



IASRI

NEWS



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निदेशक की कलम से . . .

समाचार पत्र के इस अंक में प्रतिवेदनाधीन अवधि के दौरान प्रमुख अनुसंधानिक एवं प्रशिक्षण सम्बन्धी उपलब्धियों और संस्थान की अन्य महत्वपूर्ण गतिविधियों पर प्रकाश डाला गया है।

ऐसे परीक्षण जिनमें परीक्षणात्मक इकाइयों में विचरणता के दो स्रोतों को नियन्त्रित करने की आवश्यकता है तथा उपचारों की संख्या पुनरावृत्तियों की संख्या से अधिक हो, के लिए जर्नलाइज्ड अपूर्ण ट्रोजन-टाइप अभिकल्पनाएँ प्राप्त की गयीं।

लिनियर इन्टीजर प्रोग्रामिंग के उपयोग द्वारा दूरी-सन्तुलन प्रतिचयन योजनाओं की अनेक श्रृंखलायें प्राप्त की गयीं हैं। ये योजनाएँ उन समष्टियों से प्रतिचयन के लिए उपयोगी हैं जिनमें निकटतम इकाइयाँ समय या स्थान में इकाइयों की प्राकृतिक आर्डरिंग के कारण समान प्रेषण उपलब्ध कराती हैं।

प्रतिवेदनाधीन अवधि की एक महत्वपूर्ण घटना 08 जून, 2010 को कृषि अनुसंधान एवं शिक्षा विभाग के सचिव एवं महानिदेशक, भा.कृ.अ.परिषद् द्वारा राष्ट्रीय कृषि अनुसंधान प्रणाली के लिए सांख्यिकीय संगणना के सुदृढीकरण पर एन.ए.आई.पी. कंसोर्टियम को लाँच करना है। इस परियोजना का उद्देश्य सांख्यिकीय संगणना एवं संगणनात्मक सांख्यिकी में शोध सम्बन्धी मार्गदर्शन उपलब्ध कराना है। इसमें केवल सांख्यिकी, संगणन विज्ञान एवं संख्यात्मक विश्लेषण के इंटरफेस पर ध्यान केन्द्रित नहीं होगा बल्कि इसमें सांख्यिकीय तकनीकों के क्रियान्वयन, विशेषकर बृहत् डाटा-सेटों के विश्लेषण के लिए इन्टेलीजेन्ट एल्गोरिथ्म की डिजाइनिंग भी शामिल है।

दक्षेस देशों के अधिकारियों के लिए भारत में कृषि सांख्यिकी प्रणाली पर तथा येमेन के अधिकारियों के लिए खाद्य सुरक्षा के लिए पूर्व-चेतावनी प्रणाली पर दो अन्तरराष्ट्रीय प्रशिक्षण कार्यक्रम आयोजित किये गये।

एन.ए.आई.पी. की सामर्थ्य विकसित करने की योजना के अन्तर्गत तीन वैज्ञानिकों ने अन्तरराष्ट्रीय प्रशिक्षण प्राप्त किया।

इस अवधि में संस्थान के वैज्ञानिकों द्वारा 17 शोध-पत्र प्रकाशित किये गये तथा संस्थान द्वारा अनेक बैठकों/सम्मेलनों/संगोष्ठियों/कार्यशालाओं इत्यादि में सहभागिता की गयी।

आशा है कि इस अंक की विषय वस्तु एन.ए.आर.एस. के वैज्ञानिकों के लिए सूचनाप्रद एवं उपयोगी होगी। समाचार पत्र की विषय वस्तु में सुधार लाने हेतु आपके सुझावों का स्वागत है।



Vijay Kumar Bhatia
(विजय कुमार भाटिया)

From Director's Desk . . .

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

Generalized incomplete Trojan-type designs have been obtained for experiments where it is required to control two sources of variability in the experimental units and the number of treatments may be substantially larger than

the number of replicates.

Several families of distance balance sampling plans have been obtained using linear integer programming. These plans are useful for sampling from populations in which nearer units provide similar observations due to natural ordering of units in time or space.

