

## List of Publications

### Research Papers

1. Ahmad, T, Bathla, HVL, Rai, A and Sahoo, PM (2015). Estimation of area and production of horticultural crops in Himachal Pradesh. *Adv. Appl. Res.*, **7(1)**, 1-8.
2. Ahmad, T, Sahoo, PM and Jally, SK (2015). Estimation of area under agroforestry using high resolution satellite data. *Agroforest. Sys.*, **90(2)**, 289-303.
3. Ahmad, T, Sahoo, PM and Jally, SK (2015). Agroforestry area estimation using remote sensing technique in Vaishali District of Bihar State. *Int. J. Agril. Statist. Sci.*, **11(1)**, 269-274.
4. Anjum, A, Jaggi, S, Varghese, E, Lall, S, Bhowmik, A and Rai, A (2015). Identification of differentially expressed genes in RNA-seq data of arabidopsis thaliana: A compound distribution approach. *J. Comput. Bio.*, **23(4)**, 239-247.
5. Anshida, Beevi, CN, Wason, Padaria, RN, Kumbhare, NV and Varghese, E (2015). socio-psychological drivers of livelihood diversification in Lakshadweep. *Ind. J. Extn. Edu.*, **51(3&4)**, 34-39.
6. Arya, P, Paul, RK, Kumar, A, Singh, KN, Sivaramne, N and Chaudhary, P (2015). Predicting pest population using weather variables: An ARIMAX time series framework. *Int. J. Agril. Statist. Sci.*, **11(2)**, 381-386.
7. Balakrishnan, R, Wason, M, Padaria, RN, Singh, P and Varghese, E (2014). An Analysis of constraints in e-learning and strategies for promoting e-learning among farmers. *Econ. Affairs*, **59**, 727-734.
8. Banerjee, V, Das, B, Krishnan, P, Verma, APS and Varghese, E (2015). Crop Status Index as an indicator of wheat crop growth condition under abiotic stress situations. *Field Crops Res.*, **181**, 16-31.
9. Bardhan, SR, Rao, AR, Meher, PK, Marwaha, S, Wahi, SD (2015). Identification of a suitable clustering method and allocation strategy for core set development in salt stress tolerant rice (*Oryza sativa*) germplasm. *Ind. J. Agril. Sci.*, **85(12)**, 1560-1564.
10. Basak, P, Chandra, H, Sud, UC and Lal, SB (2015). Prediction of population total for skewed variable under a log transform model. *Int. J. Agri. Stat. Sci.*, **9(1)**, 143-154.
11. Behera, BK, Baisvar, VS, Kumari, K, Rout, AK, Pakrashi, S, Paria, P, Rao, AR and Rai, A (2015). The complete mitochondrial genome of the Anabas testudineus (Perciformes, Anabantidae) and its comparison with other related fish species. *Mitochondrial DNA*, DOI: 10.3109/19401736.2015.1115490.
12. Behera, BK, Das, P, Maharana, J, Meena, DK, Sahu, TK, Rao, AR, Chatterjee, S, Mohanty, BP, Sharma, AP (2015). Functional Screening and molecular characterization of halophilic and halotolerant bacteria by 16S rRNA gene sequence analysis. *Proceedings of the National Academy of Sciences, India Section B: Biological Sciences*, **85(4)**, 957-964.
13. Bhardwaj, SP, Paul, R and Kumar, A (2015). Future trading in soybean-An econometric analysis. *J. Ind. Soc. Agril. Statist.*, **69(1)**, 11-17.
14. Bhardwaj, SP, Paul, RK and Singh, KN (2015). Price forecast an instrument for improvement

