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Division Crop Production

Research Area

1. Crop Simulation Modelling and Remote Sensing
2. Micronutrient Management
3. Sugarcane Agronomy

Publications

1. Modi RU, **Kancheti M**, Singh VP, Singh AK, Singh MK, Viswanathan R and Singh D. 2026. Dynamics of spray deposition pattern with UAV-based herbicide application for effective weed management in sugarcane crop. *Pest Management Science,* 1-15. https://doi.org/10.1002/ps.70539. (NAAS rating: 9.8)
2. Nisha S, Saha JK, Rahul M, Nishant KS, **Mrunalini K**, Biswas H, Narayan L and Tapan, A (2026) Geostatistical variability of soil properties of Jajmau tannery industrial zone of Kanpur, Uttar Pradesh *Plant Science Today*, 13(1): 10700 https://doi.org/10.14719/pst.10700. (NAAS rating: 6.8)
3. Upadhyay PK, Sarkar S, Dey A, Ekka U, Rathore SS, Kumar R, Shekhawat K, Singh RK, Rajanna GA, Peramaiyan P, Gakhar S, Sahoo RN, **Kancheti M,** Upadhyay V, Sharma NK, Choudhary SK, Hasnain M, Paliwal A, Tyagi V, Nagargade M and Singh VK. 2026. Development and validation of a precision nitrogen management app for enhancing sustainability in maize production. *Results in Engineering,* 29: 109306 https://doi.org/10.1016/j.rineng.2026.109306. (NAAS rating: 13.9)
4. Kumar M, **Mrunalini K**, Zhou Z, Modi RU**,** Bolan S, Rao CS, Braun M, Wrigley O, Li Y, Wang L and Leri A. 2025. Sources, distribution and migration of micro-nano-plastics from terrestrial to aquatic environments and its environmental and health impacts: a systematic review. *Journal of Soils and Sediments*, 25: 1767–1801 https://doi.org/10.1007/s11368-025-04042-6. (NAAS rating: 9.0)

5. Sahu N, Saha JK, Mishra R, Kumar Sinha N, **Kancheti M** and Biswas H. 2025. Prioritization of subwatersheds in the Jajmau basin, Kanpur, via drainage morphometry. *Plant Science Today* https://doi.org/10.14719/pst.7725. (NAAS rating: 6.8)

6. Pazhanivelan S, Ragul A, Sudarmanian NS, Satheesh S, **Kancheti M** and Ragunath KP. 2025. Technology-driven chickpea yield estimation using remote sensing and crop modeling. *Plant Science Today* https://doi.org/10.14719/pst.6859. (NAAS rating: 6.8)

7. Sarkar S, Upadhyay PK, Dey A, Ekka U, Rathore SS, Kumar R, Shekhawat K, Singh RK, Rajanna GA, Peramaiyan P, Gakhar S, Sahoo RN, **Kancheti M,** Upadhyay V, Sharma NK, Choudhary SK, Hasnain M, Paliwal A, Tyagi V, Nagargade M and Singh VK. 2025. An insight into productivity, profitability, and sustainable energy use in maize under precision nitrogen management using a smartphone app. *Information Processing in Agriculture,*13(1):26-46. https://doi.org/10.1016/j.inpa.2025.07.007. (NAAS rating: 13.4)

8. Thirunagari BK, **Kancheti M,** Kumar R and Kota SH. 2024. Managing synthetic N-fertilizer emissions in India: Insights from field surveys across 102 districts. *Journal of Environmental Management* https://doi.org/10.1016/j.jenvman.2024.121909. (NAAS rating: 14.4)

9. Laskar N, Das, K, **Kancheti M**, Senthilkumar M, Kumar V, Tewari K and Nath CP. 2024. Dissipation Kinetics and Residue Distribution of Imazethapyr in Urdbean (*Vigna mungo* (L.) Hepper) and Urdbean Field soil and its Effect on soil Microbial Population. *Bulletin of Environmental Contamination and Toxicology,* 113(2): 21 https://doi.org/10.1007/s00128-024-03931-9. (NAAS rating: 8.7)

10. Srinivasarao Ch, Kundu S, Dubey DP, Dubey R, Rakesh S, Lal R, Abhilash PC, Prasad JVNS, Pratibha G, Jayaraman S, **Mrunalini K,** Gopinath KA, Singh AK, Dinesh GK, Naidu GM, Singh PK, Baral K and Singh R. 2024. Soil carbon sequestration and agronomic productivity as influenced by the long-term organic and inorganic fertilisation under the upland rice–wheat system in vertisols of central India. *Anthropocene Science*, 3(1): 81-94. https://doi.org/10.1007/s44177-024-00072-w. (NAAS rating: 9.6)

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13. Modi RU, **Kancheti M**, Subeesh A, Raj C, Singh AK, Chandel NS, Dhimate AS, Singh MK and Singh S. 2023. An automated weed identification framework for sugarcane crop: A deep learning approach. *Crop Protection*, 173: 106360 https://doi.org/10.1016/j.cropro.2023.106360. (NAAS rating: 8.5)

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17. Pazhanivelan, S, Geethalakshmi, V, Samykannu, V, Kumaraperumal, R, **Mrunalini, K,** Kaliaperumal, R, Raju, M, and Yadav, M K (2023) Evaluation of SPI and Rainfall Departure Based on Multi-Satellite Precipitation Products for Meteorological Drought Monitoring in Tamil Nadu *Water,* 15(7): 1435 https://doi org/10 3390/w15071435. (NAAS rating: 9.0)

