

Dr Manvika Sahgal

Faculty Qualification
Designation
Email

Ph. D. Microbiology
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Research projects

- Production of ethanol/acid using fermented pomace (under post harvest management of apples) (AICRP-PHT) 2005-09
- All India Co-ordinated Research Project on Taxonomy- Centre for Research on Bacteria & Archaea (MoEF-GOI) 2005 -2012.
- Isolation and characterization of ACC deaminase producing bacteria for development of bioinoculant for ameliorating flooding stress (**GBPUAT- 2015-2016**)
- Isolation and characterization of Pathogens involved in *Dalbergia sissoo* mortality in terai regions of Uttarakhand (AICRP-ICAR) 2014-2018
- Consequences of long and intensive use of agrochemicals on the legumes–rhizobia symbiosis and potentialities of remediation (DST-GOI, 2017)
- Utilization of biogas slurry micro-organisms for paddy straw degradation (AICRP-EAAI, 2021-2023)

Publications

Research Articles : 32 (In Peer reviewed journals) <https://www.researchgate.net/profile/Manvika-Sahgal>
Book Chapter : 14
Popular articles : 03
Practical Manuals : 03
Abstracts : 35
Conference attended : 15
Cultures deposited at national Repository (MTCC & NAIMCC)
: 17 (Rhizobia & BCAs for maize and wheat pathogens)

Selected Research publications

1. Pragati Srivastava, **Manvika Sahgal**, Khanchand Sharma, Hesham Ali El Enhasy, Abdul Gafur, Saleh Alfarraj, Mohammad Javed Ansari and R.Z. Sayyed (2022) Optimization and identification of Siderophores produced by *Pseudomonas monteilli* strain MN759447 and its antagonism towards fungus associated with mortality in *Dalbergia sissoo* Plantation forests. (2022) *Frontiers in Plant Science-Plant Symbiotic Interactions* DOI 10.3389/fpls.2022 (**Impact factor 6.627; NAAS Rating 11.75**).
2. **Hemant Dasila**, V.K. Sah, Vandana Jaggi and Manvika Sahgal (2022) Impact of Phosphate solubilizing bacteria on soil enzyme activity and plant vigor in four wheat genotypes. *Indian Journal of Ecology* 49(4):1341-1350 DOI: [10.55362/IJE/2022/3669](https://doi.org/10.55362/IJE/2022/3669) (**NAAS RATING 5.79, IF 0.544**).
3. Samiksha Joshi, Vandana Jaggi, Saurabh Gangola, Arjun Singh, V.K. Sah, Manvika Sahgal (2021) Contrasting rhizosphere bacterial communities of healthy and wilted *Dalbergia sissoo* Roxb. forests. *Rhizosphere* 17:100295 <https://doi.org/10.1016/j.rhisph.2020.100295> (Impact Factor 2.079)
4. Srivastava Pragati, Vandana Jaggi, Hemant Dasila & **Manvika Sahgal** (2020) Identification and characterisation of siderophore positive *Pseudomonas* from north indian rosewood (*Dalbergia sissoo*)