A very important event during this period was the launch of NAIP Consortium on Strengthening Statistical Computing for National Agricultural Research System (NARS) by Secretary, DARE and Director General ICAR on June 08, 2010. The goal of the project is to provide research guidance in statistical computing to the researchers of NARS. The efforts would not merely be focused on an interface of statistics, computer science and numerical analysis, but it would also involve designing of intelligent algorithms for implementing statistical techniques particularly for analyzing massive data sets.

Two International Training Programmes on Agricultural Statistics System in India for the Officials of SAARC countries and on Early Warning System for Food Security for officials from Yemen were organized at the Institute.

Three scientists received training abroad under capacity building scheme of NAIP.

The scientists of the Institute published 17 research papers and participated in number of meetings/ 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

Distance Balanced Sampling Plans using Linear Integer Programming Approach

Balanced sampling plans excluding adjacent units {BSA (m) plans} are useful for sampling from populations in which nearer units provide similar observations due to natural ordering of units in time or space. BSA (m) plans suffers from the drawback that the unbiased estimation of variance of Horvitz-Thompson estimator of population mean is not possible. To tackle this problem, a family of distance balanced sampling plans (DBSP) with the property that the second order inclusion probabilities are non-decreasing function of distance between the two concerned units was introduced as a generalization of BSA(m) plans. A general

w -point DBSP ($w = 1, 2, \dots, \left\lfloor \frac{N}{2} \right\rfloor$), where N is the population size and $[x]$ denotes largest integer contained in x) is introduced and a method of construction of w -point DBSP using linear integer programming is proposed. The method is general in nature and two-point, three-point, w -point, many other DBSPs, simple random sampling without replacement, balanced sampling plans excluding contiguous units and balanced sampling plans excluding adjacent units fall out as a particular case. A list of w -point DBSP for sample size three is obtained for population size N , where N is odd.

Row-column Designs

Row-column Designs are widely used in agricultural and horticultural research for the control of non-treatment variability in experiments both in field and glass house arising due to two sources of variability in the experimental units. For many experiments, the number of treatments may be substantially larger than the number of replicates and a more general class of row-column designs is required. A new class of designs named as generalized incomplete Trojan-type design is defined which is a row-column design where each cell, corresponding to the intersection of row and column, contains more than one treatment and the rows are incomplete. A method of constructing generalized incomplete Trojan-type design has been developed. The columns of the designs so obtained are complete with each treatment occurring α times. Considering rows as blocks, ignoring column and cell classifications, the design is a partially balanced incomplete block (PBIB) design following a circular association scheme. When cells are taken as blocks, the design is again a PBIB design with same associate classes. These designs can be obtained for any number of treatments ≥ 6 . Further, there is flexibility in choosing the cell size of these designs depending on the experimental resources available. The added advantage of these designs is that column-wise as well as row-wise these designs are resolvable.

Secretary, DARE and Director General ICAR inaugurates Launch Workshop of NAIP Consortium "Strengthening Statistical Computing for NARS".

Dr. S Ayyappan, Secretary DARE and Director General, ICAR inaugurated the Launch Workshop of NAIP Consortium on Strengthening Statistical Computing for NARS on June 08, 2010 in presence of Dr. Bangali Baboo, National Director, NAIP, Dr. MM Pandey, DDG (Engg.), Dr. AK Singh, DDG (Natural Resource Management), Dr. SK Datta, DDG (Crop Sciences), Dr. KD Kokate, DDG (Agricultural Extension), Dr. VK Gupta, ICAR National Professor, Dr. Mruthyunjaya, Former National Director, NAIP, Dr Ramesh Chand, Director, National Centre for Agricultural Economics and Policy Research, Dr Sain Dass, Director, Directorate of Maize Research, Dr. HS Gaur, Dean and Joint Director Education, IARI, New Delhi, Dr. NT Yaduraju,

National Co-ordinator, NAIP, Dr. VK Bhatia, Director, Indian Agricultural Statistics Research Institute (IASRI) and many other dignitaries. This project is a realization of the visualization of research managers, research facilitators, researchers and trainers to create a sound and healthy statistical computing environment for the benefit of scientists of National Agricultural Research System (NARS). The goal of the project is to provide research guidance in statistical computing and computational statistics so as to provide enabling statistical computing facilities to the researchers of NARS. The efforts would not merely be focused on an interface of statistics, computer science and numerical analysis, but it would also involve designing of intelligent algorithms for implementing statistical techniques particularly for analyzing massive data sets, simulation, bootstrap, etc..



