

Biodata

Dr. PANKAJ KUMAR

M.Sc., Ph.D. (Microbiology)

Assistant Professor (Microbiology)
Department of Botany and Microbiology
School of Life Sciences
H.N.B. Garhwal University (A Central
University)
Srinagar Garhwal, Uttarakhand, India - 246174

Mobile No. **+91- 7696741518**

+91- 9412903453

e-mail: drkumarpankaj23@gmail.com



Educational Qualifications:

	Degree	Year	Institution/Board	Marks (%)	Division
1	NET (National Eligibility Test)	2014	ICAR (ASRB), New Delhi	-	Qualified
2	Ph. D. (Microbiology)	2012	G.K.V., Haridwar (Uttarakhand)	-	Awarded
3	M.Sc. (Microbiology)	2006	G.K.V., Haridwar (Uttarakhand)	74.69	First
4	B. Sc. (Botany – Honours)	2004	J.P. University, Chapra (Bihar)	69.50	First

Specialization: Rhizospheric Microbiology, Plant Microbe-Interactions, Nanotechnology, Microbial Biosurfactants, Biofertilizers, Vermi-composting, Antimicrobial activities of various plants extract

Ph.D. supervisor – Prof. R. C. Dubey, Department of Botany and Microbiology, Gurukul Kangri University, Haridwar, Uttarakhand

Employment History:

- H. N. B. Garhwal University (A Central University) (Since - **14/7/2023**)
Srinagar Garhwal, Uttarakhand, India
- **Associate Professor** (Since - **26/10/2018** to **13/7/2023**)
Department of Microbiology
Dolphin (PG) Institute of Biomedical and Natural Sciences
(Affiliated to H. N. B. Garhwal University (A Central University), Srinagar Garhwal, Uttarakhand, India)
Manduwala, Dehradun, Uttarakhand, India – 248007
- Assistant Professor (Since - **01/05/2017** to **25/10/2018**)
Deptt. of Medical Lab Technology
Pt. L.M. S. Govt. (PG) College, Rishikesh
(Course affiliated with H.N.B. Uttarakhand Medical Education University, Dehradun, India)
Dehradun, Uttarakhand, India – 249201
- Assistant Professor (Since - **10/09/2012** to **28/04/2017**)
Department of Microbiology
Dolphin (PG) College of Science & Agriculture
(Affiliated to Punjabi University, Patiala, Punjab, India).

Chunni Kalan, Fatehgarh Sahib, Near Chandigarh, Punjab, India - 140406

Extra curriculum:

1. Coordinator of Placement cell
2. Coordinator of Store and Assets management committee and
3. Member of R&D committee of Dolphin PG College of Sciences and Agriculture.

➤ **Experience: Teaching and Research: 11 Years**

➤ **Book Authored/Edited – 5**

(ANNEXURE 'A')

1. ELSEVIER, USA (2022)
2. Brillion Publishing, New Delhi, India (2022)
3. ELSEVIER, USA (2023)
4. Springer-Nature, Germany (2023)
5. De Gruyter, Germany (2024)

➤ **PUBLICATIONS (National and International): 56** ***(see ANNEXURE 'A1')***

➤ **Seminar/Hands on Training/Webinar Organized: 06** ***(see ANNEXURE 'B')***

➤ **16S rRNA gene Sequences submitted to NCBI: 09** ***(see ANNEXURE 'C')***

➤ **M.Sc. (Microbiology) students supervised: 61** ***(see ANNEXURE 'D')***

➤ **Served as External Examiner** ***(see ANNEXURE 'E')***

➤ **Scientific Conference/Seminar/Symposium/Webinar (National and International) Attended: 34**
(see ANNEXURE 'F')

➤ **Scientific Workshop/Hands-on-Training/Summer School: 12** ***(see ANNEXURE 'G')***

➤ **Brief Biodata** ***(see ANNEXURE 'H')***

UGC sponsored project: 03 years

Worked as Project Fellow in UGC sponsored project (Isolation, Identification, and Characterization of some rhizobia and their evaluation in the management of soil borne plant pathogens) at Department of Botany and Microbiology, G.K.V. Haridwar, Uttarakhand, from 01 May, 2008 to 31 March, 2011.

Administrative Experience:

Name of the Institution	Designation	Nature of Assignment	Dates/Periods		Length of Experience	
			From	To	Years	Months
Dolphin (PG) College of Science & Agriculture, Chunni kalan, Fatehgarh Saheb, Punjab, India	Coordinator of Placement Cell	Regular	15/5/2013	28/04/2017	3 Years	5 Months 2 Days

Dolphin (PG) College of Science & Agriculture, Chunni kalan, Fatehgarh Saheb, Punjab, India	Coordinator of Store and assets management	Regular	5/8/2013	28/04/2017	3 Years 2 Months 12 Days
Dolphin (PG) College of Science & Agriculture, Chunni kalan, Fatehgarh Saheb, Punjab, India	Centre Superintendent	Temporary	28/5/2013	28/5/2013	One day
University College, Chunnikalan, Fatehgarh sahib, Punjab	Centre Superintendent	Temporary	26/5/2014	27/5/2014	Two days

Invited lecture:

1. Delivered an invited lecture (02/04/2016) on “**Role of Microorganisms in Agriculture**” in the Department of Agriculture, Mata Gujri College, Fatehgarsh Sahib, Punjab (Autonomous College).
2. Delivered an invited webinar (29/10/2020) on “**Culture Media & their Application in Microbiology**” at College of Paramedical Science, Teerthanker Mahaveer University, Moradabad, UP.

Faculty Development Program (FDP): 05

1. Participated in 07 days (11 May – 17 May, 2016) **Internal Faculty development Program** organized by Dolphin (PG) College of Science & Agriculture, Chunni Kalan, Fatehgarh Saheb, Near Chandigarh, Punjab, India
2. Participated in 05 days (July 06 - 10, 2020) **e-Faculty Development Program** on Fostering Global Competencies among Faculty during COVID-19 organized by Internal Quality Assurance Cell (IQAC) of Amar Shaheed Baba Ajit Singh Jujhar Singh Memorial College, Bela (Ropar) Punjab -140111, India.
3. Participated in 15 days (January 13 - 27, 2021) **e-Faculty Development Program** by The National Institute for Entrepreneurship and Small Business Development (NIESBUD), Ministry of Skill Development and Entrepreneurship, Government of India, India.
4. Participated in 01 days (February 09 - 2021) **Faculty Development Program** on Project/Dissertation and Research paper writing skills, organized by Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, India.
5. Participated in 7 days (July 16 – 22, 2022) **Faculty Development Program** on ACADEMIC RESEARCH WRITING, organized by Teaching Learning Centre, Ramanujan College University of Delhi in collaboration with Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, India under the aegis of Ministry of Education Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching.

NPTEL course completed (FDP)

Completed 12 weeks (January to April 2020) NPTEL online certification program on **Applied Environmental Microbiology** certified by Indian Institute of Technology (IIT), Roorkee, Haridwar, Uttarakhand, India

Members of Professional Bodies:

- Life member of Association of Microbiologists (AMI) of India (ID - 3305-2012)
- Life member of The Indian Science Congress Association (ID – L26852)
- Member of Indian Botanical Society for the year 2007-2008, 2008-2009 and 2011-2012.

Member of Editorial Board of Scientific Journals:

- Academic Editor of Plant Cell Biotechnology and Molecular Biology (PCBMB)
- Academic Editor of Journal of Advances in Microbiology (JAMB)
- Academic Editor of Biotechnology Journal International (BJI)
- Editor of Food Science & Nutrition Technology (FSNT).

- Academic Editor of Asian Journal of Soil Science and Plant Nutrition (AJSSPN).
- Associate Editor of Horticulture International Journal (HIJ).

