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.

Microsatellite database and primer generation tool for pigeonpea (PIPEMicroDB) genome has been developed and is available at http://cabindb.iasri.res.in/pigeonpea/. This is first database of pigeonpea marker in world with 123387 STRs extracted in silico from pigeonpea genome. This tool enables researchers to select STRs at desired interval over selected chromosome.

Methodology for estimation of area under agroforestry based on Remote sensing and Geographic Information System (GIS) using high resolution satellite data was developed under the study National Initiative on Climate Resilient Agriculture (NICRA)-Agroforestry Component. The project aims to enhance resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration. Three training programmes which include one under NAIP on Forecast Modelling in Crops Using Weather and Geo-informatics, one Summer School on Forecast Modelling in Crops and 21 days training programme on Statistical Models for Forecasting in Agriculture sponsored by Centre of Advanced Faculty Training, ICAR were organised. 65 participants attended these training programmes. One workshop for the Nodal Officers of NISAGENET and one Partner’s meet of NAIP project NABG was also organised.

Scientists of the Institute received various Awards and Recognitions. Dr. VK Bhatia received Bharat Ratna Dr. C Subramaniam Award for Outstanding Teachers in Agriculture and Allied Sciences 2011, Dr. UC Sud was nominated by the Ministry of Statistics and Programme Implementation as Non-official Member, Dr Hukum Chandra elected as Member of International Statistical Institute, Netherlands and Dr. N. Okendro Singh have been awarded for reviewing a research article for Indian Journal of Fisheries.

Scientists of the Institute visited various countries on different assignments.

03 new projects including one consultancy mode were initiated. Scientists of the Institute published 27 research papers, 02 books, 05 popular articles, one technical bulletin and one e-book 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)
RESEARCH ACHIEVEMENTS

- **Microsatellite database and primer generation tool for pigeonpea genome (PIPEMicroDB)**
  Molecular markers play significant role through selection of desirable traits, such as high yield, resistance to a particular disease and other traits, that will benefit the crop in long term. PigeonPEa Microsatellite DataBase (PIPEMicroDB) with a novelty of an automated primer designing tool for pigeonpea genome, is based on chromosome wise as well as location wise search of primers and is available at http://cabindb.iasri.res.in/pigeonpea/. This is first database of pigeonpea marker in world with 123387 STRs extracted in silico from pigeonpea genome. This tool enables researchers to select STRs at desired interval over selected chromosome. Further, one can use individual STRs of a targeted region over a chromosome to narrow down location of gene of interest or linked QTL. This markers’ search based on characteristics and location of STRs is expected to be beneficial for researchers for their crop improvement programs of pigeon pea. These markers will be of immense use in marker assisted selection which would help to overcome approximately 50% loss in pigeonpea productivity due to biotic and abiotic stress in India as well as many parts of the world. This will further pave way towards food security in terms of per capita protein requirement/ availability to Indian population. This will also have a positive impact on Indian economy by decreasing import of pulse. In both ways it will fetch rural sustainability and livelihood of nation.

- **National Initiative on Climate Resilient Agriculture (NICRA)-Agroforestry Component**
  The project aims to enhance resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration. The strategic research is being carried out involving 21 Institutes of ICAR out of which 7 are core institutes and 14 Institutes are identified for thematic research across crops and agro-climatic zones. Indian Agricultural Statistics Research Institute (IASRI), New Delhi was a collaborative Institute of National Research Centre for Agroforestry (NRCAF), Jhansi. For estimation of area under agroforestry using Remote Sensing and GIS techniques, two districts namely, Ludhiana from Punjab and Vaishali from Bihar State were identified. High resolution satellite imageries (LISS IV), digitized district maps with village boundaries and toposheets of the two districts were procured. Geometric correction of the satellite imageries was carried out with the help of scanned and geo-referenced Survey of India (SOI) toposheets. Digital image processing of the satellite data was done using ERDAS Imagine software. Extensive ground truthing for image analysis was done in 20 villages of 7 blocks of Ludhiana district and in 22 villages of 8 blocks of Vaishali district. The
satellite imageries were first classified using unsupervised classification method in ERDAS Imagine software and then supervised classification method using maximum likelihood classifier. Another approach of classification i.e. masking of each layer and then mosaicing was also used. Land use cover map was generated for both the districts. The total number of classes obtained in Ludhiana and Vaishali districts is nine and five respectively. Area under agroforestry for Ludhiana and Vaishali districts were obtained as 6039.80 hectares and 217.86 hectares respectively. Accuracy assessment was also done and overall classification accuracy for Ludhiana district was found to be 94.28%. Area estimated is a product of number of pixels classified under agroforestry and resolution of the pixels (5x5 sq.m.). Assuming one tree per pixel under agroforestry, the number of trees estimated in Ludhiana and Vaishali are 24,17,400 and 87,144 respectively. The estimated area under forestry and agriculture classes were compared with the estimates published in Forest Survey of India (FSI) report 2009 and Ministry of Agriculture, Govt. of India. It was observed that the estimates obtained using the proposed methodology was in agreement with these published figures. A road map on methodology/techniques for mapping agroforestry area at national level in the next Five Year Plan was finalized.