The availability of healthy statistical computing environment would enable the researchers in NARS to undertake probing, in-depth, appropriate, intractable analysis of data generated from agricultural research including those in advanced research areas like biotechnology, genomics, micro-arrays, forecasting, agricultural field experiments, surveys, microarrays, massive data sets such as climate change, biodiversity, market intelligence, etc. It would also facilitate data sharing over web and creation of analytics over the web useful for All India Co-ordinated Research Projects and other Network Projects of NARS.

Dr. Ayyappan emphasized the need to sensitize the researcher managers about the capabilities of this project in making the agricultural research globally competitive, visible and acceptable. To this end IASRI has to play a proactive role by describing success stories, capabilities and features of the statistical computing environment through presentations in Director's Conferences, SAU Vice-Chancellor Conferences, Dean's meetings and other important fora.

The launch of this timely initiative to reinvigorate the agricultural research system with advanced computing facilities and development of computing skills would make June 08, 2010 as a red letter day for NARS. This would provide enhanced visibility to IASRI and agricultural statistics discipline in NARS. This project has brought all 151 NARS organizations in a closed network. The training component of the project is also very exhaustive and targets at training 1500 agricultural research scientists in the country in the usage of high-end statistical package. These would then become trainers and in turn train other agricultural research scientists. Such an effort would have a multiplier effect. Some actionable points emerged from the discussions during the launch workshop:

- In order to popularize and sensitize the scientists in the usage of SAS in NARS, NAARM, Hyderabad may be requested to include this Software in its course curriculum of the foundation course of ARS Scientists.

- To sensitize the researcher managers about the capabilities of this project in making the agricultural research globally competitive, visible and acceptable, capabilities and features of the statistical computing environment may be explained through presentations in Director's Conferences, SAU Vice-Chancellor Conferences, Dean's meetings and other important fora.
- Sensitization workshops on the usage of the software may be organized at different NARS organizations. For this purpose the savings under workshop/ training programmes head may be used after approval from NAIP-PIU.
- Some of the cooperating centres (statistical computing hubs) do not have the facility of a server. It was decided that the respective organization/ university may be requested to provide the Server from their own funds. In case it is not feasible, a request may be sent to NAIP-PIU in this regard.
- The consortium partners should collect live data sets of different disciplines so that the analytical techniques could be demonstrated through SAS on these live data sets.
- Nodal officers from different NARS organizations linked to IASRI, New Delhi expressed their concerns regarding their involvement in the operation and implementation of the software in partnership mode. They requested that the time they will devote may be accounted for in some way or the other. National Co-ordinator agreed that a suitable proposal in this regard may be sent for exploring the viability and feasibility.
- Some events/meetings of the nodal officers from all 151 NARS organisations may be organized in the first or second week of July each year. For this purpose the savings under workshop/ training programmes head may be used after approval from NAIP-PIU.
- Training calendar for the year 2010-11 was finalized and uploaded on the website of the project www.iasri.res.in/sscnars.

HONOURS / AWARDS / RECOGNITIONS

Award

- डॉ. रंजना अग्रवाल को वैज्ञानिक लेख 'मौसम चरों पर आधारित फसलों का पूर्वानुमान' के लिये केन्द्रीय सचिवालय हिन्दी परिषद् द्वारा अखिल भारतीय महिला विशेष पुरस्कार (2008-09) से पुरस्कृत किया गया ।

Recognitions

- Dr. VK Bhatia, Director served as an expert for revising the course contents of Masters and Doctoral Programs in Central Institute of Fisheries, Mumbai on April 16, 2010.
- Dr. Anil Kumar, Senior Scientist nominated as a member, Editorial Board of Journal: Progressive Research in the Society for Scientific Development in Agriculture and Technology, Jhansi (U.P.), India

