



ICAR-IASRI



NEWS

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January-March, 2020

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From Director's desk.....

This Newsletter throws light on the key research achievements, awards and recognitions received, training programmes conducted, workshops and conferences organized/ attended and significant publications of our Institute during the period under report.

A portal developed under the project “Integrated Sample Survey Solution for Major Livestock Products” became live during the reporting period and a total of 35 States/UTs have successfully logged in using the credentials provided.

It is heartening to note that our Scientists continue to bag young scientist awards from prestigious scientific societies. Our senior level Scientists who also perform other key roles like ADG (ICT), ICAR National Fellow and Coordinator of ICAR Network project KRISHI have brought recognitions to our institute by way of serving as Expert Members in various high level committees, delivering invited talks in prestigious conferences and Co-chairing a session in international conference.

Six training programmes were conducted on a wide range of topics viz., Sampling Techniques for Crop Cutting Experiment (CCE), Tools and Techniques for Data Analysis and Management, Advanced Bioinformatics Techniques for Mapping and GWAS using NGS Data, Experimental Data Analysis, Recent Advances in Econometric Modeling and Forecasting in Agriculture, Statistical Designs and Experimental Data Analysis. Our Scientists have also acted as Faculty Coordinators for the “Field Exposure Program” in the area of “Time Series Analysis, Forecasting Techniques and R Software” as part of M.F.Sc. (Fisheries Economics) curriculum of students of ICAR-Central Institute of Fisheries Education, Mumbai.



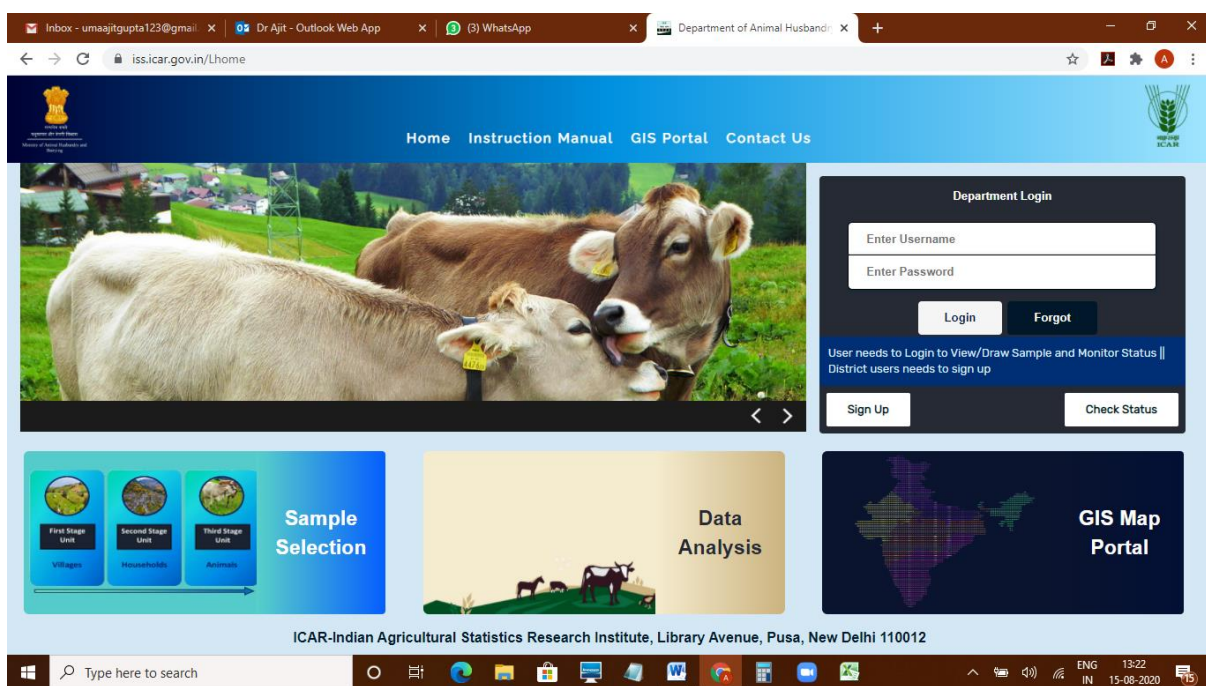
You will also be delighted to note that a good number of publications has come out during this period. Two computer packages viz., OGS: Outlier in Genomics Data and EDI: Calculation of Effective Drought Index (EDI) have been uploaded in the GitHub repository as a service of the popular free and open source software named Git. In addition, one package namely, IGST: Informative Gene Selection Tool has been uploaded in the Comprehensive R Archive Network (CRAN) for its use by interested researchers. Our Scientists have also attended many workshops and conferences, besides delivering their work in the form of presentations in them.

