

# IASRI NEWS

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INDIAN AGRICULTURAL STATISTICS RESEARCH INSTITUTE ( ICAR ), LIBRARY AVENUE, PUSA, NEW DELHI-110 012



## 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.

Under a study, method of construction of designs for incomplete multi-response experiments was obtained using a combination of randomized complete block (RCB) designs and balanced incomplete block (BIB) designs. Here RCB design is treatment-wise design (experimental designs used to allocate the treatments in each set) and BIB design is response-wise design (experimental designs used to allocate the response variables in different sets). To accommodate more number of response variables, the use of a singular group divisible design as response-wise design instead of a BIB design is suggested. The designs obtainable from this method are economical from resource point of view. A step wise procedure of analysis of the incomplete multi-response designs has also been developed.

It is observed that  $\alpha$  designs are very useful for initial varietal trials conducted under the crop improvement programmes. In these designs, the between blocks within replication variation helps in reducing the experimental error, increasing thereby the precision of estimation of treatment contrasts of interest. These designs are also useful for the field trials with large number of treatments/crop varieties which may not always be laid out in a single location or a single season.

Two new Research Projects entitled "Impact of micronutrients on crop productivity and returns" and "Decision support system for manpower planning: PERMISnet" have been initiated during the period.

Five training programmes (four National, one International) and two study tours for International participants from Afghanistan have been organised by the Institute. The Institute also participated in number of National and International 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 further improving the contents of the newsletter would be highly appreciated.

  
(SD SHARMA)

## IN THIS ISSUE

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### निदेशक की कलम से . . . . .

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

एक अध्ययन के तहत यादृच्छिक पूर्ण ब्लॉक (आर.सी.बी.) अभिकल्पनाओं एवं संतुलित अपूर्ण ब्लॉक (बी.आई.बी.) अभिकल्पनाओं के संयोजन के उपयोग द्वारा अपूर्ण बहु-अनुक्रिया परीक्षणों के लिए अभिकल्पनाएँ तैयार करने की एक विधि प्राप्त की गयी। यहाँ पर आर.सी.बी. अभिकल्पना उपचारवार अभिकल्पना है (प्रत्येक सेट में उपचारों के आबंटन हेतु प्रयुक्त परीक्षणात्मक अभिकल्पनाएँ) तथा बी.आई.बी. अभिकल्पना अनुक्रियावार अभिकल्पना है (विभिन्न सेटों में अनुक्रिया चरों के आबंटन हेतु प्रयुक्त परीक्षणात्मक अभिकल्पनाएँ)। अधिक संख्या में अनुक्रिया चरों को समायोजित करने के लिए बी.आई.बी. अभिकल्पनाओं के स्थान पर अनुक्रियावार अभिकल्पना के रूप में एकल समूह विभाज्य अभिकल्पना के उपयोग का सुझाव दिया गया है। इस विधि से प्राप्य अभिकल्पनाएँ, संसाधन की दृष्टि से अधिक मितव्ययी होती हैं। अपूर्ण बहु-अनुक्रिया अभिकल्पनाओं के विश्लेषण की एक पदशः प्रक्रिया भी विकसित की गयी है।

यह पाया गया है कि फ़सल संवर्धन कार्यक्रमों के तहत संचालित प्रारम्भिक किस्म सम्बन्धी परीक्षणों के लिए  $\alpha$  अभिकल्पनाएँ बहुत उपयोगी हैं। इन अभिकल्पनाओं में रेप्लीकेशन विचरण के बीच के ब्लॉक परीक्षणात्मक त्रुटि कम करने, उसके द्वारा रुचि के उपचार कन्ट्रॉस्ट के आकलन की परिशुद्धता को बढ़ाने में मदद करते हैं। ये अभिकल्पनाएँ अधिक संख्या के उपचारों/फ़सल किस्मों के खेत परीक्षणों के लिए भी उपयोगी हैं जो हमेशा एक ही स्थान अथवा एक ही मौसम में न लगायी जाती हों।

प्रतिवेदनाधीन अवधि के दौरान “फ़सल उत्पादकता एवं प्रतिदाय पर सूक्ष्म-पोषकों का प्रभाव” तथा “मानवशक्ति नियोजन हेतु डिज़ीज़न सपोर्ट सिस्टम : परमिसनेट” नामक दो नयी अनुसंधान परियोजनाएँ आरम्भ की गयीं।