Radio Talk

- डॉ. विजय कुमार भाटिया, निदेशक ने दिनांक 25 जून 2010 को " भारतीय कृषि सांख्यिकी अनुसंधान संस्थान किसानों के हित" में विषय पर चर्चा की ।

VISIT ABROAD

- Dr. V.K. Bhatia, was deputed to attend the ISO/TC/69 Technical Committee/ Sub-Committees and Working Groups held at Paris, France during 14-18 June 2010.
- Sh. Amrender Kumar was deputed to attend International training programme on **Technology Forecasting** at Pennsylvania State University, University Park, PA, USA. during 22 April to 14 June 2010 under NAIP project "Visioning, Policy analysis and Gender (V-PAGE) - Component II : Technology Forecasting".
- Sh. SB Lal and Smt. Anu Sharma were deputed to attend three month International training programme on **Crop Science Bioinformatics** at Iowa State University, Iowa, USA during 15 March to 14 June 2010. The training was sponsored by NAIP component-I.
- Dr. Prajneshu visited Department of Mathematics and Statistics, University of North Carolina at Greensboro, USA and delivered two invited talks on Non-linear time-series models and their applications on 03 June 2010 and Fuzzy regression analysis and its applications on 10 June 2010.

NEW PROJECT INITIATED:

The following two projects were initiated from 01 April 2010

- Establishment of National Agricultural Bioinformatics Grid in ICAR (NABG) under NAIP component-I
- A study on fertilizer response ratios for various crops and crop sequences

The following project was initiated from 01 May 2010.

- Analysis of Experimental Designs with Non-normal Error Distributions

HUMAN RESOURCE DEVELOPMENT

International Training Programmes:


- An International training programme on **Agricultural Statistics System in India** for the Officials of SAARC countries was organized at the Institute during 31 May – 11 June 2010. This training programme was funded by Central Statistical Organization (CSO), Ministry of Statistics and Programme Implementation (MOS&PI), Govt. of India (GOI). The broad objective of the training programme was to provide exposure to the participants about the agricultural statistics system prevailing in our country. Dr. UC Sud was the Course Director and Dr. KK Tyagi was the Co-Course Director of the training programme. The lecture manual was brought out in two volumes and softcopy of lecture manual was prepared in CD. An Inaugural Function was organized on 31 May 2010, in which Prof. Pronab Sen,



Chief Statistician and Secretary, MOS&PI, GOI was the Chief Guest. A Valedictory Function was organized on 11 June 2010, in which Prof. MM Pandey, DDG, ICAR was the Chief Guest.

- An International Training Course on **Early Warning System for Food Security** was organized at IASRI during 31 May to 18 June 2010 for the participants from Yemen. The course aimed at educating the participants about techniques for estimation / forecasting of agricultural production and issues involved in food security and imbalance between demand and supply of food. The course was conducted with Dr. Ranjana Agrawal as course Director, Dr. Chandradas and Sh. SC Mehta as Co-Directors. The programme was inaugurated by Dr. Pronab Sen, Chief Statistician of Ministry of Statistics and Planning. The topics covered spread over four modules consisting of Introduction to computers, Statistical methods, Sampling techniques and Forecasting techniques and Food security analysis. The trainees were imparted lectures on concepts and applied aspects of various topics on the subject. The faculty consisted of the scientists of the Institute and some were invited from IARI, NCAP, IMD and Ministry of Agriculture, etc. Field visits were arranged for carrying out crop cutting experiments at a village in Agra district and also to National Agricultural Science Museum to acquaint the participants with historical background and latest developments in agriculture. Also, visits were made to interact with the officials at IMD, NCMRWF, CSO and NASA to acquaint the trainees for the work done at the respective organizations. For valedictory function, Sh. SK Das, DG, CSO was the Chief Guest.