Reviewer of the Scientific Journals (National and International):

• Current Science	• Journal of Food Biochemistry
• Annals of Microbiology	• British Microbiology Research Journal
• Ecological Engineering	• Rhizosphere
• Canadian Journal of Microbiology	• Indian Journal of Geo-Marine Science
• Brazilian Journal of Microbiology	• Scientific Reports
• Frontiers in Microbiology	• African Journal of Microbiology Research
• Journal of the Saudi Society of Agricultural Sciences	• Asian Journal of Soil Science and Plant Nutrition
• Horticulture International Journal	▪ International Journal of Plant Production
• Plos One	▪ Microbial Cell Factories
• International J of Vegetable Science	▪ Seminar in Cancer Biology
• International J of Biological Macromolecules	▪ Current Research in Microbial Sciences
• Heliyon	▪ Journal of King Saud University

Extra Curriculum:

1. Qualified the 41st Annual All India General Knowledge Test Conducted by All India Board of General Knowledge Test, a wing of United State Organization (USO), on 30th Nov, 1991, held at Sahu Jain High School, Mirganj, Gopalganj, Bihar, India (80% marks).

ANNEXURE 'A' (Book Published/Edited)

1. **Rhizosphere Engineering**
Editors - Prof. R. C. Dubey and Pankaj Kumar
ISBN- 9780323899734
Publisher – Academic Press, Elsevier, USA, (2022)
2. **An Objective Compendium on FOOD SCIENCE**
ISBN- 978-9392725241
Authors - Ajay Singh, Pankaj Kumar and Pradyuman Kumar
Publisher – Brillion Publishing, New Delhi, India (2022)
3. **Macrophomina phaseolina: Ecobiology, Pathology and Management**
ISBN- 978-0-443-15443-0
Editors - Pankaj Kumar and Prof. R. C. Dubey
Publisher – Academic Press, Elsevier, USA (2023)
4. **Multifunctional Microbial Biosurfactants**
ISBN- 978-3-031-31229-8
Editors - Pankaj Kumar and Prof. R. C. Dubey
Publisher – SPRINGER-NATURE, Germany (2023)
5. **Microbial Oxidative Enzymes: Biotechnological Applications**
ISBN- 978-3-11-106172-6
Editors – Arti Gupta and Pankaj Kumar
Publisher – DE GRUYTER, Germany (2024) *Under production*

ANNEXURE 'A1'

PUBLICATIONS – 56

Research/Review Paper – 40

1. **Pankaj Kumar**, R. C. Dubey and D. K. Maheshwari (2012) *Bacillus* strains isolated from rhizosphere showed plant growth promoting and antagonistic activity against phytopathogens. *Microbiological Research*. 167(8): 493– 499. (Elsevier)
(PUBMED: 22677517) (ISSN: 0944-5013) (NAAS rating-2023: 11.42) (Scopus indexed) (Impact Factor: 6.7)
2. **Pankaj Kumar**, S. Khare and R. C. Dubey (2012) Diversity of Bacilli from disease suppressive soil and their role in plant growth promotion and yield enhancement. *New York Science Journal* 5(1): 90-111.
(ISSN: 1554-0200) (Marsland Press)
3. **Pankaj Kumar** and R. C. Dubey (2012) Plant growth promoting rhizobacteria for biocontrol of phytopathogens and yield enhancement of *Phaseolus vulgaris* L. *Journal of Current Perspectives in Applied Microbiology* 1: 6-38. (ISSN : 2278-1250) (Periyar University, Tamilnadu, India)
4. R. C. Dubey, S. Khare, **Pankaj Kumar**, Poonam Dubey and D. K. Maheshwari (2013) Evaluation of diversity of Bacilli from Chick-pea rhizosphere by 16S ARDRA and assessment of their plant growth promoting attributes. *Archives of Phytopathology and Plant Protection*. 46(19): 2323-2340.
(Cite Score: 1.3) (ISSN: 0323-5408) (Scopus indexed) (Taylor and Francis)
5. R. C. Dubey, S. Khare, **Pankaj Kumar** and D. K. Maheshwari (2014) Combined effect of chemical fertilizers and rhizosphere-competent *Bacillus subtilis* BSK17 on yield of *Cicer arietinum*. *Archives of Phytopathology and Plant Protection*. 47(19):2305–2318
(Cite Score: 1.3) (ISSN: 0323-5408) (Scopus indexed) (Taylor and Francis)
6. **Pankaj Kumar**, N. Kaushal and R. C. Dubey (2015) Isolation and identification of Plant Growth Promoting Rhizobacteria (*Pseudomonas* spp.) and their effect on growth promotion of *Lycopersicon esculentum* L. *Academia Arena*.7(5):44-51.
(ISSN: 1553-992X) (Marsland Press)
7. Jitendra Kumar, **Pankaj Kumar** and R.K.S. Kushwaha (2015) Feather waste degradation by keratinophilic fungi: An alternative source for protein and aminoacids. *Advances in Applied Science Research* 6 (11): 160-164. (ISSN: 0976-8610) (Pelagia Research Library)
8. **Pankaj Kumar**, R. C. Dubey, D. K. Maheshwari, Y.H. Park and V. K. Bajpai (2016) Isolation of Plant Growth Promoting *Pseudomonas* sp. PPR8 from the rhizosphere of *Phaseolus vulgaris* L. *Archives of Biological Sciences*. 68(2): 363-374. (Serbian Biological Society)
(ISSN: 0354-4664) (NAAS rating-2023: 6.96) (Scopus indexed) (Impact Factor: 0.956)
9. **Pankaj Kumar**, Jitendra Kumar, Raghuvver Kumar and R. C. Dubey (2016) Studies on phytochemical constituents and antimicrobial activities of leaves, fruits and stems of *Solanum nigrum* L. *Asian Journal of Plant Science & Research*. 6(4):57-68.
(ISSN: 2249-7412) (Pelagia Research Library)
10. **Pankaj Kumar**, R. C. Dubey, D. K. Maheshwari and V. K. Bajpai (2016) ACC deaminase producing *Rhizobium leguminosarum* RPN5 isolated from root nodules of *Phaseolus vulgaris* L. *Bangladesh Journal of Botany*. 45(3): 477-484 (Bangladesh Botanical Society)
(ISSN 0253-5416 (Print) (NAAS rating-2023: 6.34) (Scopus indexed) (Impact Factor: 0.308)
11. **Pankaj Kumar**, Piyush Pandey, R. C. Dubey and D.K. Maheshwari (2016) Bacteria consortium optimization improves nutrient uptake, nodulation, disease suppression and growth of the common bean (*Phaseolus vulgaris*) in both pot and field studies. *Rhizosphere*.2:13-23. (Elsevier)
(NAAS rating-2023: 9.44) (ISSN: 2452-2198) (Scopus indexed) (Impact Factor: 3.7)