संस्थान द्वारा पाँच प्रशिक्षण कार्यक्रम (चार राष्ट्रीय, एक अन्तरराष्ट्रीय) तथा अफगान के अन्तरराष्ट्रीय प्रतिभागियों के लिए दो अध्ययन दौरे आयोजित किये गये। संस्थान द्वारा अनेक राष्ट्रीय एवं अन्तरराष्ट्रीय बैठकों/सम्मेलनों/संगोष्ठियों/कार्यशालाओं इत्यादि में सहभागिता की गयी। आशा है कि इस अंक की विषयवस्तु नार्स के वैज्ञानिकों के लिए सूचनाप्रद एवं उपयोगी होगी। इस समाचार पत्र की विषयवस्तु में भावी सुधार लाने के लिए आपके सुझावों का स्वागत है।

  
(सुखदेव शर्मा)

## RESEARCH ACHIEVEMENTS

● The experiments where corresponding to the application of a treatment, observations on more than one variable are recorded, are known as multi-response experiments. These experiments are generally conducted using designs that are optimal/efficient for single response situations. It has been shown that the designs that are efficient for single response experiments are also efficient for complete multi-response experiments. The only requirement is that the number of response variables should be less than the error degrees of freedom. Further, in many multi-response experiments, due to constraints on resources and time, it may not be possible to collect the observations on all the response variables from each experimental unit. As a consequence the data on a response variable is collected from one subset of units, the data on other response variable is collected from other subset of units. Some of the subsets may be common. Such experiments are known as incomplete multi-response experiments and are quite common in agro-forestry, intercropping and microbial experiments. The designing and analysis of incomplete multi-response experiments is of paramount importance for drawing statistically valid conclusions. Keeping this in view, method of construction of designs for incomplete multi-response experiments is also obtained using a combination of randomized complete block (RCB) designs and balanced incomplete block (BIB) designs. Here RCB design is treatment-wise design (experimental designs used to allocate the treatments in each set) and BIB design is response-wise design (experimental designs used to allocate the response variables in different sets). The designs obtainable from this method are economical from resource point of view. A step wise procedure of analysis of the incomplete multi-response designs has also been developed.

●  $\alpha$ -designs are essentially resolvable block designs in which the blocks can be grouped such that in each group, every treatment appears exactly once. These designs are very useful for initial varietal trials conducted under the crop improvement programmes. In these designs, the between blocks within replication variation helps in reducing the experimental error, increasing thereby the precision of estimation of treatment contrasts of interest.  $\alpha$ -designs have been recommended for varietal trials conducted by AICRP on Rapeseed and Mustard, National Bureau of Plant Genetic Resources and Central Institute of Cotton Research. In many of the trials conducted using  $\alpha$ -designs, the blocks nested within replication differences were found to be significant and with low coefficient of variation (CV) in comparison to a RCB design. This corroborates the hypothesis that these designs are quite useful for such trials. For the benefit of experimenters and practicing statisticians, a webpage of  $\alpha$ -designs has been linked to Design Resources Server and is available at [www.iasri.res.in/design/Alpha/Home.htm](http://www.iasri.res.in/design/Alpha/Home.htm). One

can generate  $\alpha$ -designs along with the randomized layout for number of varieties lying between 6 and 150, replications less than or equal to 5 and of block sizes lying between 3 to 10 along with block contents. All concepts and details on  $\alpha$ -designs are also available on this URL.

#### NEW PROJECTS / SCHEMES / PROGRAMMES

- The project entitled "Impact of micronutrients on crop productivity and returns" has been started from 01 November 2007.
- The project entitled "Decision support system for manpower planning: PERMISnet" has been started from 01 November 2007.

#### HUMAN RESOURCE DEVELOPMENT

- An International Training Programme on "Biometrics in Agricultural Research" was organized by the Institute for a trainee from NARC–Nepal during 03 October-01 December 2007.



- A Training Course entitled "Agribusiness and Market Intelligence" was organised during 06-15 October 2007. 15 participants took part in the course from all over the country. The training provided new exposure to advanced areas like agribusiness and future prospects to make agribusiness more fruitful.
- One day Training Course entitled "Official Statistics and Related Methodology" was organized on 31 October 2007 for the International participants.
- A Training Programme on "Spatial and Non-spatial Information Management and Mining in Agriculture" was organized by the Institute during 13 November to 03 December 2007 under CAS.
- A Training Programme on "Advances in Quantitative Techniques for Policy Analysis in Agriculture Economics" was organized by the Institute during 06-26 December 2007 under CAS.