- Roxb. forest ecosystem. *International Journal of Agriculture Science and Research* 10 (4) 239-256. **(NAAS RATING 4.13).**
5. Jaggi Vandana, Samiksha Joshi, Hemant Dasila, Navneet Pareek, **Manvika Sahgal** (2020) Functional and molecular characterization of wheat rhizosphere bacteria and their antagonistic activity against wheat foliar blight pathogens *Journal of Experimental Biology and Agricultural Sciences* 8(5) page 605–620. [http://dx.doi.org/10.18006/2020.8\(5\).605.620](http://dx.doi.org/10.18006/2020.8(5).605.620) **(NAAS RATING 5.07).**
 6. Joshi Samiksha, Vandana Jaggi, Salil Tewari, V.K. Sah, **Manvika Sahgal** (2019) Multitrate phosphate solubilizing bacteria from *Dalbergia sissoo* Roxb. rhizosphere in natural forests of Indian Central Himalayas *Env. Ecol.* 37(3A):894-908. **(NAAS RATING 4.18).**
 7. Rana, Anjul, **Manvika Sahgal** and Pradeep Kumar (2019) Biocontrol prospects of *Pseudomonas fluorescens* AS15 against banded leaf and sheath blight disease of maize under field condition in conducive soil *National Academy Science Letters* doi.org/10.1007/s40009-018-0772-5 **(NAAS RATING 6.52).**
 8. [Hemant Dasila](#), Anjul Rana, [Damini Maithani](#) Anamika Rana, **Manvika Sahgal**, Salil Tewari (2018) Interaction between *Dalbergia sissoo* Roxb. and *Pseudomonas koreensis* AS15 Strain is Cultivar Specific *International Journal of Current Microbiology and Applied Sciences* 7(10):297-306 doi: 10.20546/ijemas.2018.710.031 **(NAAS RATING 5.38).**
 9. Dasila, Hemant, Samiksha Joshi, **Manvika Sahgal** and Salil Tewari (2018) Talaromyces sp. are associated with shisham nursery disease in Pantnagar, a terai region of western Himalayas *Eco. Env. & Cons.* Vol.24 (3), 366-370. **(NAAS RATING 4.89).**
 10. Neha Arya, Anjul Rana, Asmita Rajwar, **Manvika Sahgal** and Anil Kumar Sharma (2018). Biocontrol efficacy of siderophore producing indigenous *Pseudomonas* strains against *Fusarium* wilt in Tomato. *National Academy Science Letters* 41(3) doi: 10.1007/s40009-018-0630-5. **(NAAS RATING 6.37).**
 11. **Rajwar, A. and Sahgal, M. (2016)** Phylogenetic relationships of fluorescent pseudomonads deduced from the sequence analysis of 16SrRNA, *Pseudomonas*-specific and *rpoD* genes *3Biotech* 6: 80. doi:10.1007/s13205-016-0386-x. **(NAAS RATING 7.36).**
 12. Asmita Rajwar, Pragati Srivastava & **Manvika Sahgal (2016)** Microbiology of Fresh Produce: Route of Contamination, Detection Methods, and Remedy, *Critical Reviews in Food Science and Nutrition*, 56:14, 2383-2390, DOI: 10.1080/10408398.2013.841119. **(NAAS RATING 12.08).**
 13. G Kumar, **M Sahgal**, MK Bharti, AK Pandey, A Singh (2014) [Optimization of Various Parameters for Utilization of Apple Pomace Amended with Molasses by Indigenous Yeast Isolates](#) *National Academy Science Letters* 37 (6), 529-533. **(NAAS RATING 6.37).**
 14. Kunwar, Shyam, Govind Kumar, **Manvika Sahgal** and Anupama Singh (2012). Ethanol production through *Saccharomyces* based fermentation using apple pomace amended with molasses. *Sugar Tech.* 14:304-311. **(NAAS RATING 6.83).**
 15. Sharma, A., Pathak, A., **Sahgal, M.**, Meyer, J-M., Wray, V. and Johri, B.N. (2007). Molecular characterization of plant growth promoting rhizobacteria that enhance peroxidase and phenyl alanine ammonia- lyse activities in chile (*Capsicum annum* L.) and tomato (*Lycopersicum esculentum* Mill. *Arch. Microbiol.* 188, 483-494. **(NAAS RATING 7.60).**