HUMAN RESOURCE DEVELOPMENT

Training Programmes Organised

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Title</th>
<th>Venue</th>
<th>Date</th>
<th>Sponsored by</th>
<th>No. of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>National Agricultural Innovation Project (01: 15 Participants)</td>
<td>IASRI, New Delhi</td>
<td>22 August to 04 September 2012</td>
<td>NAIP, ICAR</td>
<td>15</td>
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<td>2.</td>
<td>Education Division of ICAR (02: 50 Participants)</td>
<td>IASRI, New Delhi</td>
<td>17 July to 06 August 2012</td>
<td>Education Division, ICAR</td>
<td>25</td>
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<td>3.</td>
<td>CAFT programme on Statistical Models for Forecasting in Agriculture</td>
<td>IASRI, New Delhi</td>
<td>11 September to 01 October 2012</td>
<td>Education Division, ICAR</td>
<td>25</td>
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</table>

Conferences/ Symposia/ Workshops Organised

<table>
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<th>S. No.</th>
<th>Title</th>
<th>Venue</th>
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</table>
AWARDS AND RECOGNITION

- **Dr. VK Bhatia** received Bharat Ratna Dr. C Subramaniam Award for Outstanding Teachers in Agriculture and Allied Sciences 2011 for excellent teaching in the field of Social Sciences on 16 July 2012 at the Foundation Day of the Indian Council of Agricultural Research.

- **Dr. UC Sud** was nominated by the Ministry of Statistics and Programme Implementation as Non-official Member for Constitution of working Group for formulating methodology for the 70th Round of NSS.

- **Dr. Hukum Chandra** elected as Member of International Statistical Institute, Netherlands.

- **Dr. N. Okendro Singh** have been awarded for reviewing a research article (with ID No. 17763) entitled Analysis of meristic characters among the populations of Japanese threadfin bream, Nemipterus japonicus (Bloch, 1791) along Indian coast, for Indian Journal of Fisheries.

VISIT ABROAD

- **Dr. VK Bhatia** visited Bangkok, Thailand to attend second meeting of the Steering Group of Agricultural Statistics held during 18-20 July 2012.

- **Dr. Rajender Parsad** visited Tsukuba, Japan during 02-04 July 2012 for attending Session on Design of Experiments of 2nd Institute of Mathematical Statistics Asia Pacific RIM Meeting and presented an invited talk on Efficient Row-Column Designs for 2-colour single factor microarray experiments.

- **Dr. Prawin Arya** visited Iowa State University of Science and Technology, Division of Agricultural & Biosystems Engineering, Davidson Hall, Ames, IA 50011 during 15 June to 12 September 2012.

- **Dr. Prajneshu** visited Islamabad, Pakistan during 02-03 September 2012 to participate in 13th International Pure Mathematics Conference 2012 and delivered an invited talk entitled Some Parametric Nonlinear Time-Series Models and their Applications in Agriculture.
PANORAMA OF ACTIVITIES

Annual Day Organised

- The Institute celebrated its 53rd Annual Day on 02 July 2012. Dr. Padam Singh, Former Member, National Statistical Commission, Govt. of India and Head EPOS Health Consultants (India) Pvt. Ltd. presided over the function and Dr. Gurbachan Singh, Chairman, Agricultural Scientists Recruitment Board, ICAR, New Delhi delivered the Nehru Memorial Lecture on “Food and Nutrition Security”. Nehru Memorial Gold Medal for the year 2009-11 was awarded to Sh. Samarendra Das, M.Sc. (Agricultural Statistics) student and Ms. Satma M.C., M.Sc. (Computer Application) student. The Annual Report of the Institute for the year 2011-12 was also released on this occasion.