12. Jitendra Kumar, Anchal Sharma, **Pankaj Kumar**, R.K.S. Kushwaha (2017) Enhancement of soil nutrition using fermented feather and their efficacy on seed germination. *International Journal of Pure and Applied Bioscience*. 5 (1): 92-98
(NAAS rating-2023: 4.74) (ISSN: 2320-7051) ([Vital Biotech, India](#))
13. **Pankaj Kumar**, Sapna Negi, Nisha Bharti and Jitendra Kumar (2017) Effect of Phosphate solubilizing Bacteria and their consortium on the growth of *Vigna radiata* L. *International Journal on Biological Sciences*. 8(1): 23-31.
(NAAS rating-2023: 3.14) (ISSN: 0976-4518) ([NESA, New Delhi](#))
14. V. K. Bajpai, S. Shukla, W. K. Paek, J. Lim, P. Kumar, **Pankaj Kumar** and M.K. Na (2017). Efficacy of (+)-Lariciresinol to Control Bacterial Growth of *Staphylococcus aureus* and *Escherichia coli* O157:H7. *Frontiers in Microbiology*. 8:804. doi: 10.3389/fmicb.2017.00804. ([Frontiers](#))
(ISSN: 1664-302X) (NAAS rating-2023: 12.06) (*Scopus indexed*) (**Impact Factor: 6.064**)
15. **Pankaj Kumar**, S. Thakur, G.K. Dhingra, Abha Singh, M. K. Pal, K. Harshvardhan, R.C. Dubey and D.K. Maheshwari (2018) Inoculation of Siderophore producing rhizobacteria and their consortium for growth enhancement of wheat plant. *Biocatalysis and Agricultural Biotechnology*, 15: 264-269. <https://doi.org/10.1016/j.bcab.2018.06.019>. ([Elsevier](#))
(Cite Score: 8.4) (ISSN: 1878-8181) (*Scopus indexed*) (**Impact Factor: 4.0**)
16. **Pankaj Kumar**, Pawan Sharma, T.R. Kumar, H.C. Sharma and R. C. Dubey (2020) Effect of storage conditions on vermicompost quality. *Current Science*, 118(2): 297-300.
([Current Science Association and Indian Academy of Sciences](#))
(ISSN: 0011-3891) (NAAS rating-2023: 7.17) (*Scopus indexed*) (**Impact Factor: 1.169**)
17. Deepika Singla, Ajay Singh, Sanju Bala Dhull, Pradyuman Kumar, Tanu Malik and **Pankaj Kumar** (2020) Taro Starch: Isolation, morphology, modification and novel applications concern – A review. *International Journal of Biological Macromolecules*, 163:1283–1290. ([Elsevier](#))
(ISSN: 0141-8130) (NAAS rating-2023: 14.03) (*Scopus indexed*) (**Impact Factor: 8.2**)
18. Jitendra Kumar, **Pankaj Kumar**, R.K.S Kushwaha (2020) Recycling of Chicken Feather Protein into Compost by *Chrysosporium indicum* JK14 and their effect on the Growth Promotion of *Zea mays*. *Plant Cell Biotechnology and Molecular Biology*, 21(37-38): 75-80. ([International Knowledge Press](#))
(ISSN: 0972-2025) (*Scopus indexed*) (NAAS rating-2023: 4.88)
19. **Pankaj Kumar**, Vikas Pahal, A. Gupta, R. Vadhan, H. Chandra, R.C. Dubey (2020) Effect of silver nanoparticles and *Bacillus cereus* LPR2 on the growth of *Zea mays*. *Scientific Reports*, 10(1), 20409. ([Nature Publishing Group](#))
(ISSN: 2045-2322) (NAAS rating-2023: 11.00) (*Scopus indexed*) (**Impact Factor: 4.996**)
20. **Pankaj Kumar**, A. Aeron, N. Shaw, A. Singh, V.K. Bajpai and R.C. Dubey (2020) Seed bio-priming with tri-species consortia of phosphate solubilizing rhizobacteria (PSR) and its effect on plant growth promotion. *Heliyon*, 6, e05701. ([Elsevier, Cell Press](#))
(ISSN: 2405-8440) (NAAS rating-2021: 9.78) (*Scopus indexed*) (**Impact Factor: 4.0**)
21. Aditi Sharma, Kritika Rawat, Priyanka Jattan, Pradyuman Kumar, Ozlem Tokusoglu, **Pankaj Kumar**, H. Vural, A. Singh (2021) Formula Refining Through Composite Blend of Soya, Alfalfa and Wheat Flour; A Vegan Meat Approach, *Journal of Food Processing and Preservation*; 46 (5): e15235. ([Wiley](#))
(ISSN: 0145-8892) (NAAS rating-2023: 8.61) (*Scopus indexed*) (**Impact Factor: 2.609**)

22. N. Saini, N. G. A. Kumar, H. C. Pant, I. Rautela and **Pankaj Kumar (2021)** Mass clonal propagation of *Mucuna Pruriens (Fabaceae)* and an assesment of its phytochemical properties. *Plant Cell Biotechnology and Molecular Biology*, 22(33&34):274-287. (International Knowledge Press)
(ISSN: 0972-2025) (NAAS rating-2023: 4.88)
23. Harsha Pal, Ramandeep Kaur, **Pankaj Kumar**, Manju Nehra, Kritika Rawat, Nishant Grover, Ozlem Tokusoglu, Loveleen Kaur Sarao, Sandeep Kaur, Tanu Malik, Ajay Singh, Rajan Swami (2021) Process parameter optimization for development of beer: Star fruit fortified approach, *Journal of Food Processing and Preservation*, e15838. (Wiley)
(ISSN: 0145-8892) (NAAS rating-2023: 8.61) (Scopus indexed) (Impact Factor: 2.609)
24. **Pankaj Kumar**, A. K. Rai, A. Gupta, H. Phukon, A. Singh, D. Kalita, S. Sharma, K. Harshvardhan, R. C. Dubey (2021) Pesticide-Degrading and Phosphate-Solubilizing Bacilli Isolated from Agricultural Soil of Punjab (India) Enhance Plant Growth, *Microbiology*, 90(6): 848-856. (Springer)
(Print ISSN: 0026-2617) (NAAS rating-2021: 7.51) (Scopus indexed) (Impact Factor: 1.511)
25. V. Pahal, **Pankaj Kumar**, P. Kumar, V. Kumar (2022) Antibacterial activity and hormetic response of silver nanoparticles synthesized using leaflet extract of wheat (*Triticum aestivum*) and rice (*Oryza sativa*) crop plants. *Journal of Applied Biology and Biotechnology*. 10(02):154–167.
(Print ISSN: 2455-7005) (Scopus indexed)
26. V. Pahal, **Pankaj Kumar**, P. Kumar, V. Kumar (2022) Phytofabrication of gold and bimetallic gold-silver nanoparticles using water extract of wheatgrass (*Triticum aestivum*), their characterization and comparative assessment of antibacterial potential. *Plant Science Today*. 9(2): 345–356.
(eISSN: 2348-1900) (NAAS rating-2021: 5.44) (Scopus indexed)
27. N. Saini, Y. Ali, A. Thapa, P. Bankoti, A. Sharma, P. Sharma, A. Kaur, N. Gaurav* and **Pankaj Kumar*** (2022) Pathophysiology of SARS - nCOV-2: Structure, Mode of Infection and Possible Treatments. *Plant Cell Biotechnology and Molecular Biology*, 23(9-10), 44-56.
(International Knowledge Press)
(ISSN: 0972-2025) (NAAS rating-2023: 4.88)
28. N. Gaurav, A. Thapa, Y. Ali, A. Kulshrestha, N. Saini, P. K. Joshi, H. Rawat, A. Kaur, and **Pankaj Kumar*** (2022) Effects of Corona Pandemic on Global Environment and Economy. *Biotechnology Journal International* 26(1): 40-55.
(ISSN: 2456-7051) (NAAS rating-2023: 4.57)
29. V. Pahal, **Pankaj Kumar**, R. Kumar, P. Kumar, V. Kumar (2022) Characterization and comparative assessment of bactericidal activity of carbon nanodots (CDs) and nanoparticles (CNPs) prepared from soot's of clarified butter and mustard oil, respectively. *Journal of Applied Biology and Biotechnology*, Online available.
(Print ISSN: 2455-7005) (Scopus indexed)
30. **Pankaj Kumar***, R. C. Dubey and A. K. Rai (2022) Plant growth promoting and antagonistic *Enterobacter* sp. EPR4 from common bean rhizosphere of garhwal himalayan inhibits a soil-borne pathogen *Sclerotinia sclerotiorum*. *Plant Science Today*, 9(4): 837–843.
(Print ISSN: 2455-7005) (NAAS rating-2023: 5.44) (Scopus indexed)
31. S. Kumari, **Pankaj Kumar***, S. Kiran, S. Kumari, and A. Singh (2022) Optimization of Siderophore Production by *Bacillus Subtilis* DR2 and its effect on Growth Promotion of *Coriandrum sativum*. *Russian Agricultural Sciences*. (Springer-Nature) 48(6): 467–475.
(Print ISSN: 1068-3674) (Web of Science indexed)
32. H. Kaur, Tashima, S. Singh and **Pankaj Kumar*** (2023) Reconditioning of plant metabolism by arbuscular mycorrhizal networks in cadmium contaminated soils. *Microbiological Research*, 268: 127293.