I trust and believe that the contents of this Newsletter would be interesting to you all. Suggestions for improvising the look and feel features and contents of the newsletter are most welcome.



(Tauqueer Ahmad)

The portal developed under the project “**Integrated Sample Survey Solution for Major Livestock Products**” became live on 06.01.2020 on domain <https://iss.icar.gov.in>. A total of 35 States/UTs have successfully logged in using the credentials provided.



HONOURS/ AWARDS

- Sukanta Dash received Young Scientist award from Society for World Environment, Food and Technology (SWEFT) on 08 February 2020 in its 2nd National Conference on “Technological and Emerging Aspects in Agriculture and Community Science” at Conference Hall, International Buddhist Research Institute, Vipin Khand, Gomtinagar, Lucknow.

RECOGNITIONS

- Anil Rai, Head (A), CABin
 - Expert member of a National level Committee on Mission Mode in the domain of Precision Agriculture constituted by CSIR under the Chairmanship of Ex- Secretary (DARE) and DG, ICAR
 - Member of Examination Committee for admission of UG/PG/Ph.D. students in different agricultural universities
 - Member of DPC at ICAR-Research Complex for Eastern Region, Patna for the promotion of scientists
 - Expert and Coordinator in “National Testing Agency”, Ministry of Human Resource Development, Noida, U.P.

- Expert member of “Working Group constituted for the design and development of the IDEA Blueprint” by Ministry of Agriculture and Farmers Welfare, New Delhi
- Hukum Chandra, ICAR National Fellow
 - Invited Speaker in the National Conference on "Contribution of Statistics to the Development of Society" at School of Studies in Statistics, Vikram University, Ujjain, Madhya Pradesh during 07-08 February, 2020.
 - Invited Speaker in the Brainstorming session on “Multi-Dimensional Poverty and Small Area Estimation”, organised by Ministry of Statistics and Programme Implementation, Government of India and UNICEF, New Delhi on 17 February, 2020.
 - Member Secretary, Quinquennial Review Team (QRT) of ICAR-IASRI, New Delhi for the Period 2011-2018.
 - Co-Chairman for the Technical Session on Presentation of Progress Report of the Energy Management in Agriculture (EMA) component for 2019-20 and proposal for technical programme for 2020-21 at the MPUA&T, Udaipur during 18-19 February, 2020.
 - Resource Person in the Workshop on Statistical techniques and data analysis using software at Department of Statistics, MDU, Rohtak on 28 February, 2020.
- Rajender Parsad, Principal Scientist
 - Co-Chairman for a Session on Data Management and Big Data Analytics in Agricultural Research and Development organized in ICPulse 2020: International Conference on Pulses, Climate Smart Crops: Challenges and Opportunities by Indian Society of Pulses Research and Development and ICAR-Indian Institute of Pulses Research at MP Tourism Development Corporation, Bhopal during 10-12 February, 2020.
 - Nominated as Member of Programme Steering and Monitoring Committee (PSMC) under the Biotech-Krishi Innovation Science Application Network (Biotech-KISAN) programme.

HUMAN RESOURCE DEVELOPMENT

Training programs organized:

S.N.	TITLE	VENUE	PERIOD
1.	Sampling Techniques for Crop Cutting Experiment (CCE) Course Director Tauqueer Ahmad Course Coordinators Prachi Misra Sahoo Ankur Biswas	ICAR-IASRI, New Delhi	06.01.2020 To 10.01.2020

2.	Tools and Techniques for Data Analysis and Management <i>Course Director</i> SN Islam	Institute of Agri-business Management, SKRAU, Bikaner	20.01.2020 To 25.01.2020
3.	Advanced Bioinformatics Techniques for Mapping and GWAS using NGS Data <i>Course Coordinators</i> Sarika M A Iquebal	ICAR-IASRI, New Delhi	06.02.2020 To 26.02.2020
4.	Experimental Data Analysis <i>Course Coordinators</i> B N Mandal Sunil Kumar Yadav	ICAR-IASRI, New Delhi	10.02.2020 To 15.02.2020
5.	Recent Advances in Econometric Modeling and Forecasting in Agriculture <i>Course Director</i> Ravindra Singh Shekhawat <i>Course Co-Directors</i> Anuja A R Rajesh T	ICAR-IASRI, New Delhi	04.03.2020 To 24.03.2020
6.	Statistical Designs and Experimental Data Analysis <i>Course Director</i> Seema Jaggi <i>Course Coordinators</i> Arpan Bhowmik Anindita Datta	ICAR-IASRI, New Delhi	18.02.2020 To 02.03.2020

Apart from the above training programs, the following HRD activity has also been undertaken during the reporting period:

- Ramasubramanian V, Kanchan Sinha and Anuja A.R. acted as Faculty Coordinators for the “Field Exposure Program” in the area of “Time Series Analysis, Forecasting Techniques and R Software” conducted at our institute during 17 January 2020 to 07 February, 2020 as part of M.F.Sc. (Fisheries Economics) curriculum of students of ICAR-Central Institute of Fisheries Education, Mumbai.