Hindi Pakhwara

- संस्थान में 01 से 14 सितंबर 2012 के दौरान हिंदी पक्षावधि का आयोजन किया गया। दिनांक 01 सितंबर, 2012 को हिंदी पक्षावधि का उद्घाटन संसदीय राजनीति समिति की दृष्टि से उप-समिति के अन्दर संचित, डॉ. श्री प्रकाश शुक्ला जी द्वारा किया गया। हिंदी पक्षावधि के उद्घाटन के अवसर पर काय्य पाठ का आयोजन किया गया। हिंदी पक्षावधि के दौरान शिल्पक दिवस, डॉ. दरोगा सिंह समृद्धि व्याख्या के साथ-साथ वैज्ञानिक प्रभागों में हिंदी में स्वाभाविक वैज्ञानिक कार्य करने के लिए प्रभावी चल-शीलद, प्रम-मंच, अन्तराल, हिंदी वर्तनी प्रतियोगिता, हिंदी पत्रकार कर्मियों के लिए हिंदी बुलेटिन एवं शादी व सलाम गहना व्याख्या आयोजित की गयी। सभी प्रतियोगिताओं में छात्रों सहित संस्थान के विभिन्न वर्गों के कर्मियों ने वह-बढ़केर सहभागिता की। संस्थान में 05 सितंबर, 2012 को शिल्पक दिवस का आयोजन किया गया जिसमें संस्थान के पूर्व सचिव डॉ. सुदर्शन कुमार रहे जो एवं डॉ. बाल बी.ए.स. गोयल जी को सम्मानित किया गया। संस्थान में अन्य के वर्ग हिंदी दिवस के अवसर पर डॉ. दरोगा सिंह समृद्धि व्याख्या का आयोजन किया जाता है। इस वर्ष यह व्याख्या एई.एन.ए., के वरिष्ठ वैज्ञानिक, डॉ. आनंद के डे जी द्वारा किया गया। इस समारोह के मुख्य अधिवेश भारत अनु.परिषद के राष्ट्रीय प्रौद्योगिकी, डॉ. विनोद कुमार गुप्ता जी थे। दिनांक 14 सितंबर, 2012 को हिंदी पक्षावधि का समापन समारोह हुआ। इस अवसर पर संस्थान के वाणिज्यिक रिपोर्ट दो-हिंदी संस्करण का विमोचन किया गया तथा हिंदी पक्षावधि के दौरान आयोजित विभिन्न प्रतियोगिताओं के सफल प्रतियोगिताओं को पुरस्कृत करने के साथ-साथ गद्द वर्ग के दौरान संस्थान में आयोजित कार्यशालाओं के वक्ताओं एवं प्रशिक्षकों को भी सम्मानित किया गया।

Seminars Delivered

Seminars in different areas of Agricultural Statistics, Computer Application and Bioinformatics were delivered. These seminars include presentation of salient findings of the completed research projects by the scientists, Thesis/ORW/Course seminars of students of M.Sc. and Ph.D. (Agricultural Statistics), M.Sc. (Computer Application) and M.Sc. (Bioinformatics) and Guest seminars.

During the period one general seminar was delivered by Mr. Biswajit Nayak, Stat Soft India, the title of the seminar was A demo on ANN and SVM through Statistica Software.

New Projects / Schemes / Programmes

The following new projects were initiated during the period:
- Parallelized work-flows for gene prediction, phylogenetic analysis and primer designing (w.e.f. 28-08-2012)
- Commodity price forecast based on time series data (w.e.f. 18-09-2012)
- Under Consultancy Mode
- Impact assessment of agro forestry model in Vaishali district of Bihar State (w.e.f.10.09.2012)

The Details of Seminars Delivered

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<td>New Proposal</td>
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<td>Project Progress</td>
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<td>Foreign Visit</td>
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<td>Student</td>
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<td>Total</td>
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PUBLICATIONS

Research Papers


5. Bhardwaj, SP, Kumar, Ashok and Singh, KN (2012). Econometric study of asymmetry in price transmission from wholesale to retail trade of sugar. *Economic Affairs*, **57**(2), 137-146. ISSN: 0424-2513 Online ISSN:0976-4666.


