

# 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.

In one of the study, a new class of designs called doubly nested partially balanced incomplete block (DNPBIB) designs has been introduced. Some general methods for construction of doubly nested partially balanced incomplete block designs are obtained using DNBIB designs, nested balanced incomplete block (NBIB) designs and partially balanced incomplete block designs. A catalogue of 2 and 3-associate DNPBIB designs for  $v \leq 20$  and  $r \leq 30$  has also been prepared.

In another study attempt has been made to study the production and consumption pattern and estimation of the elasticities of demand and supply for major fruits and vegetables.

In the project entitled "Expert system on wheat crop management", a comprehensive system on wheat crop management has been developed which has a lot of utility for planners, farmers and researchers. The system helps in diagnosing a pathological disorder in the plant and suggests control measures. It also helps in identifying insect/pest and suggests defence mechanism. The expert system is mainly based on input from a large amount of research work done by the ICAR Institutes, Directorate of Wheat Research and SAU's.

One training programme on "Advances in data analytical techniques" was organized under the aegis of Center of Advanced Studies in Agricultural Statistics and Computer Application. The training programme was aimed at familiarizing the participants with the advances in statistical data analysis for making inferences from agricultural research data and to acquaint the participants with the use of statistical software packages SAS/SPSS/MINITAB/SYSTAT.

The Institute 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.

(SD SHARMA)

## IN THIS ISSUE

- Research Achievements
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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 में डबली नेस्टेड आंशिक संतुलित अपूर्ण ब्लॉक (DNPBIB) अभिकल्पनाओं की एक नयी श्रेणी का विकास किया गया। डबली नेस्टेड आंशिक संतुलित अपूर्ण ब्लॉक अभिकल्पनाओं की संरचना के लिए DNBIB अभिकल्पनाओं, नीड़ित संतुलित अपूर्ण ब्लॉक (NBIB) अभिकल्पनाओं तथा आंशिक रूप से संतुलित अपूर्ण ब्लॉक अभिकल्पनाओं के उपयोग द्वारा कुछ विधियाँ विकसित की गयीं।  $v \leq 20$  तथा  $r \leq 30$  के लिए 2 तथा 3-एसोसिएट DNPBIB अभिकल्पनाओं का एक कैटलॉग भी तैयार किया गया है।

एक अन्य अध्ययन में प्रमुख फलों एवं सब्जियों के उत्पादन एवं उपभोग पद्धति तथा माँग एवं आपूर्ति की लोच के आकलन का अध्ययन करने का प्रयास किया गया।

“गेहूँ फ़सल प्रबन्धन पर विशेषज्ञ तंत्र” नामक परियोजना में गेहूँ फ़सल के प्रबन्धन पर एक व्यापक तंत्र विकसित किया गया जो नियोजकों, कृषकों एवं शोधकर्ताओं के लिए अत्यन्त उपयोगी है। यह तंत्र पौधों में रोगों का पता लगाने तथा उसके नियंत्रण के उपाय सुझाने में सहायक है। यह विशेषज्ञ तंत्र मुख्यतः भा.कृ.अ.प. के संस्थानों, गेहूँ अनुसंधान निदेशालय एवं राज्य कृषि विश्वविद्यालयों द्वारा वैज्ञानिक ढंग से किसानों के लिए किये गये शोध कार्यों पर आधारित है।

कृषि सांख्यिकी एवं संगणक अनुप्रयोग के उच्च अध्ययन केन्द्र के तत्वावधान में “ऑकड़ों में विश्लेषणात्मक तकनीकों के विकास” पर एक प्रशिक्षण कार्यक्रम आयोजित किया गया। इस प्रशिक्षण कार्यक्रम का उद्देश्य कृषि अनुसंधान ऑकड़ों से निष्कर्ष प्राप्त करने के लिए ऑकड़ों के सांख्यिकीय विश्लेषण के विकास से प्रतिभागियों को अवगत कराना तथा उन्हें सांख्यिकीय सॉफ्टवेयर पैकेजों, एस.ए.एस./एस.पी.एस.एस./मिनिटैब/सिस्टैट के उपयोग की जानकारी प्रदान करना था।

संस्थान द्वारा अनेक 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। समाचार पत्र की विषयवस्तु में सुधार लाने हेतु आपके सुझावों का स्वागत है।

  
(सुखदेव शर्मा)

