



Faculty Profile on University Website

www.kmclu.ac.in



Name	Dr. Shalini Rai				
Designation	Assistant Professor, Subject-Incharge				
Department	Microbiology				
Contact Details					
Email	shalinimicro09@gmail.com , shalinirai@kmclu.ac.in				
Mobile No.	9453419244				
LinkedIn Profile Link					
Twitter Profile Link					
Educational Qualification					
Exam	Board/University	Subject	Passing Year		
Ph.D.	SHUATS (Formerly AAI-DU), Prayagraj (U.P.)	Microbiology	2016-17		
M.Sc.	SHUATS (Formerly AAI-DU), Prayagraj (U.P.)	Microbiology	2009		
B.Sc.	Agrasen Autonomous P. G College, Varanasi (Affiliated to VBSPU), U.P.	Biotechnology, Chemistry	2006		
Details of Service					
Employer's Name and City	Designation	Type	Date(from)	Date(upto)	Total Experience
SHEPA, Varanasi	Assistant Professor		August 2018	October 2021	3.3 years
KMCLU, Lucknow	Assistant Professor-Temporary		November 2021	May 2022	07 Months
DSMNRU, Lucknow	Assistant Professor-Temporary		January 2023	May 2026	3.5 Years

Academic Details	
Teaching Area/Specialization	1. Agriculture Microbiology 2. Biotechnology. 3. Molecular and Diagnostic Markers
Teaching Experience	1. More than 10 years teaching and research experiences
Research Area	Agriculture Microbiology, Biotechnology, Molecular & Diagnostic Markers, Plant Microbe Interactions
Orchid ID	
Vidwan ID/Research gated	https://www.researchgate.net/profile/Shalini-Rai-5
Google Scholar Profile	https://scholar.google.com/citations?user=yxV2r8oAAAAJ&hl=en

Research Details	
Research Publications	Research papers: Total 17 International Journals: 1. Kumar, S., Maurya, D.K., Rai, S., Kashyap, P.L., Srivastava, A.K. 2012. Computational Mining and Genome Wide Distribution of Microsatellite in <i>Fusarium oxysporum</i> f. sp. <i>lycopersici</i>, <i>Notulae Scientia Biologicae</i>, 4(4):127-131. ISSN No. 2067-3264 2. Kumar, S., Rai, S., Maurya, D.K., Kashyap, P.L., Srivastava, A.K. & Anandraj, M. 2013. Crossspecies transferability of microsatellite markers from <i>Fusarium oxysporum</i> for the assessment of genetic diversity in <i>Fusarium udum</i>, <i>Phytoparasitica</i>, 41:615–621, DOI 10.1007/s12600-013-0324-y., ISSN NO. 1876-7184. 3. Rai S., Solanki, M.K., 2014. Optimization of Thermostable Alpha-Amylase Production Via Mix Agricultural-Residues and <i>Bacillus amyloliquefaciens</i>, <i>Notulae Scientia Biologicae</i>, 6(1):105-111 (Print ISSN 2067-3205; Electronic 2067-3264) 4. Rai, P.K., Nathawat, M.S. and Rai, S. 2013. Using the Information Value Method in Geographic Information System (GIS) and Remote Sensing for malaria mapping; A case study from India, <i>Informatics in primary care</i> (University of Surrey, U.K.), 21(1):43-52. Available at: http://dx.doi.org/10.14236/jhi.v21i1.38 (ISSN 1475-9985) 1-11. 5. Kashyap, P.L., Rai, S., Kumar, S., Srivastava, A.K., Anandaraj, M. and Sharma, A.K. 2015. Mating type genes and genetic markers to decipher intraspecific variability among <i>Fusarium udum</i> isolates from pigeonpea, “<i>Journal of Basic Microbiology</i> (Publisher: Wiley & Blackwell), Vol. 54, 846-856. ISSN No. 1521-4028. 6. Shalini Rai, Prem Lal Kashyap, Sudheer Kumar, Alok Kumar Srivastava, Pramod W Ramteke, 2016. Comparative analysis of microsatellites in five different antagonistic <i>Trichoderma</i> species for diversity assessment. <i>World Journal of Microbiology and Biotechnology</i>, 32 (8), 1-11.

DOI 10.1007/s11274-015-1964-5. ISSN No. 1573-0972.

7. Prem Lal Kashyap, Shalini Rai, Sudheer Kumar and Alok Kumar Srivastava, 2016. Genetic diversity, mating types and phylogenetic analysis of Indian races of *Fusarium oxysporum* f. sp. *ciceris* from chickpea. Archives of Phytopathology and Plant Protection. Vol. 49 (19-20), Pp.533-553. DOI: 10.1080/03235408.2016.1243024. ISSN NO. 0323-5408.