National Training Programmes:

- **SAS Platform Administration training** for SAS EBI Server was organized during 02-05 June 2010. The training programme was inaugurated by Dr. VK Gupta, ICAR National Professor and the inaugural function was chaired by Dr. VK Bhatia, Director, IASRI, New Delhi. The training was imparted by SAS Resource Persons and 20 Scientific/ technical personnel from the Institute participated in the training.
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- **SAS Installation training** was organized during 07-08 June 2010. Dr. MM Pandey, Deputy Director General (Engineering) inaugurated the Installation training of Nodal Officers from 24 NARS organizations of NAIP Consortium on "Strengthening Statistical Computing for NARS" on 07 June 2010 in presence of Dr. VK Gupta, ICAR National Professor and Dr. VK Bhatia, Director, IASRI, New Delhi and many other dignitaries. Dr. Bhatia underlined the importance of this project and emphasized that the outcome of this project would be in terms of trained manpower in the usage of statistical package. Dr. Rajender Parsad, Consortium Principal Investigator described briefly the genesis, importance and goal of the project and also presented an implementation plan. This initiative aims at creating a sound and healthy statistical computing environment for the benefit of scientists of NARS. The goal of the project is to provide research guidance in statistical computing and computational statistics, providing thereby enabling statistical computing facilities to the researchers of NARS. It would not merely be an interface of statistics, computer science and numerical analysis; it would also involve development of intelligent algorithms using statistical techniques for analyzing massive data sets. Dr. VK Gupta felt that the initiation of this project is a historical event, which would go in the

Annals of the ICAR as a red letter day. It would give a new look to the research of agricultural scientists and through statistical computing environment the agricultural research would become globally competitive, visible and acceptable. Dr. Gupta also felt that the process of procurement and installation has been successfully initiated but the bigger challenge that lies ahead is in the implementation and capacity building of scientists and this would become a major component of the success of this project. Dr. MM Pandey congratulated IASRI for its efforts in spearheading this initiative



which would provide desired impetus to agricultural research. Dr. Pandey expressed his feelings by saying that this effort would further enhance the visibility of IASRI and the disciplines of Agricultural Statistics and Computer Applications in NARS. Dr. Pandey expressed a sense of fulfillment over the fact that not only this project aims at creating infrastructure but also targets at training 1500 researchers in the NARS in the usage of high-end statistical package. These trainers would in turn train their fellow scientists and thus it would have a multiplier effect. The availability of very healthy statistical computing environment would help the researchers in NARS in undertaking a probing, in-depth an appropriate data analysis of the data generated from agricultural research including those in advanced research areas such as biotechnology, genomics, micro-arrays, forecasting, agricultural field experiments and surveys, microarrays, massive data sets such as climate changes. It would also develop a capability of sharing data over web and creation of analytics over the web useful for All India Coordinated Research Projects and other Network Projects of NARS. Dr. Pandey echoed loudly the feeling that sensitization of the research managers and the research scientists is very important for the success of this project. IASRI has to prove its leadership in this aspect also. The training programme was attended by 31 participants (22 nodal officers from the NARS organizations linked to IASRI as Statistical Computing Hub and 09 from IASRI, New Delhi).

- A part time two days special computer training program was conducted for the officials of ICAR Hqrs. during 18-19 May 2010. The training program was attended by 30 participants. Sh. VH Gupta and Ms. Shashi Dahiya took classes in the training program with the assistance of technical officers of division of Computer Application.
- Two full time two days special computer training program were conducted in the division for the officials of ICAR Hqrs. during 17-18 June 2010 and 24-25 June 2010. The training programs were attended by 50 participants. Sh. VH Gupta and Ms. Shashi Dahiya took classes in the training program with the assistance of technical officers in the division.

CONFERENCES / WORKSHOPS / SEMINARS / SYMPOSIA ETC. ORGANIZED

Conferences/ Symposia/ Workshops:

Travel Workshop:

- A Travel Workshop on Resolvable designs and Design Resources Server was organized by ICAR National Professor Research Unit in collaboration with Department of Statistics, College of Basic Sciences, CCS HAU, Hisar at Hisar on April 16, 2010. Dr. VK Gupta, National Professor, ICAR, Dr. Rajender Parsad, Head of Division, Design of Experiments and Dr. LM Bhar, Senior Scientist were the faculty members. Fifty participants attended the Workshop.

