

# Division of Crop Research

## Personal Details



Dr. Rachana Dubey  
Scientist (Sr. Scale)

Address: Scientist (**Environmental Science**), Division of  
Crop Research, ICAR Parisar, ICAR Research Complex for  
Eastern Region , P.O.: B V College, Patna

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## Research Interest

Climate Change and Agriculture Carbon Sequestration, Greenhouse Gases, Water and Air  
Pollution, Ecosystem Services,

## Research Highlights

Greenhouse quantification, mitigation of terminal heat stress, ecosystem  
services

## Membership/Fellowship

Awarded NESAC (National Environmental Science Academy) Young Scientist Award-2019  
for contribution in the field of Environmental Sciences.

Awarded Early Career Research Award from DST SERB with a project titled 'Optimising  
soil organic carbon stock in rice based cropping system under irrigated ecosystem' in 2018.

Awarded as an Innovation in Science Pursuit for Inspired Research (INSPIRE) Fellow by  
Department of Science and Technology, Ministry of Science and Technology, Govt. of  
India from 2010 to December, 2013.

Awarded Junior Research Fellowship (JRF) by UGC in Environmental Sciences in 2012.

Awarded Pradeep Memorial Award for the best student of Centre for Environment Science  
and Climate Resilient Agriculture, IARI in 2010.

Awarded Junior Research Fellowship (JRF) by ICAR, New Delhi for Pursuing Master of  
Science (2008-10).

Awarded Junior Research Fellowship (JRF) by CSIR in Earth Sciences in 2009.

## Publications

1. Jain, Niveta, **Rachana Dubey**, D. S. Dubey, Jagpal Singh, M. Khanna, H. Pathak, and Arti Bhatia. "Mitigation of greenhouse gas emission with system of rice intensification in the Indo-Gangetic Plains." *Paddy and water environment* 12, no. 3 (2014): 355-363.
2. Gupta, Dipak Kumar, A. Bhatia, A. Kumar, T. K. Das, N. Jain, R. Tomer, Sandeep K. Malyan, R. K. Fagodiya, **Rachana Dubey**, and H. Pathak. "Mitigation of greenhouse gas emission from rice-wheat system of the Indo-Gangetic plains: Through tillage, irrigation and fertilizer management." *Agriculture, Ecosystems & Environment* 230 (2016): 1-9.
3. **Dubey, Rachana**, Pathak, H., Pal, M., Chakrabarti, B., & Harit, R. C. (2016). Effect Of Sowing Date, Cultivars And Irrigation Scheduling On Physiological Parameters Of Wheat (*Triticum Aestivum*) With Climate Change Adaptation In Perspective. *Current Advances in Agricultural Sciences*, 8(2), 135-138.

4. **Dubey, Rachana**, Pathak, H., Singh, S., Chakravarti, B., Thakur, A. K., & Fagodia, R. K. (2019). Impact of Sowing Dates on Terminal Heat Tolerance of Different Wheat (*Triticum aestivum* L.) Cultivars. *National Academy Science Letters*, 42(6), 445-449.
5. Fagodiya, Ram Kishor, Himanshu Pathak, Arti Bhatia, Niveta Jain, Dipak Kumar Gupta, Amit Kumar, Sandeep K. Malyan, **Rachana Dubey**, Sheetal Radhakrishanan, and Ritu Tomer. "Nitrous oxide emission and mitigation from maize-wheat rotation in the upper Indo-Gangetic Plains." *Carbon Management* 10, no. 5 (2019): 489-499.
6. **Rachana Dubey**, Pathak, H., Chakrabarti, B., Singh, S., Gupta, D. K., & Harit, R. C. (2020). Impact of terminal heat stress on wheat yield in India and options for adaptation. *Agricultural Systems*, 181, 102826.
7. Rautaray, S. K., **Dubey, Rachana**, Raychaudhuri, S., Pradhan, S., Mohanty, S., Mohanty, R. K., & Ambast, S. K. (2020). Sustainable agriwaste management at farm level through self-reliant farming system. *Waste Management & Research*, 0734242X20920350.
8. Rautaray, S. K., S. Pradhan, S. Mohanty, R. Dubey, S. Raychaudhuri, R. K. Mohanty, A. Mishra, and S. K. Ambast. "Energy efficiency, productivity and profitability of rice farming using Sesbania as green manure-cum-cover crop." *Nutrient Cycling in Agroecosystems* 116, no. 1 (2020): 83-101.
9. Shubha, K., Singh, N. R., Mukherjee, A., Maity, A., & **Dubey, Rachana** (2020). Controlled traffic farming: an approach to minimize soil compaction and environmental impact on vegetable and other crops. *Current Science*, 119(11), 1760.
10. Mondal, Surajit, Janki Sharan Mishra, Shish Pal Poonia, Rakesh Kumar, **Rachana Dubey**, Santosh Kumar, Mausam Verma et al. "Can yield, soil C and aggregation be improved under long- term conservation agriculture in the eastern Indo- Gangetic plain of India?" *European Journal of Soil Science* 72, no. 4 (2021): 1742-1761.
11. Mishra, J. S., S. P. Poonia, Rakesh Kumar, Rachana Dubey, Virender Kumar, Surajit Mondal, S. K. Dwivedi et al. "An impact of agronomic practices of sustainable rice-wheat crop intensification on food security, economic adaptability, and environmental mitigation across eastern Indo-Gangetic Plains." *Field crops research* 267 (2021): 108164.
12. Dubey, Rachana, Raychaudhuri, M., Brahmanand, P. S., & Rautaray, S. K. (2021). Effects of wastewater from peri-industrial site on soil physico-chemical properties in tropical environment. *Journal of Soil and Water Conservation*, 20(3), 335-341.
13. Kumar, Rakesh, Janki Sharan Mishra, Sushanta Kumar Naik, Surajit Mondal, Ram Swaroop Meena, Saurabh Kumar, Abhishek Kumar Dubey, **Rachana Dubey**, et al. "Impact of crop establishment and residue management on soil properties and productivity in rice- fallow ecosystems in India." *Land Degradation & Development* 33, no. 5 (2022): 798-812.
14. Mishra, J. S., Rakesh Kumar, Surajit Mondal, S. P. Poonia, K. K. Rao, Rachana Dubey, Rohan Kumar Raman et al. "Tillage and crop establishment effects on weeds and productivity of a rice-wheat-mungbean rotation." *Field Crops Research* 284 (2022): 108577.
15. **Rachana Dubey**, AK Choudhary, Shreetu Singh, Anurag Ajay, Santosh Kumar, Rakesh Kumar and Surajit Mondal. Assessing the Impact of Air Pollution of Trees and Crops by Monitoring Air Pollution Tolerance Index and Anticipated Performance Index in Eastern Gangetic Plains of India, *Current Science*, 2023.