## RESEARCH ACHIEVEMENTS

- Nested block designs are useful for the experimental situations where there are two sources of variation in the experimental units and one is nested within another. There may arise situations when there exists another source of variations among the units in sub-blocks of an incomplete block design. To be clearer, consider a field experiment which is conducted at several locations using a nested block design where locations are taken as blocks and harvesting time is taken as sub-blocks. But harvested samples from each sub-block are to be analyzed for their content in laboratory by different technicians. To control variation due to technicians, this may be taken as another blocking factor. Hence, nesting of units within sub-blocks may be required. Doubly nested incomplete block designs are useful for such situations. An exhaustive catalogue of doubly nested balanced incomplete block (DNBIB) designs for number of treatments  $v \leq 20$  and  $r \leq 20$  is available in the literature. A DNBIB design may not exist for all parametric combinations or even if it exists it may require large number of replications which the experimenter may not be able to afford. To deal with such situations, a new class of designs called doubly nested partially balanced incomplete block (DNPBIB) designs has been introduced. Some general methods for construction of doubly nested partially balanced incomplete block designs are obtained using DNBIB designs, nested balanced incomplete block (NBIB) designs and partially balanced incomplete block designs. A catalogue of 2 and 3-associate DNPBIB designs for  $v \leq 20$  and  $r \leq 30$  has also been prepared.

- Under the project entitled “An econometric study of estimation of elasticities of demand and supply of major fruits and vegetables in India”, the production and consumption patterns of major fruits and vegetables have been studied.

The percentage increase in onion production did not show a definite trend in production pattern, however, at all India level the trend was increasing over the period. The maximum increase in cabbage production during 2001-03 over 1990-92 was observed in West Bengal, it was followed by Haryana, Maharashtra, Orissa, Gujarat, Assam and Tamilnadu while it declined in Karnataka during the same period. The production of potato has increased at all India level over the period, however, the increase in production (50%) was not encouraging during 2001-03 over 1990-92. The maximum increase in tomato production was observed in West Bengal during 2001-03 over 1990-92 and it followed by Gujarat, Maharashtra, Punjab, Andhra Pradesh and Orissa, however, it decreased in Karnataka, Tamilnadu and Assam during the same period. Brinjal production at all India level has increased during 2001-03 over 1990-92. The



maximum increase in brinjal production was observed in Gujarat followed by Andhra Pradesh, Maharashtra and Madhya Pradesh while decreased in Karnataka and Tamilnadu. In case of fruits, the maximum increase of mango was observed in Tamilnadu followed by Rajasthan, Maharashtra, Orissa, Andhra Pradesh, Gujarat, West Bengal and Kerala while the production of mango decreased in Karnataka, Punjab and Haryana during the same period. Change in production of grapes in major grape producing states which indicated that the grape production has increased more than 295% in Maharashtra during 2000-02 over 1990-92 and about 14% in Karnataka while it decreased by 77% in Haryana, 40% in Andhra Pradesh, 38% in Punjab and marginally in Tamilnadu. The overall production of grapes has increased by about 70% at country level during 2000-02 over 1990-92. The production of apple at country level has decreased by 0.3% during 2000-02 over 1990-92. The maximum decrease was observed in Uttranchal followed by Himachal Pradesh and Arunachal Pradesh. Only in Jammu and Kashmir state, apple production has increased by about 51% during the same period. Banana is an important crop which is available throughout the year. The change in production of banana showed that there was an increase of about 98% in banana production at country level during 2000-02 over 1990-92. It was also observed that Maharashtra has produced the maximum 168.95 thousand tonnes sapota during 2000-02 which is about 803% higher than production during 1990-92 in the state. The second largest sapota producing state was West Bengal followed by Gujarat and Andhra Pradesh while there was a decrease in Karnataka during the same period.

The demand for total fruits at current growth of disposable income is 18.99 million tonnes and at hypothetical growth of disposable income i.e. 0.047, 0.062 and 0.078 percent it would be 19.79, 20.93 and 22.22 million tonnes respectively in the year 2010. This demand for total fruits at different growth levels of disposable income during 2015 would be 23.19, 25.23 and 27.60 million tonnes respectively, while at current growth of disposable income, it would be 21.79 million tonnes.

