Department of Plant Physiology

Dr. S.C. Shankhdhar

DESIGNATION:	Professor
QUALIFICATION:	Ph.D. Plant Physiology
SPECIALISATION:	Plant Nutrition
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Research Areas/ Areas of Interest

- Biofortification and Plant Nutrition

Teaching Experience and Courses Taught

Teaching Experience: 28 years

Courses taught:

Post Graduate Courses

- BPY- 611 Mineral Nutrition of Plants
- BPY-613 Research Techniques in Plant Physiology
- BPY-614 Principles of Plant Physiology I
- BPY-619 Physiological and Molecular Mechanism of Mineral Nutrient Acquisition and their Functions
- BPY-704 Advance Tech in Plant Physiology
- BPY-705 Climate Change and Crop Growth
- BPY-710 Physiological and Molecular Aspects of Photosynthesis Carbon & Nitrogen Metabolism
- BPY-713 Experimental Techniques to Characterize Plant Processes for Crop Improvement

- BPY-715 Physiological and Molecular Aspects of Source-Sink Capacity for Enhancing Yield

Projects completed

- **NAIP (ICAR) 2009-2014 (54lacs)** "Understanding the mechanism of variations in status of few nutritionally important micronutrients in some important food crops and the mechanism of micronutrient enrichment in plant parts"
- **U.G.C New Delhi 2012-2016 (12 lacs)** "In vitro multiplication and antioxidative response of Withania somnifera and Rauvolfia serpentine under drought stress"
- **Isagro (Asia) Agrochemicals Pvt. Ltd. Mumbai 2016-2017 (4 lacs)** "Neoleaf" (Granules) an aminoacid based product from natural origin on paddy crop
- **M/S Gharda Chemicals Limited, Dombivali Maharashtra 2018-2020 (12.74 lacs)** "Evaluation of plant growth regulator Mepiquat Chloride 5% AS in Wheat & effect on succeeding crop"

Book Chapters: 10
Research Papers: 75
Abstracts in National Conferences :45
International Conferences:18

Student Guided

- Ph.D. Student Guided: 10
- M.Sc. Student Guided:19

Reviewer (s) Pedosphere (Elsevier); Journal of Plant Nutrition and Soil Science (Wiley); Archives of Agronomy and Soil Science (Taylor & Francis)

Honors/Awards/Professional Achievements

- M.Sc. Gold-medalist
- GATE 1992 Qualified in Basic Sciences & Engineering
- Availed UGC Junior Research Fellowship during PhD
- CSIR- UGC Joint Test Life Sciences Qualified in 1992
- ASRB NET Plant Physiology Qualified in 1995 & 2001
- Best AICRIP Plant Physiology center in 2013
- Golden Jublee overall best AICRIP Rice center award in 2015
- Governor's Award 2015 for Best Research paper
- Best AICRIP Plant Physiology center in 2016
- Best paper award for oral presentation during two days workshop (May21-22, 2013) held at G.B.P.U.A &T, Pantnagar.
- Best paper award for poster presentation during National symposium (October16-18, 2014) held at GBPUAT, Pantnagar.
- AIU Doctoral Best PhD thesis award 2022 (My advisee Dr. Pratibha Rawat, Plant Physiology)
- Best Poster Presentation Award during National Conference of Plant Physiology (December 9-11, 2023)

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Selected Research Publications

1.TonyManoj KumarNandipamu, Sumit Chaturvedi, Prayasi Nayak, V.C. Dhyani, S.P. Pachauri , S.C. Shankhdhar and Subhash Chandra (2025). Energy-use audit and data envelopment analysis based optimization of tillage and residue management in rice-wheat system of indo-gangetic plains. *Renewable Energy*. **238:**121924. **(NAAS score: 14.70)**

2. Thi Thi Myint, Cho Wit Yee Soe, Pratibha Rawat, Ritika Misra, Deepti Shankhdhar and S. C. Shankhdhar (2024). Augmented effects of silicon solubilizer on biochemical analysis of rice grains under normal and water stress conditions. *Journal of Plant Nutrition.* **47(7):**1045-1057. **(NAAS score: 8.10)**

3. Bhupendra Mathpal, P.C. Srivastava, S.P. Pachauri, A. K. Shukla and S.C. Shankhdhar (2023). Role of gibberellic acid and cytokinin in improving grain zinc accumulation and yields of rice (*Oryza sativa* L.). *Journal of Soil Science and Plant Nutrition.* **23**: 6006- 6016. **(NAAS score: 9.90)**

4. Shamiya Jahan, Sheela Rautela, Aman Sobia Chisthi, Deepti Shankhdhar, S. C. Shankhdhar, Alok Srivastav and Snajay Kumar Garg (2023). Triacontanol is a potent alleviator of stress induced by salt and heavy metal contamination in plants. *Rhizosphere.* **28**:100822. **(NAAS score: 9.70)**

5. P Rawat, A Sharma, D Shankhdhar and S.C. Shankhdhar (2022). Improvement of phosphorus uptake, phosphorus use efficiency and grain yield of upland rice (*Oryza sativa* L.) in response to phosphate solubilizing bacteria blended with phosphorous fertilizer. *Pedosphere.* **32(5**):752-763. **(NAAS score: 11.70)**

6. P Rawat, D Shankhdhar and S.C. Shankhdhar (2022) Synergestic impact of phosphate solubilizing bacteria and phosphorous rates on growth antioxidative defense system and yield characteristics of upland rice (*Oryza sativa* L). *Journal of Plant Growth Regulation*. **41**:2449-2461. (**NAAS score: 10.80)**

7. Sudeshna Das, G.S Panwar, Deepti Shankhdhar and S.C. Shankhdhar. (2022) Silicon mediated modulation of physiological attributes and pollen morphology under normal and water deficit conditions in rice (*Oryza sativa* L.). *Cereal Research Communications.* **50**: 929-939. **(NAAS score: 7.60)**

8. Pratibha Rawat, ,Anita Sharma, Deepti Shankhdhar and S. C Shankhdhar. (2022) Comparative response of Phosphate solubilizing indigenous Bacillus licheniformis, Pantoeadispersa and Staphylococcus sp. From rice rhizosphere for their multifarious growth promoting characteristics. *Geomicrobiology Journal*. **39 (6):**445-452. **(NAAS score: 8.30)**

9. P Rawat, S Das, D Shankhdhar and S. C. Shankhdhar (2021) Phosphate-solubilizingmicroorganisms: Mechanism and their role in phosphate solubilization and uptake.*Journal of Soil Science and Plant Nutrition.* **21(1):**49-68. **(NAAS score: 9.90)**

10. Sachin Kumar Vaid , Prakash Chandra Srivastava , Satya Pratap Pachauri , Anita Sharma , Deepa Rawat , Shailesh Chandra Shankhadhar and Arvind Kumar Shukla (2020) Effective zinc mobilization to rice grains using rhizobacterial consortium. *Israel Journal of Plant Sciences***. 66: (3-4):** 227–237. **(NAAS score: 7.00)**