(PUBMED: 36586201) (ISSN: 0944-5013) (Scopus indexed) (NAAS rating-2023: 11.42) (Impact Factor: 6.7)

33. S. Kumari, **Pankaj Kumar***, S. Kiran, S. Kumari, and A. Singh (2023) Characterization of culture condition dependent, growth responses of phosphate solubilizing bacteria (*Bacillus subtilis* DR2) on plant growth promotion of *Hordeum vulgare*. *Vegetos* (Springer-Nature) <https://doi.org/10.1007/s42535-023-00589-2>

(Print ISSN: 2229-4473) (NAAS rating-2023: 5.27) (Scopus indexed)

34. B Naik, V Kumar*, S Rizwanuddin, M Chauhan, M Choudhary, AK Gupta, **Pankaj Kumar**, V Kumar, PEJ Saris*, MA Rather, S Bhuyan, PR Neog (2023) Genomics, proteomics, and metabolomics approaches to improve abiotic stress tolerance in tomato plant. *International Journal of Molecular Sciences* (MDPI). 24(3): 3025.

(ISSN: 1422-0067) (Scopus indexed) (Impact Factor: 6.208)

35. N Kumar, A Yadav, G Singh, A Singh, **Pankaj Kumar**, N K. Aggarwal (2023) Comparative study of ethanol production from sodium hydroxide pretreated rice straw residue using *Saccharomyces cerevisiae* and *Zymomonas mobilis*. *Archives of Microbiology*, 205,146.

(ISSN: 0302-8933) (Scopus indexed) (NAAS rating-2023: 8.67) (Impact Factor: 2.8)

36. G. Singh, A. K. Singh, **Pankaj Kumar***, and M. Mandal (2023) Effect of Bio-decolorised Spent Wash on Plant Growth Promotion. *Russian Agricultural Sciences* (Springer-Nature). 49(1): 20–27.

(Print ISSN: 1068-3674) (NAAS rating-2023: 5.44) (Web of Science indexed)

37. H C Pant, I Rautela, H V Pant, A Kumar, **Pankaj Kumar**, K Fatima and N Gaurav (2023) Comparison of Antioxidant properties and flavonoids of Natural and *In vitro* cultivated *Nardostachys jatamansi*. *Agricultural Science Digest*, doi10.18805/ag.D-5654.

(Print ISSN: 0976-0547) (NAAS rating-2023: 4.75) (Web of Science indexed)

38. K. Rajput, B. Chauhan, R. C. Dubey and **Pankaj Kumar** (2023) Antimicrobial Activity of Some Spices against Potential Probiotic Bacteria Isolated from Raw Sheep Milk. *Current Journal of Applied Science and Technology*, 42(29): 1-11

(ISSN: 2457-1024) (NAAS rating-2023: 4.71)

39. H. Kaur, S.J. Hussain, R. A. Mir, V. C. Verma, B. Naik, **Pankaj Kumar***, R.C. Dubey (2023) Nanofertilizers – Emerging smart fertilizers for modern and sustainable agriculture. *Biocatalysis and Agricultural Biotechnology*, 54, 102921.

(ISSN: 1878-8181) (Cite Score: 8.4) (Scopus indexed) (Impact Factor: 4.0)

40. B. Prasad, D. Sharma, **Pankaj Kumar**, R. C. Dubey (2023) Biocontrol potential of *Bacillus* spp. for resilient and sustainable agricultural systems. *Physiological and Molecular Plant Pathology*, 128, 102173.

(ISSN: 1096-1178) (NAAS rating-2023: 8.74) (Scopus indexed) (Impact Factor: 2.7)

Book Chapter: 14

1. S. Kumar, **Pankaj Kumar**, R. C. Dubey and D.K. Maheshwari (2012) Ecofriendly and economically viable integrated nutrient management for sustainable agriculture. *In: Bioremediation of Pollutants* (eds. D.K. Maheshwari and R.C. Dubey), I.K. International Pub. House Pvt. Ltd., New Delhi, pp 279-298.

(ISBN: 978-93-81141-05-2)

2. **Pankaj Kumar*** and R. C. Dubey (2016) Bacilli as Bioinoculants for Sustainable Agriculture and its Challenges. *In: Biotechnology in India: Initiatives and Accomplishments* (eds. Niladri Bag, Ramar Murugan and Arundhati Bag), New India Publishing Agency, New Delhi, pp 89-109.

(ISBN: 978-93-85516-25-2)

3. Rishendra Kumar, **Pankaj Kumar**, Anchal Giri (2019) Regional impact of psychrophilic bacteria on bioremediation. *In: Smart Bioremediation Technologies: Microbial Enzymes* (ed. Pankaj Bhatt), Academic Press, Elsevier, USA, pp 119-135, DOI: 10.1016/B978-0-12-818307-6.00007-X, pp 119-136.
(ISBN: 978-0-12-818307-6)
4. Jitendra Kumar, **Pankaj Kumar**, R.K.S Kushwaha (2021) Significance of keratinophiles in biofertilizer development from keratinous waste: Upcoming perspective. *In: Biofertilizers: Advances in Bioinoculants* (Ist volume) (eds. Amitava Rakshit Vijay Meena Manoj Parihar H.B. Singh A.K. Singh), Woodhead Publishing, Elsevier, <https://doi.org/10.1016/B978-0-12-821667-5.00006-3>. pp. 95-101.
(ISBN: 9780128216675)
5. Sapna Negi, **Pankaj Kumar***, Jitendra Kumar, Ajay Singh and Ramesh Chandra Dubey (2022) Indigenous nitrogen fixing microbes engineer rhizosphere and enhance nutrient availability and plant growth. *In: Rhizosphere Engineering* (eds. Ramesh Chandra Dubey and Pankaj Kumar), Academic Press, Elsevier, USA, pp 19-43.
(ISBN: 9780323899734)
6. S. Garg, Payal, **Pankaj Kumar** (2022) Barnyard Millet (*Echinochloa Frumentacea*); Chemistry, Nutritional Attributes, Processing Innovations, Traditional and Modern Foods and Beverages, Antinutrition and Health Benefits *In: Small Millets and Pseudo Cereals for Nutritional & Health Security*, (eds. G. K. Sharma, P.M. Muthaiah, and J. R.Xavier), NIPA, New Delhi, India. pp. 141-161.
(ISBN: 978-93-90591-63-3)
7. S. Goel, **Pankaj Kumar**, M. Sain and Ajay Singh (2022) Anaerobic Treatment of Food Processing Wastes and Agricultural Effluents. *In: Food processing waste and utilization: Tackling pollution and enhance product recovery*. (eds. S. B. Dhull, A. Singh and P. Kumar), CRC press. pp. 313-328.
(ISBN: 9781032062945)
8. B. Jangra, P. Bhadrecha, **Pankaj Kumar** and J. Kumar (2023) Decoding beneficial plant microbe association with latest techniques for sustainable agriculture. *In: Plant Microbiome for Plant Productivity and Sustainable Agriculture* (eds. S. Chhabra, R. Prasad, N. R. Maddela, and N. Tuteja) Springer-Nature, Germany. pp. 227–244.
(ISBN: 978-981-19-5028-5)
9. A. Sharma, **Pankaj Kumar*** V. Pahal, J. K. and S. S. Pandey (2023) Endophytic phytohormone production and utilization of functional traits in plant growth promotion. *In: Plant Microbiome for Plant Productivity and Sustainable Agriculture* (eds. S. Chhabra, R. Prasad, N. R. Maddela, and N. Tuteja) Springer-Nature. Germany. pp. 365–385.
(ISBN: 978-981-19-5028-5)
10. H. Chaudhary, **Pankaj Kumar** and R. C. Dubey (2023) Mechanism of disease development in host plants by *Macrophomina phaseolina*. *In: Macrophomina phaseolina: Ecobiology, Pathology and Management* (eds. **Pankaj Kumar** and R. C. Dubey), Academic Press, Elsevier, USA., pp. 133-154.
(ISBN: 978-0-443-15443-0)
11. S. Kumar, V. Kumar, **Pankaj Kumar** and R. C. Dubey (2023) Survival of *Macrophomina phaseolina* in plant tissues and soil. *In: Macrophomina phaseolina: Ecobiology, Pathology and Management* (eds. **Pankaj Kumar** and R. C. Dubey), Academic Press, Elsevier, USA, pp. 205-224.
(ISBN: 978-0-443-15443-0)
12. Sumit Kumar, **Pankaj Kumar** and R. C. Dubey (2023) Biosurfactants: Role in plant growth promotion and disease management *In: Multifunctional Microbial Biosurfactants* (eds. **Pankaj Kumar** and R. C. Dubey) Springer-Nature, Germany. pp 213–229
(ISBN: 978-3-031-31229-8)

13. H. Kaur, **Pankaj Kumar**, A. Cheema, S. Kaur and S. Singh and R. C. Dubey (2023) Biosurfactants as promising surface-active agents: Current understanding and applications. *In: Multifunctional Microbial Biosurfactants* (eds. **Pankaj Kumar** and R. C. Dubey) Springer-Nature, Germany. pp 271–306.