- The Project “Expert system on wheat crop management” is a system developed on wheat crop management and has a lot of utility for our farmers. It provides the users with recommendations and advice concerning wheat production. This system has been designed to cover the agriculture operations, variety selection, fertilizer application, and insecticide/pesticide application on one hand and economic benefits on the other hand. The system analyses the question given by the user and specifies the result to the user with appropriate certainty factor.

This system helps in diagnosing a pathological disorder in the plant and suggests control measures. It also helps in identifying insect/pest and suggests defence mechanism.

The system holds a collection of general principles that is applied to any problem related to wheat crop management which are stored in the knowledge base. This system acts as an expert in absence of human experts. It recommends variety, identifies the diseases and insects and gives appropriate solution to solve the problem. This way it will help in transfer of technology for increasing production of wheat crop and will be a boon for Indian Agriculture.

#### NEW PROJECTS/SCHEMES/PROGRAMMES

The following new projects have been approved by IRC and initiated:

- A statistical investigation on production, economic and energy potential of crop sequences in different agro-ecosystems.
- A statistical study of rainfall distribution and rainfall based crop insurance.
- An econometric analysis of groundwater markets in Indo-Gangetic plains of India.
- Planning, designing and analysis of experiments relating to AICRP on STCR.

#### VISIT ABROAD

- Dr. Rajender Parsad, National Fellow was deputed to attend the 14<sup>th</sup> Regional Technical Coordination Committee Meeting of the Rice Wheat Consortium in Kathmandu, Nepal during 13-16 February 2007.

#### HUMAN RESOURCE DEVELOPMENT

- A training programme on “Advances in data analytical techniques” was organized under the aegis of Center of Advanced Studies in Agricultural Statistics and Computer Application during 08-28 February 2007. The training programme was aimed at familiarizing the participants with the advances in statistical data analysis for making inferences from agricultural research data and to acquaint the participants with the use of statistical software packages SAS/SPSS/MINITAB/SYSTAT.

This course was intended for the scientific research personnel working in the National Agricultural Research System. The training programme was attended by 19 participants





from various disciplines of Agricultural Sciences representing different ICAR institutes (13) and State Agricultural Universities (6). The entire course for this programme was structured in a series of six modules namely (i) Computer usage and statistical software packages, (ii) Basic statistical techniques consisting of statistical methods and inference, design of experiments and sample surveys, (iii) Diagnostics and remedial measures, (iv) Applications of multivariate techniques, (v) Modelling and forecasting techniques in agriculture and (vi) Other useful techniques such as Bio-informatics, Geoinformatics, Microarrays, Nanotechnology in agriculture, DNA fingerprinting, Biplots etc. The course material was distributed to the participants at the beginning of the programme in the form of Reference Manual in two volumes that consisted of 834 pages. Dr. Rajender Parsad and Dr. Lalmohan Bhar were respectively the Course Director and Course Co-Director of this training programme.

### PANORAMA OF ACTIVITIES

- दिनांक 22 जनवरी, 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।
- The Institute Research Committee (IRC) of the Institute is an important forum to guide the scientists in the formulation of new research projects and to review the progress of on-going research projects periodically. The meeting of the Institute Research Committee (IRC) was held on 23 February 2007 under the Chairmanship of Prof. SD Sharma, Director, IASRI. Progress of 26 ongoing projects, including 03 completed projects were discussed and 04 new projects were approved by the IRC.
- A meeting of QRT was held on 12 March 2007.
- Two meetings of the Grievance Committee of the Institute were held on 26 February and 24 March 2007 under the Chairmanship of Prof. SD Sharma, Director, IASRI.



### हिन्दी कार्यशाला

- दिनांक 15 से 17 मार्च, 2007 को संस्थान के कर्मियों के लिए “हिन्दी टंकण” पर एक तीन दिवसीय प्रशिक्षण

कार्यशाला का आयोजन किया गया। कार्यशाला का उद्घाटन दिनांक 15 मार्च, 2007 को गृह मंत्रालय, राजभाषा विभाग की हिन्दी शिक्षण योजना की सहायक निदेशिका (टंकण एवं आशुलिपि), सुश्री ऊषा शर्मा द्वारा किया गया, तत्पश्चात् उन्होंने “हिन्दी टंकण” पर प्रशिक्षण/व्याख्यान दिया। दिनांक 16 तथा 17 मार्च, 2007 को गृह मंत्रालय, राजभाषा विभाग की हिन्दी शिक्षण योजना की ही सहायक निदेशिका (टंकण एवं आशुलिपि), सुश्री आशा ने “हिन्दी टंकण” पर प्रशिक्षण एवं व्याख्यान दिये। कार्यशाला में 18 प्रतिभागियों ने सहभागिता की। कार्यशाला का समापन संस्थान के निदेशक महोदय द्वारा किया गया तथा प्रतिभागियों को प्रमाण-पत्र वितरित किए गए।