Research Papers Published

1. Abhishekh, MP, Kumar, M, Joshi, P, Dahiya, S, Arora, A and Pal, S (2019). Development and validation of mobile based decision support system for postural assessment of agricultural activities using rapid upper limb assessment (RULA) technique, *Progressive Research-An International Journal*, **14 (Special)**: 335-337.
2. Barman, S, Ramasubramanian, V and Ray, M (2019). An application of boosted classification and regression trees (CART) in agricultural ergonomics, *RASHI: Journal of the Society for Application of Statistics in Agriculture and Allied Sciences (SASAA)*, **4(1)**: 17-25.
3. Behera, B, Das, TK, Ghosh, S, Parsad, R and Rathi, N (2019). Effects of brown manure species, seed rate and time of application of 2,4-D on weed control efficiency, productivity and profitability in maize. *Indian Journal of Weed Science*, **51(4)**: 393-397.
4. Dasgupta, P, Ahmad, T, Rai, A and Biswas, A (2019). Bootstrap variance estimation technique under dual frame ranked set sampling. *Journal of the Indian Society of Agricultural Statistics*. **73(3)**: 197–206.
5. Dash, S, Mandal, BN and Parsad, R (2020). On the construction of nested orthogonal Latin hypercube designs. *Metrika*, **83(3)**: 347-353.
6. Dharmaraja, S, Jain, V, Anjoy, P. and Chandra, H. (2020). Empirical Analysis for Crop Yield Forecasting in India. *Agricultural Research*, **9(1)**: 132-138.
7. Gupta, RK, Bhowmik, A, Jaggi, S, Harun, M, Varghese, C, Datta, A and Kumar, D (2019). A note on linear trend free designs in two plots per block. *Bhartiya Krishi Anusandhan Patrika*, **34(3-4)**: 245-247.
8. Krishnan, V, Rani, R, Pushkar, S, Lal, SK, Srivastava, S, Kumari, S, Vinutha, T, Dahuja, A, Praveen, S and Sachdev, A (2020). Anthocyanin fingerprinting and dynamics in differentially pigmented exotic soybean genotypes using modified HPLC–DAD method, *Journal of Food Measurement and Characterization*. **14**: <https://doi.org/10.1007/s11694-020-00443-y>.
9. Kumar, D, Chhokar, V, Sheoran, S, Singh, R, Sharma, P, Jaiswal, S, Iquebal, MA, Jaiswar, A, Jaisri, J, Angadi, UB, Rai, A, Singh, GP, Kumar, D and Tiwari, R (2020). Characterization of genetic diversity and population structure in wheat using array based SNP markers. *Mol Biol Rep*, **47(1)**: 293-306.
10. Kumar, S., Dwivedi, SK, Basu, S, Kumar, G, Mishra, JS, Koley, TK, Rao, KK, Choudhary, AK, Mondal, S, Kumar, S, Bhakta, N, Bhatt, BP, Paul, RK and Kumar, A (2020). Anatomical, agromorphological and physiological changes in rice under cumulative and stage specific drought conditions prevailed in eastern region of India. *Field Crops Research*, **245** (107658): <https://doi.org/10.1016/j.fcr.2019.107658>
11. Majumdar, SG, Rai, A, Mishra, DC (2019). Identification of genetic markers for increasing agricultural productivity: An empirical study. *Indian Journal of Agricultural Sciences*. **89(10)**: 1708-13.
12. Misra, T, Arora, A, Marwaha, S (2020). SpikeSegNet-a deep learning approach utilizing encoder-decoder network with hourglass for spike segmentation and counting in wheat plant from visual imaging. *Plant Methods*, **16**: <https://doi.org/10.1186/s13007-020-00582-9>.
13. Paul, RK, Paul, AK and Bhar, LM (2020). Wavelet-based combination approach for modeling sub-divisional rainfall in India. *Theoretical and Applied Climatology*, **139 (3–4)**: 949–963.