Books

Popular Articles


**Technical Bulletin**

**E-Book**

**INVITED LECTURES DELIVERED**
- **Training on Geospatial Technologies and its Applications at HPKV, Palampur during 30 June - 02 July 2012.**
  - Bharadwaj, Anshu. i.) Geoinformatics in Precision Agriculture: Statistical Aspect and ii.) Spatial Data Mining
- **Workshop on Statistical Data Mining using MATLAB at Maharaja Agrasen Institute of Technology, New Delhi during 26-27 July 2012.**
  - Sharma, Anu. Overview of Data Mining.
  - Mishra, DC. Statistical Data Mining using MATLAB.
  - Kumar, Sanjeev. Classification techniques and SVM using MATLAB and R.
- **Training programme on Field Survey, Data Acquisition and Analysis held at NCAP New Delhi during 21-27 July 2012.**
  - Parsad, Rajender. SAS: Statistical Procedures.
- **Training Programme for ISS probationers at NASA, Greater Noida, UP on 02 July, 2012.**
  - Sud, UC. Agriculture in India and emerging techniques for generation of agriculture statistics.
- **CAFT Training programme on Agricultural Research Planning and Impact Assessment organized at Division of Agricultural Economics, IARI, New Delhi during 17 August - 06 September 2012.**
  - Ramasubramanian V. Technology forecasting models in agriculture.
  - Parsad, Rajender. SAS for Statistical Procedures.
- **Training Programme on Agriculture Statistics including Animal Husbandry and Horticulture, Crop Area Estimation and Use of GIS Technology for the participants from SAARC Member States during 27-31 August 2012, at National Academy of Statistical Administration, M/o S&PI, Govt of India, Greater Noida, UP.**
  - Sud, UC. Agriculture in India and emerging techniques for generation of agriculture statistics.
  - Chandra, Hukum. i) Overview of R software and practical exercise and ii) Survey data analysis using R software.
  - Ahmad, Tauqueer. Crop area estimation using GIS and Remote sensing technology.
- **Institute of Bioresources and Sustainable Development (IBSD) (DBT Institute), Imphal, Manipur on 06 September 2012.**
  - Kumar, Dinesh. Applications of bioinformatics tools on bio-resource management.
  - Ahmad, Tauqueer. Overview of geographic information system.
  - Jaggi, Seema. i) Correlation and Regression Analysis, ii) SPSS: An Overview, iii) Testing of Hypothesis and iv) ANOVA
  - Varghese, Cini. (i) Introduction to basic statistics; (ii) Non-parametric methods and (iii) Practical: Statistical analysis using SPSS
- Training programme for the participants from Madhya Pradesh organized by NASA, Greater Noida, UP, during 10-14 September 2012.
  - Sud, UC. Small area estimation procedure and its uses in agriculture.
- Training programme on Basic Statistics, Sampling Techniques and Local Level Planning organized by NASA, Greater Noida, UP, for the participants from CSO, Sri Lanka during 17-21 September 2012.
  - Sud, UC. i) Statistic, estimators (Least square, Maximum Likelihood and BLUE), ii) properties of estimators with introduction to ratio and iii) regression estimators
- Workshop on Biostatistical Aspects of Randomized Clinical Trials (RCT) and Medical Ethics, organized at Govt. Medical College Hospital, Chandigarh on 21 September 2012.
  - Tyagi, KK. Sampling methods and sequential sampling plans relevant with RCT.

