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| • Research Achievements | • Panorama of Activities | • Publications |
| • Papers presented/Lectures Delivered | • Participation in Conferences | • Human Resource Development |
| • Consultancy/Advisory Services | • Awards and Recognitions | • Projects Initiated/Completed |
| • Copyrights/MOUs | • Personnel | |

From the Director's desk...

This Newsletter brings to you the key research achievements, awards and recognitions received, training programmes conducted, workshops and conferences organized/ attended, advisory services provided and significant publications of ICAR-IASRI during the period under report.

The Institute has developed (i) masking factor for survey-weighted linear regression and applied to the Household Consumer Expenditure dataset from the 68th round of India's National Sample Survey; (ii) PredPSP', an online prediction server based on machine learning for identifying pathway-specific photosynthetic proteins in plants; (iii) AScirRNA'a machine learning based online prediction server for the discovery of abiotic stress specific circular RNAs (circRNAs) in plants and (iv) HPpred, a novel artificial intelligence driven prediction server designed to classify protein sequences as halophilic or non-halophilic.

The Institute also celebrated Annual Day, Teacher's Day, Swachhata Campaign and 02 programmes under SCSP Programmes and planted sapling of Ashoka Plant on the occasion of "EK Pade Maa Ke Nam". Annual Report, Agricultural Research Data Book, Sankhyiki Vimarsh, Monograph on Crop Cutting Experiment Techniques, and a pamphlet on e-LISS end-to-end solutions for major livestock products were released during celebrations of the Annual Day.

A total of 67 Research Papers, 08 Book Chapters; 18 Popular Articles; 09 R Packages were published. Initiated 06 new research projects. Through 07 training programmes, 474 personnel were trained, and 26 participated in Hindi Workshop.

The new initiatives of the Institute like E-Learning Portal, AI-DISC, KVCALUNET, AEIS, KRITYGAYA Hackathon Portal, NARES-BLP, Virtual Reality Experience Labs, Agri-Diksha Web Channel, Academic Management System, Krishi Megh, etc. have found a prominent place in presentation on 'New initiatives in Agricultural Education by ICAR' by Honourable DDG (Agricultural Education), Chaired by Honourable Secretary DARE and DG ICAR in presence of Honourable Vice-Chancellors of AUs and Directors of ICAR Institutes.

Memorandum of Understanding(MoU) has been signed between SKUAST-Jammu and ICAR-Indian Agricultural Statistics Research Institute for Work Plan for the HADP project on "Sensor Based Smart Agriculture" at SKUAST-Jammu. Patent granted by Patent Office, Government of India on Synthetic Peptides and Antibodies Targeted to Bovine Mx2 Protein and 05 designs were also registered by Patents Office, Government of India as lead organization as SKUAST-K, Srinagar and ICAR-IASRI.



ICAR-IASRI family joins the statistics fraternity in congratulating to Professor Rahul Mukerjee, formerly at IIM, Kolkata for being awarded the “Vigyan Shri” of the Rashtriya Vigyan Puraskar - 2024. He has been a member of QRT of ICAR-IASRI and also delivered a lecture at ICAR-IASRI during CAFT (earlier Centre of Advanced Studies) programme. Prof Rahul is a genius statistician and a very pleasing personality to talk. Congratulations to him. This is proud moment for statistics fraternity.

The scientists of the Institute brought recognitions by way of serving as Expert Members in various high level committees, presenting research work in prestigious conferences/workshops.

I earnestly hope that the contents of this Newsletter would be useful and informative to you all. Any constructive comments for better presentation of this newsletter are most welcome.



(Rajender Parsad)

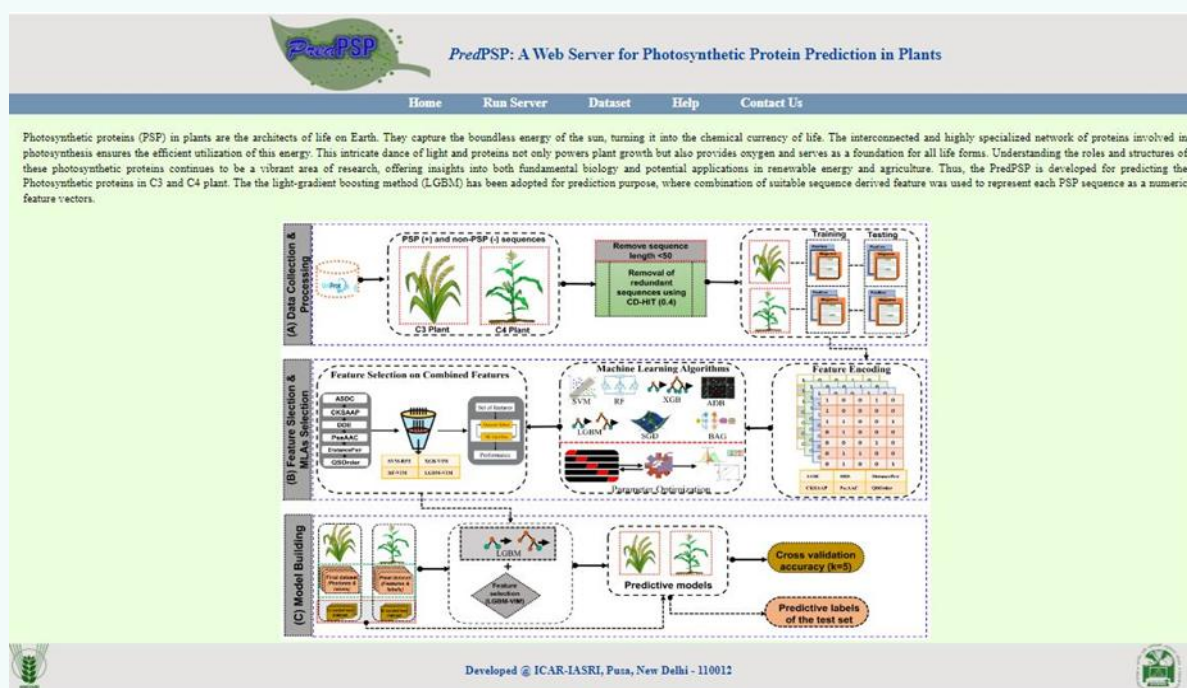
RESEARCH ACHIEVEMENTS

Detection of Outliers in Survey-Weighted Linear Regression

Regression diagnostics help identify influential data points in a model. Detecting outliers in complex survey design data involving stratification, clustering, and unequal probability sampling is difficult due to the presence of masking, where one outlier makes it hard to detect others. The masking factor for survey-weighted linear regression is developed and applied to analyzing the Household Consumer Expenditure dataset of 68th round of the National Sample Survey Organization survey of India. Regression parameters are calculated before and after detection and removal of outliers. The standard error of regression parameters for survey-weighted least squares models is reduced by 2% for the intercept, 5% for variable “meat”, 4% for “served processed food”, and 4% for “packaged processed food”. Inference alters the significance of regression coefficients of the variable “served processed food” leading to the emergence of significance. There is no change in inference for other variables.

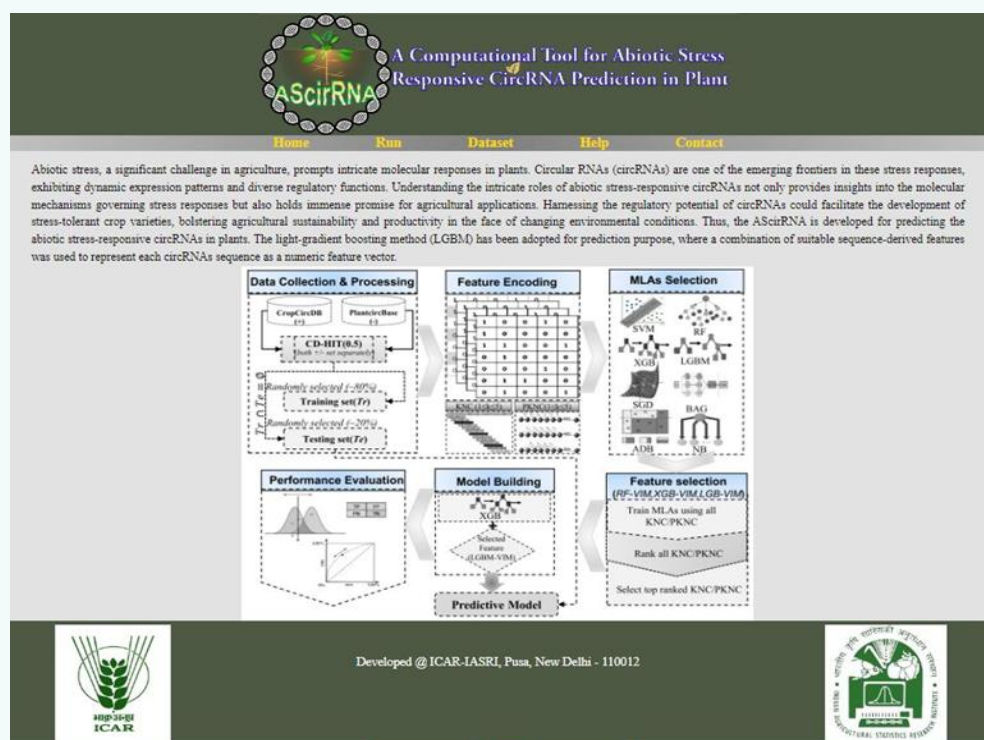
PredPSP: Predicting plant-specific photosynthetic proteins

Developed a machine learning based online prediction server ‘**PredPSP**’, for identifying pathway-specific photosynthetic proteins in plants and freely available at <https://iasri-sg.icar.gov.in/predpsp/>. Photosynthetic proteins play a crucial role in agricultural productivity by harnessing light energy for plant growth. Understanding these proteins, especially within C3 and C4 pathways, holds promise for improving crops in challenging environments. Despite existing models, a comprehensive computational framework specifically targeting plant photosynthetic proteins is lacking. The underutilization of plant datasets in computational algorithms accentuates the gap this study aims to fill by introducing a novel sequence-based computational method for identifying these proteins. The scope of this study encompassed diverse plant species, ensuring comprehensive representation across C3 and C4 pathways. Utilizing six deep learning models and seven shallow learning algorithms, paired with six sequence-derived feature sets followed by feature selection strategy, this study developed a comprehensive model for prediction of plant-specific photosynthetic proteins. Comparison with existing methods demonstrated the superiority of the proposed model in predicting plant-specific photosynthetic proteins. Being first of its kind, this study offers valuable insights into predicting plant-specific photosynthetic proteins which holds significant implications for plant biology.