8. Shalini Rai, Prem Lal Kashyap, Sudheer Kumar, Alok Kumar Srivastava, Pramod W Ramteke, 2016. Identification, Characterization and Phylogenetic analysis of antifungal *Trichoderma* from tomato rhizosphere. Springer Plus, 5 (1):1939. DOI 10.1186/s40064-016-3657-4. ISSN: 2193- 1801.

9. Kumar V., Dubedi Anal, A.K., Rai, S. and Nath V., 2017. Leaf, panicle and fruit blight of litchi (*Litchi chinensis*) caused by *Alternaria alternata* in Bihar state, India, Can. J. Plant Pathol., 40 (1), pp. 1-7. DOI: <https://doi.org/10.1080/07060661.2017.1401005>. ISSN No. 0706-0661.

10. Rai, P.K., Mohan, K. and Mishra, V.N, Bishwari, M., Sharma, A. and Rai, S., 2016. Changing Regimes of Gangotri and Surrounding Glaciers: A Case Study of Garhwal Himalaya, India, Remote Sensing Applications: Society and Environment, Vol. 3(1), 53-72. DOI: 10.1016/j.rsase.2016.02.001. ISSN: 2352-9385.

11. Sagar, A., Thomas, G., Rai, S., Mishra, R.K., Ramteke P.W., 2018. Enhancement of Growth and Yield Parameters of Wheat Variety AAI-W6 by an Organic Farm Isolate of Plant Growth Promoting *Erwinia* Species (KP226572). International Journal of Agriculture, Environment and Biotechnology, 11(1): 159-171, 113. ISSN NO. 2230-732X.

12. Rai A., singh AK., Mishra R., Shahi B., Rai VK., Kumari N., Kumar V., Gangwar A., Sharma RB., Rajput J., Kumari N., Kumar S., Anal AKD, Rai S, et al., (2020). Sulphur in soils and plants: An overview. International Research Journal of Pure and Applied Chemistry, 21(10): 66-70. ISSN: 2231-3443.

13. Anal AKD, Varma A, Kumar V, Rai S, Chandra A, (2021). Effect of nitrogen sources on growth and sporulation of *Alternaria alternata* causing blight disease in Litchi. International Journal of Current Microbiology and Applied Sciences, 10(2): 3395-3399. ISSN: 2319-7706(Online).

14. Sagar A, Rai S, Ilyas N, Sayyed RZ, Al-Turki AI, El Enshasy HA, Simarmata, T, (2022). Halotolerant Rhizobacteria for Salinity-Stress Mitigation: Diversity, Mechanisms and Molecular Approaches. Sustainability, 14, 490. <https://doi.org/10.3390/su14010490>, ISSN: 2071-1050

15. Nong Q, Malviya MK, Solanki MK, Solanki AC, Lin L, Xie J, Mo Z, Wang Z, Song X-P, Huang X, Rai S, Li C and Li Y-R (2022). Sugarcane Root Transcriptome Analysis Revealed the Role of Plant Hormones in the Colonization of an Endophytic Diazotroph. Front. Microbiol. 13:924283. doi.org/10.3389/fmicb.2022.924283, ISSN: 1664-302X.

National Journal:

	1. Rai, S. and Maurya, D.K. 2014. Computational Analysis of Single-Nucleotide Polymorphisms and Insertions/Deletions in Coding Regions of Three <i>Formae speciales</i> of <i>Fusarium oxysporum</i>, Journal of Scientific Research, Banaras Hindu University, 58:51-58. (ISSN: 0447-9483). 2. Rai, S. and Maurya, D.K. 2014. Assessment of EST-SSR markers for genetic diversity analysis on <i>Fusarium oxysporum</i> f. sp. <i>Lycopersici</i>, Journal of Scientific Research, Banaras Hindu University, 59 (1)
Books	Book Chapters: Total 10 1. Kumar V., Rai S., Gaur P., Fatima T. 2013. Endophytic fungi: novel sources of anticancer Molecules, Advance in Endophytic Research, ed. book by Eds. Verma V.C. and Gange A.C., Advance in Endophytic Research. Springer-verlag GmbH, Germany. ISBN No. 978-81-322-1575-2. 2. Sharma, S., Rai, P., Rai, S., Srivastava, M., Kashyap, P.L., Sharma A., Kumar S., 2017. Genomic Revolution in Crop Disease Diagnosis: A Review; Singh S. (edited book). Plants and Microbes in an EverChanging Environment, Plant Science Research and Practices, Nova Science Publishers, 257-294. ISBN No. 978-81-322-1575-2. 3. Rai, S., Solanki, M.K., Solanki A.C., Surapathrudu, K., 2019a. Biocontrol Potential of <i>Trichoderma</i> spp.: Current Understandings and Future Outlooks on Molecular Techniques; (edited book) Plant Health under Biotic Stress. Editor: Ansari, R.A. and Mahmood, I., Springer, Vol. 2, 129-160. DOI: doi.org/10.1007/978- 981-13-6040-4_7. ISBN No. 978-981-13-6040-4. 4. Rai, S., Ramteke, P.W., Sagar, A., Dhusia, K., Kesari, S.K. 2019b. Diversity Assessment of Antagonistic <i>Trichoderma</i> Species by Comparative Analysis of Microsatellites. Sayyed, R. Z. et al. (eds.), Plant Growth Promoting Rhizobacteria (PGPR): Prospects for Sustainable Agriculture, Springer Nature, 1-23. ISBN 978-981-13-6790-8. 5. Anal AKD, Rai S, Singh M, and Solanki MK (2020). Plant Mycobiome: Current Research and Applications. In: Solanki MK, Kashyap PL, Kumari B (eds) Phytobiomes: Current Insights and Future Vistas. Singapore, Springer Singapore, pp 81-105. ISBN: 978-981-15-3151-4. 6. Rai S, Solanki AK, Anal AKD (2020). Modern biotechnological tools: an opportunity to discover complex phytobiomes of horticulture crops. In Solanki MK, Kashyap PL, Ansari RA, Kumari B (eds) Microbiomes and Plant Health: Panoply and Their Applications. Elsevier, United States pp 85-124. eBook ISBN: 9780128226018. 7. Rai S, Solanki AK, Anal AKD, Sagar A, et al., (2021). Emerging frontiers of microbes as Agrowaste recycler. In Kashyap BK, Solanki MK, Kamboj DV, Pandey AK (eds) Waste to Energy: Prospects and Applications. Singapore, Springer Singapore, pp 3-27. ISBN: 978-9813343467. 8. Rai, S. and Solanki. 2023. Beneficial Endophytic <i>Trichoderma</i>

	Functions in Plant Health Management, ed. Book by Solonaki, M. et.al., Microbial Endophytes and Plant Growth, Elsevier (Academic Press), pp. 233-244. eBook ISBN: 9780323914468. 9. Samal, S., Rai, S. and Upadhyay R.S. 2023. Endophytic Fusarium and Their Association with Plant Growth, ed. Book by Solonaki, M. et.al., Microbial Endophytes and Plant Growth, Elsevier (Academic Press), pp. 259-268. eBook ISBN: 9780323914468. 10. Rai, S., Solanki, M., Solonaki, A.C., Samal, S. 2023. Microbial Endophytes as Probiotics for the Plant Health: An Overview, et.al., Microbial Endophytes and Plant Growth, Elsevier (Academic Press), pp. 269-281. eBook ISBN: 9780323914468. Book Published: Total 05 1. Rai, S., 2013. Analyse Production through Agro Waste, LAP Lambert Academic Publishing, Germany, 1-94. ISBN No.: 978-3-659-48759-0. 2. Ram Prasad and Rai, S. 2022. New and Future Developments in Microbial Biotechnology and Bioengineering: Trichoderma for Biotechnological Application: Current Insight and Future Prospects. Elsevier. United States. ISBN No.: 978-0323998901. 3. Rai, S., Bhardhwaj, A.K., Colla, L. A. 2024. "Sustainable Management of Agro- Food Waste: Fundamental Spects and Practical Applications", (Edt. Book-1st Edition), Elsevier. eBook ISBN: 9780443236808. 4. Rai, P.K. and Rai S. 2024. Climate, Environment and Agricultural Development: Sustainable Approach Towards Society. Springer Singapore, DOI: https://doi.org/10.1007/978-981-97-8363-2. eBook ISBN: 978-981-97-8363-2. 5. Rai, P.K. and Rai S. 2025. Blue-Green Land Management and Smart Ecosystem Services Integrated Strategies for Planning and Development. Springer Singapore, DOI: https://doi.org/10.1007/978-981-96-8452-6. eBook ISBN: 978-981-96-8452-6.
P.hD./M.Phil. Awarded under Supervision	
Projects	1. 2.
Conferences/Seminars/Worksh ops	• Abstract accepted on topic "Extra cellular production of thermostable α-amylase by <i>Bacillus amyloliquefaciens</i> MB101 using flour mill waste" in 52th International Conference of AMI, Chandigarh 2011. • Abstract accepted on topic "Efficient colonization pattern of <i>Bacillus</i> strain in plant root through GFP based approach" in 52th International Conference of AMI, Chandigarh 2011. • Poster presented in the "International Conference on Health, Environment & Industrial Biotechnology" (BioSangam-2013), held at MNNIT, Allahabad during Nov. 21-23, 2013. • Morphological and molecular characterization of <i>Fusarium</i>

spp. associated with wilt disease of pigeonpea (*Cajanus cajan*) in India. Shalini Rai, Prem Lal Kashyap, Alok K. Srivastava, Sudheer Kumar and Arun Kumar Sharma, National symposium on plant pathology in genomic era at Raipur (May 26-28, 2014).