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21. Behera B, **Mrunalini K,** Raza MB, Shiv A, Mangal V, Rathod G, Altaf MA, Kumar A, Aftab T, Kumar R, Tiwari RK, Lal MK and Singh B. 2022. Mechanistic insight on boron-mediated toxicity in plant vis-a-vis its mitigation strategies: a review. *International Journal of Phytoremediation,* 25(1): 9-26. https://doi.org/10.1080/15226514.2022.2049694. (NAAS rating: 9.4)

22. Pazhanivelan S, Geethalakshmi V, Tamilmounika R, Sudarmanian NS, Kaliaperumal R, Ramalingam K, Sivamurugan AP, **Mrunalini K,** Yadav MK and Quicho ED. 2022. Spatial rice yield estimation using multiple linear regression analysis, semi-physical approach and assimilating SAR satellite derived products with DSSAT crop simulation model. *Agronomy*, 12(9): 2008. https://doi.org/10.3390/agronomy12092008. (NAAS rating: 9.4)

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Book Chapters

1. Ramanjaneyulu AV, Srinivas D, Neelima TL, Sameer Kumar CV, **Kancheti M** and Thakur AK. 2025. Organic farming in pigeonpea. *In*: Naik MR, Ramanjaneyulu AV, Hudedamani U and Srinivasarao Ch. (*Eds.*), Recent advances in organic farming research, ICAR-National Academy of Agricultural Research Management, 1-3.

2. Kumar N, **Kancheti M**, Hazra KK, Nath CP, Hashim M and Deo MM. 2024. Enhancing nutrient use efficiency in pulses under diversified farming through agronomic manipulations. *In*: Babu S, Singh R, Rathore SS, Das A and Singh VK (*Eds.*), Agricultural diversification for sustainable food production sustainability sciences in Asia and Africa. Springer, Singapore, https://doi.org/10.1007/978-981-97-7517-0_8.

3. **Mrunalini K**, Behera B, Chandana P, Patnaik GP, Modi RU, Saraswat A, Rathi N and Kumar N. 2022. Legumes to reduce ecological footprints for climate-smart cropping systems *In*: Meena and Kumar (*Eds.*) Advances in legumes for sustainable intensification Elsevier, 403-420 https://doi.org/10.1016/B978-0-323-85797-0.00032-X.

4. Gupta S, Kumar N, Satyavathi CT, **Kancheti M,** Hazra KK and Hashim M. 2025. Resource-efficient and environment-friendly production of pulses and millets *In*: Pathak H, W S Lakra, A Gopalakrishnan, and K C Bansal (Eds), Advances in Agri-Food Systems Springer, Singapore https://doi.org/10.1007/978-981-96-0759-4_14.

5. Kumar N, **Mrunalini K,** Patnaik GP and Behera B. 2023. Efficient diversified cropping systems of field and horticultural crops for livelihood security *In*: Integrated pest management in diverse cropping systems, Apple Academic Press, 1-29

6. Venkadesh S, Pazhanivelan S and **Mrunalini K**. 2022. Monitoring of Meteorological Drought Based on Rainfall Departure Using Remotely Sensed CHIRPS Precipitation Product over Tamil Nadu, India *In*: Bhunia GS, Chatterjee U, Lalmalsawmzauva K, Shit PK (*Eds*) Anthropogeomorphology Geography of the Physical Environment Springer, Cham https://doi.org/10.1007/978-3-030-77572-8_19.

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8. **Mrunalini K,** Jayaraman S, Srinivasa Rao C, Praharaj CS, Singh NP and Patra AK. 2021. Impact of Conservation Agriculture and Residue Management on Soil Properties, Crop Productivity Under Pulse-Based Cropping Systems in Central India Conservation Agriculture: A Sustainable Approach for Soil Health and Food Security: Conservation Agriculture for Sustainable Agriculture, 117-137 https://doi.org/10.1007/978-981-16-0827-8_6.

9. **Mrunalini K** and Deb CK. 2021. Drones in agriculture *In*: Digital technologies in agriculture, (*Eds.*) Rathor S, Lakshmi VB and Sumanth Kumar VV, Biotech Books, New Delhi 171-182.
10. **Mrunalini K,** Behera B, Kumar N and Praharaj CS. 2021. Agronomic interventions for drought stress mitigation in pulses *In*: Sustainable production of pulses in diverse agro-ecosystems Vol 2 Stress management and livelihood security, 21-42.
11. **Kancheti M**, Lalit Kumar Rolaniya, Debarati Datta, Sandeep Kumar, Biswaranjan Behera, Govind Makarana, Arjun Singh, Prasad JVNS, Pratibha G, Ramesh Naik M, Narayana Swamy G and Srinivasarao Ch. 2020. Resource conservation technologies for climate change adaptation and mitigation *In*: Srinivasarao C. et al, (*Eds*.) Climate change and Indian agriculture: challenges and adaption strategies, ICAR-National Academy of Agricultural Research and Management, Hyderabad, Telangana, India, 131-156. ISBN No: 978-81-943090-7-9

Books

1. Behera B, Das TK, Raza MB, **Kancheti M** and Devi OR. 2022. An Insight into Agronomy (Edition Ist) Jain Brothers Publishers ISBN: 978-93-90576-60-9
2. Rathore M, Kumar N, Pratap A, Das A, Srivastava AK, Lamichaney A, Birader R, Shanmugavadivel PS, Basavaraja T, Kumar S, Revanasidda, **Kancheti M** and Ranjan R. (*Eds.*). 2021. Abstracts: National web conference on sustaining pulse production for self-sufficiency and nutritional security, Feb 9–11, 2021. ICAR-Indian Institute of Pulses Research, Kanpur, UP, India, Pp-462. https://www.researchgate.net/publication/357793321_Abstract_Book_Pulse_webCon_2021.