AScirRNA: Predicting Abiotic Stress Specific Circular RNAs

- Insight into circRNAs' involvement in stress responses could help breeders develop stress-resistant crops for harsh climates. In this direction, ICAR-IASRI developed 'AScirRNA' a machine learning based online prediction server for the discovery of abiotic stress specific Circular RNAs (circRNAs) in plants freely available at <https://iasri-sg.icar.gov.in/ascirna/>. In the realm of plant biology, understanding the intricate regulatory mechanisms governing abiotic stress responses stands as a pivotal pursuit. circRNAs, emerging as critical players in gene regulation, have garnered attention in recent days for their potential roles in abiotic stress adaptation. A comprehensive grasp of circRNAs' functions in stress response offers avenues for breeders to manipulating plants to develop abiotic stress resistant crop cultivars to thrive in challenging climates. This study pioneers a machine learning-based model for predicting abiotic stress-responsive circRNAs. The K-tuple nucleotide composition (KNC) and Pseudo KNC (PKNC) features were utilized to numerically represent circRNAs. Three different feature selection strategies were employed to select relevant and non-redundant features. Eight shallow and four deep learning algorithms were evaluated to build the final predictive model. Both the proposed model and the developed tool are poised to augment ongoing efforts in identifying stress-responsive circRNAs in plants.



HPpred (Halophiles Protein Prediction):

Introduced a novel Artificial Intelligence (AI) driven prediction server designed to classify protein sequences as halophilic or non-halophilic. Developed to address diverse research needs, HPpred supports both single protein sequences and batch analysis via CSV file uploads. The tool is accessible at <https://login1.cabgrid.res.in:5052>.

R-Packages Developed: 09

- PerMat:** Performance Metrics in Predictive Modeling that provides different performance measures like mean squared error, root mean square error, mean absolute deviation, mean absolute percentage error etc. of a fitted model available at <http://krishi.icar.gov.in/jspui/handle/123456789/44138>

- **ICompELM:** Independent Component Analysis Based Extreme Learning Machine is available at <https://cran.r-project.org/web/packages/ICompELM/index.html>
- **DNAmotif:** DNA Sequence Motifs is available at <https://cran.r-project.org/web/packages/DNAmotif/index.html>
- **OpEnHiMR:** Optimization Based Ensemble Model for Prediction of Histone Modifications in Rice available at <https://cran.r-project.org/web/packages/OpEnHiMR/index.html>
- **EEML:** Ensemble Explainable Machine Learning Models is available at <https://cran.r-project.org/web/packages/EEML/index.html>
- **Doofa:** Designs for Order-of-Addition Experiments is available at <https://cran.r-project.org/web/packages/doofa/index.html>
- **AdIsMF:** Adsorption Isotherm Model Fitting is available at <https://cran.r-project.org/web/packages/AdIsMF/index.html>
- **CompExpDes:** Computer Experiment Designs (Version:1.0.2) to generate efficient LHDs (Latin hypercube designs) and Uniform Designs (UDs) is available at <https://CRAN.R-project.org/package=CompExpDes>
- **InterNL:** This package introduced algorithm for time series intervention analysis employing ARIMA and ANN models with a non-linear intervention function and is available at <https://cran.r-project.org/web/packages/InterNL/index.html>

Others

Launch of Portals/Mobile Apps

Launch of ASEAN-INDIA Fellowship Portal by Shri. Shivraj Singh Chouhan, Union Minister of Agriculture and Farmers' Welfare & Rural Development on August 14, 2024 and NPSS 2.0 on August 15, 2025. Indo-ASEAN Fellowship has been developed by the Institute as part of Education Portal and NPSS 2.0 is developed by ICAR-NCIPM, DPPQ&S (DA&FW), ICAR-IASRI, Plantix and AI-Wadhwani.

Technology/Methodologies Certified

Following **Eighteen** technologies/methodologies developed by the Institute were awarded certificates during ICAR Foundation and Technology Day.

ICAR-IASRI as Lead Institute

1. ICAR-AED-IASRI-Methodology-2024-042: Sampling methodology of calibration estimation of infinite population parameters under two stage sampling and adaptive cluster sampling design (Methodology). {Anukur Biswas, Kaustav Aditya, Raju Kumar, Deepak Singh and Pradip Basak}.
2. ICAR-AED-IASRI-Methodology-2024-022: AIGenIBD: Algorithmic generation of some useful families of Incomplete Block Designs (Methodology). {Cini Varghese, Mohd. Harun, Seema Jaggi, Ashutosh Dalal, L.N. Vinaykumar, Sayantani Karmakar and Nehatai Agashe}
3. ICAR-AED-IASRI-Methodology-2024-038: Survey weighted composite index for complex survey data (Methodology). {Deepak Singh, Pradip Basak, Raju Kumar and Tauqueer Ahmad}
4. ICAR-AED-IASRI-Methodology-2024-025: OptisembleForecasting: Optimization based ensemble forecasting using MCS algorithm and PCA based error index (Methodology). {Md. Yeasin and Rankit Kumar Paul}
5. ICAR-AED-IASRI-Methodology-2024-023: Software for identification of herbicide and insecticide resistant genes (Product). {Prabina Kumar Meher, Tanmay Kumar Sahu and Atmakuri Ramakrishna Rao}

6. ICAR-AED-IASRI-Methodology-2024-026: Software for identification of splice sites (Methodology). {Prabina Kumar Meher, Tanmay Kumar Sahu and Atmakuri Ramakrishna Rao}
7. ICAR-AED-IASRI-Methodology-2024-041: Integrated sampling methodology for crop acreage estimation using remote sensing, GIS and ground survey in Meghalaya (Methodology). {Prachi Misra Sahoo, Anil Rai, Tauqueer Ahmad and Md. Samir Farooqi}
8. ICAR-AED-IASRI-Methodology-2024-030: WaveML: Wavelet based machine learning techniques for time series forecasting (Model). {Ranjit Kumar Paul, Md. Yeasin, Sandip Garai and Amrit Kumar Paul}
9. ICAR-AED-IASRI-Methodology-2024-043: Tools for evaluating impact of pandemics on agricultural prices (Methodology). {Ranjit Kumar Paul, Md. Yeasin, PS Birthal AK Paul, Himadri Shekhar Roy and Prakash Kumar}
10. ICAR-AED-IASRI-Methodology-2024-040: TSEnsemble: Ensemble algorithm for time series forecasting (Methodology). {Ranjit Kumar Paul, Md. Yeasin, PS Birthal AK Paul, Himadri Shekhar Roy and Prakash Kumar}
11. ICAR-AED-IASRI-Methodology-2024-028: Web application for land record management system in ICAR institutes (Product). {Shashi Bhushan Lal, Krishna Kumar Chaturvedi, Mukesh Kumar and Avanaksh Singh Sambyal}
12. ICAR-AED-IASRI-Methodology-2024-024: PlantMicrobeProinteract: A web application to predict the protein-ligand interaction in plants and microbes (Product). {Senha Murmu, Sunil Archak, Himanshu Shekhar Chaurasia, Atmakuri Ramakrishna Rao, Anil Rai, Soumya Sharma, Ritwika Das, Md. Samir Farooqi and Girish Kumar Jha}
13. ICAR-AED-IASRI-Methodology-2024-027: Modified sampling methodology for estimation of area and production of horticultural crops (Methodology). {Tauqueer Ahmad, Prachi Misra Sahoo, Ankur Biswas, Kausav Adityam, Deepak Singh and Raju Kumar}
14. ICAR-AED-IASRI-Methodology-2024-039: Sampling methodology for estimation of cotton production using double sampling approach (Methodology). {Tauqueer Ahmad, Anil Rai and Prachi Misra Sahoo}
15. ICAR-AED-IASRI-Methodology-2024-029: Multivariate adaptive regression spline based ANN and SVR model for crop yield prediction (Methodology). {Pankaj Das, Achal Lama, Girish Kumar Jha and Rajender Parsad}
16. ICAR-AED-IASRI-Methodology-2024-021: E-Learning Portal for agricultural education (Product). {Sudeep Marwaha, Shashi Dahiya, Anshi Bharadwaj, Rajender Parsad, Anuradha Agrawal and RC Agrawal}

ICAR-IASRI as Partner

1. ICAR-AED-NIAP-Policy-2024-009: India's food demand and supply to 2047. {Shivendra k. Srivastava, N. Sivaramane, Pratap S. Birthal, Ranjit K. Paul and Raka Saxena}
2. ICAR-AED-NIAP-Policy-2024-010: India's agricultural exports during the covid-19 pandemic (Policy). {Ranjit K. Paul, Balaji S.J. and Rohit Kumar}

Two of these technologies *E-Learning Portal* and *Multivariate adaptive regression spline based ANN and SVR model for crop yield prediction* were selected among the 5 best technologies of Agricultural Education Division, ICAR.