- A Study Visit of International participants from Afghanistan sponsored by FAO was organised during 10-29 December, 2007. The

participants visited Directorate of Economics and Statistics, Trivandrum during 16-19 December, 2007 and Directorate of Economics and Statistics, Hyderabad during 25-27 December, 2007.



- A Study Tour was conducted for Mr. Mohammed Akram and Mr. Faiz Mohammed Rashid from Afghanistan of Senior Certificate Course. They visited to CIRG, Mukhdum, Mathura and State Department of Agriculture, Agra during 10-12 December, 2007.

#### VISIT ABROAD

- Dr. Prajneshu, Head, Division of Biometrics was deputed to attend International Conference on "Advances in Interdisciplinary Statistics" organised at Greensboro, USA during 12-14 October 2007.
- Dr. VK Bhatia, Principal Scientist and Incharge, RCMU was deputed to attend the Fourth International Conference on Agricultural Statistics organised at Beijing, China during 22-24 October 2007.
- Dr. Sushila Kaul, Senior Scientist was deputed to attend the First International CIRIEC Research Conference on the Social Economy organised at Victoria BC, Canada during 22-25 October 2007.

#### PANORAMA OF ACTIVITIES

- A meeting with Senior Plant Breeders of AICRP-RM was organized on 03 October 2007 to finalize the designs for the initial varietal trials and criteria of promotion of entries. The meeting was chaired by Dr. SD Sharma, Director, IASRI, New Delhi. Dr. VD Patil, ADG (O & P) and Dr. Arvind Kumar, Director, NRC-RM, Bharatpur also participated in this meeting. Dr. Rajender Parsad made a presentation on Statistical Issues in Rapeseed-Mustard Varietal Trials. Based on the analysis of data generated from  $\alpha$ -designs, it was shown that the coefficient of variation reduced in 14 trials out of 27 trials.



- दिनांक 23 अक्टूबर, 2007 को निदेशक महोदय की अध्यक्षता में संस्थान राजभाषा कार्यान्वयन समिति की बैठक हुई जिसमें राजभाषा विभाग द्वारा जारी वार्षिक कार्यक्रम की प्रत्येक मद पर विस्तार से चर्चा हुई।
- A meeting of the Grievance Committee of the Institute was held on 15 October 2007 under the Chairmanship of Prof. SD Sharma, Director, IASRI.
- A meeting of the Institute Joint Staff Council was held on 30 October 2007 under the Chairmanship of Prof. SD Sharma, Director, IASRI.
- A meeting of the Joint Research Advisory Committee (RAC) of IASRI and NCAP was organised on 26 November 2007 under the Chairmanship of Sh. PV Shenoi, Former Special Secretary of Ministry of Agriculture (GOI) and Director, ISEC.



- XV National Conference of Agricultural Research Statisticians of ICAR was organised by the Institute at Birsa Agricultural University, Ranchi (Jharkhand) during 03-04 December 2007.
- **हिन्दी कार्यशाला**  
दिनांक 14 तथा 15 दिसम्बर, 2007 को संस्थान के वैज्ञानिक एवं तकनीकी कर्मियों के लिए “वैज्ञानिक/तकनीकी सामग्री का हिन्दी अनुवाद” पर द्वि-दिवसीय कार्यशाला आयोजित की गई। कार्यशाला में केन्द्रीय अनुवाद ब्यूरो के निदेशक, डॉ. दंगल टी. झाल्टे ने 14 दिसम्बर, 2007 को तथा अलीगढ़ मुस्लिम विश्वविद्यालय के हिन्दी विभाग के रीडर, डॉ. राजीव लोचन नाथ शुक्ला ने 15 दिसम्बर, 2007 को व्याख्यान दिये। कार्यशाला के समापन के अवसर पर संस्थान के निदेशक महोदय द्वारा प्रतिभागियों को प्रमाण-पत्र वितरित किये गये।
- An Awareness Workshop on NISAGENET was organized at IASRI, New Delhi during 19-20 December 2007.



- Valedictory Function of Senior Certificate Course (SCC) was organised at IASRI, New Delhi on 28 December 2007.