PAPERS PRESENTED
- In Session on Design of Experiments of 2nd Institute of Mathematical Statistics Asia Pacific RIM Meeting held at Tsukuba, Japan during 02-04 July 2012.
  - Parsad, Rajender*, Dash, Sukanta and Gupta, VK. Efficient row-column designs for 2-colour single factor microarray experiments. (Invited Talk)
- 1st International Conference on Mathematics and Mathematical Sciences at Molecular Marg, Lodhi Road, New Delhi (INDIA) during 07-08 July 2012.
  - Panwar, Sanjeev*. Growth rates of rice yield through non-linear models.
  - Anil Kumar and Sanjeev Panwar*. Identification of best crop sequence for getting maximum and consistent net returns and energy equivalents.
- International Conference on Advances in Electronics, Electrical and Computer Science EEC’2012 at Dehradun, Uttra Khand during 07-09 July 2012.
  - Bharadwaj, Anshu* and Minz, Sona Zharia. Hybrid approach to classification using SVM and decision tree.
  - Dash, Manoswini, Challam, Clarissa, Sahu, TK, Ghosh, Tapu, Tyagi, Wricha, Rai, Mayank and Rao, AR*. Identification and analysis of SNPs in DREB genes of rice cultivars grown in NE-hill region. (Poster paper presented)
• National Conference on Agro-Informatics and Precision Agriculture - 2012 organized at IIIT, Hyderabad during 01-03 August 2012.
  – Dahia Shashi. Agricultural knowledge management using an e platform. (Oral presentation)
  – Sudeep. Agridaksh - A tool for developing online expert system. (Oral presentation)
  – Bharadwaj Anshu. Geo-informatics in precision agriculture - Statistical aspect. (Oral presentation)
• 13th International Pure Mathematics Conference 2012 organised at Islamabad, Pakistan during 02-03 September 2012.
  – Prajneshu. Some Parametric Nonlinear Time-Series Models and their Applications in Agriculture.(Invited Talk)
• 6th CSI-IEEE International Conference on Software Engineering (CONSEG-2012) held at DAVV Indore (MP) during 05-07 September 2012.
  – Chaturvedi, KK* and Singh, VB. Determining bug severity using machine learning techniques.
  – Chandra, Hukum* and Sud, UC (2012). Disaggregate level crop yield estimation using small area estimation techniques. (invited Talk)

PARTICIPATION
Conferences / Workshops / Seminars / Symposia etc
• Management Development Programme in Agricultural Research at NAARM, Hyderabad during 02-07 July 2012. (Dr UC Sud)
• Working Group for the Construction of Index Numbers of Area, Production and Yield of Crops on 03 July 2012 at Krishi Bhawan, New Delhi/. (Dr VK Bhatia)
• National Workshop on Standardization of Methodology for Estimating Cost of Milk Production in India at NDR, Karnal on 06 July 2012. (Dr KK Tyagi and Dr Hukum Chandra)
• Ist International Conference on Mathematics and Mathematical Sciences, Molecular Marg, Lodhi Road, New Delhi during 07-08 July 2012.(Dr Anil Kumar)
• Training Programme on Knowledge Management and Knowledge Sharing in Organisation held at IIPA, New Delhi during 23-29 July 2012.(Dr Prajneshu)
• Valedictory function of the training programme on Field Survey, Electronic Compilation and Analysis of Data at NCAP, New Delhi on 28 July 2012 (Dr. VK Bhatia as Chief Guest)
• 51st All India Wheat and Barley's Worker’s Meet at Jaipur during 23-27 August 2012 (Sh. SN Islam)
• Training/meeting/ workshop on Harvest and Post Harvest Losses during 03-04 September 2012 at MPUAS, Jaipur. (Dr. Anil Rai)
• National workshop on Improvement of Agricultural Statistics organized during 19-20 September 2012 by Directorate of Economics & Statistics, Ministry of Agriculture, Govt. of India. (Dr UC Sud, Dr KK Tyagi, Dr Tauqueer Ahmad and Dr Hukum Chandra)
• All India Training of Trainers (AITOT) for the 70th round of NSS, to discuss the sampling design, schedules of enquiry and procedures for data collection, etc. at Indian Institute of Mass Communication, Aruna Asaf Ali Marg, New JNU Campus, New Delhi during 27-29 September 2012. (Dr UC Sud)
Meetings