14. Rafique, S, Abdin, MZ and Alam, W (2019). Response of combined abiotic stresses on maize (*Zea mays* L.) inbred lines and interaction among various stresses. *Maydica Electronic Publication*, **64(3)**:1-8.
15. Ray, M, Singh, KN, Ramasubramanian, V, Paul, RK, Mukherjee, A and Rathod, S (2020). Integration of Wavelet Transform with ANN and WNN for Time Series Forecasting: an Application to Indian Monsoon Rainfall. *National Academy Science Letters*, <https://doi.org/10.1007/s40009-020-00887-2>.
16. Santhiya, S, Saha, P, Tomar, BS, Jaiswal, S, Gopala, KS, Chinnuswamy V, Saha, ND and Ghoshal, C (2019). Heat stress tolerance study in eggplant based on morphological yield traits. *Indian Journal of Horticulture*, **76 (4)**: 691-700.
17. Shivaswamy, GP, Raghavendra, KJ, Anuja, AR, Singh, KN, Rajesh, T and Harish Kumar, HV (2020). Impact of institutional credit on agricultural productivity in India: A time series analysis. *Indian Journal of Agricultural Sciences*, **90 (2)**: 412–7.
18. Singh, AK, Singh, N, Kumar, S, Kumari, J, Singh, R, Gaba, S, Yadav, MC, Grover, M, Chaurasia, S and Kumar, R (2020). Identification and evolutionary analysis of polycistronic miRNA clusters in domesticated and wild wheat. *Genomics*. 112(3): 2334-2348. doi: 10.1016/j.ygeno.2020.01.005.
19. Singh, B, Das, A, Parihar, AK, Bhagawati, B, Singh, D, Pathak, KN, Dwivedi, K, Das, N, Keshari, N, Midha, RL, Kumar, R, Pratap, A, Kumar, V and Gupta S (2020). Delineation of Genotype-by environment interactions for identification and validation of resistant genotypes in mungbean to root-knot nematode (*Meloidogyne incognita*) using GGe biplot. *Scientific Reports*, 10: <https://www.nature.com/articles/s41598-020-60820-x>.
20. Yadav, SP, Sarkar, SK, Mahapatra, RK, Kannaki, TR, Dange, M, Bhattacharya, TK and Chatterjee, RN (2019). Modeling growth curves for Indian native vs exotic chicken breeds to assist in selection. *Indian Journal of Animal Sciences*, **89(8)**: 898–902.

Popular Articles:

- Dash, S, Lal, K. and Parsad, R. (2019). Conjoint Analysis. In: *Quantitative Methods for Social Sciences* Eds. Vinayak Nikam, Abimanyu Jhajharia and Suresh Pal. ICAR-National Institute of Agricultural Economics and Policy Research. 96-109.

Book Chapter:

- Lal, SB, Sharma A, Chaturvedi, KK, Farooqi, MS and Rai, A (2020). Internet of Things in Forestry and Environmental Sciences. In: Chandra G., Nautiyal R., Chandra H. (eds) *Statistical Methods and Applications in Forestry and Environmental Sciences*. Forum for Interdisciplinary Mathematics. Springer, Singapore. Pp.35-45. DOI: https://doi.org/10.1007/978-981-15-1476-0_3.

Book Published:

- Jaggi, S., Varghese, E. and Varghese, C. (2019). *Experimental Designs Involving Competition Effects*. ICAR Publication. [ISBN: 978-81-7164-188-8].

Package Published:

- Neeraj Budhlakoti, D C Mishra, Anil Rai and Rajeev Ranjan Kumar (2020). OGS: Outlier in Genomics Data, GitHub repository. URL: <https://github.com/BudhlakotiN/OGS>.
- Rajeev Ranjan Kumar, K N Singh, D C Mishra and Neeraj Budhlakoti (2020). EDI: Calculation of Effective Drought Index (EDI), GitHub repository. URL: <https://github.com/rrk4910/EDI>.
- Nitesh Kumar Sharma, Dwijesh Chandra Mishra, Neeraj Budhlakoti and Md. Samir Farooqi (2020). IGST: Informative Gene Selection Tool. R package version 0.1.0. <https://CRAN.R-project.org/package=IGST>.