## **PARTICIPATION OF INSTITUTE**

**Conference/Workshop/Symposium/Training etc.**  
Various Scientists and Technical Personnels of the Institute participated in

- A Seminar on “Where Hunger Rules, Peace can not Prevail – A Road Map for a Hunger Free Nutrition Secure India” organized at NASC on 03 October 2007.
- Fourth Workshop of AICRP on “Ergonomics and Safety in Agriculture (ESA)” organized at OUAT, Bhubaneswar during 04-06 October 2007.
- One day Seminar on “Oracle Technology Summit” at Nehru Place on 11 October 2007.
- 27<sup>th</sup> World Food Day Celebration 2007 organized by Department of Agricultural Research and Education, Ministry of Agriculture at NASC Complex, New Delhi on 16 October 2007.
- Brainstorming Workshop on “Networking for Agricultural Economics and Policy Research” under NAIP at UAS, Dharwad on 24 October 2007.
- National Seminar on “Survey Results of NSS 61<sup>st</sup> Round” organized by National Sample Survey Organization, Ministry of Statistics and Programme Implementation, Govt. of India at New Delhi during 29-30 October 2007.
- Pre-conference proceedings of Conference on “Environmental and Livelihood Security through Resource Management in Northern India” held at Chandigarh during 29-31 October 2007.
- 7<sup>th</sup> Kissan Mela Evam Pashu Vigyan Pradarshni at IVRI, Izatnagar, Bareilly during 01-03 November 2007.
- 29<sup>th</sup> Foundation Day of Central Avian Research Institute, Izatnagar, Bareilly on 02 November 2007.
- ASRB Foundation Day held at NASC Complex, New Delhi on 05 November 2007.
- 10<sup>th</sup> Annual Conference of the Society of Statistics, Computer and Applications held at St. Thomas College, Pala, Kerala during 16-18 November 2007.
- Inception Workshop of the Regional Programme on “Pro-poor Policy Formulation Dialogue and Implementation at the Country Level” at NCAP, New Delhi during 14-15 December 2007. The programme was a FAO initiative collaboration with IFAD.
- 3<sup>rd</sup> Indian International Conference on “Artificial Intelligence” held at NIA, Pune during 17-19 December 2007.

## **LECTURES DELIVERED**

Scientists of the Institute delivered various Lectures/Invited talks

- Invited Lectures on “Multivariate analysis of animal breeding data” and “Testing of hypothesis” in a National Training Programme on “Genetic analysis of animal breeding data using advanced software packages” organized by National Dairy Research Institute, Karnal during 10-30 October 2007.
- An Invited Talk on “Statistics: Career and prospects” at Kalindi College, Delhi University, Delhi on 23 November 2007.
- A Talk in the “2<sup>nd</sup> Asian Congress of mycology and plant pathology” held at Osmania University, Hyderabad during 19-22 December 2007.
- On the topics, viz., Introduction to Bioinformatics & Genomics, Internet Resources and Public Databases in Bioinformatics in a Winter School on Applications of Computers and Computational Skills in Veterinary and Animal Science organized at Bikaner during 27-28 December 2007.

#### HONOURS/AWARDS (पुरस्कार)

- शोध पत्र “बाजार में आगमन के आधार पर दिल्ली में मुख्य फूलों का उत्पादन” द्वारा ए.के. गुप्ता, वी.के. जैन, एम.एस. नारंग, यू.सी. सूद एवं के.के. त्यागी को भारतीय कृषि अनुसंधान पत्रिका 21(1): 34-44, 2006 में प्रकाशित उत्कृष्ट लेखों में प्रथम स्थान प्राप्त हुआ।

#### 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 560000 times since 05 September 2003.

#### SEMINARS DELIVERED

- Seminars in different areas of Agricultural Statistics and Computer Application were delivered. These seminars included presentation of salient findings of the completed research projects, thesis seminars and course seminars of students of M.Sc. and Ph.D. (Agricultural Statistics) and M.Sc. (Computer Application).

The details of Seminars Delivered		
Category	Type of seminar	Number
Student	Course	07
	Thesis	13
	ORW	03
Scientist	General	01
	New Project	01
Guest		09
<b>Total</b>		<b>34</b>

#### PUBLICATIONS

##### Research Papers Published

- Bhasin, RM, Sethi, SC and Sharma, SK (2006). To study the profitability of angora rabbits farming. *Hry. Eco. J.*, **26(1-2)**, 86-89.
- Bhattacharya, BK, Dutta, S, Dadhwal, VK, Parihar, JS, Chattopadhyay, C, Agrawal, R, Kumar, V, Khan, SA, Roy, S and Shekhar, C (2007). Predicting aphid (*Lipaphis erysimi*) growth in oilseed *Brassica* using near surface meteorological data from NOAA TOVS - A case study. *Int. J. Remote Sensing*, **28(17)**, 3759-3773.

