.2010

Financial Upgradation

Under MACP Scheme Sh Mukesh Kumar, LDC was awarded Financial Upgradation w.e.f. 17.08.2011 vide F.No. 20(5)/2010-Admn-I dated 08.10.2012.

Transfer

Name	From	Effective Date
Sh. AP Sharma, Senior F&AO	IARI, New Delhi	07.11.2012

Wish you happy Retired Life

Name	Designation	Effective Date
Sh. Rajendra Kumar	Scientist	31.10.2012
Smt. Shakuntla Devi	Counter Assistant (T-4)	31.12.2012
Sh. Charan Singh	SSS	31.12.2012

Resignation

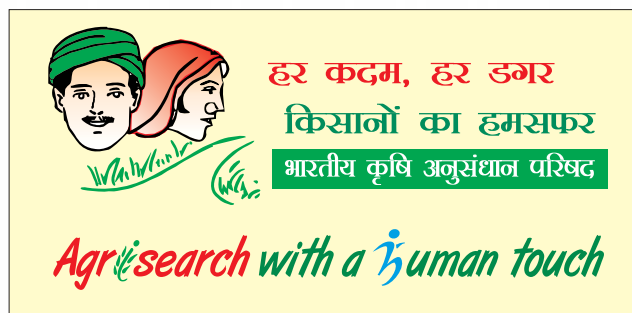
Sh. Adarsh, Assistant resigned from the Institute on 26.12.2012

Any Other

Sh. Anil Kumar Bhalla, Assistant has been appointed as Caretaker w.e.f. 26 November 2012.

Saleable Technologies

- Statistical Package for Factorial Experiments (SPFE 1.0)
- Statistical Package for Agricultural Research (SPAR 2.0)
- Statistical Package for Augmented Designs (SPAD)
- Statistical Package for Block Designs (SPBD 1.0)
- Statistical Package for Animal Breeding (SPAB 2.0)
- Software for Survey Data Analysis (SSDA 1.0)



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