Reference Manual /Manual/ E-manual/Pamphlet:

- Iquebal, M.A., Sarika, Uma, Rai, A. and Kumar, D. (2020). Advanced Bioinformatics Techniques for Mapping and GWAS using NGS Data. Reference Manual-I, ICAR-IASRI, New Delhi.
- Iquebal, M.A., Sarika, Uma, Rai, A. and Kumar, D. (2020). Advanced Bioinformatics Techniques for Mapping and GWAS using NGS Data. Reference Manual-II, ICAR-IASRI, New Delhi.
- Iquebal, M.A., Sarika, Uma, Rai, A. and Kumar, D. (2020). Advanced Bioinformatics Techniques for Mapping and GWAS using NGS Data. E-Manual, ICAR-IASRI, New Delhi.
- L.M.Bhar and Dr. R.K. Paul (2020) Data Analysis in Agriculture using Statistical Software Packages, Reference manual of Winter School organized during 16 January to 05 February, 2020, ICAR-IASRI, New Delhi.
- L.M. Bhar and R.K. Paul (2020) Data Analysis in Agriculture using Statistical Software Packages Reference e-manual of Winter School organized during 16 January to 05 February, 2020, ICAR-IASRI, New Delhi.
- Mandal B.N. (2020). Academic writing with LATEX. E-Manual for the workshop "Academic writing with LATEX".
- Mandal, B.N., and Yadav, S.K. (2020). Experimental Data Analysis, E-manual of the training programme for Technical Personnel of ICAR and SAUs held during February 10-15, 2020, ICAR-IASRI, New Delhi.
- Shekhawat, R.S., Anuja, A.R. and Rajesh T. (2020). "Training Manual I Recent Advances in Econometric Modeling and Forecasting in Agriculture" - Winter School held during 04-24 March, 2020 at ICAR-IASRI, New Delhi.
- Shekhawat, R.S., Anuja, A.R. and Rajesh T. (2020). "Training Manual II Recent Advances in Econometric Modeling and Forecasting in Agriculture" - Winter School held during 04-24 March, 2020 at ICAR-IASRI, New Delhi.
- Shekhawat, R.S., Anuja, A.R. and Rajesh T. (2020). E-training manual on Recent Advances in Econometric Modeling and Forecasting in Agriculture" Winter School held during 4-24 March, 2020 at ICAR-IASRI, New Delhi.
- Tauqueer Ahmad, Prachi Misra Sahoo and Ankur Biswas. (2020). Sampling Techniques on Crop Cutting Experiment. Reference Manual of the Training Programme held during 06-10 January, 2020, ICAR-IASRI, New Delhi.

- Tauqueer Ahmad, Prachi Misra Sahoo and Ankur Biswas. (2020). Sampling Techniques on Crop Cutting Experiment. Training e-manual of the Training Programme held during 06-10 January, 2020, ICAR-IASRI, New Delhi.
- S.B.Lal (2020): Training manual for the Hindi Workshop entitled "संगणक एवं सांख्यिकीय तकनीकों का कृषि जैव सूचना में प्रयोग" during 05-07 March, 2020, ICAR-IASRI, New Delhi.

LECTURES DELIVERED

1. Dinesh Kumar delivered lecture and conducted practical session on "Transcriptome assembly" in the CAFT Programme: Phenomics and Genomic Evaluation of Dairy Animals for Sustainable Production held at ICAR-NDRI, Karnal during 02-22 January, 2020.
2. Hukum Chandra delivered two lectures on Data Frame in R, and Statistical Model in R in the Workshop on Statistical Techniques & Data Analysis Using Software at Department of Statistics, MDU, Rohtak on 28 February, 2020.
3. K.K. Chaturvedi delivered an invited talk on "Role of Big Data for AI in Agriculture" in Scientific Consultative Group Meeting on "Artificial Intelligence and Smart Agriculture for Prosperous Bundelkhand" on 06 March, 2020 at Rani Lakshmi Bai Central Agricultural University, Jhansi (UP).
4. M.A.Iquebal delivered lecture and conducted practical session on "In silico mining of SSR markers and its application in Agriculture" in the CAFT Programme: Phenomics and Genomic Evaluation of Dairy Animals for Sustainable Production held at ICAR-NDRI, Karnal during 02-22 January, 2020.
5. Ramasubramanian V. delivered a lecture entitled "Multi-Dimensional Scaling (MDS)" on 04.01.2020 to the students of ICAR-CIFE, Mumbai who had registered for the course on "Advanced Statistical Methods" over there which was also attended by students and Faculty of Fisheries Economics, Extension and Statistics Division of that institute.
6. Ramasubramanian V. delivered four practical oriented lectures viz., Correlation and Regression Analysis, Classification and Regression Tree (CART), Time Series Analysis, Multi-Dimensional Scaling) on 22.01.2020, in "Training on Tools and Techniques for Data Analysis and Management" (held during 20-25 Jan. 2020) at SKRAU, Bikaner conducted as part of an NAHEP project of our institute.
7. Ramasubramanian V. delivered lead lectures on "Logit & Probit analysis and Markov chain" on 02.03.2020 in the Workshop cum training entitled "Market analytics with R – Phase-II" conducted under NAHEP-CAAST at AAU, Anand during 02-04 March, 2020; also participated in the inaugural function of the programme on 02.03.2020 and delivered "Address by Expert".
8. Ranjit Kumar Paul delivered four lectures on Cointegration, ARIMAX model and ARFIMA model in the Workshop cum training entitled "Market analytics with R – Phase-II" conducted under NAHEP-CAAST at AAU, Anand during 02-04 March, 2020.