- The 2nd Institute of Mathematical Statistics Asia Pacific Rim Meeting held at Tsukuba, Japan on 02 July 2012. (Dr Rajender Parsad)
- Meeting of Executive Committee of Swadeshi Science Movement, Delhi at NPL, New Delhi on 03 July 2012. (Dr Susheela Kaul)
- ASRB Data Center evaluation meetings on 03 July 2012 at ASRB. New Delhi (Dr. Sudeep)
- Meetings related to establishment of Institute on ICT in Agriculture, with Dr. Sam Pitroda, DG, ICAR, DG, NIC, DDG (Ag. Engg.) and other officials of NIC and Planning Commission at NIC, New Delhi on 06 July, 02 August and 06 August 2012. (Dr. Anil Rai and Dr. VK Bhatia)
- Board of Studies joint meeting (Agricultural Statistics, Computer Applications and Bioinformatics) on 10 July 2012.
- Academic Council Meeting on July 12, 2012 at IARI, New Delhi
- Meeting of Technical Committee for FASAL Programme on 20 July 2012 at Krishi Bhawan, New Delhi. (Dr. KN Singh and Dr. Ranjana Agrawal)
- Joint review meeting of the three mega projects of ICAR: National Agricultural Bioinformatics Grid, Bioprospecting of Genes and Allele Mining for Abiotic Stress Tolerance and Phenomics of moisture deficit and low temperature stress tolerance in rice chaired by Dr. Mangala Rai, Ex DG, ICAR on 21 July 2012 at IASRI, New Delhi (Dr. VK Bhatia and Scientists of CABin)
- Meeting of Executive Council of Farming Systems Research and Development Association on 24 July 2012 at PDESR, Modipuram (Dr. Anil Kumar as a Joint Secretary)
- A roundtable discussion on Generating responses to an uncertain monsoon on 01 August 2012 at Observer Research Foundation, New Delhi. (Dr. KN Singh and Dr. Amrender Kumar)
- Meeting with Dr. GPS Raghava, Scientist & Head Bioinformatics Centre, Institute of Microbial Technology, Chandigarh regarding web server training during 05-10 August 2012. (Dr. Sarika and Dr. Dinesh Kumar)
- Meetings with HPC and Bioinformatics group of C-DAC, Pune on 21 September 2012 to discuss the work plan of NABG (Dr. Anil Rai, Dr. Dinesh Kumar and Sh. SB Lal)
- Meeting with World Bank on 19 September 2012 regarding MIS/FMS project. (Dr. Alka Arora and Dr. Sudeep)

CONSULTANCY / ADVISORY SERVICES PROVIDED

- Mr. Manoj Kumar, Scientist, CIAE, Bhopal was advised on the application of artificial neural networks for detecting pattern in the mechanization status of Soybean-Wheat cropping pattern for different farm operation in Bhopal Region.
- Ms. Meena Vidhani, Ph.D. student of Department of Physical Planning, School of Planning and Architecture, New Delhi to examine the prosperity of six newly developed towns (Kalyani, Bidhan Nagar, Mariamalai nagar, Noida Gurgaon and Navi Mumbai) on the basis of seven factors affecting the performance of new towns.

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 125988 times since 01 April 2012 and 1168305 times since 05 September 2003.
PERSONNEL

Congratulations on your Appointment

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<tr>
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<td>Sh. Kapil Kumar Rana</td>
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<td>24.07.2012</td>
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<td>Sh. Rohit Rastogi</td>
<td>Assistant</td>
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Congratulations on your Promotion

Financial Upgradation

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<td>Smt. Alka Arora</td>
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<td>Dr. N. Okendro Singh</td>
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<td>Dr. Prachi Misra Sahoo</td>
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<td>Sh. SN Islam</td>
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<td>Sh. Ram Naresh Singh Yadav</td>
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<td>Sh. Ram Sahay</td>
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<td>Sh. Sunil Bhatia</td>
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<td>Smt. Gursharan Kaur</td>
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<td>Sh. Manoj Kumar</td>
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<tr>
<td>Sh. SK Singh</td>
<td>T-9</td>
<td>03.02.2012</td>
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<tr>
<td>Sh. Ratan Singh</td>
<td>T-4</td>
<td>29.04.2012</td>
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Under MACP Scheme after completing 30 years of service Sh. Raghuvier Dutt, Assistant was awarded Financial Upgradation.
Wish you happy Retired Life

<table>
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<tr>
<th>Name</th>
<th>Designation</th>
<th>Effective Date</th>
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<tr>
<td>Dr. Ashok Kumar</td>
<td>Principal Scientist</td>
<td>31.07.2012</td>
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<tr>
<td>Sh. Rajender Kumar</td>
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<td>Sh. DK Sehgal</td>
<td>Scientist</td>
<td>31.08.2012</td>
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<td>Sh. VK Mishra</td>
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<td>Smt. Shubh Lata Pal</td>
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<td>Smt. Sudershna Sood</td>
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<td>Smt. Renu Datta</td>
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<td>Smt. Sudershan Chadda</td>
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Any Other

Dr. Seema Jaggi, Senior Scientist has been appointed as Incharge, PME Cell w.e.f. 27 August 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)