Hindi Workshop:

- Sh. VH Gupta organized a Hindi workshop on 28 June, 2010 on 'MS Excel' which was attended by participants from all the divisions/sections of the institute. Sh. PL Gupta, Technical Officer explained about MS Excel and its features in Hindi in the workshop.

Seminar Delivered

Seminars in different areas of Agricultural Statistics and Computer Application 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) and M.Sc. (Computer Application) and Guest Seminars.

Guest seminars during the period

- Dr. KV Palanichamy, Director, Biostatistics and Statistical Programming, Kendle India, Ahmedabad. Experiences of a Practicing Statistician.
- Dr. CS Jonathan Liu, Vice President, State College, Pennsylvania. Soft Genetics-Software Tools for Genetic Analysis.

PANORAMA OF ACTIVITIES

- Board of Studies Meeting held on 20 May 2010 under the Chairmanship of Director IASRI.
- One meeting of Institute Joint Staff Council was held on 29 May 2010 under the Chairmanship of Director IASRI.
- One meeting of the Grievance Committee of the Institute was held on 23 June 2010.

PUBLICATIONS

Research Papers:

1. Bhardwaj, SP and Vasisht, AK (2010). Price discovery in commodity markets: a case study of gram. *Ind. Com. Mkt.*, 224-234.
2. Chandra, H (2009). Estimation of small area proportions under unit level spatial models. *J. Ind. Soc. Agril. Statist.*, **63(3)**, 267-276.

The Details of Seminars Delivered

Category	Type of seminar	Number
Student	Course	10
	ORW	01
	Thesis	02
Scientist	New Project Proposal	02
Guest		02
Total		17

3. Chhikara, Raj S and Sud, UC (2009). Estimation of population and domain totals under two-phase sampling in the presence of non-response. *J. Ind. Soc. Agril. Statist.*, **63(3)**, 297-304.
4. Gupta, AK, Bathla, HVL, Sud, UC and Tyagi, KK (2009). Methodology for estimation of production of flowers on the basis of market arrivals. *J. Ind. Soc. Agril. Statist.*, **63(3)**, 259-265.
5. Gupta, VK, Singh, Poonam, Kole, Basudev and Parsad, Rajender (2009). Construction of optimal mixed-level supersaturated designs *J. Ind. Soc. Agril. Statist.*, **63(3)**, 311-319.
6. Gupta, VK, Singh, Poonam, Kole, Basudev and Parsad, Rajender (2010). Addition of runs to a two-level supersaturated design. *J. Statist. Plan. Inf.*, **140(9)**, 2531-2535.
7. Jaggi, Seema, Varghese, Cini, Varghese, Eldho and Sharma, VK (2010). Generalized incomplete trojan-type designs. *Statist. Prob. Lett.*, **80**, 706-710.
8. Kumar, Jitendra, Nisar, Keyath, Shakil, N.A., Walia, Suresh and Parsad, Rajender (2010). Controlled release formulations of metribuzin: Release kinetics in water and soil. *J. Env. Sci. Health, Part B: Pesticides, Food Contaminants, and Agricultural Wastes*, **45(4)**, 330-335.
9. Mathur, DC and Sethi, SC (2009-2010). Estimation of productivity of coconut crop for different holding categories at blocks / districts level in Kerala state. *Hry. Eco. J.*, **27(1-2)**, 101-02.
10. Rao, AR, Choudhary, SK, Wahi, SD and Prabhakaran, VT (2010). An index for simultaneous selection of genotypes for high yield and stability under incomplete genotype x environment data. *Ind. J. Gen.*, **70(1)**, 80-84.
11. Salvati, N, Chandra, H, Giovanna, R. and Chambers, R. (2010). Small area estimation using a nonparametric model based direct estimator. *Comput. Statist. Data Anal.*, **54 (9)**, 2159- 2171.
12. Sethi, SC, Pandey, PS and Mathur, DC (2009-2010). Productivity analysis of rice in India. *Hry. Eco. J.*, **27(1-2)**, 149-51.
13. Sharma, VK, Varghese, Cini and Jaggi, Seema (2010). Tetrahedral and cubical association schemes with related PBIB (3) designs. *Model Assisted Statist. Appl.*, **5(2)**, 93-99.
14. Shukla, Rajesh, Rai, Anil and Monga, Nitasha (2010). India Protection Index: An objective measurement of the economic and social well-being of the Indian population. *Margin. J. Appl. Eco. Res.*, **4(3)**, 339-367
15. Singh, Surendra, Vasisht, AK, Paul, AK and Bhar, LM (2010). The effect of farms on growth pattern of cross bred cattle. *Ind. J. Anim. Sci.*, **80(4)**, 373-375.
16. Vasisht, AK and Bhardwaj, SP (2010). An analysis of volatility of agricultural Prices: A case study of maize. *Ind. Comm. Mkt.*, 175-187.
17. Yadav, DK, Singh, G, Jain, A, Paul, AK and Singh, S (2010). A comparison of nonlinear models for describing growth in Muzaffarnagar lambs under field conditions. *Ind. J. of Anim. Sci.*, **80(6)**, 581-583.

