

Brief Resume of Dr. Koushik Banerjee

**Dr. Koushik Banerjee, M.Sc. (Ag.), Ph.D.,
Scientist**

**ICAR-Mahatma Gandhi Integrated Farming Research
Institute (MGIFRI)**, Piprakothi- 845429, Motihari, East
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Born: West Bengal, India; Category: General



Research Specialization

Crop weather relation, climate change, remote sensing, thermography, multivariate analysis in crop stress characterization

Academic Background

2010-2014 B.Sc. (Ag.) Hons. 1st Class, Bidhan Chandra Krishi Viswavidyalaya

2014-2016 M.Sc. (Ag.) in Agricultural Physics, 1st Class I.A.R.I, New Delhi

2016-2020 Ph.D. (Ag.) Agricultural Physics, 1st Class I.A.R.I, New Delhi

Professional Service Experience

2020 (Oct)-2021 (Jan) Scientist ICAR- NAARM

2021 (Jan)- till Scientist ICAR- MGIFRI

Awards, Honours & Recognitions

2014 ICAR- Junior Research Fellowship Award- Physical Science, AIR-6

2016 ICAR- Senior Research Fellowship Award- Agricultural Meteorology, AIR-4

2016 Best Poster presentation award at 4th International Agronomy Congress

2020 Agricultural Research Service- ARS- Agricultural Meteorology, AIR-1

2022 IARI Merit Medal Award for outstanding performance in PhD in Agricultural Physics.

Publications

Total 24: Research papers 17 (International 12, National 5), Books/ Book Chapters 7,
Google Scholar Citations: Total citations 345, H-index 8, i10 index 7

Publications

Research papers:

1. **Banerjee, K.**, Krishnan, P. and Mridha, N., 2018. Application of thermal imaging of wheat crop canopy to estimate leaf area index under different moisture stress conditions. *biosystems engineering*, 166, pp.13-27.
2. **Banerjee, K.** and Krishnan, P., 2020. Normalized Sunlit Shaded Index (NSSI) for characterizing the moisture stress in wheat crop using classified thermal and visible images. *Ecological Indicators*, 110, p.105947.
3. **Banerjee, K.**, Krishnan, P. and Das, B., 2020. Thermal imaging and multivariate techniques for characterizing and screening wheat genotypes under water stress condition. *Ecological Indicators*, 119, p.106829.

4. Chattopadhyay, A., Singh, A.P., Singh, S.K., Barman, A., Patra, A., Mondal, B.P. and **Banerjee, K.**, 2020. Spatial variability of arsenic in Indo-Gangetic basin of Varanasi and its cancer risk assessment. *Chemosphere*, 238, p.124623.
5. Singh, R.N., Krishnan, P., Singh, V.K. and **Banerjee, K.**, 2022. Application of thermal and visible imaging to estimate stripe rust disease severity in wheat using supervised image classification methods. *Ecological Informatics*, 71, p.101774.
6. Mondal, B.P., Sekhon, B.S., Sadhukhan, R., Singh, R.K., Hasanain, M., Mridha, N., Das, B., Chattopadhyay, A. and **Banerjee, K.**, 2020. Spatial variability assessment of soil available phosphorus using geostatistical approach. *Indian journal of agricultural sciences*, 90(6), pp.1170-1175.
7. Mandal, K.G., Purbey, S.K., Singh, A. K., Bharti, P.K., Kumar, R., Samal, S.K. and **Banerjee, K.** 2021. Perspectives on integrated farming in waterlogged ecosystems for ensuring food and nutrition security to farmers. *Indian Journal of Agronomy*. Special issue.
8. Banerjee, A., Islam, S., **Banerjee, K.**, Rana, D., Ray, K., Samanta, M.K., Panja, B. and Nath, P.S., 2020. First report of *Rhizoctonia solani* AG-2-2 IV causing large patch disease of Japanese lawn grass in India. *Journal of Plant Pathology*, 102(4), pp.1351-1352.
9. Banerjee, A., Rana, D., Islam, S., Chakraborty, S., Chatterjee, S., Chatterjee, A., **Banerjee, K.**, Panja, B. and Nath, P.S., 2020. First report of powdery mildew caused by *Erysiphe alphitoides* on *Aegle marmelos* in India. *Journal of Plant Pathology*, 102(4), pp.1343-1344.
10. Paul, T., **Banerjee, K.**, Patra, P.S., Nandi, K. and Roy, S., Soil carbon sequestration through farming practices a carbon-negative technique to reduce global warming. *Indian Farming*, 69(4).
11. **Banerjee, K.**, Dutta, S., Das, B., Roy, D., Sen, S., Mandal, B.P. and Chatterjee, A., 2025. Crop type discrimination through low cost proximal RGB imaging and multivariate analysis. *Arabian Journal of Geosciences*, 18(1), p.31.
12. Bhattacharyya, S., Sonkar, R.K., Saha, A., Pakhmode, P., **Banerjee, K.**, Roy, P. and Roy, T.N., 2024. Analyzing the Association between Citrus Farm Income and Extension Service Providers of Citrus Farmers of Central India. *Journal of Agricultural Science and Technology*, pp.0-0.
13. **Banerjee, K.**, Dutta, S., Das, S. and Sadhukhan, R., 2025. Crop simulation models as decision tools to enhance agricultural system productivity and sustainability—a critical review. *Technology in Agronomy*, 5(1).
14. Sadhukhan, R., Kumar, D., Sepat, S., Ghosh, A., **Banerjee, K.**, Shivay, Y.S., Gawdiya, S., Harish, M.N., Bhatia, A., Kumawat, A. and Dutta, S., 2024. Precision nutrient management influences the productivity, nutrients use efficiency, N₂O fluxes and soil enzymatic activity in zero-till wheat (*Triticum aestivum* L.). *Field Crops Research*, 317, p.109526.
15. Kumar, S., Krishnan, P., Singh, P.K., Vashisth, A., **Banerjee, K.** and Kundu, M., 2024. Development of Tomato Fruit Stage Index (TFSI) to characterise different fruit growth stages of tomato using multivariate techniques. *Journal of Food Measurement and Characterization*, 18(2), pp.980-999.
16. Mandal, K.G., **Banerjee, K.**, Purbey, S.K. and Kumar, R.A.V.I., 2024. Potential measures to enhance ecosystem services of flood-prone and wetland agricultural systems. *Journal of Agricultural Physics*, 24, pp.S108-S122.
17. Mondal, B.P., Sekhon, B.S., **Banerjee, K.**, Sharma, S., Setia, R.K., Das, B., Dutta, S., Bhattacharya, R., Abdel Rahman, M.A., Scopa, A. and Drosos, M., 2024. Spatial