PANORAMA OF ACTIVITIES

Annual Day

- ICAR-Indian Agricultural Statistics Research Institute (ICAR-IASRI), New Delhi celebrated its Annual Day on July 02, 2024. Dr. Himanshu Pathak, Secretary, DARE & Director General, ICAR was the Chief Guest; Dr. Suresh Kumar Chaudhari, Deputy Director General (Natural Resource Management) was the distinguished speaker for 34th Nehru Memorial Lecture; Dr. R.C. Agrawal, DDG (Agricultural Education), ICAR & ND (NAHEP) and Dr. SK Sharma, ADG (HRM), ICAR were the Guest of Honour. The celebrations started with the planting the saplings of Ashok by the Chief Guest Dr. Himanshu Pathak, Secretary, DARE & Director General, ICAR and other dignitaries. Dr. Rajender Parsad, Director of the Institute delivered the welcome address and presented the activities and accomplishments of the Institute during 2023. He also gave a glimpse of major achievements, honours & awards, collaborations & linkages, statistical methodologies and their impact, human resource development, products, digital initiatives, etc., of the Institute. The crisp yet elaborative presentation covering all the aspects of the Institute was well appreciated by Secretary DARE and Director General, ICAR and others. The dignitaries had all applauded for the good work done and being done by ICAR-IASRI.
- Speaking on the occasion in this presidential address, Chief Guest of the function Dr. Himanshu Pathak, Secretary, DARE & Director General, ICAR congratulated the entire IASRI fraternity on the occasion of the Annual day and also appreciated the efforts of past and present IASRIians for their immense contributions to the system. He shared his memories as a student of course on Statistics at IASRI. He began with importance of

Statistics in research and policy planning and cited several anecdotes regarding Professor P.C. Mahalanobis.

- He also conveyed that from the Institute which has contributed significantly in the area of Statistical Sciences, ICAR has higher expectations from the Institute. He also emphasized about the importance of quality data, correct data and authenticated data for well informed decisions. He emphasized the need of real time capturing of data through one of the largest network of agricultural research, education and extension. The real time data captured for



crop, fisheries, and livestock, etc. should be calibrated and after authentication it should be made it available to all. All agricultural related data should be available with the Council and IASRI should play the lead role in this endeavor. Efforts on AI/ML should be strengthened for fast growth taking place in this field for nearer to realistic results. All information to be converted to knowledge and provided to farmers in the form of advisories, research managers and policy planners on a realistic basis at any time

He further said that simulation modeling is another area in which IASRI should take the responsibility. This will also lead to providing realistic advisory for the farmers on their field at their suitable time.

Dr. Pathak talked about another important issue regarding several indices like Global Hunger Index, Human Development Index, etc. developed outside the country and then our country is judged on the basis of those indices. He asked that we should develop our own indices like Nutrition Index, Soil health Index, Climate change Index, Hunger index, based on our environment and conditions. He opined that real time, quality and authenticated data is the key to make it possible.





Nehru Memorial Lecture is an integral part of our annual day Celebration every year. This year, Dr. S.K. Chaudhuri, DDG (NRM), ICAR delivered 34th Nehru Memorial Lecture on the topic **Natural Resource management for Ecosystem Sustainability**. Dr. Chaudhari congratulated IASRI on the annual day and praised the environment of ICAR as an organization. He also appreciated the students of IASRI and said that they are our ambassadors who with their deeds will keep the flag of IASRI flying high when they will go out. Further, in his thought provoking lecture, Dr. Chaudhari, emphasized upon the three key pillars of environmental sustainability being social, economic and environmental. He emphasized that along with GDP, environmental sustainability has to be given its due importance. Dr. Chaudhari attracted everyone's attention to the bigger problems in waiting like the electronic waste that would be much higher than the plastic and also told that through these heavy metals will enter into the soil, polluting it so much so that it will be difficult to reverse the damage as this will impact the entire food chain. He also talked about the Government's vision of 2070 to have an emission neutral and vision for 2030 to have a land degradation neutral country. He emphasized the importance of climate risk assessment. He also mentioned that to work towards environmental sustainability, government alone is not enough, the private sector partnership along with common man is the right option.

Guest of Honour and IASRI alumni Dr. R.C. Agrawal, DDG (Agricultural Education), ICAR & National Director (NAHEP), addressed the gathering on online mode and introduced the speaker. In his address, he not only mentioned about the glorious past of IASRI but also shed light on the contributions and importance of the Institute at present not only for ICAR but for entire NARES.

Following five publications were also released on the occasion: (i) Annual Report 2023 (ii) Agricultural Research Data Book (ARDB) 2024; (iii) Monograph on "Crop Cutting Experiments Techniques for Determination of Yield Rates of Field Crops" (iv) Pamphlet on

“eLISS end-to-end solution for major Livestock Products; and (v) Sankhyiki Vimarsh Merit medal and certificates were awarded to the best M.Sc. students in all the three disciplines:

(i) Sh. Surya Kant Tripathi, Agricultural Statistics; (ii) Ms. Sakshi Rwat, Computer applications and (iii) Sh. Abhik Sarkar, Bioinformatics.

Dr. Rajbir Singh, ADG(Agronomy); Dr. AR Rao, ADG(PIM), Dr. Seema Jaggi, ADG(HRD); Dr. Bimlesh Mann, ADG(EPHS), Dr. Anil Rai, ADG(ICT) and Dr. Ajit Singh Yadav, ADG(EQR) were also present on the occasion.



Staff versus student's sports were also organized on the eve of Institute Annual day. The winning teams of the sports events Table Tennis, Volley Ball and Musical Chair were also given the prizes. Students also prepared beautiful rangoli during celebrations.





Independence Day

ICAR-IASRI celebrated the 78th Independence Day with a vibrant program. Director, ICAR-IASRI led the flag-hoisting ceremony, followed by inspiring performances from students, including poetry, dance, group songs, and a presentation on India's freedom struggle.



On the auspicious occasion of Independence Day, August 15, 2024, Shri Shivraj Singh Chouhan, Hon'ble Minister of Agriculture & Farmers Welfare, unveiled the National Pest Surveillance System (NPSS) mobile application at C. Subramaniam Auditorium, NASC. Following the launch, Shri Faiz Ahmed Kidwai, IAS, Additional Secretary, MoA&FW, GoI, provided an in-depth overview of the app's capabilities. NPSS is a cutting-edge tool designed for comprehensive pest surveillance across India. It currently supports the identification of pests and diseases for 61 crops, with advisory services available for 15 crops. Mr. Kidwai further acknowledged the pivotal contributions of ICAR-NCIPM, ICAR-IASRI, DPPQ&S, Wadhwani AI, and Plantix in the development and success of this vital initiative.



एक पेड़ मां के नाम

भा.कृ.अनु.प.- भारतीय कृषि सांख्यिकी अनुसंधान संस्थान में आज दिनांक 29 अगस्त 2024 को एक पेड़ मां के नाम का आयोजन किया गया | इसमें संस्थान के निदेशक महोदय और अन्य अधिकारियों द्वारा 10 अशोका के पौधों का वृक्षारोपण कर इस आयोजन को सफल बनाया।



Teachers Day

- Institute celebrated Teacher's Day on September 05, 2024. Chief Guest Sh. Parvin Srivastava, Former Chief Statistician and Secretary, Ministry of Statistics and Programme Implementation, Govt. of India delivered lecture on **Use of Data in Decision Making**. Guest of Honor Dr. Punam Bedi, Senior Professor, University of Delhi delivered **lecture on My Journey in Academics and Research**.



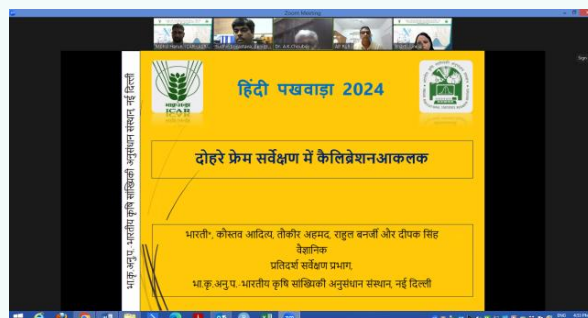
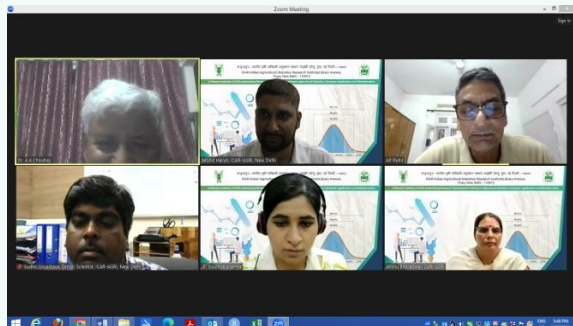
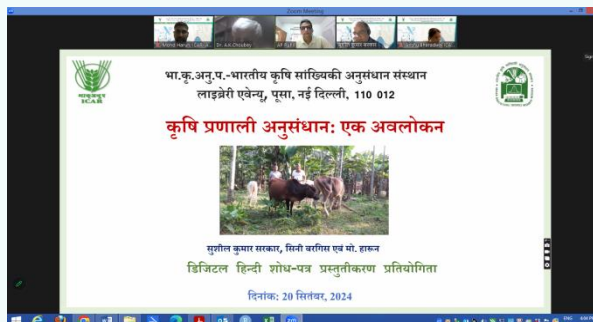
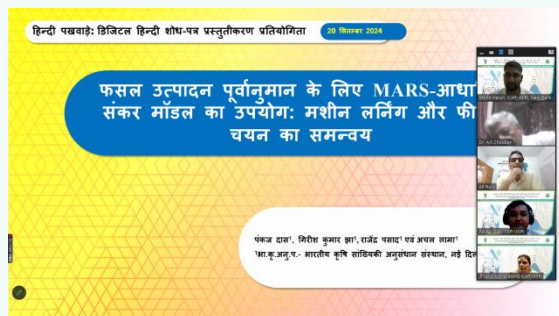