### PARTICIPATION OF INSTITUTE

#### In Various Meetings

- Meeting of the Steering Committee for preparation of the manual under the Chairmanship of DG, CSO at Sardar Patel Bhavan, New Delhi.
- Meeting of the Empowerment Committee under the Chairmanship of the Secretary, Statistics and Programme Implementation at CSO, Sardar Patel Bhavan, New Delhi.
- Meeting with Company Secretary, MD, NICS and Consultant of EDCIL for preparation of a document on structures and functions of consultancy wing for the project “Assessment of survey capabilities of private sector”.
- Meeting with the Company Secretary (TCIL).
- Meeting related to Crop Insurance under the Chairmanship of Secretary, Ministry of Agriculture at Krishi Bhavan, New Delhi on 14 February 2007.
- Various programmes relating to 45<sup>th</sup> Convocation of PG School, IARI during 05-09 February 2007.
- Meeting with QRT members on 06 March 2007 and with QRT Chairman on 12 March 2007.
- Meeting of the Screening Committee to discuss the project proposal for updating rates and ratios under the Chairmanship of Additional Director General (NAD) at Sardar Patel Bhavan, New Delhi on 19 March 2007.

#### Conference/Workshop/Symposia/Training etc.

Various Scientists and Technical Personnel of the Institute participated in

- Acted as resource person in a workshop on “Bio-informatics and statistics in aquaculture” at CIFA, Bhubaneswar.

- National seminar on “Serving farmer and saving farming indian imperatives and global perspectives” at Pant Nagar during 10-12 January 2007. Acted as Chairman of the Judges Committee to judge the technical deliberation of the seminar.
- Group meeting of AICRP-LTFE held at IISS, Bhopal during 17-18 January 2007 and gave a presentation on “Statistical procedure for identification of soil indicators-principal components analysis approach”.
- Two days “Asia Pacific Users Conference (APUC)” organized by ESRI at Taj Palace, New Delhi during 18-19 January 2007.
- 20<sup>th</sup> National convention of agricultural engineers and national seminar on “Farm mechanization for diversification of agriculture”, organized by the Ludhiana local centre of the Institution of Engineers (India) in collaboration with the Department of Farm Power and Machinery, Punjab Agricultural University, Ludhiana during 19-20 January 2007.
- An India-US Agriculture Knowledge Initiative (AKI) joint workshop on curriculum development in emerging areas of agriculture and rural development organized by ICAR and GBPUAT, Pant Nagar at NASC complex, New Delhi during 22-23 January 2007.
- Zonal Research & Extension Programme workshop of eastern dry zone (Zone-5) held at GKVK, Bangalore and presented the Agricultural Field Experiments Information System (AFEIS) to the participants on 28 March 2007.
- Southern regional workshop of AICRP on STCR during 01-02 March 2007 at GKVK, Bangalore.
- Eastern Regional workshop of AICRP on STCR during 15-16 March 2007 at OUAT, Bhubaneswar.
- Three days training on Spatial Analyst during 05-07 March 2007 provided by ESRI, India at NIIT, Kalkaji, New Delhi.
- Workshop on data analysis and data mining at NAARM, Rajendernagar, Hyderabad and also delivered a lecture on Exploratory data analysis techniques for comparison of different crossbreds in dairy cattle at NAARM, Rajendernagar, Hyderabad on 26 February 2007.

#### HONOURS/AWARDS (पुरस्कार)

- Dr. VK Sharma has been awarded “Best Teacher Award” for the year 2006 for his outstanding contribution to teaching during 45<sup>th</sup> Convocation held at IARI, New Delhi on 9 February 2007.
- Dr. Rajender Parsad, National Fellow was appointed as Managing Editor of Journal of Econometric Applications and Theory, a publication of Forum for Interdisciplinary Mathematics.



#### 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 350125 times since 05 September 2003.

#### SEMINARS 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 seminars by guest speakers. The seminar by guest speaker was delivered by Dr. AP Gore, Member QRT on “Measurement of Poverty” on 14 February 2007.