(ISBN: 978-3-031-31229-8)

14. R. Sathya, R. Varghese, M. V. Arasu, V. Csaba, **Pankaj Kumar**, R.C. Dubey (2024) Agro-food industrial residues into enzymes and other products using solid-state fermentation. . *In: Microbial Oxidative Enzymes: Biotechnological Applications* (eds. Arti Gupta and **Pankaj Kumar**) De Gruyter, Germany. pp 281–300.

(ISBN- 978-3-11-106172-6)

Popular Article: 01

1. **Pankaj Kumar** (2017) Krishi me Sukshamjiv ka Mahatav (in Hindi), Publisher – Kheti Duniya, Patiala, Punjab, India, Volume 33, Page No., 05; Date, 16.12.2017.

Article in Training Manual: 01

1. **Pankaj Kumar** (2022) Water borne diseases (pp. 22-26). *In: A three days (9-11 November, 2022) Hands on Training on Microbiological Analysis of Water*, organized by Department of Microbiology, Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, Uttarakhand, India and sponsored by USERC, Dehradun, Uttarakhand.

ANNEXURE 'B'

Seminar/Hands on Training Organized/Webinar - 08

2. Co-Organising Secretary of the Two days (19-20 Feb. 2015) Hands on Training on 'Downstream Processing of Enzymes' organized by Department of Biotechnology, Dolphin (PG) College of Science & Agriculture (Affiliated to Punjabi University, Patiala, Punjab) Chunni Kalan, Fatehgarh Sahib, Near Chandigarh, Punjab, India
3. Co-Organising Secretary of the one day (07 April. 2015) National seminar on "Relevance of Microbes in Public Health: Challenges & Elucidations" organized by Dolphin (PG) College of Science & Agriculture (Affiliated to Punjabi University, Patiala, Punjab) Chunni Kalan, Fatehgarh Sahib, Near Chandigarh, Punjab, India
4. Executive member of organizing committee of one day (30 September, 2016) National symposium on "Forensic Biotechnology" organized by Institute of Forensic Science and Criminology (IFSC), Panjab Univeristy, Chandigarh and Association of Microbiologist of India (Chandigarh Unit).
5. Member of organizing committee of two days (19-20 November, 2016) National conference on Food Security issues and Environmental Challenges for Indian Agriculture in the next decades and XXIX Annual conference of National Environmental Science Academy (NESA), New Delhi, jointly organized by NESA and Dolphin (PG) College of Science & Agriculture (Affiliated to Punjabi University, Patiala, Punjab) Chunni Kalan, Fatehgarh Sahib, Near Chandigarh, Punjab, India.
6. Member of organizing committee of two days (18-19 October, 2019) National conference on Advancement in Food Microbiology, organized by Department of Microbiology and Horticulture, Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, Uttarakhand, India.
7. Organizing secretary of one day (26 June, 2020) Webinar on "Vedic Microbiology in today's world: Preparing for a new normal" organized by Department of Microbiology, Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, Uttarakhand, India.
8. Coordinator of One day (17 September, 2022) Intradepartmental quiz competition on the occasion of

International Microorganism Days, organized by Department of Microbiology, Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, Uttarakhand, India.

9. Member of organizing committee of three days (9-11 November, 2022) Hands on Training on Microbiological Analysis of Water, organized by Department of Microbiology, Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, Uttarakhand, India and sponsored by USERC, Dehradun, Uttarakhand.

ANNEXURE 'C'

16S rRNA gene Sequences submitted to NCBI: 09

S. No.	Strains Name	NCBI GenBank Accession number
1	<i>Rhizobium leguminosarum</i> RPN-5	JN180926
2	<i>Bacillus</i> sp. BPR-7	JN208240
3	<i>Pseudomonas</i> sp. PPR-8	JN225423
4	<i>Enterobacter</i> sp. EPR-4	JN225424
5	<i>Aneurinibacillus aneurinilyticus</i> WBC1	KX954217
6	<i>Aeromonas</i> sp. WBC4	KX954216
7	<i>Pseudomonas</i> sp. WBC10	KX954215
8	<i>Bacillus safensis</i> SWP5	MN239493
9	<i>Bacillus</i> sp. SWP1	MN239494

ANNEXURE 'D'

M.Sc. (Microbiology) students supervised: 61

S. No.	Thesis titles	Students Name	Year
Dolphin (PG) College of Science & Agriculture. Chunni Kalan, Near Chandigarh, Punjab			
1	Isolation and characterization of Plant Growth Promoting Rhizobacteria (<i>Pseudomonas</i> spp.) from rice growing in Punjab	Preeti Sehgal	2013
2	Screening of Plant Growth Promoting Rhizobacteria (<i>Pseudomonas</i> spp.) from <i>Lycopersicon esculentum</i> L.	Neha Kaushal	2013
3	Bioremediation of Phenol by fungi.	Sunil Bhatti	2013
4	Phenotypic characterization of Plant Growth Promoting Rhizobacteria (<i>Bacillus</i> spp.) isolated from wheat growing in Punjab.	Hardeep Kumar	2013
5	Isolation and Characterization of Bacteria (<i>Azotobacter</i> spp.) from chilli rhizosphere for different plant growth promoting activities.	Sandeep Kaur	2013
6	Isolation and Identification of Phosphate solubilizing Bacteria (<i>Bacillus</i> spp.) and their effect on the growth of <i>Zea mays</i> L.	Nisha Bharti	2014
7	Characterization of Phosphate solubilizing Bacteria (<i>Pseudomonas</i> spp.) and their effect on the growth of <i>Vigna radiata</i> L.	Sapna Negi (NET qualified)	2014
8	Study of Phosphate solubilizing Bacteria (<i>Burkholderia gladioli</i> , <i>Pseudomonas</i> sp. and <i>Bacillus subtilis</i>) on the growth of <i>Trigonella foenum-graecum</i> L. and <i>Lycopersicon esculentum</i> L.	Niru Shaw (NET qualified)	2014
9	Study of Phosphate solubilizing Bacteria (<i>Bacillus subtilis</i> , <i>Bacillus cereus</i> and <i>Pseudomonas</i> sp.) on the growth of <i>Trigonella foenum-graecum</i> L. and <i>Lycopersicon esculentum</i> L.	Rajveer Kaur	2014
10	Study on effect of Phosphate solubilizing Bacteria (<i>Burkholderia gladioli</i> , <i>Pseudomonas</i> sp. and <i>Bacillus subtilis</i>) on growth of <i>Triticum aestivum</i> L. and <i>Capsicum annum</i> L.	Madhu Kumari	2014
11	Study on effect of Phosphate solubilizing Bacteria (<i>Bacillus koreensis</i> , <i>Burkholderia</i> sp. and <i>Bacillus cereus</i>) on growth of <i>Triticum aestivum</i> L. and <i>Capsicum annum</i> L.	Alka Sharma	2014
12	Study of Phosphate solubilizing Bacteria (<i>Pseudomonas</i> sp. <i>Burkholderia</i> sp. and	Kazi Ajjunisha	2014