हिंदी पखवाड़ा

वर्ष के दौरान संस्थान में आयोजित हिन्दी पखवाड़े की रिपोर्ट 2024

संस्थान में सितम्बर 30 से 14, के दौरान हिन्दी पखवाड़े का आयोजन किया गया 2024। इस वर्ष हिन्दी पखवाड़े का शुभारम्भ अर्थात उदघाटन हिन्दी दिवस एवं चतुर्थ अखिल भारतीय राजभाषा सम्मेलन के अवसर पर सितम्बर 14, को भारत 2024 मंडपम, नई दिल्ली में माननीय गृह राज्य मंत्री जी द्वारा किया गया था। हिन्दी पखवाड़े का आयोजन एवं इससे संबन्धित प्रतियोगिताएँ संस्थान में दिनांक सितम्बर 30 से 18, के दौरान आयोजित की गयी 2024। दिनांक सितम्बर 18, को 2024 पाठ प्रतियोगिता का आयोजन किया गया-काव्य। हिन्दी पखवाड़ा के दौरान डॉ दरोगा सिंह स्मृति व्याख्यान के साथसाथ - वैज्ञानिक प्रभागों में हिन्दी में सर्वाधिक वैज्ञानिक कार्य करने के लिए प्रभागीय चलशील्ड-, डिजिटल हिन्दी शोधपत्र - (वैज्ञानिक वर्ग के कर्मियों के लिए) प्रस्तुतीकरण प्रतियोगिता, हिन्दी श्रुतलेख प्रतियोगिता, हिंदीतर कर्मियों के लिए शब्दार्थ लेखन प्रतियोगिता लेखन प्रतियोगिता, अंताक्षरी प्रतियोगिता तथा प्रश्न मंच प्रतियोगिता, भी आयोजित की गईं। सभी प्रतियोगिताओं में संस्थान के विभिन्न वर्ग के कर्मियों ने बढ़ चढ़कर हिस्सा लिया-। संस्थान में प्रत्येक वर्ष हिन्दी दिवस के अवसर पर डॉ दरोगा सिंह स्मृति व्याख्यान का आयोजन किया जाता है। इस वर्ष इस कड़ी का तैतीसवाँ व्याख्यान राष्ट्रीय प्रतिदर्श कार्यालय के पूर्व महानिदेशक श्री राकेश कुमार त्यागी द्वारा किया गया और इस कार्यक्रम की अध्यक्षता (ओ.एस.एस.एन) संस्थान के निदेशक महोदय द्वारा की गई। दिनांक सितम्बर 30, को हिन्दी पखवाड़ा 2024 के समापन समारोह के अवसर पर इस दौरान आयोजित प्रतियोगिताओं के सफल प्रतियोगियों को नगद पुरस्कारों की घोषणा की गयी। इसके अतिरिक्त इस अवसर पर अक्टूबर, से अगस्त 2023, तक की अवधि के दौरान संस्थान में आयोजित हिन्दी कार्यशालाओं के वक्ताओं 2024 पत्र प्रदान किए जाने की भी घोषणा की गयी-को प्रशस्ति।

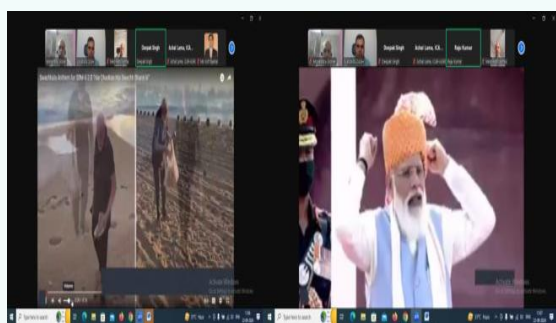
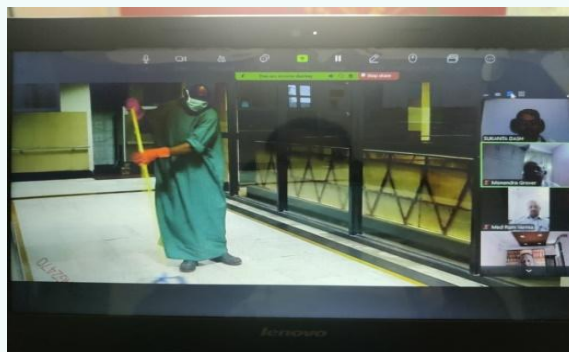




Swachhata Campaign

Swachhata Campaign: September 15-October 02, 2024. The drive was celebrated as “Swachhata Hi Seva 2024” स्वच्छता बनाए रखें, न तो गंदगी करें और न ही दूसरों को करने दें, सूखा और गीला कचरा अलग-अलग करें, सूखा कचरा कम करें, पेड़ लगाएं, जल और ऊर्जा का संरक्षण करें, एकल उपयोग प्लास्टिक का उपयोग न करें (Maintain cleanliness, neither litter nor let others litter, separate dry and wet waste, reduce dry waste, plant trees, conserve water and energy, avoid single use plastic). As part of Swachhata Pakhwada, gratitude was expressed for sanitation and house keeping workers. A photo of staff with sanitation and housekeeping workers was taken ICAR-IASRI staff and students took the 'Swachhta Pledge' administered by Secretary (DARE) & DG (ICAR) online on September 17, 2024; "Ek Ped Maa Ke Naam" plantation drive was organized in the Campus after the Swachhata Pledge; A cleanliness drive were carried out in the Institute Campus by staff members; in and around hostels by the staff and students; cleanliness was also carried out outside campus by the staff members; the staff members participated in Swachhata Run on 19.09.24 as a part of Swachhata Hi Seva Campaign; on 20.09.2024 the staff and safai mitras posed for a photograph at selfie point of the Institute and the staff also took a round of the campus for cleanliness drive; a video show was organized on 21.09.2024, the title of the video was स्वच्छता ही सेवा पखवाड़े के तहत पूरे देश में सफाई अभियान | Swachhata Hi Seva 2024 and Swachhata Hi Seva Film 2023 were shown with the message that “Every year Govt. of India celebrates Swachhata Pakhwada from 15th September to 02 October., the whole country and all groups are participating in it. Drawing and Slogan writing was organised by studentson 21.09.2024, a video show was organized on 22.9.2024 on Swachhata Anthem for SBM-U 2.0 "Har Dhadkan Hai Swachh Bharat ki", Join the world's largest campaign for cleanliness on "1st October 10 am for 1 hour", रोज स्वच्छता में भारत इतिहास नए गढ़ता है....जितने कदम बढ़ाते हम उतना भारत बढ़ता है and Swachh Bharat Abhiyan-Swachh Bharat ka Irada Kar Liya Hum Ne; on 25.09.2024 cleanliness campaign at religious place (temple near ICAR-NIAP : ICAR-National Institute (formerly Centre) of Agricultural Economics and Policy Research) was conducted; on 26.09.2024 an open lecture for all the

ICAR Institutes in hybrid mode was delivered by Dr. N.B. Mazumdar, Honorary Chairman, International Academy of Environmental Sanitation and Public Health, New Delhi, Honorary Director General, Sulabh International Social Service Organisation (SISSO) and Director Dr. Bindeshwar Pathak Research Foundation, on **Environmental Sanitation and Public Health**, Scientists, technical and administrative staff of ICAR-IASRI and Staff members of various ICAR Institutes have attended this and it was followed by interaction with audience; ADG (Co-ordination) Dr. Anil Kumar along with Dr. Sanjeev Panwar visited and inspected ICAR-IASRI for ongoing Swachhata Activities. Overall they were satisfied with the activities. They also gave several suggestions which will be followed; An email campaign regarding “Single use plastic” was conducted for ICAR users; on 27.09.2024 a health check -up of Safai Karamcharis in the Institute was conducted in nearby Mohalla Clinic by Doctors of the clinic; on 01.10.24, a video show was organized on (i) Single Use Plastic Ban DTE Call For Action; (ii) Nature And You: Single Use Plastic; (iii) Swachh Bharat Abhiyan - Short Film; (iv) Incredible India - 'Swachhata Hi Sewa' Film | Cleanliness Campaign. The valedictory function of the Swachhata Hi Sewa 2024 Campaign and Swachh Bharat Diwas was held in hybrid mode. The event was graced by the presence of Dr. R.C. Agarwal, Deputy Director General (Education), Dr. S.K. Sharma, Assistant Director General (HRM), and staff members of IASRI in the virtual session. The program began with the IASRI song, followed by a warm welcome speech. Dr. Achal Lama presented a brief overview of the activities undertaken during the IASRI Swachhata Campaign, after which the Director, ADG, and DDG shared their insights. The Director of IASRI highlighted the key aspects of the 2024 Swachhata Hi Sewa Campaign and discussed a planned collaborative initiative with Sulabh International. Dr. S.K. Sharma, ADG (HRM), stressed the importance of improving India's global cleanliness ranking and urged collective efforts to present India as a model nation in cleanliness. Dr. R.C. Agarwal, DDG (Education), emphasized that cleanliness should become a habit and reminded everyone that no one is ever too busy to participate in Swachhata activities. He also underscored our responsibility to leave a cleaner planet for future generations and the importance of instilling these values from an early age. The event concluded with the distribution of certificates to the participants of the various competitions held during the campaign.