#### The details of Seminar Delivered

Category	Type of seminar	Number
Student	Course	04
	Thesis	03
	ORW	12
Scientist	Project completion	03
Guest		01
<b>Total</b>		<b>23</b>

#### LECTURES DELIVERED

- Statistical modelling in aquaculture at National Symposium during 22-25 January 2007 held at CIFA, Bhubaneswar.

#### PUBLICATIONS

##### Research Papers Published

- Bhatia, VK and Paul, Amrit Kumar (2006). Estimation of heritability by Bayesian approach. *J. Anim. Sci.*, **76(10)**, 860-861.
- Bhatia, VK and Paul, Amrit Kumar (2006). Effect of aberrant values on estimation of heritability. *J. Anim. Sci.*, **76(10)**, 862-863.
- Ghosh, Himadri, G, Sunil Kumar and Prajneshu (2006). Self exciting threshold autoregressive models for describing cyclical data. *Cal. Stat.*



*Assoc. Bull.*, **58**, 116-132.

- Jaggi, Seema, Gupta, VK and Ashraf, Jawaid (2006). On block designs partially balanced for neighbouring competition effects. *J. Ind. Statist. Assoc.*, **44**, 27-41.
- Khatri, RS and Kumar, Anil (2006). Importance of livestock in Indian economy in *Samarika* on the eve of the celebration of *Farmer Fair and Animal Science Exhibition*, organized by IVRI, Izatnagar, Bareilly during 28-30 October 2006.
- Nanda, Meena (2007). Brainstorming: As a weapon for agricultural researcher. *Agriculture Today*, **X (1)**, 29-30.
- Parsad, Rajender, Gupta, VK and Srivastava, R (2007). Designs for cropping systems research. *J. Statist. Plann. Inf.*, **137**, 1687-1703.
- Rai, Anil, Saxena, BC and Bindal, Vijay (2005). Two phase sampling in multiple frame surveys. *J. Ind. Soc. Agril. Statist.*, **59(3)**, 187-191.
- Raju, BMK, Bhatia, VK and Samanth Kumar, V V (2006). Assessment of sensitivity with incomplete data. *J. Ind. Soc. Agril. Statist.*, **60(2)**, 118-125.
- Singh, Okendro N, Bhatia, VK and Paul, AK (2006). Estimation of variance components when errors are correlated by autoregressive of order one. *J. Ind. Soc. Agril. Statist.*, **60(2)**, 126-130.
- Srivastava, R, Parsad, Rajender, Dey, Amitava and Gupta, VK (2006). A-efficient block designs for asymmetrical slope ratio assays. *J. Statist. and Appl.*, A Publication of 'Forum for Interdisciplinary Mathematics', **1(2-4)**, 185-192.
- Sarkar, Ananta and Parsad, Rajender (2006). Block designs for 2-colour microarray experiments: An overview. *Pusa Agri. Science*, 38-54.
- Singh, RK, Srivastava, R and Parsad, Rajender (2005). Robustness of standard re-inforced balanced incomplete block designs against exchange of a test-treatment. *J. Ind. Soc. Agril. Statist.*, **59(3)**, 228-232.
- Wahi, SD, Bhatia, VK and Rao, AR (2006). Study of statistical properties of genetic correlation using bootstrap technique. *J. Anim. Sci.*, **76(9)**, 755-758.

#### हिन्दी पत्रिका का प्रकाशन

- हिन्दी पत्रिका "सांख्यिकी-विमर्श: 2006-07" का प्रकाशन किया गया।

#### Research Papers Accepted for Publication

- Gupta, AK, Narang, MS, Jain, VK, Sud, UC and Tyagi, KK. Estimation of area, production and productivity of flowers in Delhi. *IJASS*, Muzaffarnagar, UP.
- Kumar, Jitendra, Singh, G, Palta, RK, Walia, Suresh, Parsad, Rajender and Parmar, BS. Field appraisal of controlled release formulations of carbofuran against the rice leaf folder, *Cnaphalocrocis medinalis* (guenee). *Ind. J. Agril. Sci.*
- Ramasubramanian, V. Utility of expert systems for the farming community. *Agric. Extn. Rev.*
- Ramasubramanian, V, Rai, A and Singh, R. Jackknife variance estimation under two-phase sampling. *J. Model Assisted Statist. App.*
- Kiran, Sandhya, Bhatia, VK and Paul, Amrit Kumar. Estimation of heritability by modified ANOVA method in different situations. *Ind. J. Anim. Sci.*