- in agricultural production and marketing in Rajasthan- A case study of rape seed and mustard seeds. *Ind. J. Agril. Marketing*, **29(2)**, 163-171.
15. Bhati, J, Chaduvula, PK, Kumar, S, Marla, SS and Rai, A (2016). In-silico prediction and functional analysis of salt stress responsive genes in Rice (*Oryza sativa*). *J. Rice Res.*, **4**, 164. DOI:10.4172/2375-4338.1000164
  16. Bhatia, K, Asrey, R and Varghese, E (2015). Correct packaging retained phytochemical, antioxidant properties and increases shelf life of minimally processed pomegranate (*Punica granatum L.*) arils Cv. Mridula. *J. Sci. Industrial Res.*, **74**, 141-144.
  17. Bhowmik, A, Jaggi, S, Varghese, C and Varghese, E (2015). Optimal block designs with interference effects from neighbouring units under a non-additive model. *Comm. Statist-Theory. Methods*, **44(10)**, 2092-2103.
  18. Bhowmik, A, Jaggi, S, Varghese, C and Varghese, E (2015). Trend free block designs balanced for interference effects from neighbouring experimental units. *J. Comb., Inform. and Sys. Sci.*, **39 (1-4)**, 117-133.
  19. Bhowmik, A, Jaggi, S, Varghese, C and Varghese, E (2015). Trend free second order neighbour balanced block designs. *J. Ind. Statist. Asso.*, **53(1 & 2)**, 63-78.
  20. भौमिक, अर्पण, वर्गीस, एल्दो, जग्गी, सीमा, वर्गीस, सिनी, गहलौत, बी.जे. एवं बिन्दल, विजय (2015). उपचारों के प्रभाव के सही आकलन हेतु उच्च क्रम नेबर सन्तुलित चक्र्रीय ब्लॉक अभिकल्पनाएँ, भारतीय कृषि अनुसंधान पत्रिका, **30(3)**, 155-158.
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  22. Biswas, A, Rai, A, Ahmad, T and Sahoo, PM (2016). Spatial estimation and rescaled spatial bootstrap approach for finite population. *Comm. in Statist. - Theory and Methods* (DOI: 10.1080/03610926.2014.995820).
  23. Chaduvula, PK, Bhati, J, Rai, A, Gaikwad, K, Marla, SS, Elangovan, M and Kumar, S (2015). Insilico expressed sequence tag analysis in identification and characterization of salinity stress responsible genes in Sorghum bicolor. *Aust. J. Crop Sci.*, **9(9)**, 799-806.
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  25. Chandra, H, Salvati, N and Chambers, R (2015). A Spatially nonstationary Fay-Herriot model for small area estimation. *J. Surv. Statist. Method.*, **3(2)**, 109-135.
  26. Chandrika, KSV P, Singh, A, Rathore, A and Kumar, A (2016). Novel cross linked guar gum-g-poly(acrylate) porous superabsorbent hydrogels: Characterization and swelling behaviour in different environments. *Carbohydrate Polymers*, **149**, 175-185.
  27. Chaturvedi, V, Kumar, A, Mishra, IM, Singh, JK, Sahoo, RN, Jha, GK and Lal, SB (2016). Study on interventions to reduce vibration transmission to power tiller operator. *J. Appl. Natural Sci.*, **8(1)**, 265 - 272.
  28. Choudhary, RK, Rao, AR, Wahi, SD and Misra, AK (2016). Detection of biennial rhythm and estimation of repeatability in mango (*Mangifera indica L.*). *Ind. J. Genet. Plant Breed.*, **76(1)**, 88-97.
  29. Das, S, Bit, A, Patnaik, S, Sahoo, L, Meher, P, Saha, T, Patel, A, Patel, N, Koringa, Joshi, C, Agarwal, S, Pandey, M, Srivastava, S, Kushwaha, B, Kumar, R, Nagpure, N, Iquebal, MA, Jaiswal, S, Kumar, D, Jayasankar, P, Jena, J and Das, P (2015). Low depth shotgun sequencing resolves complete mitochondrial genome sequence of *Labeo rohita*. *Mitochondrial DNA* (<http://www.tandfonline.com/doi/full/10.3109/19401736.2015.1074197>)
  30. Das, S, Pandey, P, Rai, A and Mohapatra, C (2015). A computational systems biology approach to construct gene regulatory networks for salinity response in rice (*Oryza sativa*). *Ind. J. Agril. Sci.*, **85(12)**, 1546–1552.
  31. Dasyam, R, Bhattacharyya, B and Pal, S (2015). Trend estimation by parametric and nonparametric modeling for area, production and yield of rice in West Bengal. *The Ecoscan*, **9(1 & 2)**, 451-455.
  32. Dasyam, R, Pal, Soumen, Rao, VS and Bhattacharyya, B (2015). Time series modeling for trend analysis and forecasting wheat production of India. *Int. J. Agril. Env. Biotech.*, **8(2)**, 303-308.
  33. Datta, A, Jaggi, S, Varghese, C and Varghese, E (2015). Some series of row-column designs with multiple units per cell. *Cal. Statist. Asso. Bull.*, **67 (265-266)**, 89-99.