SC-Sub Plan Programmes

- An exposure visit for Scheduled Caste beneficiaries under SCSP Scheme on September 13, 2024. An exposure visit was organized at ICAR-IASRI on September 13, 2024, under the SCSP scheme for Scheduled Caste (SC) beneficiaries from the villages of Kair and Khaira in Najafgarh, New Delhi. Twenty-five beneficiaries attended the event. While addressing the participants Dr. Rajender Parsad, Director of ICAR-IASRI, highlighted the Institute's

achievements and urged all to contribute effectively in (i) maintaining and enhancing Swachchhta in their neighbourhood; (ii) Plant more trees under Ek Ped Maa ke Naam Campaign and (iii) encourage the school going children towards agriculture education and work. During the event, all participants and officials took the Swachhata Pledge. Dr. Mukesh Kumar and Dr. Soumen Pal briefed the role of ICT in agriculture and provided insights into the AI-DISC, KRISHI Portal, and Kisan SARATHI. The SCSP committee organized the programme, and sewing machines were distributed to the SC beneficiaries. Dr. Alka Arora, Dr. Anshu Bharadwaj, Dr. Ritwika Das, Sh Vishal Goel, Sh. Mayank Singh Pundir and others were present on the occasion.

- An exposure visit for Scheduled Caste Students under SCSP Scheme was organized at ICAR-IASRI on September 27, 2024, under the SCSP scheme for 20 students belonging to Scheduled Caste Community from Sulabh Public School, Mahavir Enclave, Palam, New Delhi. Dr. Rajender Parsad, Director of ICAR-IASRI, highlighted the Institute's achievements and emphasized on the importance of agricultural education and the career opportunity in the agriculture sector. He also mentioned the ongoing 'Swachhata Pakhwada' campaign from September 15 to October 02, 2024, urging participants to actively engage in and contribute to its success. Dr. Mukesh Kumar briefed about the SCSP programme and role of ICAR in Indian agriculture. Dr. Anshu Bhardwaj talked about the impact of Artificial Intelligence in agriculture, highlighting the AI-DISC and AR-VR initiatives at the institute, and demonstrated the AR-VR tool to the students. Dr. Soumen Pal welcomed the participants and provided an overview of the institute's activities. Dr. Md Yeasin shared the importance of agricultural statistics in research and education. Dr. Ritwika Das described the concepts of agricultural Bioinformatics. As a part of this excursion, the students also visited the National Agricultural Science Museum at NASC Complex



WORKSHOPS/WEBINARS/ MEETINGS ETC. ORGANIZED

Seminars Delivered

A total of 44 seminars on different areas of Agricultural Statistics, Computer Application and Bioinformatics which include presentations on new project proposals, salient findings of the completed research projects and Training undertaken at International level by the Scientists, Course/ Thesis/ ORW Seminars of students of M.Sc. and Ph.D. disciplines of Agricultural Statistics, Computer Application and Bioinformatics. The category-wise break-up is given below:

Category	Type of Seminar	Number
Scientist	Project Completion	1
	New Project Proposal	0
	Foreign Visit	0
	General	0
Student	Course	17
	ORW	21
	Thesis	5
	Guest Seminar	1
Total		44

PUBLICATIONS

Research Papers

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63. Yadav KK, Dash, S, and Singh, AK (2024). Construction of α -resolvable and nearly α -resolvable BIB designs. *International Journal of Statistics and Applied Mathematics*, **9**(4), 152-155. <https://dx.doi.org/10.22271/math.2024.v9.i4b.1786>; <http://krishi.icar.gov.in/jspui/handle/123456789/84141>
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Book Chapters

1. Das P, Adhikary, T and Ahmed B (2024). Transformative Roles of Information and Communication Technologies in Fostering Climate-Resilient Agriculture. In: *Enhancing Crop Resilience: Advances in Climate Smart Crop Production Technologies*. Eds. Anjani Kumar, Rameswar Prasad Sah, Basana Gowda G., Joy Kumar Dey, Ashim Debnath, Bimal Das. Biotica publication. ISBN: 978-81-947739-1-7; <https://doi.org/10.54083/978-81-947739-1-7-1>
2. Murmu S, Das R, Pandey B, Sharma S and Farooqi MS (2024). Exploring Secondary Metabolites in Plants through Bioinformatics. In: *Bioinformatics for Plant Research and Crop Breeding*, 435-458. Ed. Jen-Tsung Chen, Wiley Publication. ISBN:978-1-394-20993-4; <https://doi.org/10.1002/9781394209965.ch18>
3. Murmu S, Chaurasia H, Samal I, Bhoi TK and Pradhan AK (2024). Bioinformatics Approaches for Unraveling the Complexities of Plant Stress Physiology. *Bioinformatics for Plant Research and Crop Breeding*, 209-231. Ed. Jen-Tsung Chen; Wiley Publication. ISBN:978-1-394-20993-4; <https://doi.org/10.1002/9781394209965.ch8>
4. Verma M.R. (2024). Basic Experimental Designs for Animal Science Experiments. In: *Recent Advances in Veterinary Sciences and Animal Husbandry*. Gorakh Mal, Birbal Singh, Rinku Sharma, Gauri Jairath, Ajayta Rialch and R. A. Shah (eds). ICAR-Indian Veterinary Research Institute, Bareilly & National Agriculture Development Cooperative Ltd. (NADCL) Baramulla, Dilpreet Publishers & Distributors, New Delhi, pp: 494-500. ISBN 978-93-91995-41-6
5. Singh D, Kumar R, Kumar D, Kumar V, Godara S and Jhahharia A (2024). Role of Sample surveys in efficient data collection and agricultural policies evaluation. In: *Agriculture technologies for sustainable development*. Eds. edited by Dwivedi, S., Kumar, V. and Somakka, N.A.N., pp 50-58, New Delhi Publishers.
6. Singh D, Kumar R, Godara S, Jhahharia A, Begam S. and Kumar V. (2024). Survey Designs for Agricultural Sample Surveys. In: *Agriculture technologies for sustainable development*. Eds. Dwivedi, S., Kumar, V. and Somakka, N.A.N., pp 143-153, New Delhi Publishers.
7. Godara S, Begam S, Jhahhria A, Kumar R, & Kumar D. (2023). Computational approach for developing regional crop plan. In: *Agriculture technologies for sustainable agriculture development* (1st ed.). New Delhi Publishers. (Eds.), S. Dwivedi, V. Kumar, & N. S. A. N.
8. Dheeraj A, Marwaha S, Nigam S, Haque MA and Madhu (2024). ADNet: An Attention Embedded DenseNet121 Model for Weed Classification. In: *The Future of Artificial Intelligence and Robotics*, pp. 626-638. Eds. David Pastor-Escuredo, Imene Brigui, Nishtha Kesswani, Sushanta Bordoloi, Ashok Kumar Ray. Springer Nature Switzerland. ISBN: 978-3-031-60935-0; https://doi.org/10.1007/978-3-031-60935-0_55

Popular Articles

1. Marwah Sudeep, Deb Chandan Kumar, Haque Ashraful Md., Bhardwaj Anshu, Arora Alka, Dahiya Shashi and Parsad Rajender. Transforming agricultural education with the power of Artificial Intelligence. *Agri Rise Agricultural Education Digest, NAHEP*, **2(3)**, 22-26.
2. Marwah Sudeep, Dahiya Shashi, Bhardwaj, Arora Alka, Mahalle Suvarna and Parsad Rajender. NAHEP's E-Learning Portal. *Agri Rise Agricultural Education Digest, NAHEP*, **2(3)**, 35-38.
3. Marwah Sudeep, Bhardwaj, Arora Alka, Dahiya Shashi, Parsad Rajender and Agrawal Anuradha. NARES-blended learning platform: innovating agricultural education for the next generation. *Agri Rise Agricultural Education Digest, NAHEP*, **2(3)**, 52-55.

4. Soumya Sharma, Sneha Murmu, Ritwika Das, Sarika Sahu, Adarsh Kumar, Sunil Kumar (2024). Enhancing agricultural research productivity with generative ai: practical applications and innovations. Article ID: 50800, **6(10)**, 2024, Agriculture & Food: e-newsletter.
5. राहुल बनर्जी, भारती, दीपक सिंह, पंकज दास, अंकुर विश्वास, कौस्तव आदित्य एवं राजकुमार (2023). मल्टीस्ट्रैटम प्रतिक्रिया सतह अभिकल्पनाओं पर एक अवलोकन। साँख्यिकी विमर्श, 19, 05-12.
6. दीपक सिंह, राहुल बनर्जी, भारती, पंकज दास, समर्थ गोदारा, राजू कुमार, अंकुर विश्वास एवं कौस्तव आदित्य (2024)। प्रतिदर्श सर्वेक्षणों में परिमित समष्टि माध्य के अनुमानकों का एक बेहतर वर्ग। साँख्यिकी विमर्श, 19, 13-18।
7. पंकज दास, भारती, राहुल बनर्जी, दीपक सिंह एवं राजकुमार (2024). ड्रोन-प्रौद्योगिकी: कृषि में उच्च उत्कृष्टि का संवर्धन, साँख्यिकी विमर्श, 19, 19-23.
8. समर्थ गोदारा, राम स्वरूप बाना, श्रुति गोदारा, राजेन्द्र प्रसाद, सुदीप मरवाहा, राजू कुमार एवं दीपक सिंह (2023)। कृषि आवश्यकताओं के व्याख्यान हेतु किसान कॉल सेंटर के किसानों के प्रश्नों का गहन विश्लेषण। साँख्यिकी विमर्श, 19, 24-32।
9. आशुतोष दलाला, सिनी वर्गीस, मो. हारून एवं देवेन्द्र कुमार। न्यूट्रोसोफिक आंकड़ों हेतु साँख्यिकीय तकनीकें। साँख्यिकी विमर्श, 19, 33-38
10. नीतू आर एस, सिनी वर्गीस, मो. हारून, आशुतोष दलाला, अनिदिता दत्ता एवं देवेन्द्र कुमार। अभिकल्पना परीक्षणों का गैर-प्राचलिक विश्लेषण। साँख्यिकी विमर्श, 19, 39-47
11. नोबिन चन्द्र पॉल, नव्याश्री पोन्नगंटी, राहुल बनर्जी, धनञ्जय डी नंगारे एवं तौकीर अहमद (2024). महारष्ट्र के पुणे जिले के लिए गूगल अर्थ (Google Earth) इंजन का इस्तेमाल कर के भूमि की सतह के तापमान का स्थानिकमान चित्रण, साँख्यिकी विमर्श, 19, 48-50.
12. सुशील कुमार सरकार, अनिदिता दत्ता एवं रवि वंजारी। दीर्घावधि उर्वरक परीक्षण: एक अवलोकन। साँख्यिकी विमर्श, 19, 51-58.