	<i>Bacillus subtilis</i>) on the growth of <i>Lycopersicon esculentum</i> L. and <i>Trigonella foenum-graecum</i> L.		
13	Study of Phosphate solubilizing Bacteria (<i>Bacillus koreensis</i> , <i>Burkholderia</i> sp. and <i>Bacillus cereus</i>) on the growth of <i>Lycopersicon esculentum</i> L. and <i>Trigonella foenum-graecum</i> L.	Shilpa	2014
14	Study on effect of Phosphate solubilizing Bacteria (<i>Bacillus subtilis</i> , <i>Pseudomonas</i> sp. and <i>Bacillus cereus</i>) on the growth of <i>Triticum aestivum</i> L. and <i>Capsicum annum</i> L.	Ajay Kumar	2014
15	Isolation and identification of Siderophore producing Bacteria with antagonistic activity against <i>Fusarium solani</i> .	Sachin Thakur	2015
16	Phytochemical and antibacterial activities of <i>Solanum nigrum</i> growing in Punjab.	Raghuveer Kumar	2015
17	Phytochemical screening and antibacterial activities of leaves and bark extract of <i>Azadirachta indica</i> growing in Punjab.	Anukriti Kumari	2015
18	Study on effect of Siderophore producing Bacteria on Plant Growth Promotion of Rice growing in Punjab.	Sayiema Ali	2015
19	Study of Phosphate solubilizing Bacteria (<i>Pseudomonas</i> sp. <i>Burkholderia</i> sp. and <i>Bacillus subtilis</i>) on the growth of <i>Triticum aestivum</i> L. and <i>Capsicum annum</i> L.	Gurinder Singh	2016
20	Screening of Pesticide degrading Plant Growth Promoting Bacteria (PGPB).	Shivani Sharma	2016
21	Isolation of Pesticide degrading Plant Growth Promoting Bacteria (PGPB) from wheat growing in Punjab (Bathinda).	Amrik Singh	2016
22	Study of Vermicomposting Production from different waste and their storage condition on Vermicompost quality. (In collaboration with Dr. Pawan Sharma, ICAR-Indian Institute of Soil and Water Conservation, Chandigarh)	Tilak Ranjan Kumar	2016
23	Preparation of Vermicompost using cow dung and vegetable/ fruit waste and its biochemical and microbial study	Ankita Sharma	2017
24	Screening of potential PGPR to study the effect of Silver nanoparticles and PGPR on growth of maize (<i>Zea mays</i> L.)	Ruchi Vadhan	2017
25	Isolation of potential PGPR for growth enhancement of OKRA (<i>Abelmoschus esculentus</i>)	Rachna	2017
26	Isolation of Potential PGPR for growth enhancement of Summer squash (<i>Cucurbita pepo</i>)	Aanchal Jamwal	2017
27	“Preparation of Vermicompost using buffalo dung and vegetable/ fruit waste and its biochemical and microbial study”	Swati Suman	2017
28	To study the phytochemicals and antimicrobial activity of <i>Ricinus communis</i>	Kiran	2017
29	To study the phytochemicals and antimicrobial activity of <i>Neolamarckia cadamba</i> and <i>Malvastrum coromandelianum</i> leaves	Anil	2017
30	Phytochemical analysis and antimicrobial activity of <i>Pongamia pinnata</i>	Sandeep Kaur	2017
31	Study of phytochemicals and antimicrobial activity of <i>Ageratum conyzoides</i> leaves and flowers extracts against various pathogenic bacteria	Mukesh Kumar	2017
Pt. LMS Govt. (PG) College, Rishikesh, Dehradun			
32	Screening of plant growth promoting rhizobacteria (PGPR) from coriander and their effect on seed germination of <i>Abelmoschus esculentus</i> L. (Co-supervisor) Supervisor – Dr. G.K. Dhingra, Pt. LMS Govt. (PG) College, Rishikesh, Dehradun	Akshita Uniyal (M.Sc. Botany)	2018
33	Isolation and Identification of Plant Growth Promoting Rhizobacteria (PGPR) and their effects on seed germination of <i>Solanum melongena</i> L. (Co-supervisor) Supervisor – Dr. G.K. Dhingra, Pt. LMS Govt. (PG) College, Rishikesh, Dehradun	Anjali Kathait (M.Sc. Botany)	2018
Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun			
34	Screening of Plant Growth Promoting Rhizobacteria (PGPR) from <i>Malus domestica</i> (Apple)	Aahuti Sharma (NET qualified)	2019
35	Production of Bioplastic from Microorganism	Ankita Saklani	2019
36	Isolation and Identification of Plant Growth Promoting Rhizobacteria (PGPR) from rhizosphere of <i>Brassica juncea</i> and their effects on growth promoting of <i>Glycine max</i>	Chandni Bisht	2019
37	Isolation And Characterization of Plant Growth Promoting Rhizobacteria (PGPR) from turmeric (<i>Curcuma longa</i> L.)	Lovely Gahlot	2019
38	Screening of Plant Growth Promoting Rhizobacteria from the rhizosphere of <i>Spinacia oleracea</i>	Preeti Pundir	2019
39	Water Testing of Pharmaceutical Industry (co-supervisor) (Place of work - Origin Formulations (P) Ltd, Kotdwar)	Rashmi Gusain	2019

40	Microbiological analysis of Water in Pharmaceutical Products (co-supervisor) (Place of work - Uni Medicolabs, Dehradun)	Ravi Singh	2019
41	Microbial analysis of Water in Pharmaceutical Plant (co-supervisor) (Place of work - Ved Lifesavers (P) Ltd, Dehradun)	Shivani Chauhan	2019
42	Phenotypic characterization of PGPR isolated from herbal plant Peppermint	Himani Goswami	2020
43	Screening of Plant Growth Promoting Rhizobacteria (PGPR) from <i>Coriandrum sativum</i> L.	Neeraj Joshi	2020
44	Characterization of potassium solubilizing bacteria from <i>Malus domestica</i> (Apple) growing in Uttarakhand	Prapti Talukdar	2020
45	Screening of Plant Growth Promoting Rhizobacteria (PGPR) from Aloe vera (<i>Aloe barbadensis</i>)	Priyanka Saxena	2020
46	Isolation of potential PGPR from <i>Ocimum sanctum</i> (<i>Ocimum tenuiflorum</i>)	Simanta Kalita	2020
47	Screening of persistent organic pollutants (POPs) degrading bacteria from food.	Shikha	2021
48	Screening of potassium solubilizing Plant growth promoting fungi from garhwal Himalaya	R Rildon Koren	2021
49	Screening of fungi involved in degradation of persistent organic pollutants (POPs) present in food	Kanupriya	2021
50	Isolation of biosurfactant producing fungi and their application in agriculture	Gufuran	2021
51	Effect of various disinfectant like surface cleaners, lyzol etc and various sanitizers on microbes	Yasmeen Jahan	2021
52	Role of environmental monitoring and microbiological analysis of water in pharmaceutical industry (co-supervisor)	Purnima Pandey	2021
53	Microbiological water testing & environmental monitoring in pharmaceutical industry (co-supervisor)	Ravi Ranjan	2021
54	Microbial analysis of different types of water used in an injectable pharmaceutical industry (co-supervisor)	Md. Shariqul Rahman	2022
56	Clinical profile and antibiotic susceptibility pattern in Typhoid fever (co-supervisor)	Balwinder Singh	2022
56	Microbial characterization and identification of pathogenic bacteria from clinical samples (co-supervisor)	Anupam Deka	2022
57	Isolation and identification of Actinomycetes and their antimicrobial activities	Abhisek Saini	2023
58	Studies on fermented food and their microbial analysis	Alpana Bhandari	2023
59	Microbiological analysis of fermented foods	Shreya Sharma	2023
60	Preparation of Kimchi and Sauerkraut and their microbial analysis	Rajni Bhatt	2023
61	Microbiological analysis of street cooked, Reputed hotel and home cooked foods	Ganesh Manger	2023

ANNEXURE 'E'

➤ Served as External Examiners

- Gurukul Kangri University, Haridwar, Uttarakhand
- Graphic Era University, Dehradun, Uttarakhand
- Chandigarh University, Mohali, Punjab
- Mata Gujri College, Fatehgarh Sahib, Punjab
- Punjabi University, Patiala, Punjab
- Sri Guru Ram Rai University, Dehradun, Uttarakhand
- Teerthanker Mahaveer University, Moradabad, UP

ANNEXURE 'F'

Scientific Conference/Seminar/Symposium/Webinar (National and International): 34

1. Participated in a National Seminar (9-11th March, 2007) - Medicinal plants: Conservation. Cultivation and

Utilization II, organized by Deptt of Zoology and Environmental Sciences, Gurukul Kangri Vishwavidyalaya, Haridwar, Uttarakhand, India.