variability of soil microbiological properties under different land use systems. African Journal of Agricultural Research, 20(9), pp.825-839.

Book chapters:

1. **Banerjee, K.**, Pramanik, P., Maity, A., Joshi, D.C., Wani, S.H. and Krishnan, P., 2019. Methods of using nanomaterials to plant systems and their delivery to plants (Mode of entry, uptake, translocation, accumulation, biotransformation and barriers). In Advances in Phytonanotechnology (pp. 123-152). Academic Press.
2. **Banerjee, K.** and Das, B., 2022. Application of Remote Sensing Technology for Estimation of Soil Moisture. In Soil Management For Sustainable Agriculture (pp. 231-258). Apple Academic Press.
3. **Banerjee, K.**, Bal, S.K., Chakraborty, D., Malleswari, S., Banerjee, A., Sadhukhan, R. 2021. Agricultural Research, Technology and Policy: Innovations and Advances. Crop Calendars and Advances in Agriculture Insurance Products in India. In book: Agricultural Research, Technology and Policy: Innovations and Advances.
4. Sadhukhan, R., Sharma, L.D., Sen, S., Karmakar, S., **Banerjee, K.** and Baral, K., 2021. Enhancing the Productivity of Field Crops through Nano-Fertilizer. In Agricultural Development in Asia-Potential Use of Nano-Materials and Nano-Technology. IntechOpen.
5. Saha, S., Mridha, N., Chakraborty, D., Chatterjee, D., Nanda, M.K., Dhanya, M.S., Swain, C.K., Das, S.R. and **Banerjee, K.**, 2024. Monitoring and Impact Assessment of Climate Change: Eddy Covariance Technique. In Climate Change Impacts on Soil-Plant-Atmosphere Continuum (pp. 595-630). Singapore: Springer Nature Singapore.
6. Biswas, A., Sarkar, S., Das, S., Dutta, S., Choudhury, M.R., Giri, A., Bera, B., Bag, K., Mukherjee, B., **Banerjee, K.** and Gupta, D., 2025. Water scarcity: A global hindrance to sustainable development and agricultural production–A critical review of the impacts and adaptation strategies. Cambridge Prisms: Water, 3, p.e4.
7. Dutta, H., Bhattacharya, S., Sawarkar, A., Pradhan, A., Raman, R.B., Panigrahi, K.K. and Dutta, S., **Banerjee, K.** 2023. High yielding mulberry production through controlled pollination for enhanced vegetative growth and early sprouting suitable for tropical agroclimatic regions. The Pharma Innovation. 2023a, 12(3), pp.4485-4492.