PAPERS PRESENTED/LECTURES DELIVERED

Paper presented /Invited talk delivered in Conferences

- Regional Advisory Group Meeting at NABARD, West Bengal Regional Office on July 10, 2024
 - Ashraful Haq. Artificial Intelligence in Agriculture.
- NAHEP-IDP Training Programme on “Digital Literacy: Empowering Agriculture Students” organized by SKUAST-Jammu during July 03-09, 2024
 - Anshu Bharadwaj. Blended learning and immersive learning: embracing the promising future of digital learning in Agriculture Higher Education
 - Alka Arora. Unlocking the power of AI: introduction and applications with Google Colab.
- National Conference on Digitalization of Agriculture and Rural Management Challenges, Priorities and Strategies at Shobhit University, New Delhi on July 19, 2024
 - Sanjeev Kumar. Empowering the farmers through Agri-Extension Services and knowledge dissemination with reference to national policy framework – Kisan Sarathi.
- 28th Conference of Central and State Statistical Organization organized by Ministry of Statistics and Planning Implementation at Dr. Ambedkar International Centre, New Delhi during August 12-13, 2024

- Rajender Parsad. Statistical literacy. In the Breakout Session: Capacity Building and Statistical Classification.
- International Conference on “AI in Health, Humanity and Indian Culture Symposium” held at University of Cincinnati, Ohio, USA during 23.08.2024 - 25.08.2024 while as Postdoc at that University.
 - D.C. Mishra. Disease Diagnosis: A Journey from Ancient time to Artificial Intelligence Era.
- Following papers presented in International Conference on Emerging Technologies in Agriculture and Allied Sciences (ETAAS-2024), Society for Agriculture, Allied Sciences and Technology (SAAST), Odisha; School of Agriculture, SR University, Warangal; Meadow Agriculture Pvt. Ltd., Uttar Pradesh, India during August 10-11 2024
 - Godara S, Kumar R, Jha GK, Marwaha S and Parsad Rajender. Information demand of Indian farmers on edible oil-crops: Insights from Kisan Call Center data.
 - Begam S, Godara S. SSRminer: Python command-line tool for precise extraction of genomic SSR markers.
 - Parida SK, Godara S and Begam S. Regional GC content analysis of Tobacco Mosaic Virus genome: Insights into functional and evolutionary implications.
- 3rd International Wheat Congress-2024, Murdoch University, Perth, Western Australia during September 22-27, 2024
 - Lokeshwari M, Girish Kumar Jha, Jyoti Kumari, Rajender Parsad, Sudhir Navathe, Yashavantha Kumar KJ, Sundeep Kumar, Gyanendra Pratap Singh, P V Vara Prasad and Arun Kumar Joshi (2024). Wheat yield prediction with optimized deep neural network using spectral vegetation indices.
 - Neeraj Budhlakoti, Dwijesh Chandra Mishra, Divya Sharma, Reyazul Rouf Mir, VK Vikas, Sundeep Kumar and Girish Kumar Jha. Investigating Genetic Structure of Powdery Mildew Resistance in Wheat via QTL Meta-Analysis. (Poster presentation)
- Two Weeks Faculty Development Programme of CAU, Imphal during September 10 – 23, 2024 on 16th September.
 - Chandan Kumar Deb. Leveraging Artificial Intelligence for Enhancing Crop Improvement and Protection: some initiatives.
- KVK Zonal Workshop of Zone-XI, Bengaluru organised at IISR, Kozhikode on September 03, 2024.
 - Alka Arora. KVK Portal
- Annual Zonal Workshop of Krishi Vigyan Kendras (KVKs) of Zone-I organised at GDVASU, Ludhiana on September 18, 2024.
 - Alka Arora. Managing Data through KVK Portal.
- Discussion Meet on AI for Agriculture Sector – Trends, Challenges & Future Prospects organised in online mode by Centre for Development of Advanced Computing, Mohali on September 6, 2024
 - Alka Arora. Advancing AI Innovations in Agriculture
- Workshop on Student READY Portal and RAWE App (VIKAS) organised in online mode by Agricultural Education Division, ICAR for all State Agricultural Universities & its affiliated colleges on September 25, 2024.
 - Alka Arora. Student Ready Portal & VIKAS App
- 7th International Conference- on Current Innovations and Technological Advances in Agriculture and Allied Sciences (CITAAS 2024) organized at GKU, Talwandi Sabo, Bathinda (Punjab) during August 29-31, 2024
- Singh M, Sharma A, Chaturvedi KK, Kumar S, Mishra DC, Arora A, Bhardwaj R, Ray M, Mamatha YS and Godara S (2024). Advanced Seed Classification Using a Deep Neural

Network Framework with NIR Spectroscopic Technology. Souvenir cum Abstract Book, p. 258. New Delhi: ICAR-Indian Agricultural Statistics Research Institute.

{ *denotes who has presented the paper }

Lecture Delivered (Outside institute)

- ‘Exploratory Data Analysis by using R’ on July 20, 2024 in Training Program “Skill Enhancement of Statistical Methods and Software Packages” for State Government officials organized by Statistics Section, Department of Basic Sciences, Dr. YS Parmar University of Horticulture and Forestry, Nauni Solan during July 16-21, 2024. (Bharti).
- Training programme on “Digital Literacy: Empowering Agriculture Students under the aegis of IDP SKUAST Jammu, NAHEP organized at SKUAST-Jammu during July 03-09, 2024.
 - Rajender Parsad. Data and Web Resources on July 05, 2024
 - Girish Kumar Jha. Artificial Intelligence-based Techniques for Time Series forecasting on July 05, 2024.
- 10th NEP Orientation and Sensitization Programme at Malaviya Mission Teacher Training Centre (MMTTC), Central University of Haryana, organized during July 22-31, 2024.
 - Dinesh Kumar. Holistic and Multi-Disciplinary Education in NEP 2020: Relevance and Challenges on July 23, 2024.
- ‘Orientation & Sensitization programme’ at UGC-MMTTC (formerly UGC-HRDC), Jawahar Lal University (JNU), New Delhi organised during July 15-25, 2024.
 - Dinesh Kumar. NEP 2020 and Research Funding Role of NRF & Private Sector on July 24, 2024
- ‘Hands-on Training on Next-generation sequencing: A tool for genome analysis and genomic resources’ on July 26, 2024 at SKUAST, Jammu.
 - Neeraj Budhlakoti. Basics of bioinformatics applications and NGS data analysis.
- SERB sponsored High-End Workshop on ‘Harnessing the power of multi-omics big data in animal science for precision agriculture’ from July 15 to July 28, 2024 at ICAR-NDRI, Karnal.
 - Sneha Murmu. Transcriptomic analysis on July 19, 2024.
- ‘Hands on training on statistical analysis exploring the role of agriculture in industry domains’ organized by the Indian Society of Agronomy during August 22- 31, 2024.
 - Med Ram Verma. Basics in experimental designs and analysis of field data on August 28, 2024.
- Short Course on ‘Hands on training on statistical analysis exploring the role of agriculture in industry domains’ organized by the Indian Society of Agronomy during 22-31 August 2024
 - Mohd Harun. Data analysis for farming system and on farm research on August 30, 2024
 - Anindita Datta. Data transformation and interpretation on August 30, 2024
- Training Programme on "NextGen Extension: transforming roles and sparking innovations" organizing by Uttar Banga Krishi Vishwavidyalaya, West Bengal and National Institute of Agricultural Extension Management (MANAGE), Hyderabad on August 28, 2024 (Online).
 - Sudeep Marwaha. Mobile and AI Interventions for NextGen Extension on August 28, 2024.
- ‘SHITIJ 2024-25’ incubation program organised by ZTM Unit, ICAR-IARI on August 21, 2024.
 - Alka Arora. ICAR repository for Knowledge Management on August 21, 2024.

- Indira Gandhi Krishi Vishwavidyalaya RVKY RAFTAAR Agribusiness Incubator (IGKV R-ABI), Raipur on August 02, 2024.
 - Alka Arora. ICAR Digital Knowledge Management Repository on August 02, 2024.
- Training program on 'Phenomics and High-Throughput Phenotyping: Dissection of Traits for Abiotic Stress Tolerance' during August 25-30, 2024.
 - Chandan Kumar Deb. AR/VR module for NDPPC, ICAR-IARI, New Delhi August 30, 2024.
- '11th NEP Orientation & Sensitization Programme' Malaviya Mission Teacher Training Centre (MMTTC), Central University of Haryana, organized during August 20-30, 2024.
 - Dinesh Kumar. Indian Knowledge System & NEP: Role of HEI on August 22, 2024
- 'Basics of Data Analysis using R' from September 09-13, 2024 at Kerala Agricultural University.
 - Himadri Shekhar Roy. Data Visualization Techniques – Basic and Advanced graphical tools on September 12, 2024.
- Neural Harmony (Part-I): Integrating Biology, Physics, & Quantum into AI in Silicon Valley Quantum Computing Group programme on August 03, 2024. (Monendra Grover).
- Agricultural Innovation: Cyber Agricultural Systems in Plant Breeding and Productivity in Central Agricultural University, Imphal, Faculty Development Programme on September 15, 2024. (Monendra Grover)

PARTICIPATION

International Conference/ Workshop/Symposium etc.