2. *Presented* paper in XXXth All India Botanical Conference and National Symposium on “Emerging trends in Plant Science: Biodiversity, Biotechnology and Environmental Conservation” (28-30th November, 2007) organized by School of studies in Botany, Jiwaji University, Gwalior (M.P.), India.

Pankaj Kumar, R.C. Dubey and D.K. Maheshwari, *Bacillus subtilis* BN1 A rhizospheric competent strain enhance the growth of chir pine (*Pinus roxburghii*) by controlling *Fusarium oxysporum*. p-37.

3. Participated in a one day (11th February, 2008) Regional Seminar on “Patenting in Biotechnology” organized by National Research and Development Corporation, New Delhi and UCOST, Dehradun, Uttarakhand at Lee Grand Hotel, Haridwar, Uttarakhand, India.

4. *Presented* Paper in 3rd Uttarakhand State Science and Technology Congress (10-11th November, 2008) Held at IIT, Roorkee, Uttarakhand, India.

Pankaj Kumar, R.C. Dubey and D.K. Maheshwari, Screening of Rhizobia from *Phaseolus vulgaris* L. growing at high altitudes of Uttarakhand Himalaya p-88.

5. *Presented* paper in XXXIst “All India Botanical Conference and **International** Symposium on Plant Biology and Environmental: Changing Scenario” (17-19th December, 2008) held at Department of Botany, University of Allahabad, Allahabad (U.P.), Co-organizer, Patanjali Yogpeeth (Trust), Haridwar, Uttarakhand, India.

Pankaj Kumar, R.C. Dubey and D.K. Maheshwari, Isoalation of rhizobial sp. from common bean growing at higher altitude of Uttarakhand, P-35.

6. Participated in “Science and Technology Intervention in Traditional and Rural Crafts” (27-28 August, 2009) at Department of Botany and Microbiology, Gurukula Kangri Vishwavidyalaya, Haridwar, jointly sponsored by UCOST, Dehradun, India.

7. Participated in a National Symposium (19-20th February, 2010) on “Impact of Trends in Climate Change on Biodiversity and Faunistic Systems” held at Department of Zoology and Environmental Sciences, Gurukul Kangri Vishwavidyalaya, Haridwar, Uttarakhand, India.

8. Participated in International Biodiversity Day Celebration (22nd May, 2010) held at Department of Botany and Microbiology, Gurukula Kangri Vishwavidyalaya, Haridwar, jointly sponsored by UCOST, Dehradun and Biodiversity Board, Uttarakhand, India.

9. *Presented* Paper in 5th Uttarakhand State Science and Technology Congress (10-12th November, 2010) held at Doon University, Dehradun, Uttarakhand, India.

Pankaj Kumar, Rajat Khillon, Abhinav Aeron, R.C. Dubey and D.K. Maheshwari, Appraisal of Rhizobial diversity associated with *Phaseolus vulgaris* L. from Uttarakhand Himalaya. p-72.

10. *Presented* Paper (Poster) in 54th Annual conference of Association of Microbiologist of India (AMI-2013) and **International** symposium on Frontier discoveries and innovations in Microbiology and its Interdisciplinary Relevance (FDMIR-2013) (17-20th November, 2013) held at Department of Microbiology, Maharshi Dayanand University, Rohak-124001, Haryana, India.

Pankaj Kumar, R.C. Dubey and D.K. Maheshwari, *Rhizobium leguminosarum* RPN5 isolated from root nodules of common bean inhibited the growth of phytopathogens. p-91.

11. Participated in a one day (30 September, 2016) National symposium on “Forensic Biotechnology” organized by Institute of Forensic Science and Criminology (IFSC), Panjab Univeristy, Chandigarh and Association of Microbiologist of India (Chandigarh Unit).

12. *Presented* Paper (Poster) in two days (19-20 November, 2016) National conference on Food Security issues and Environmental Challenges for Indian Agriculture in the next decades and XXIX Annual conference of National Environmental Science Academy (NESA), New Delhi, jointly organized by NESA and Dolphin (PG) College of Science & Agriculture Chunni kalan, Fatehgarh Sahib, Near Chandigarh, (Affiliated to Punjabi University, Patiala, Punjab) Punjab, India.

Pankaj Kumar and Sapna Negi, Characterization of Phosphate Solubilizing Bacteria (*Pseudomonas* spp.) and their effect on the Growth of *Vigna radiata* L. p-32.

13. Participated in a one day (04 June, 2017) National conference on “Emerging Trends in Pharmaceutical and Life Science” organized by Indian Pharmacy Graduate Association, Uttarakhand state branch at Indian

Drugs and Pharmaceuticals Ltd., Rishikesh.

14. Participated in a three days (09 Nov to 11 Nov, 2017) 19th **Organic World Congress (OWC)** organized by **International Federation of Organic Agriculture Movements (IFOAM, Germany and Organic India)** at India Expo Center and Mart, Greater Noida, Uttar Pradesh, India.
15. Participated in a one day (24 March, 2018) National conference on “Current Challenge for Tuberculosis Management” organized by SGRR University, Dehradun and Uttarakhand Science Education and Research Center, Uttarakhand.
16. Participated in a one day (05 June, 2018) symposium on “Institutional Partnership for maximizing impact on minimal use of plastic” to celebrate World Environmental Day – Beat the plastic pollution, jointly organized by Pt. LMS Govt (PG) college, Rishikesh and AIIMS, Rishikesh, Uttarakhand.
17. Presented Paper in three days (28-30 September, 2018) National conference on “Microbial Inoculants for Agriculture and Environmental Sustainability” jointly organized by Department of Botany and Microbiology, Gurukul Kangri Vishwavidyalaya, Haridwar and Patanjali Bio Research Institute, Haridwar, Uttarakhand.
Pankaj Kumar, Niru Shaw, G.K. Dhingra, Shivani Parashar, R.C. Dubey and D.K. Maheshwari “Seed biopriming with phosphate solubilizing rhizobacteria (PSR) and their effect on plant growth promotion”-p 26.
18. Participated in a Three days (14-16 February, 2019) **International** Conference on Medicinal, Aromatic and Nutraceutical plants from Mountainous areas (**9th Annual conference of ACMAP**) organized by Department of Life Science and Department of Biotechnology, Graphic Era (Deemed to be University), Dehradun. Uttarakhand, India and American Council for Medicinally Active Plants (ACMAP) University, USA.
19. Presented Paper in a Two days (8-9 March, 2019) National Seminar in “Innovative Approaches in Microbial Technology” jointly organized by Department of Botany and Microbiology, Gurukul Kangri Vishwavidyalaya, Haridwar and Weldon Biotech Pvt. Ltd., Haridwar, Uttarakhand.
Pankaj Kumar, Vikas Pahal, Ruchi Vadhan, Jitendra Kumar, R.C. Dubey and D.K. Maheshwari “Study on effect of Silver nanoparticles and PGPR on growth of *Zea mays*”-p 26.
20. Participated in a one day (05 June, 2019) seminar on World Environment Day organized by Department of Botany, Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, Uttarakhand.
21. Participated in a one day (29 July, 2019) National symposium on “Rashtriya Shiksha Niti” organized by Bhartiya Shikshan Mandal and Uttarakhand Technical University (UTU), Dehradun at UTU, Dehradun, Uttarakhand.
22. Participated in a one day (28 April, 2020) Webinar Lecture Series on COVID-19 and Ayurveda organized by Amity Institute of Indian System of Medicine, Amity University, Noida, (U.P.), India.
23. Participated in a one day (30 April, 2020) **International** online Conference on COVID-19 (Biotechnology: A Way Forward) organized by Department of Bioscience, Faculty of Science and Directorate of Admissions, Manipal University, Jaipur, India.
24. Participated in one day (26.05.2020) National Webinar on “Prospects Of Microbes For Human Health”, Organised by the Department Of Zoology, Govt. V.Y.T. PG. Autonomous, College, Durg, Chhattisgarh, India
25. Participated in one day (07 June, 2020) webinar on “Challenges of living with COVID-19” organized by Department of Science, Krishna Group of College, Bijnor, Uttar Pradesh, India.
26. Participated in Two days (19-20 June 2020) webinar on “ Tackling COVID-19 through Traditional Ways” organized by Department of Botany and Microbiology, Gurukula Kangri Vishwavidyalaya, Haridwar, Uttarakhand, India.
27. Participated in National Doctor’s Day programme (01 July, 2020) jointly organized by Dolphin Students Welfare Committee, Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, Uttarakhand and Indian Redcross Society, Uttarakhand, India.
28. Participated in a One-Day (18th July, 2020) National Webinar “Covid-19: Challenges and Opportunity” organized by Department of Zoology, Dolphin (PG) Institute of Biomedical and Natural Sciences, Dehradun, Uttarakhand and Indian Redcross Society, Uttarakhand, India.