- Dhar, Vishwa, Singh, SK, Kumar, M, Agrawal, R and Kumar, Amrender (2007). Prediction of pod borer (*Helicoverpa armigera*) infestation in short duration pigeonpea (*Cajanus cajan*) in central Uttar Pradesh. *Ind. J. Agril. Sci.*, **77(10)**, 701-704.
- Islam, Shahnawazul, Agarwal, Hari Om and Farooqi, Samir (2007). Need of a new revolution in agriculture. *Agril. Situation India*, (Special Number: How to Bring About a Second Green Revolution in India), 51-53.
- Jaggi, Seema and Tomar, Jitendra Singh (2005). Robustness of neighbour balanced complete block designs for correlated observations. *Ind. J. Appl. Statist.*, **9**, 41-52.
- Kumar, Jitendra, Nisar, K, Kumar, Arun, MB, Walia, Suresh, Shakil, NA, Parsad, Rajender and Parmar, Balraj S (2007). Development of polymeric seed coats for seed quality enhancement of soybean (*Glycine max*). *Ind. J. Agril. Sci.*, **77(11)**, 738-743.
- Singh, N Okendro, Paul, Amrit Kumar and Alam, Wasi (2007). Non-linear models to describe growth pattern of tor putitora (*Hamilton*) under monoculture and polyculture systems. *Ind. J. Anim. Sci.*, **77(12)**, 1346-1348.
- Parsad, Rajender, Kageyama, Sanpei and Gupta, VK (2007). Use of complementary property of block designs in PBIB designs. *ARS Combinatoria*, **85**, 173-182.
- Kolluru, Ramesh, Rao, AR, Prabhakaran, VT, Selvi, A and Mohapatra, T (2007). Comparative evaluation of clustering techniques for establishing AFLP based genetic relationship among sugarcane cultivars. *J. Ind. Soc. Agril. Statist.*, **61(1)**, 51-65.
- Rao, AR and Prabhakaran, VT (2007). Simultaneously selection of cultivars for yield and stability in crop improvement trials. *Ind. J. Genet.*, **67(2)**, 161-165.
- Roca, X, Olson, AJ, Rao, AR, Enerly, ER, Kristensen, VN, Dale, AB, Anderson, BS, Krainer, AR and Schidanandam, R (2007). Features of 5' splice site efficiency derived from disease causing mutations and comparative genomics. *Genome Research, online*, 21 November 2007.
- Sandhya Kiran, P, Bhatia, VK and Paul, AK (2007). Estimation of heritability by modified ANOVA method in different situations. *J. Anim. Sci.*, **77(11)**, 1184-1187.
- Sandhya Kiran, P, Bhatia, VK and Paul, AK (2007). Bayesian estimation of heritability in different situations. *J. Anim. Sci.*, **77(11)**, 1188-1191.
- Sandhya Kiran, P, Bhatia, VK and Paul, AK (2007). Estimation of heritability of robust method in case of half sib. *J. Anim. Sci.*, **77(12)**, 1301-1306.
- Pal, Satya, Ramasubramanian, V and Mehta, SC (2007). Statistical models for forecasting milk production in India. *J. Ind. Soc. Agril. Statist.*, **61(2)**, 80-83.
- Sethi, IC, Sud, UC, Rai, Anil and Narang, MS (2005). A comparison of different estimators of regression coefficients from survey data. *Ind. J. Appl. Statist.*, **9**, 27-34.
- Sethi, SC, Sood, RM, Dass, Bhagwan and Mathur, DC (2006). A study on block level estimators of crop yield and comparison of estimates for important crops in the Sirsa district of Haryana State. *Hry. Eco. J.*, **26(1-2)**, 103-105.
- Sharma, A, Varghese, C, Rao, AR, Gupta, VK and Pal, S (2007). SPRMD – A statistical package for cataloguing and generation of repeated measurement designs. *J. Ind. Soc. Agril. Statist.*, **61(1)**, 84-90.
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- for symmetric parallel line assays. *Utilitas Mathematica*, **73**, 239-253.
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  - गुप्ता, ए.के., नारंग, एम.एस. एवं माथुर, डी.सी. (2007). सब्जियों की उपज पर उर्वरक सिंचाई एवं कीटनाशक का प्रभाव। *भारतीय कृषि अनुसंधान पत्रिका*, **22(3)**, 195-200