- International Conference of Agricultural Economists (ICAE-2024) Poster and Exhibition Committee meeting at ICAR-NIAP on July 26, 2024. (Jaiprakash Bisen)
- 32nd International Conference of Agricultural Economists 2024 held at NASC, New Delhi during August 02-07, 2024, as an Exhibitor nominated by ICAR, New Delhi. (Alka Arora, Anshu Bharadwaj)
- 3rd International Wheat Congress 2024 organized at Murdoch University, Perth, Western Australia during September 22-27, 2024, 2024. (Girish Jha and Neeraj Budhlakoti)

National Conference/ Workshop/ Seminar/ Symposia/ Training / Foundation Course/ Annual Day/ Lectures, etc.

- Stakeholders' workshop for government data ecosystem at India Habitat Centre on July 26, 2024. (Rajender Parsad)
- Workshop-cum-Brainstorming session for members of various sectional committees of BIS at National Institute of Training for Standardization (NITS), Noida on July 26, 2024. (K.K. Chaturvedi)
- One-day virtual Zonal Review Workshop of Farmers First Programme on July 29, 2024. (Mukesh Kumar)
- Agricultural Education Division Exhibition Stall on ICAR Technology Day on July 15-16, 2024 at NASC Complex. (Rajender Parsad, Sudeep Marwaha, Chandan Deb, Ashraful Haque and Sapna Nigam)
- MDP training on AI for Managers at IIM Lucknow during July 01-05, 2024. (Chandan Kumar Deb, Sanchita Naha, Ashraful Haque, Sapna Nigam and Madhu)
- Workshop on Collaborative Research Studies of CGWB and ICAR organized by ICAR (NRM Division) and Central Ground Water Board held on July 11, 2024. (Anshu Bharadwaj)

- Online Faculty Development Program on Handling Partial Least Squares - Structural Equation Modelling (PLS-SEM) held online during July 01-05, 2024. (Soumen Pal)
- 28th conference of Central and State Statistical Organization organized by Ministry of Statistics and Planning Implementation at Dr. Ambedkar International Centre, New Delhi during August 12-13, 2024. (Rajender Parsad)
- Launch event of ASEAN-India Fellowship for Higher Education in Agriculture and Allied Sciences organized by ICAR, Ministry of Agriculture & Farmers' Welfare and Ministry of External Affairs on August 14, 2024. (Rajender Parsad)
- Interaction meet of ICAR and Agricultural University on increasing job opportunities for students through vocational and higher Agricultural Education organized by Agricultural Education Division on August 17, 2024 (Online) (Rajender Parsad)
- One-week online training program on "Python" from August 02-08, 2024 organized by ICAR-Indian Agricultural Statistics Research Institute, New Delhi. (Susheel Kumar Sarkar)
- 32nd International Conference of Agricultural Economists, held during August 02-07, 2024 at New Delhi. (Jaiprakash Bisen)
- Workshop Consultation on Review of milestone setting for SDGs National Indicators organized by MoSPI, Government of India at Vigyan Bhawan, New Delhi on August 16, 2024. (Tauqueer Ahmad)
- NAHEP component-2 'Interface Meeting on Mainstreaming of Agricultural Higher Education in Colleges/ Departments affiliated with Traditional Public Universities' at ICAR Committee Room, NAAS, NASC New Delhi on August 27, 2024. (Sudeep, Alka Arora, Anshu Bharadwaj, Shashi Dahiya)
- Participated and demonstrated the software applications viz. PIMS, TMIS and Land Management Systems for ICAR in the Hybrid meeting under the chairmanship of Hon'ble Vice Chancellor, UHS, Bagalkot on August 05, 2024. (Sudeep, Alka Arora, Shashi Dahiya)
- Annual Zonal Workshop for KVKs of Zone V (A&N Islands, Odisha & West Bengal) at Puri Odisha during August 27-29, 2024. (Soumen Pal)
- IP awareness Seminar on "Lab to Market- Leveraging IP" conducted in online mode under the National IPR Awareness Mission-NIPAM 2.0 on August 09, 2024. (Anshu Bharadwaj)
- Launch program of the "ASEAN-India Fellowship Program for Higher Education in Agriculture and Allied Sciences" held on August 14, 2024 at NASC, New Delhi. (Sudeep, Alka Arora, Anshu Bharadwaj)
- Conference on "Space-Driven Solutions for Agricultural Transformation in India" held at Bharat Mandapam, Pragati Maidan, New Delhi on August 16, 2024 organized by MNCFC, Govt. of India in celebration of National Space day on August 23, 2024. (Anshu Bharadwaj)
- 3rd International Wheat Congress 2024 and presented the poster entitled, "Wheat yield prediction with optimized deep neural network using spectral vegetation indices" during September 22-27, 2024, 2024 held at Murdoch University, Perth, Western Australia. (Girish Kumar Jha)
- DGCA (Govt. of India) approved "Remote Pilot Training Course" conducted by the "Fore Institute of Drone Technology and Research (FIDTR)", Gurugram, Haryana. (Ankur Biswas and Pankaj)
- Online Editor's Workshop-Enabling A Research Ecosystem organized by Ag. Education Division, ICAR on September 24, 2024. (Shashi Dahiya, K.K. Chaturvedi)
- Stakeholders Consultation on Transforming Agriculture Research-Enhancing Role of Private Sector" Organized by Ministry of Agriculture and Farmers' Welfare in virtual mode on September 03, 2024. (K.K. Chaturvedi)

HUMAN RESOURCE DEVELOPMENT

➤ Training Programmes/Workshops Organized: 07 (Participants 474)

S.No.	Title	Venue	Period	No. of Participants
1.	NARES Blended Learning Platform (<i>Coordinators: Shashi Dahiya, Sudeep Marwaha and Anshu Bharadwaj</i>)	ICAR-IASRI, New Delhi	July 22-23, 2024	25
2.	Metagenomics Data Analysis (<i>Coordinators: Anu Sharma, Mohammed Samir Farooqui, and Sneha Murmu</i>)	ICAR-IASRI, New Delhi	July 22-24, 2024	30
3.	NARES Blended Learning Platform: Features and Functionalities (<i>Coordinators: Alka Arora, Soumen Pal and Sudeep Marwaha</i>)	ICAR-IASRI, New Delhi	July 29-30, 2024	25
4.	Data Analysis and Interpretation for 46th Batch of ISS Probationers (<i>Coordinators: Ajit, Ankur Biswas and Upendra Kumar Pradhan</i>) <i>Sponsored by: NSSTA, Ministry of Statistics and Programme Implementation, Govt. of India</i>	ICAR-IASRI, New Delhi	August 12-23, 2024	28
5.	Python (<i>Course Directors: Sudeep Marwaha and Rajender Parsad; Coordinators: Soumen Pal and Chandan Kumar Deb</i>)	Online	August 02-08, 2024	271
6.	Empowering Agriculture through Artificial Intelligence and Digital Technologies (<i>Course Directors: Sudeep Marwaha and Rajender Parsad; Coordinators: Madhu, Sapna Nigam and Akshay Dheeraj</i>)	Online	August 20-22, 2024	50
7.	Phenomics and High Throughput Phenotyping: Dissection of Traits for Abiotic Stress Tolerance (<i>Coordinators: Sudeep Marwaha and Chandan Kumar Deb</i>)	Online	August 25-30, 2024	45
हिन्दी कार्यशाला				
8.	परिषद में ई-गवर्नन्स का अनुप्रयोग (संयोजक: एस.बी. लाल, मुकेश कुमार एव	भा.कृ.अनु.प.- भा.कृ.सां.अ.सं,	सितम्बर 11, 2024	26

	संजीव कुमार)	नई दिल्ली		
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CONSULTANCY/ADVISORY SERVICES PROVIDED

- Mohd Harun advised (i) a M.Sc. Student, Yogita Yadav from the discipline of Vegetable Science, The Graduate School, ICAR-IARI regarding analysis of data collected on disease score regarding Downey Mildew disease of cauliflower, over 8 time intervals after inoculation. The analyses involved mainly, factorial RCB Design, transformation of data, descriptive statistics, graphical representations etc.; and (ii) Dr. Anju Kamra, Principal Scientist at Division of Nematology, ICR-IARI, New Delhi regarding analysis of data from experiment conducted for studying content of enzymes using cultivars of tomato. For this purpose, six enzyme levels have been estimated at 3 time intervals in four cultivars in roots and leaves with and without inoculation. Correlation analysis, ANOVA and post hoc analyses were performed.
- Rahul Banerjee advised (i) Dr. Khasru Alam, Scientist-C, CSRTI, Berhampore in the analysis of transfer learning methodology for Investigating Gender Determination in Silkworm Cocoon.
- Pankaj Das advised Dr. Anju Sharma, Assistant Professor (Statistics), Department of Basic Sciences, Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni(Solan), HP in application of ML & DL models in apple yield forecasting.
- MA Iquebal advised (i) Dr. Syed Mudasir Andrabi, Professor & Head, Animal Biotechnology, Shuhama, SKUAST-Kashmir, regarding protein modelling docking and (ii) Dr. RS Tomar, Principal Scientist, Directorate of Groundnut Research, Junagadh regarding RNS-seq experiment designing and analysis.
- Sarika advised (i) Dr. Swarnalaxmi, Principal Scientist regarding metagenome data analysis and (ii) Dr. Radha Prasanna, Principal Scientist, ICAR-IARI, New Delhi regarding metagenome data analysis.
- Monendra Grover advised (i) Mr. Rishabh, student IIT Madras on Quantum Computing and (ii) Mr. Harshit, student Case Western Reserve University, USA on Quantum Computing.
- Sneha Murmu advised (i) Ms. Priya, Ph.D. (working under the chairmanship of Dr. Manjusha Verma, Principal Scientist, ICAR-NBPGR, New Delhi) on protein-ligand interaction study; (ii) Ms. Joshi working under the project “Meta-Analysis and computational approach for biomolecular interactions profiling of Sclerotinia sclerotiorum–Brassica pathosystem”, Network Project on Agricultural Bioinformatics and Computational Biology; (iii) Ms. Mehulee (Ph.D., Division of Plant Pathology, ICAR-IARI) regarding protein-ligand interaction and (iv) Dr. Ipsita Samal (Scientist, NRC Litchi, Bihar) for bipartite network and PCA analysis.
- Prakash Kumar advised to Dr. Gayacharan, Scientist, ICAR-NBPGR, New Delhi on data of heat-tolerant mungbean genotypes to find candidate gene.