CONFERENCES/WORKSHOPS/SEMINARS/SYMPOSIUM/MEETINGS ETC. ORGANIZED

- KRISHI Project Team of our institute organized a Sensitization Seminar on ICAR Research Data Repository for Knowledge Management at Division on Agronomy, ICAR-IARI, New Delhi on 20 January, 2020.

- An Inception Workshop on “Evaluation of Agricultural Census Scheme” was organized at our institute under the project “Evaluation of Agricultural Census Scheme” funded by Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India on 31 January, 2020.
- Sukanta Das and Arpan Bhowmik organized a Workshop on “Sensitization on ICAR Data Management (ICAR Research Data Repository for Knowledge Management)” during 07-08 February, 2020 at ICAR-CSSRI, Lucknow for their scientific and technical staff.
- Sukanta Dash, Mukesh Kumar and Susheel Kumar Sarkar organized a Workshop on “Sensitization on ICAR Data Management (ICAR Research Data Repository for Knowledge Management)” during 26-27 February, 2020 at ICAR-CIRB, Hisar for their scientific and technical staff including those from ICAR-NRCE, Hisar.
- Rajender Parsad organized Webinar session on Implementation of ICAR Research Data Management Guidelines on 23 March, 2020 using Spontania Meeting facility available with ICAR-NAARM, New Delhi.
- B.N. Mandal organized a one day Hindi workshop on “Academic writing with LATEX” on 20 March, 2020 at our institute.
- S.B.Lal, M.S.Farooqi and K.K. Chaturvedi, organized a Hindi Workshop in the institute on "संगणक एवं सांख्यिकीय तकनीकों का कृषि जैव सूचना में प्रयोग" during 05-07 March, 2020.
- Anil Rai, Head (A), CABin & ADG (ICT) organized following meetings:
 - Meeting of Crop Science Division with Directors of SMD under the Chairmanship of DDG (CS) on 17 March, 2020 in ICAR New Delhi.
 - Meeting on ICT Road Map of ICAR under Chairmanship of D.G., ICAR, on 29 February, 2020 at New Delhi.
 - Meeting of Horticulture Division with Directors of SMD under the Chairmanship of DDG (Hort.) on 17 March, 2020 in ICAR New Delhi.
 - Meeting of Animal Science Division with Directors of SMD under the Chairmanship of DDG (AS) on 17 March, 2020 in ICAR New Delhi.
 - Meeting of Fisheries Division with Directors of SMD under the Chairmanship of DDG (Fys.) on 17 March, 2020 in ICAR New Delhi.
 - Meeting of NRM Division with Directors of SMD under the Chairmanship of DDG (NRM) on 18 March, 2020 in ICAR New Delhi.
 - Meeting of Ag. Eng. Division with Directors of SMD under the Chairmanship of DDG (Ag.Eng.) on 18 March, 2020 in ICAR New Delhi.
 - Meeting of Ag. Education Division with Directors of SMD under the Chairmanship of DDG (Ag. Edn.) on 18 March, 2020 in ICAR New Delhi.
 - Meeting of Ag. Extension Division with Directors of SMD under the Chairmanship of DDG (Ag.Ext.) on 18 March, 2020 in ICAR New Delhi.
 - Director’s Conference through Video Conferencing under the Chairmanship of DG, ICAR on 18 March, 2020 at Krishi Bhawan.