#### Research Papers Published in Conference Proceedings

- Proceedings of the 3<sup>rd</sup> Indian International Conference on Artificial Intelligence (IICAI-07), Pune
  - Kumar, A, Ramasubramanian, V and Agrawal, R (2007). Forecasting rice yield using neural networks. 1510-1516.
  - Lal, SB, Ramasubramanian, V, Agrawal, R, Raza, SM and Jha, GK (2007). A software for imputing missing values using neural networks. 1595-1604.
  - Ramasubramanian, V, Agrawal, R, Lal, SB, Rai, A, Kumar, A, Raza, SM and Jha, GK (2007). Evaluation of neural network application for data editing. 1572-1581.
- Kumar, Ashok. Role of micro credit and financial institutions in rural development. Souvenir of the Conference on Environmental and Livelihood Security through resource Management in Northern India, Chandigarh, during 29-31 October 2007.

#### Research Papers Accepted for Publication

- Ghosh, H, Iquebal, MA and Prajneshu. A bootstrap study of variance estimation under heteroscedasticity using genetic algorithm. *J. Statist. Theo. Prac.*
- Kumar, Suman, Hooda, BK, Jaggi, Seema and Singh, Rajendra. Use of dummy variables for investigating structural stability in fertilizer-yield response models. *Ind. J. Agril. Sci.*
- Mandal, BN, Parsad, Rajender and Gupta, VK. Computer-aided construction of balanced sampling plans excluding contiguous units. *J. Statist. Appl.*
- Sarkar, Ananta, Parsad, Rajender, Rathore, Abhishek and Gupta, VK. Efficient block designs for microarray experiments. *J. Ind. Soc. Agril. Statist.*
- Srivastava, AK, Sud, UC and Chandra, Hukum. Small area estimation - An application to NSSO data. *J. Ind. Soc. Agril. Statist.*

#### Research Papers Presented in the Conference/ Symposium/Workshop etc.

- An Invited Talk entitled "Nonlinear time-series modelling and forecasting for volatile onion price data" at International Conference on "Advances in Interdisciplinary Statistics" held at Greensboro, USA during 12-14 October 2007.
- A paper entitled "Statistical Evaluation of Agricultural Development in Asian Countries" presented at ICAS-IV, Fourth International Conference in Agricultural Statistics, Beijing, China during 22-24 October 2007.
- A paper entitled "Implications of globalisation on development of dairy cooperatives in India" presented at the 1<sup>st</sup> Research Conference on Soil Economy in Victoria, BC, Canada during 22-25 October 2007.
- भारतीय गन्ना अनुसंधान संस्थान, लखनऊ में 26-28 अक्टूबर 2007 को आयोजित वैश्वीकरण के परिपेक्ष्य में कृषि एवं संबंधित उत्पादों की गुणात्मक वृद्धि एवं संरक्षण हेतु भावी शोध दिशाएं, दसवीं राष्ट्रीय वैज्ञानिक संगोष्ठी में "गन्ने की फसल के उच्चतम उत्पादन के लिए फसल कटाई का श्रेष्ठतम समय एवं पोटैश उर्वरक की मात्रा का रेस्पॉस सर्फेस विधि द्वारा अध्ययन" नामक शोध पत्र प्रस्तुत किया।



A view of Inaugural Session of XV National Conference of Agricultural Research Statisticians of ICAR organised at Ranchi (Jharkhand)

#### Saleable Technologies

- Statistical Package for Factorial Experiments (SPFE 1.0)
- Statistical Package for Agricultural Research (SPAR 2.0)
- Statistical Package for Agricultural Designs (SPAD)
- Statistical Package for Block Designs (SPBD 1.0)
- Statistical Package for Animal Breeding (SPAB)



Paper presentation during XV National Conference of Agricultural Research Statisticians of ICAR organised at Ranchi (Jharkhand)

- One research paper was presented and its abstract was published in the International Conference on Fisheries held at Kochi during 21-23 November 2007.
- Lead papers were presented in various Sessions of XV National Conference of Agricultural Research Statisticians during 03-04 December 2007.
- In one of the Session of Tractor and Farm Machinery Manufacturers' Meet organized at CIAE, Bhopal during 16-17 November 2007, a presentation on the long term mechanization strategies was made.