29. Participated in a One-Day (24 July, 2020) **International** Conference (Online) on Green Technology & Sustainable Development organized by Jagannath University, Jaipur, India.
30. Participated in the one day (31 July 2020) **International** Webinar on “Epidemiological and Immunological Aspects of COVID-19”, organized by P.G. Department of Microbiology & Biotechnology, St.Thomas College, Bhilai, Chhattisgarh, India
31. Participated in the one day (27 August, 2020) **International** Webinar on “The Challenges and Scientific Advances of SARS – COV2” organized by Department of Microbiology, Assam University, India in collaboration with Springer Nature and Society of Environmental Sustainability.
32. Participated in the two days (26-27 September, 2020) NATIONAL WEBINAR on “Opportunity of Microbiologist in the new normal Era” organized by Department of Microbiology, Vidyasagar University, West Bengal, India in collaboration with The Biotech research Society, India.
33. Participated in the one day (08 January, 2021) WEBINAR on “*Multi-Stakeholder Consultation on Corporate Water Stewardship: Encouraging Water Stewardship*” organized by PHD Intellectual Property Facilitation Centre, New Delhi & Oxfam India, India.
34. *Presented* Paper in a two days (03-04 November, 2022) **International** webinar in “*6th International conference on Microbes and Beneficial Microbes*” organized by conferenceseries.com (Conference series & the Editors of Journal of Antimicrobial Agents), Montreal, Canada.

Pankaj Kumar “Biocontrol of *Macrophomina phaseolina* causing charcoal rot of *Phaseolus vulgaris* by *Pseudomonas* sp. PPR8”.

ANNEXURE ‘G’

Scientific Workshop/Hands-on-Training/Summer School: 12

1. Participated in a 10 days (10-19th February, 2008) workshop on “Molecular and Applied Microbiology” organized by Department of Botany and Microbiology, Gurukul Kangri Vishwavidyalaya, Haridwar, sponsored by State Biotech Programme (SBP), Haldi, Uttarakhand, India.
2. Participated in a 10 days (10-19th February, 2008) Hands-on-Training on “Microbial Fermentation and Microbial Inoculant Preparation” organized by Department of Botany and Microbiology, Gurukul Kangri Vishwavidyalaya, Haridwar, sponsored by UCOST, Dehradun, Uttarakhand, India.
3. Participated in a 15 days (16-30th September, 2008) Summer School on “Recent Trends in Biotechnology” organized by Department of Botany and Microbiology, Gurukul Kangri Vishwavidyalaya, Haridwar, sponsored by State Biotechnology Programme (SBP), Haldi, Uttarakhand, India.
4. Participated in one day (20th March, 2009) “Kanya Bhruun Hatya Roktham Jagrukta Karyashala” Organized by National Scheme Service (NSS), of Faculty of Engineering and Technology, Gurukul Kangri Vishwavidyalaya, Haridwar, sponsored by Department of Medical, Health and Family Planning, Uttarakhand, India.
5. Participated in a 12 days (14-25th November, 2010) Training Programme on “Current Trends in Microbial Biotechnology” organized by Department of Botany and Microbiology, Gurukul Kangri Vishwavidyalaya, Haridwar, sponsored by State Biotechnology Programme (SBP), Haldi, Uttarakhand, India.
6. Participated in a 5 days (21-25th February, 2012) Training programme on “Marine Bacterial Diversity” organized by Discipline of Marine Biotechnology and Ecology, CSIR-Central Salt and Marine Chemicals Research Institute, Bhavnagar-364002, Gujarat, India.
7. Participated in an 8 days (21-28th February, 2015) “Hands on workshop in Applied Biotechnology” organized by Department of Biotechnology and Bioinformatics, DAV College, Sector 10, Chandigarh jointly with Association of Microbiologists of India (Chandigarh Unit).
8. Participated in one day (27th April, 2017) workshop on “Advanced tools and techniques in Post Genomic Era” organized by Central Molecular Research Laboratory (CMRL), Deptt. of Biochemistry, Shri Guru Ram Rai Institute of Medical & Health Sciences, Patel Nagar, Dehradun, Uttarakhand, 248001.
9. Participated in a one month (01.06.2017 to 30.06.2017) training programme on “Molecular Biology and

Molecular Diagnostics” at Central Molecular Research Laboratory (CMRL), SGRR University, Dehradun.

10. Participated in a three days (29-31 March, 2018) Indian Science Academies Lecture –workshop on Bio and Information Technology for Healthcare: Pharma, Medicine and Informatics, organized by Department of Community Medicine, Himalayan Institute of Medical Science, Swami Rama Himalayan University, Jolly Grant, Dehradun, Uttarakhand.
11. Participated in a two days (4-5 October, 2019) National workshop on Indian designed cost effective Raman and Fluorescence spectroscopy, organized by Dolphin (PG) Institute of Biomedical and Natural Science, Dehradun and RI instruments and innovations, Haldwani, Uttarakhand.
12. Participated in a two days (10-11 March, 2022) on Intellectual Property Right (IPR) organized by Dolphin (PG) Institute of Biomedical and Natural Science, Dehradun and funded by UCOST, Dehradun, Uttarakhand.

Extra Curriculum:

Qualified the 41st Annual All India General Knowledge Test Conducted by All India Board of General Knowledge Test, a wing of United State Organization (USO), on 30th Nov, 1991, held at Sahu Jain High School, Mirganj, Gopalganj, Bihar, India (**80%** marks).

Scientific Software Handling:

ANOVA, Sigma plot, Biostat, OriginPro, MVSP (Multivariate Statistical Package), NTsys, BioEdit, Mega6

Computer Skills:

- Certificate in Dewsoft Smart office professional course from Dewsoft Education Academy, Haridwar in the year 2007.
- Certificate in Computing (CIC) from IGNOU, New Delhi in the year 2001 (**75.50%** marks).
- Well versed with MS word, MS Power Point, MS Excel, and Internet.

Hobbies:

Study, Teaching and Listening soft music

Personal Information:

Date of Birth	:	29 th December, 1979
Father's Name	:	Shri Mahatma Prasad
Mother's Name	:	Shrimati Kaushalya Devi
Gender	:	Male
Nationality	:	Indian
Language Known	:	Hindi, English
Marital Status	:	Married

I hereby declare that all of the above information is true to the best of my knowledge and belief.

Date : 20.01.2024

(PANKAJ KUMAR)