PAPERS PRESENTED

Papers presented /Invited talks delivered in Conferences

1. Ramasubramanian V. delivered an invited talk on the topic entitled “Classification tree modeling for applications in agricultural systems with special mention on Bayesian CART” by Ramasubramanian V., Mrinmoy Ray and Md. Wasi Alam in the Invited Parallel Session on “Agricultural Statistics” on 03.01.2020 in the 22nd Annual Conference of the Society for Statistics, Computer and Applications (SSCA) (held as International Conference on Importance of Statistics in Global Emerging Scenario) at Savitribai Phule Pune University, Pune during 02-04, Jan., 2020.
2. Rajender Parsad presented paper on Data Management in Indian Agricultural Research and Development in the International Conference on Importance of Statistics in Global Emerging Scenario organized by Department of Statistics, Savitribai Phule Pune University in conjunction with 22nd Annual Conference of the Society of Statistics, Computer and Applications at Pune University on January 02, 2020.
3. Susheel Kumar Sarkar presented a paper on Digitalization approaches in Agriculture (Invited Talk) in the International Conference on Importance of Statistics in Global Emerging Scenario organized by Department of Statistics, Savitribai Phule Pune University in conjunction with 22nd Annual Conference of the Society of Statistics, Computer and Applications at Pune University during 02-04, January 2020.
4. Mandal, B.N. presented contributed paper on Modified Simplex-centroid designs with complete blends for mixture experiments in the International Conference "INDSTATS 2019 Innovations in Data and Statistical Sciences" organized at IIT Bombay, Mumbai during 26-30 December, 2019.
5. D.C. Mishra delivered an invited talk on “Statistical Advancement in Genomic Selection: Concepts and Challenges” in a technical session entitled "Biostatistics" chaired by Dr. Ashish Sen Gupta in an International Conference on “Importance of Statistics in Global Emerging Scenario” organised by the department of Statistics, Savitribai Phule Pune University, Pune held during 02-04 January, 2020.
6. Deepak Singh delivered an invited talk on "Survey weighted agricultural consumption index" in the International Conference on "Advances and Innovations in Agriculture & Allied Sciences (AIAAS-2020)" held during 31 January to 01 February, 2020.
7. Mukesh Kumar delivered an invited talk on “Information Technology Interventions in Physiological and Postural Ergonomics Assessment to Combat Drudgery” in International Conference on “Importance of Statistics in Global Emerging Scenario Agriculture (ISGES-2020)” during 02 – 04 January 2020 in conjunction with the XXII Annual Conference of the Society of Statistics, Computer and Applications (SSCA) at Department of Statistics at Savitribai Phule Pune University, Pune.
8. Soumen Pal delivered on “Adoption Pattern of Wheat Production Technologies in India- Key Recommendations on CSISA Dashboard at ICAR-IIWBR, Karnal on 4 January, 2020.
9. Rajender Parsad delivered invited talk on the topic entitled “Data Management and Big Data Analytics in Agricultural Research and Development” on February 11, 2020 in ICPulse 2020: International Conference on Pulses, Climate Smart Crops: Challenges and Opportunities organized by Indian Society of Pulses Research and Development and ICAR-

- Indian Institute of Pulses Research at MP Tourism Development Corporation, Bhopal during February 10-12, 2020.
10. Hukum Chandra delivered an invited talk on Recent developments in Small Area Estimation Methodology and Its Application in the Brainstorming session on “Multi-Dimensional Poverty and Small Area Estimation”, organised by Ministry of Statistics and Programme Implementation, Govt of India and UNICEF, New Delhi on 17 February, 2020.
 11. Hukum Chandra delivered an invited talk on Small Area Estimation of Survey Weighted Counts under Aggregated Level Spatial Model in National Conference on “Contribution of Statistics to the Development of Society” at School of Studies in Statistics, Vikram University, Ujjain, Madhya Pradesh during 07-08 February, 2020.
 12. Vandita Kumari delivered an invited talk on Estimation of Regression Coefficient for Sample Survey Data using Calibration Approach” in National Conference on Contributions of Statistics to the Development of Society (NCCSDS-2020) during 07-08 February, 2020, Vikram University, Ujjain, Madhya Pradesh.

PARTICIPATION

International Conference/ Workshop/Symposium etc.

- Sukanta Dash participated in International Conference on Importance of Statistics in Global Emerging Scenario in conjunction with 22nd Annual Conference of Society of Statistics, Computer and Applications held at Department of Statistics, Savitribai Phule Pune University, Pune during January 02-04, 2020.
- Ramasubramanian V. attended the 22nd Annual Conference of the Society for Statistics, Computer and Applications (SSCA) (held as International Conference on Importance of Statistics in Global Emerging Scenario) at Savitribai Phule Pune University, Pune during 02-04 January, 2020 (attended only during first two days).
- Sukanta Dash participated in the International Conference "INDSTATS 2019 Innovations in Data and Statistical Sciences" organized at IIT Bombay, Mumbai during 26-30 December, 2019.
- D.C. Mishra participated in an International Conference on “Importance of Statistics in Global Emerging Scenario” organised by the department of Statistics, Savitribai Phule Pune University, Pune held during 02-04 January, 2020.
- Rajender Parsad participated in ICPulse 2020: International Conference on Pulses, Climate Smart Crops: Challenges and Opportunities organized by Indian Society of Pulses Research and Development and ICAR-Indian Institute of Pulses Research at MP Tourism Development Corporation, Bhopal during 10-12 February, 2020.