16. **Sahgal, M.** and Johri, B.N. (2006) Taxonomy of rhizobia: Current status. *Curr Sci*, 90, 486-487. (NAAS RATING 6.84).
17. **Manvika Sahgal**, Alok Sharma, B. N. Johri and Anil Prakash (2004). Selection of growth promotory rhizobia for *Dalbergia sissoo* from diverse soil ecosystems of India. *Symbiosis*, 36, 83 – 96. (NAAS RATING 7.30).
18. Piyush Pandey, **Manvika Sahgal**, D.K. Maheshwari and B.N. Johri (2004). Genetic diversity of rhizobia isolated from medicinal legumes growing in the sub-Himalayan region of Uttaranchal. *Curr. Sci.* 86,202- 207. (NAAS RATING 6.84).
19. Alok Sharma, **Manvika Sahgal** and B. N. Johri (2003). Microbial Communication in the Rhizosphere: Operation of Quorum Sensing. *Curr. Sci.* 85, 1164–1172. (NAAS RATING 6.84).
20. Avijit Pramanik, Rachna Gaur, **Manvika Sahgal** and B.N.Johri. (2003) Oligophilic bacterial diversity of Leh Soils and its Characterization employing ARDRA. *Curr. Sci.* 84, 1550-1555. (NAAS RATING 6.84).
21. **Manvika Sahgal** and B. N. Johri (2003) "The Changing Face of Rhizobial Systematics" *Curr. Sci.* 84, 43-48. (NAAS RATING 6.84).

Practical Manual:

3

- Rhizobial Systematics: A working manual by **Manvika Sahgal**, B. N. Johri and A. K. Tripathi (2003) developed under AICOPTAX- CRBA, MoEF, Govt. of India.
- “*Analytical Techniques in Food Bio Processing*” Laboratory Manual by Anupama Singh and **Manvika Sahgal** (2008) Department of PHPFE, G.B.P.U.A.&T., Pantnagar.
- Research Techniques in Microbiology: A Laboratory Manual by Dr Reeta Goel and Manvika Sahgal (2013), Department of Microbiology, CBSH, G.B. P.U.A. & T., Pantnagar

Specialization Bacterial Taxonomy and Phylogeny

Research area/Area of Interest

- Bacterial Taxonomy
- Plant-microbe interactions

(Biological Control of wheat and maize pathogens)

(Plant Growth Promoting Bacteria especially PSBs and siderophore positive bacteria)

- Agrowaste utilization through cellulolytic micro-organisms

Any other Information for uploading in Faculty Profile

1. Awarded **DBT-post Doctoral Fellowship (2003)** on Proposal titled “**Genetic diversity in rhizobia of medicinal legumes growing in sub-Himalayan region of India.**”
2. AMI Young Scientist Award, Molecular Biology (2004)
3. Affiliations to Professional Societies:

- Life Member, Association of Microbiologists of India
- Life Member, Society of Biological Chemists, India
- Life Member, Asian PGPR society for Sustainable agriculture, USA

4. Specialized Training Attended

- AICOPTAX - UNESCO practical Training Course titled "**Molecular Techniques in Diversity, Phylogeny and Taxonomy of Plant Associated Bacteria**", Nov 5 - 18, 2000 held at School of Biotechnology, Faculty of Science, B.H.U. Varanasi, INDIA
- **Refresher Course on "Computer-based Multimedia Presentation"** June20-July10, 2007 held at National Academy of Agricultural Research Management, Hyderabad-500 030
- National training on "**Rhizosphere microbiology: Classical to Omic approaches**" 12th To 21st March, 2018 organised by ICAR- National Bureau of Agriculturally Important Micro-organisms,(NBAIM), Kushmaur, Maunath Bhanjan-275103, Uttar Pradesh.

5. Bacterial culture deposits at National repository

MTCC, IMTECH Chandigarh 10 cultures
 NAIMCC, NBAIM, Mau (UP) 09 cultures

6. A patent on "**Antimicrobial Finish of *Falconeria insignis* on Casement Fabric**. Patent Published on 04 Dec 2020 with **Publication Number 201911021965**, Authors Dr Pooja Singh, Alka Goel and Manvika Sahgal

Students Guided

M.Sc. Students	21 completed	2 continuing
Ph.D. Students	6 Completed	4 continuing