34. Devi, CP, Munshi, AD, Behera, TK, Choudhary, H, Vinod, Gurung, B, Saha, P (2015). Cross compatibility study in interspecific hybridization of *Solanum melongena* and its wild relatives. *Scientia Horticulturae*, **193**, 353-358.
35. Divya, B, Robin, S, Biswas, A and John, JA (2015). Genetics of association among yield and blast resistance traits in Rice (*Oryza sativa* L). *Ind. J. Agril. Sci.*, **85(3)**, 354-360.
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38. Ghosh, H, Chowdhury, S, and Prajneshu (2015). An improved fuzzy time series method of forecasting based on L-R fuzzy sets and its application. *J. Appl. Statist.* DOI:10.1080/02664763.2015.1092111.
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40. Grover, M and Mishra, DC (2015). Development of computational methods for classification and determination of function in proteins related to abiotic stress in Poaceae. *J. Appl. Bio. Sci. Res.*, **12**, 1-3.
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42. Gupta, A, Amrapali, S, Kumar, M, Khatri, P, Lal, B, Agrawal, PK, Mahajan, V and Bhatt, JC (2016). Distinctness, uniformity and stability testing in maize inbreds. *Natl. Acad. Sci. Lett.* **39(1)**, 5-9.
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#### Databases Developed

- Brassica SSR database and web tools for accessing the information (MA Iquebal, Sarika, UB Angadi, Anil Rai and Dinesh Kumar).
- CearESTDb: A database for abiotic stress genes, their annotation and pathways of cereal crop has been developed. (Sanjeev Kumar, DC Mishra, Anil Rai, KK Chaturvedi, SB Lal and M Grover).
- Mango SNPs database developed and web tools developed for browsing mango SNPs (MA Iquebal, Sarika, UB Angadi, Anil Rai and Dinesh Kumar).
- Wheat in-silico and experiments SSR database and web portal development (UB Angadi)

#### Macros Developed

- SAS code for selection of sample for crop area enumeration for the project "Study on improving methods for estimating crop area, yield and production under mixed, repeated and continuous cropping" for Rwanda.
- R code for selection of sample for crop area enumeration for the project "Study on improving methods for estimating crop area, yield

and production under mixed, repeated and continuous cropping” for Jamaica.

- R code for selection of tehsils and villages in each district of the states of Gujarat, Uttar Pradesh, Assam, Karnataka and Odisha under the project Pilot study for developing State level estimates of crop area and production on the basis of sample sizes recommended by Professor Vaidyanathan Committee report.
- SAS Macro for Generation of help replicate of 92<sup>k</sup> factorial with minimally changed run sequences.

### E Resources

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- Gupta, VK, Mandal, BN and Parsad, R (2015). History of Statistics on Timeline. Available at <http://sample.iasri.res.in/ssrs/history.pdf>.
- Prasad, R and Bhowmik, A (2015). Data Analysis and interpretation.

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- Exchange & Lync (39)
- Storage & backup (30)
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- Windows & Hyper-V (31)
- Helpdesk (4)

- Process (50)
- Network & Security (31)
- Database (36)

### Leaflet Brochure Published

- Bhowmik, A and Varghese, C. "Statistical Advances for Technological Enhancement in Agricultural Research".
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- Grover, M and Mishra, DC. "Recent Advances in Next Generation Sequencing Data Analysis".
- Kumar, D and Sarika. "Computational Tools and Tehniques for Molecular Data Analysis in Agriculture".
- Meher, P K and Pradhan, UK "Recent Advances in Statistical Genetics and Genomics"
- Rao, AR and Meher, PK. Bioinformatics and high dimensional genome data analysis.
- Two Leaflet brochure were prepared and published by the Division of Sample Surveys on the following topics:
  - i) Division of Sample Survey: A brief Profile
  - ii) Applications of Remote Sensing and GIS and Agricultural Surveys.
- A poster on the topic "Crop Cutting Experiment (CCE) technique for determination of yield rates of different crops in India" was prepared by the Division of Sample Surveys and has been displayed in the SMD corridor.

### Other Periodic Publications

- Annual Report 2014-15
- ICAR-IASRI News (quarterly)
- सांख्यिकी-विमर्श 2015-16, अंक 11