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

- K.K.Chaturvedi participated in two days training programme for “Technical Committee Members” at NITS Noida conducted by NITS, Bureau of Indian Standards during 23-24 January 2020.

- Alka Arora and Ajit attended Brainstorming Session on “Adoption Pattern of Wheat Production Technologies in India- Key Recommendations” and presentation on CSISA Dashboard at ICAR-IIWBR, Karnal on 04 January, 2020.
- Hukum Chandra and Vandita Kumari participated in National Conference on Contributions of Statistics to the Development of Society (NCCSDS-2020) held at Vikram University, Ujjain, Madhya Pradesh during 07-08 February, 2020.
- Vandita Kumari was the Chairperson of the Contributory Session in the National Conference on Contributions of Statistics to the Development of Society (NCCSDS-2020) held at Vikram University, Ujjain, Madhya Pradesh during 07-08 February, 2020.
- Hukum Chandra participated in Brainstorming session on “Multi-Dimensional Poverty and Small Area Estimation”, organised by Ministry of Statistics and Programme Implementation, Government of India and UNICEF, New Delhi on 17 February, 2020.
- Hukum Chandra participated in the XXIII Annual Workshop of the ICAR-AICRP on Energy in Agriculture and Agro based Industries at the MPUA&T, Udaipur during 18-20 February, 2020.
- Hukum Chandra participated in Workshop on Statistical Techniques & Data Analysis using Software at Department of Statistics, MDU, Rohtak during 25 February to 01 March, 2020 (on February 28, 2020).
- M.A. Iquebal attended one day Hindi Workshop on “लाटेक्स के साथ शैक्षणिक लेखन” on 20 March 2020 at ICAR-IASRI, New Delhi.
- Sarika attended one day Hindi Workshop on “लाटेक्स के साथ शैक्षणिक लेखन” on 20 March 2020 at ICAR-IASRI, New Delhi.
- U.B.Angadi participated in Hindi Training program on “Sanganak Evam Sankhyikiya Takneekon Ka Krishi Jaiv Soochna Mein Anuoragya” during 05-07 March 2020.
- Raju Kumar attended a one day Inception Workshop at ICAR-IASRI, New Delhi on 06 March, 2020 for a project “Evaluation of Improvement of Agricultural Statistics Scheme” funded by Directorate of Economics & Statistics, Department of Agriculture Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India.
- Ankur Biswas, Vandita Kumari and AK Mogha attended a one day Hindi workshop on “लाटेक्स के साथ शैक्षणिक लेखन” at IASRI, New Delhi on 20 March, 2020.
- Arpan Bhowmik and Mohd. Harun participated in one day Hindi workshop on “लाटेक्स के साथ शैक्षणिक लेखन” at ICAR-IASRI, New Delhi on 20 March, 2020.
- Harish Kumar H.V. and Kanchan Sinha participated in one day Hindi workshop on “Academic Writing with LATEX” on 20 March, 2020 at ICAR-IASRI, New Delhi.

Consultancy/ Advisory Services Provided

- Anuja, A.R.provided advisory service regarding statistical analysis using STATA software to Dr. Gulab Singh Yadav (Scientist), Regional Station, ICAR Complex for NEH (Agartala) (ICARNEH,RS), West Tripura.
- Anuja, A.R. provided advisory services for performing ‘Propensity score Matching’ to Dr. B.R. Jamakhandi, Assistant Professor, Department of Agricultural Economics, College of Agriculture, Vijayapur, University of Agricultural Sciences, Dharwad.

- Arpan Bhowmik provided advisory services on the use of factorial ANOVA with one extra treatment for studying 18 characters with respect to chips preparation based on two factors each at three levels and one control to Dr. Shruti Sethi, Principal Scientist, Division of Food Science & Post-harvest Technology, ICAR-IARI, New Delhi
- Arpan Bhowmik provided advisory services on the use of two way ANOVA for identifying best treatment combinations among 10 dip treatments and 7 storage conditions to Mr. Ziaullah, a Ph.D. Scholar of PG School, IARI from Afghanistan.
- Kanchan Sinha provided advisory services on artificial neural network and its application for modelling and forecasting in the field of agriculture to Dr. Kader Ali Sarkar, Assistant Professor, Visva Bharati University, West Bengal.
- Shivaswamy, G.P. provided advisory services for performing 'Factor analysis' to Dr. Wasseem Raja, Assistant Professor, SKUAST, Srinagar.



एक कदम स्वच्छता की ओर



हर कदम, हर डगर
किसानों का हमसफर
भारतीय कृषि अनुसंधान परिषद

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