Research Papers Presented in the Conference

- National Seminar on the Survey Results of NSS 63rd Round during 02-03 June 2010 held at New Delhi.
 - Chandra, H., Bhatia, VK and Sud, UC (2010). Small area level estimates for proportion of poor households in the state of Uttar Pradesh in India.
- Workshop on Knowledge Discovery for Rural Systems in the 14th Pacific-Asia Conference on Knowledge Discovery and Data Mining organized at Hyderabad during 21-24 June 2010 using e-conference.
 - Jain, Rajni, Arora, Alka Ahuja, Usha. Clustering approach to diagnose determinants of ICT empowerment to women farmers.

INVITED LECTURES DELIVERED

- Dr. Anil Kumar delivered an invited talk on Impact analysis of goat rearing in 10 days training programme for Veterinary officers of Bihar Government on 13 April 2010 at Central Research Institute on Goat, (ICAR), Farah, Mathura, (U.P.)
- Dr. Rajender Parsad delivered two invited lectures on Analysis of α -designs and Design Resources Server to the participants of the travel workshop organized by ICAR National Professor Research Unit in collaboration with Department of Statistics, College of Basic Sciences, CCS HAU, Hisar at Hisar on 16 April 2010.
- Sh. KK Chaturvedi delivered an invited talk entitled Multimedia and StCORM (Sharable Content Object Reference Model) in MOODLE during one day Workshop on Computerization of Research Project Information (RPF-I) and Content Management for E-Learning System using MOODLE at NDRI, Karnal on 26 April 2010
- Dr. Prajneshu delivered two lectures on Nonlinear time-series models and Fuzzy linear regression models at IIFT, Kolkata on 26 April 2010.

PARTICIPATION

Conferences / workshops / seminars / symposia etc

The scientists of the institute participated in the following:

- National Conference on Knowledge Management in the Globalized Era at NASC Complex, New Delhi during 21-23 April 2010 organized by Association of Agricultural Librarians and Documentalists of India.
- Sensitization Workshop on Project Information and Management System of ICAR (PIMS-ICAR) held at the Institute on 26 April 2010.

- One day Workshop on Computerization of Research Project Information (RPF-I) and Content Management for E-Learning System using MOODLE at NDRI, Karnal on 26 April 2010.
- Brain Storming Session on a survey to be conducted entitled Survey on Measuring Outcomes for Children of National Academy of Statistical Administration; Greater Noida on 29 April 2010.
- Annual Day Function of National Centre for Agricultural Economics and Policy Research (NCAP) on 01 May 2010.
- A one week Training Programme on Creative Writing on Agriculture held at Indian Institute of Mass Communication (IIMC), Dhenkanal, Orissa during 10-15 May 2010.
- A Brainstorming session to discuss the problem of variation in the estimates of area and production of sugarcane brought out by the State Agricultural Statistics Authorities (SASAs)/Cane Commissioners and the quality problems in the crop statistics in general under the chairmanship of Secretary (A&C) at Krishi Bhawan, New Delhi on 15 May 2010.
- Project launch-cum-annual workshop on Policy and Institutional Options for Inclusive Agricultural Growth funded by NAIP on 21 May 2010 at Division of Agricultural Economics, IARI, New Delhi.
- All India training for trainers on Methodology for Integrated Sample Survey Scheme organized by the Department of Animal Husbandry, Dairying and Fisheries, Government of India, New Delhi, at IASRI, New Delhi on 18 June 2010.