AWARDS AND RECOGNITIONS

Recognitions

Rajender Parsad

- Received certificate of appreciation for outstanding (contribution and dedication towards organizing the 32nd International Conference of Agricultural Economists on

Transformation) towards Sustainable Agri-Food Systems organized by International Association of Agricultural Economists at NASC Complex, New Delhi during August 02-07, 2024.

Tauqueer Ahmad

- Official Member, Technical Advisory Group (TAG) for Enterprise Surveys of NSSO constituted by Ministry of Statistics & Program Implementation, Govt. of India, a National Level Committee for the next 2 years w.e.f. 30.08.2024 for providing technical guidance for Enterprise Surveys of NSSO.

Visits Abroad

Girish Jha and Neeraj Budhlakoti

- 3rd International Wheat Congress 2024 held at Murdoch University, Perth, Western Australia during September 22-27, 2024.

PROJECTS/ SCHEMES/ PROGRAMME/ CENSUS/ SAMPLE SURVEYS/ EVALUATION STUDIES/ SOFTWARE DEVELOPED/ INITIATED/ COMPLETED

Initiated

1. “Pilot Study for Development of Sampling methodology for Cost of Cultivation of Minor Crops in India” w.e.f. September 02, 2024, sponsored by Ministry of Agriculture & Farmers’ Welfare, Govt. of India. (PI: Tauqueer Ahmad; Co-PI’s: Prachi Mishra Sahoo, Rajender Parsad, Ankur Biswas and Raju Kumar)
2. “Pilot study to investigate the causes of high cost of cultivation of mandated principal crops in Maharashtra” w.e.f. September 02, 2024, sponsored by Ministry of Agriculture and Farmers welfare, Govt. of India. (PI: Raju Kumar, Tauqueer Ahmad, Prachi Misra Sahoo, Ankur Biswas, Deepak Singh, Bharti)
3. “Mapping QTLs for drought tolerance in cotton” w.e.f. September 09, 2024. (ICAR-CICR, Nagpur: J. Amudha, M. Saravanan, A. H. Prakash, J.H. Meshram; ICAR-IASRI: Sudhir Srivastava, Neeraj Budhlakoti)
4. “Development of AI enabled models and web solution for prediction of crop yield” w.e.f. September 12, 2024, DST Core Research Grant. (PI: Ranjit Kumar Paul, Md Yeasin, Prakash Kumar, H.S. Roy)
5. “Integrating whole genome resequencing transcriptome sequencing and genome wide association analysis for allele mining of yield and quality traits in black pepper and cardamom” w.e.f. March 01, 2024, sponsored by NASF. (ICAR- IISR, Kozhikode, Kerala: T E Sheeja, Dr. S MukeshSankar, Mhd. Azharuddin T P, Sona Charles; KAU-CRS, Pampadumpara, Idukki, Kerala: Preethy T T, Murugan M; ICAR-IASRI, New Delhi: Sarika Jaiswal, Mir Asif Iquebal and ICAR-IISR , RS, Appangala, Karnataka: M.S. Shivakumar, Akshitha H.J., Honnappa Asangi)
6. “NNP (Agri-Genomic Repository and Intelligent Analytical System)” w.e.f. May 13, 2024, sponsored by DBT, Govt. of India. (ICAR-IASRI, New Delhi: GK Jha, U.B. Angadi, Dinesh Kumar, KK Chaturvedi, Sudhir Srivastava, Neeraj Budhlakoti, Sunil Kumar, Monendra Grover, Sanjeev Kumar, SB Lal, Mohammad Samir Farooqi, Sarika Jaiswal, Mir Asif Iquebal, DC Mishra, Anu Sharma; ICAR-NIPB, New Delhi: Amolkumar U Solanke, SV Amitha Charu R Mithra; ICAR-NBPGR, New Delhi: Rakesh Singh, Sundeep Kumar, Amit Kumar Singh; ICAR-NBFGR, Lucknow, UP:

Murali S, Basedeo Kushwaha; ICAR-NBAIR, Bengaluru: Gandhi Gracy, Prathepa M, Mohan M, Venkatesan T).

Completed

1. A novel approach for time series forecasting of demand and supply of food grains in India. (Wasi Alam, Kanchan Sinha, Prawin Arya: 28.11.2022-26.09.2024)
2. Potential irrigated area mapping through remotely sensed high-resolution data. (ICAR-IIWM: R.K. Jena, R.R. Sethi; ICAR-NBSS & LUP: Nirmal Kumar; Office of Climate Research and Services, IMD, Pune: S. Khedikar; ICAR-IASRI: Upendra Kumar Pradhan: 05.09.2021-04.09.2024)
3. Resilient Agricultural Education System (RAES). (Sudeep, Alka Arora, Anshu Bharadwaj, Ajit, V. Ramasubramanian, Shashi Dahiya, S.N. Islam, Soumen Pal, Sanchita Naha, Madhu, Samarth Godra: 29.07.2021-31.08.2024)

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Patents

- **Synthetic Peptides and Antibodies Targeted to Bovine Mx2 Protein.** [Patent No. 537505]: {Lead Organization: ICAR-CIRB, Hisar and ICAR-IASRI as partner}, Granted by Patent Office, Government of India.

Design Registered by Patents Office, Government of India: Lead Organization: SKUAST-K, Srinagar and ICAR-IASRI as Partner

- Aquatic Nutrient Removal Device for Agricultural Use [Design No. 415267-001].
- Portable Smart Vegetable Agriculture System [Design No. 415268-001]
- Smart Medicine Reminder Device [Design No. 415269-001]
- Automated Bird Scarer [Design No. 417207-001]
- Solar Bug Trap and Tracker [Design No. 417208-001].

MOU Signed

SKUAST-Jammu and ICAR-IASRI have signed a MoU to boost academic and research collaboration, particularly benefiting students and researchers. This milestone, achieved on 5th July 2024, also includes a Work Plan for the HADP project on “Sensor Based Smart Agriculture” at SKUAST-Jammu. The signing ceremony was graced by Dr. B.N. Tripathi, Honorable Vice Chancellor, SKUAST-Jammu, and Dr. Rajender Parsad, Director, ICAR-IASRI. Esteemed faculty members and resource personnel, including Prof. Anil Kumar, Dean Faculty of Agriculture & Registrar, SKUAST-Jammu; Prof. Sushil Sharma, Dean, FoAE; Dr. Manish Kr. Sharma, Prof. & Head; Dr. Girish Kumar Jha, Professor & Head, DABIN, ICAR-IASRI; and Dr. Ram Niwas, CCSHAU, Hisar, along with other distinguished dignitaries, were in attendance.



PERSONNEL

Congratulations on your Promotion/ New Assignment/ New Joining

Name	Designation	Effective date
➤ New Joining		
Smt. Raj Kumari Nair	PPS	05.08.2024
Sh. Pradeep Kumar	AFAO	30.08.2024
Sh. Abhijeet Dubey	Assistant	03.09.2024
Ms. Komal	Assistant	03.09.2024
Sh. Yash Chaudhary	Assistant	03.09.2024
Sh. Vineet Jayant	Assistant	03.09.2024
Smt. Jyoti Rani	Assistant	06.09.2024
Sh. Manish	Assistant	17.09.2024
➤ Promotions		
Sh. Vineet Kumar Maurya	AAO	06.08.2024
Sh. Sunil Kumar-II	Assistant	31.07.2024
Smt. Rakhi Soni	Assistant	31.07.2024
Sh. P.R. Paite	Assistant	31.07.2024
Sh. S.D. Rout	Assistant	31.07.2024
Sh. Sunil Kumar – II	Assistant	31.07.2024
Smt. Seema Dahiya	Assistant	31.07.2024

Wish you a Happy Retired Life

Name	Designation	Effective date
Sh. Anil Kumar	Chief Technical Officer	31.07.2024
Sh. Nanak Chand	PS	31.07.2024
Sh. K.K. Sharma	CFAO	31.08.2024
Sh. Ram Kanwar	SSS	31.08.2024
Sh. Raghubir Singh	SSS	17.09.2024
Sh. S.N. Islam	Scientist	30.09.2024
Sh. Shiv Kumar	Bearer	30.09.2024

Transfer/ Resignation/Deputation

Name	Designation	Effective date
Sh. Pushpendra Yadav	Assistant	09.08.2024 on Deputation as AAO to ICAR-CIRG, Makhdoom
Smt. Umeeta Ahuja	PPS	19.07.2024, Transferred to ASRB

Compiled by:
Rajender Parsad,
Ajit and Upendra Kumar Pradhan

Technical and Secretarial Assistance:
Neha Narang, Sunita,
VP Singh and Anil Kumar