- Climate change and changing scenario of plant diseases in India. Prem Lal Kashyap, Shalini Rai and Alok Kumar Srivastava, National seminar on climate change and environmental threat to public health and sustainable agriculture at Sunbeam College of Women, Varanasi (August 30-31, 2014).
- Comparative analysis of Cell wall degrading enzymes (CWDEs) in *Fusarium oxysporum* f. sp. *ciceri*. Chandra Shekhar Verma, Shalini Rai, Prem L. Kashyap and Poonam Singh, National seminar on climate change and environmental threat to public health and sustainable agriculture at Sunbeam College of Women, Varanasi (August 30-31, 2014).
- Molecular characterization of Antibiotic genes in antagonistic strains of *Bacillus* and *Pseudomonas*. Ved Prakash, Ruchi Singh, Shalini Rai and Sudheer Kumar, National seminar on climate change and environmental threat to public health and sustainable agriculture at Sunbeam College of Women, Varanasi (August 30-31, 2014).
- .Morphological characterization of *Colletotrichum* species from agricultural crops. Shahnawaz Alam, Shalini Rai, Prem Lal Kashyap and Soban Ahmed, National seminar on climate change and environmental threat to public health and sustainable agriculture at Sunbeam College of Women, Varanasi (August 30-31, 2014).
- Computational analysis of Microsatellites Dynamics in Expressed Sequence Tags (ESTs) of *Fusarium oxysporum* f. sp. *lycopersici*. Deepak Maurya, Sudheer Kumar, Shalini Rai, Prem Lal Kashyap and Alok K. Srivastava, National seminar on climate change and environmental threat to public health and sustainable agriculture at Sunbeam College of Women, Varanasi (August 30-31, 2014).
- Diversity analysis of *Fusarium udum* isolates associated with pigeonpea. Prem Lal Kashyap, Shalini Rai, Alok Kumar Srivastava and Arun Kumar Sharma, XII Agricultural Science Congress at National Dairy Research Institute, Karnal (3-6 february, 2015).
- Microsatellite based detection system for *Alternaria* species. Prem Lal Kashyap, Preeti Singh, Shalini Rai, Hillol Chakdar, Alok K. Srivastava, Arun Kumar Sharma, XII Agricultural Science Congress at National Dairy Research Institute, Karnal (3-6 february, 2015).
- Shalini Rai, Prem Lal Kashyap, Sudheer Kumar, Alok K. Srivastava, Pramod W. Ramteke and Arun Kumar Sharma, 2015. Development, characterization and comparative

	analysis of microsatellites in five species of antagonistic Trichoderma, 3rd Uttar Pradesh agricultural science congress on “Strategic Governance & Technological Advancement for Sustainable Agriculture” in Sam Higginbottom Institute of Agriculture, Technology & Sciences (Deemed University), Allahabad from June 14-16. • Shalini Rai, Alka Sagar, Prem Lal Kashyap, Sudheer Kumar, Alok Kumar Srivastava, Pramod W Ramteke, 2015. A comparative in silico survey of conservation and distribution of microsatellites in the transcripts of seven sequenced Trichoderma species, National conference on Bioinformatics Parinama in Agriculture and Health, in Sam Higginbottom Institute of Agriculture, Technology & Sciences (Deemed University), Allahabad from Oct. 5-6, 2015. • Shalini Rai. 2015. An Abstract entitled “Diagnosis of alternaria diseases in vegetable crops using species-specific PCR based assay” in a national seminar “Microbes in Extreme Environment: Diversity and Translation Applications organized by the Department of Botany and Microbiology, HNB Garwahl University, Srinagar, Uttarakhand from 30-31 Oct. 2015. • Shalini Rai, Prem Lal Kashyap, Sudheer Kumar, Alok K. Srivastava, Pramod W Ramteke, 2016. Identification and characterization of indigenous ergosterol producing antifungal Trichoderma isolates from tomato rhizosphere. National conference on “Emerging Trends in Fungal Biology and Plant Protection (ETFPP)”, Department of Botany, Banaras Hindu University (BHU), Varanasi from Feb 16-18.
Honours/Awards	
1. ICAR-SRF	
2. NET	
Administrative Services to the University	
1. Department Subject-Incharge, Microbiology	
2. Department Subject-Incharge, Chemistry	
Any Special Information	
Patent Awarded 1. Re: Patent Awarded in INDIA Title: “A METHOD OF DETECTION OF ALTERNARIA SPP. AND USES THEREOF” Applicant: INDIAN COUNCIL OF AGRICULTURAL RESEARCH, Ref: PD015159IN-SC 2. AIR POLLUTION DETECTION DEVICE, Ref.: 421145-001References Personal Détails Applicant: IPI, Govt. of India	

(Dr. Shalini Rai)