Inauguration session of training programme on "Advances in data analytical techniques"

#### 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)



A view of 45<sup>th</sup> Convocation held at IARI, New Delhi

- Kiran, Sandhya, Bhatia, VK and Paul, Amrit Kumar. Estimation of heritability by robust method in case of half-sib. *Ind. J. Anim. Sci.*
- Kiran, Sandhya, Bhatia, VK and Paul, Amrit Kumar. Bayesian estimation of heritability in different situations. *Ind. J. Anim. Sci.*
- Sharma, Anu, Goyal, RC, Gupta, VH and Grover, RB. Design and On-line Management of Database on Indian Agricultural Education System. *J. Ind. Soc. Agril. Statist.*
- Singh, Okendro, Paul, Amrit Kumar and Alam, Wasi. Non-linear models to describe growth pattern of *Tor putitora* (Hamilton) under monoculture and polyculture systems. *Ind. J. Anim. Sci.*

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

- Estimation of finite population mean using double ranked set sampling by UC Sud was presented in the 14<sup>th</sup> International Conference on Computational, Mathematical and Statistical Methods held at Chennai during 06-08 January 2007.
- Application of statistics in field experimentation and soil testing by Alope Lahiri was presented on 15 March 2007 in Eastern Regional Workshop of AICRP on STCR organised at OUAT, Bhubaneswar during 15-16 March 2007.
- Two papers entitled Web similarity aspects by Aditi Sharan and Shashi Dahiya and Characterizing mushroom clusters using rough set by Alka Arora, Shuchita Upadhyaya and Rajni Jain were presented in National Conference on Computing for National Development (INDIACom 2007), during 23-24 February 2007 organised at Bharti Vidyapeeth's Institute of Computer Application and Management, New Delhi.

- Rainfall modeling and forecasting in India: An overview by Himadhri Ghosh and Prajneshu has been presented in the International Conference on Environmental and Ecological Statistics with Application at ISI, Kolkatta during 21-23 March 2007.

#### PERSONNEL

##### Deputation

- Sh. PR Piate, LDC was deputed as UDC to NRCPB, LBS Building, Pusa, New Delhi and was relieved on 05.03.2007

##### Congratulations on your Promotion

- Dr. Lal Mohan Bhar, Sr. Scientist w.e.f. 24.01.2006
- Sh. Sanjeev Pawar, Scientist (SS) w.e.f. 31.08.2004
- Sh. Amrender Kumar, Scientist (SS) w.e.f. 29.10.2005
- Smt. Shashi Dahiya, Scientist (SS) w.e.f. 25.08.2004
- Smt. Anu Sharma, Scientist (SS) w.e.f. 18.11.2005
- Sh. Sudeep, Scientist (SS) w.e.f. 27.10.2005
- Mohd. S Islam, Scientist (SS) w.e.f. 29.11.2005
- Sh. KK Chaturvedi, Scientist (SS) w.e.f. 16.11.2005
- Sh. Pal Singh, Scientist (SS) w.e.f. 29.10.2005
- Smt. Sangeeta Ahuja, Scientist (SS) w.e.f. 27.10.2005
- Km. Anshu Dixit, Scientist (SS) w.e.f. 17.11.2005
- Sh. Vipin Kumar Dubey, Scientist (SS) w.e.f. 02.11.2005
- Mohd. Wasi Alam, Scientist (SS) w.e.f. 10.01.2006

##### Wish you Happy Retired Life

- Sh. Sunil Bahrioke (PA) w.e.f. 02-02-2007 (VRS)
- Sh. SP Rang (AAO) w.e.f. 31-03-2007

#### OBITUARY

The Director, Staff and Students of IASRI deeply condole the death of Sh. Balwant Singh, S.S.Gr.III, who expired on 07 March 2007

फार्म संबंधी सभी समस्याओं पर विशेषज्ञ की सलाह के लिये प्रातः 6.00 बजे से रात 10.00 बजे तक सभी सातों दिन टोल फ्री नम्बर 1551 पर डायल करें।

**For expert's advise on all farm related problems, dial toll free number 1551 from 6 am to 10 pm on all seven days**

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