Following invited talks were presented during 10<sup>th</sup> Annual Conference of Society of Statistics, Computer and Applications held at St. Thomas College, Pala during 16-18 November 2007.

- Computer aided search of efficient designs for 2-colour microarray experiments by Rajender Parsad, Ananta Sarkar, VK Gupta and Abhishek Rathore.
- Some considerations on fractional factorial designs by VK Gupta, Rajender Parsad and Lalmohan Bhar.
- A robust method for experimental data analysis by Lalmohan Bhar, Rajender Parsad and VK Gupta.

The following papers were presented in 61<sup>st</sup> Annual Conference of ISAS, New Delhi held at Birsa Agricultural University, Ranchi during 30 November to 02 December 2007.

- QTL detection in drought stress in maize by VK Bhatia.
- Rainfall based forecast model for rice yield by T Rai.
- Modelling for forecasting crop yield using weather parameters and agricultural inputs by Ranjana Agrawal and Amrender Kumar.
- Weather based forecast models for potato by SC Mehta, Satya Pal and Amrender Kumar.
- Some investigations on mixture experiments in agriculture by Krishan Lal, VK Sharma, PK Batra and LM Bhar.
- A note on Bayes estimator in finite population sampling by UC Sud, Hukum Chand and IC Sethi.
- Expert system on wheat crop management: An IT based tool for transfer of technology by SN Islam, Hari Om Agarwal, MS Farooqi, KK Chaturvedi, Kirti Sharma, AK Sharma, Randhir Singh, RK Sharma and HS Sikarwar.
- A note on estimates of women workforce in India – NSS 61<sup>st</sup> round by Jagbir Singh.
- Small area estimation- Theory and some application in agriculture by UC Sud.

- An index for selecting genotypes simultaneously for high yield and stability under incomplete genotype x environment data by SD Wahi.
- A study on performance of simultaneous selection indices against missing observations by SD Wahi.

#### CONSULTANCY/ADVISORY SERVICES

- Sh. W Rungsumg from Nagaland was advised on the analysis of data pertaining to an experiment conducted on 50 varieties of rice bean using a RCB design with 3 replications conducted for 2004 and 2005 at three locations Patkai, SASRD and Kohima. He was advised on the analysis of data (both individual environment and combined over 6 environments) pertaining to 13 characters: flowering, maturity, plant height, pods per cluster, cluster per plant, pods per plant, pod length, seeds per pod, biomass per plant, protein content, carbohydrate content, 100-seed weight and seed yield per plant.

#### PERSONNEL

##### Congratulations on your promotion

- Smt. Sushma Nigam, PA (Under ACP Scheme) w.e.f. 04-06-2007.
- Smt. Sudesh Arora, PA (Under ACP Scheme) w.e.f. 14-07-2007.
- Sh. KK Hans, UDC (Under ACP Scheme) w.e.f. 28-09-2007.
- Sh. Vishal Lakhnupal, Assistant w.e.f. 15-11-2007.
- Sh. Trilok Saini, UDC w.e.f. 15-11-2007.
- Sh. Jagar Nath Yadav, SS Gr.IV w.e.f. 23-10-2007.
- Sh. Diwan Singh, SS Gr. III w.e.f. 23-10-2007.

##### Wish you happy retired life

- Sh. Bhagwan Dass, Scientist(SS) w.e.f. 31-10-2007.
- Sh. MS Narang, Senior Scientist w.e.f. 30-11-2007.
- Sh. PK Mitra, T-7-8 w.e.f. 30-11-2007.
- Sh. MS Verma, T-7-8 w.e.f. 31-12-2007.

##### Deputation

- Sh. Raghuvar Dutt, Assistant has been relieved from the Institute to join National Backward Commission as a PS on co-terminus basis w.e.f. 26-11-2007 (after noon).

##### Transfer

- Sh. Nirbhay Pal Singh, T-5 has been transferred to DIPA, KAB-1, Pusa, New Delhi with post w.e.f. 27-08-2007.

#### OBITUARY

The Director, Staff and Students of IASRI deeply condole the deaths of Sh. RP Gupta, T-6, Sh. Ramesh Chand, T-2 and Sh. Babu Lal, Cook who expired on 12 October 2007, 10 November 2007 and 14 December 2007 respectively

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