Division of Crop Research

Personal Details

Dr. Saurabh Kumar
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Research Interest

Metagenomics, Plant-Microbe Interactions, Arsenic Bioremediation

Research Highlights

C Sequestration, Conservation Tillage

Memberships / Fellowships

- **i.** Life membership of Association of Microbiologists of India
- **ii.** Life membership of Society of Biological Chemists
- **iii.** CSIR-Senior Research Fellow award 2017
- **iv.** Graduate Aptitude Test in Engineering (GATE)-2016 (Life sciences)
- **v.** CSIR- Junior Research Fellow award 2014 (Life Sciences)
- **vi.** Teaching and Research assistantship award at G.B.P.U.A.&T. Pantnagar

Technology Developed

External Research Grants

DST-SERB Startup Research Grant (SRG/2021/001454)

Duration: 30-Dec-21 to 29-Dec-2023, Total Budget: 30.47 Lakh

Project Title:Rhizosphere microbiome of high yielding rice cultivars in arsenic contaminated Indo-Gangetic Plains and their application for arsenic amelioration in rice grains.

Publication Details

1. **Kumar, S.,** Choudhary, A. K., Suyal, D. C., Makarana, G., & Goel, R. (2022). Leveraging arsenic-resistant plant growth-promoting rhizobacteria for arsenic abatement in crops. *Journal of Hazardous Materials*, 425, 127965.

2. Suyal, D. C., Joshi, D., **Kumar, S.,** Bhatt, P., Narayan, A., Giri, K., ... & Yadav, A. N. (2021). Himalayan microbiomes for agro-environmental sustainability: current

perspectives and future challenges. *Microbial Ecology*, 1-33.

3. Kumar, S.,Suyal, D. C., Yadav, A., Shouche, Y., & Goel, R. (2020). Psychrophilic Pseudomonas helmanticensis proteome under simulated cold stress. Cell Stress and Chaperones, 1-8.

4. Kumar, S.,Suyal, D. C., Yadav, A., Shouche, Y., & Goel, R. (2019). Microbial diversity and soil physiochemical characteristic of higher altitude. PloS one, 14(3), e0213844.

5. Suyal, D. C., Joshi, D., Kumar, S., Soni, R., & Goel, R. (2019). Differential protein profiling of soil diazotroph Rhodococcusqingshengii S10107 towards low-temperature and nitrogen deficiency. Scientific reports, 9(1), 1-9.

6. Joshi, D., Chandra, R., Suyal, D. C.,Kumar, S. & Goel, R. (2019). Impacts of bioinoculants Pseudomonas jesenii MP1 and Rhodococcusqingshengii S10107 on chickpea (Cicer arietinum L.) yield and soil nitrogen status. Pedosphere, 29(3), 388-399.

7. Debbarma, P., Zaidi, M. G. H., Kumar, S., Raghuwanshi, S., Yadav, A., Shouche, Y., & Goel, R. (2018). Selection of potential bacterial strains to develop bacterial consortia for the remediation of e-waste and its in situ implications. Waste Management, 79, 526-536.

8. Kumar, S., Suyal, D. C., Bhoriyal, M., & Goel, R. (2018). Plant growth promoting potential of psychrotolerantDyadobacter sp. for pulses and finger millet and impact of inoculation on soil chemical properties and diazotrophic abundance. Journal of Plant Nutrition, 41(8), 1035-1046.

9. Suyal, D. C., Kumar, S., Joshi, D., Soni, R., & Goel, R. (2018). Quantitative proteomics of psychotrophic diazotroph in response to nitrogen deficiency and cold stress. Journal of proteomics, 187, 235-242.

10. Suyal, D. C., Kumar, S., Yadav, A., Shouche, Y., & Goel, R. (2017). Cold stress and nitrogen deficiency affected protein expression of psychrotrophic DyadobacterpsychrophilusB2 and Pseudomonas jessenii MP1. Frontiers in microbiology, 8, 430.

Book Chapters

1. **Kumar, S.,** Joshi, D., Pandey, S. C., Debbarma, P., Suyal, D. C., Chaubey, A. K., &Soni, R. (2022). Structure and Functions of Rice and Wheat Microbiome. In Survival Strategies in Cold-adapted Microorganisms (pp. 343-356). Springer, Singapore.

2. Joshi D., **Kumar S**., Suyal D.C**.**, Goel R. (2017). The Microbiome of the Himalayan Ecosystem. In: Kalia V., Shouche Y., Purohit H., Rahi P. (eds) Mining of Microbial Wealth and MetaGenomics. Springer, Singapore. Pp 101-116.