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 **522836** times since 01 April 2008 and **887804** times since 05 September 2003.

CONSULTANCY/ADVISORY SERVICES PROVIDED

- Dr. Madhuban Gopal, National Fellow, Division of Agricultural Chemicals, IARI, New Delhi was advised on the analysis of data pertaining to the experiment conducted to test the effect of 20 chemicals each with 6 different concentrations on the root length and shoot length of plants. In this experiment, each of the treatment combinations were replicated twice. Best treatment combination were identified through one way classified ANOVA followed by tukey's Honest Significant Difference test for making all possible pairwise treatment comparisons.
- Initiated work on Consultancy study on Prioritization of Rainfed area in the country in collaboration with CRIDA, Hyderabad funded by National Rainfed Area Authority (NRAA), Ministry of Agriculture, Govt. of India. The aim of the study is to develop integrated index based on resource availability, agriculture and livestock production systems, socio-economic parameters with livelihood perspective

which is to be used for prioritization of rainfed area. IASRI will be engaged in development of Socio economic and livelihood indices.

- Provided technical guidance to the Officer of Board of Revenue for Rajasthan, Ajmer regarding the problems faced in estimation of number of fruits for Rajasthan State. Data analysis of the data obtained from Board of Revenue for Rajasthan, Ajmer was done for one tehsil of Shriganganagar district of Rajasthan and estimate of number of fruits along with percentage standard error was obtained by adopting two different estimation procedures.
- As per request received from Assistant Director, National Sample Survey Organisation (Field Operation Division), Ministry of Statistics and Programme Implementation, Faridabad, a document on "Methodology on estimation of area and production of fruits and vegetables" was prepared and sent to Commissioner, Land Records & Settlements, Gwalior, Madhya Pradesh.

PERSONNEL

Congratulations on your Appointment

Name	Designation	Effective Date
Sh. Eldho Varghese	Scientist	04.05.2010

Congratulations on your Promotions

Name	Promoted to	Date
Sh. Sanjeev Panwar	Technical Officer, T-5	19.08.2008
Sh. Rajender Kumar Koli	A.A.O.	09.06.2010
Sh. Manosh Choudhury	A.A.O.	09.06.2010

Under MACP Scheme 66 Skilled Supporting Staff were awarded Financial Upgradation vide O.O.No. 24(1)/2010-Admn.II dated 21.06.2010.

Under MACP Scheme 07 Cantene Staff were awarded Financial Upgradation vide O.O.No. 24(2)/2010-Admn.II dated 21.06.2010.

Wish you happy Retired Life

Name	Date
Sh. SC Sethi, Scientist(SG)	31.05.2010
Sh. DC Mathur, Scientist(SG)	01.06.2010
Sh. SMG Saran, Scientist	30.06.2010
Sh. RG Kondapalli, Technical Officer, T-7-8	30.06.2010
Sh. RC Tripathi, Technical Officer, T-6	30-06-2010
Smt. Pushpa Bareja, AAO	30.06.2010

Transfer

Name	To	Effective Date
Sh. Amar Singh, UDC	Deputy Secretary(Ag. Engg.) ICAR, KAB-II	21.04.2010
Sh. Suresh Kumar, AF&AO	ICAR, Krishi Bhawan New Delhi	17.05.2010
Sh. PS Syal, Administrative Officer	IASRI, New Delhi	21.05.2010

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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भारतीय कृषि अनुसंधान परिषद

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