

Rajesh Kumar Sharma

(Curriculum Vitae)

Dr R K Sharma, Ph.D.

Assistant Professor

Contact details

Laboratory of Ecotoxicology

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Google scholar citations: 6842; Total Publications: 105, h-index- 27.

Scopus citation: 4,583, Total documents: 80, H-index-25

Major research areas: **Ecotoxicology, Bioremediation and Sustainable agriculture**

Educational qualifications

S. No	DEGREE	UNIVERSITY NAME	YEAR	TITLE/DIVISION
1	Ph. D in Botany	Banaras Hindu University, Varanasi	2007	Heavy metal contamination of vegetables in and around Varanasi city
2	M. Sc. in Botany	Banaras Hindu University, Varanasi	2002	First (66.80%)
3	B. Sc (Hons.) in Botany	Banaras Hindu University, Varanasi	2000	First (66.39%)

Professional experience

S.NO	POSITIONS	UNIV./INSTITUTE	DURATIO	TYPE OF WORK
1	Assistant Professor	Banaras Hindu University, Varanasi	2015 – till date	Teaching, Research and Administration
2	Scientist - D	G B Pant National Institute of Himalayan Environment, Almora	2012-2015	Research, Development and Administration
3	Scientist - C	G B Pant National Institute of Himalayan Environment, Almora	2008-2012	Research, Development and Administration
4	CSIR-SRF	Banaras Hindu University, Varanasi	2006 - 2008	Teaching, Research and Administration
5	Project - JRF	Banaras Hindu University, Varanasi	2002 - 2006	Teaching, Research and Administration

Awards and fellowships

1. **ESDA Senior Scientist** award 2024
2. **Fellow of Linnaean Society 2023**, London, UK
3. **INTI Research Fellow** 2023, Malaysia
4. ESDA (3rd World Environment Summit) **Best Oral Presentation** award 2021
5. **SERB International Travel Grant** award 2013
6. **SERB young scientist** award 2012
7. **SERB International Travel Grant** award 2008
8. **CSIR, CCSTDS International Travel Grant** award 2008
9. **CSIR Senior Research Fellowship** Award 2006 and Extended **SRF** award 2008
10. Indian French Embassy **Post-Doctoral Fellowship** award 2008

Research Interests

1. Phytoremediation of metal contaminated soil for sustainability
2. Sustainable approaches for improving crop yield and food safety in metal-enrich areas
3. Developing techniques for phytoextraction of rare earth elements (REEs) from minerals

Teaching interests

Plant Ecology, Plant Physiology; Environmental Pollution, Ecotoxicology; Air pollution and Climate Change and Waste Management

Couse development

- Developed an online course entitled “Climate Change Impact Assessment: Air Pollution and Global Warming” for UG/PG students

Administrative Responsibilities

1. **Warden**, Broacha Hostel II, BHU, Varanasi (Since August 17, 2026)
2. **Member**, NEP Committee, Institute of Science, BHU
3. **Member**, Centralized Examination Committee, Institute of Science, BHU
4. **Centre Superintendent**, NEET-UG 2026, Department of Botany, BHU, Varanasi
5. **Convener**, Examination Committee, Department of Botany, BHU
6. **Swayam Course Coordinator**, Department of Botany, BHU, Varanasi
7. **Member**, Departmental Time-Table Committee, BHU
8. **Member**, Institute Time Table Committee, BHU
9. **Member**, Botanical Garden, Hostel Allotment committees, Department of Botany, BHU,
10. **In-charge** Security committee, GBPNIHE, Mohal-Kullu, India (2009-2015)
11. **In-charge**, Store-Purchase committee, GBPNIHE, Mohal-Kullu, India (2009-2015)
12. **Drawing and Disbursing officer**, GBPNIHE, Mohal-Kullu, India (2009-2015)

National and International Recognitions

1. **Member**, National Adviser Committee, ICABB, JP University, Noida, India
2. **Invited speaker**, International conference organized by KRM University, Haryana, India during April 27-28, 2026.
3. **Invited speaker**, Workshop, Organized by Mirinda House, New Delhi on 30th March, 2026
4. **Invited speaker**, National Workshop organized by WRCAC, JNV University, Jodhpur, India during February 27, 2026
5. **Invited speaker**, International conference organized by RCSS and SPR at Kochi, Kerala, India during February 12, 2026.
6. **Invited speaker**, International conference organized by Department of Environmental Science, Pachhunga University College, Aizawl, Mizoram, India, during February 4, 2026.

7. **Invited speaker**, International conference on “organized by Botany MMV section, Banaras Hindu University, Varanasi, India during December 10, 2025.
8. **Keynote speaker**, National Seminar organized by Graphic Era University, Dehradun, India During November 10, 2025
9. **Keynote speaker**, International Conference organized by UTM, Malaysia, October 10, 2025
10. **Technical Committee Program chair**, International Conference on “Urban Environmental Pollution Monitoring and Remediation” at UTM, Malaysia, Oct 10-12, 2025
11. **Resource person**, National workshop organized by Department of History, BHU, Varanasi, March 1, 2025
12. **Chief Guest**, Science fare at Gurukulam Academy, Mirzapur on November 9, 2024
13. **Editorial Board Committee**, Interdisciplinary Journal of Applied Science (APCEI)
14. **Section Editor**, Vegetos, Springer Nature (2025-Till date),
15. **Editorial Board Member**, Scientific Reports, Springer Nature (2024-Till date)
16. **Technical Committee Member**, 5th International conference on “Waste recycling and Management” Tokyo, Japan, February 21-23, 2024
17. **Technical Committee Member**, 3rd Global Conference on Agriculture, Amsterdam, Netherland, June 24-25, 2023
18. **Co-Chairperson**, Technical session in National Webinar-Second Series at Govt. M.S. Golwalkar College Rewa (APS University Rewa), Madhya Pradesh, November 5, 2021
19. **Member**, Editorial Board, Hima-Paryavaran, GBPNIHE, Almora (2010-2015)

Research Guide/Mentor

Post-Docs

1. Responses of selected high altitude agriculture crops under enhanced UV-B radiation (Post doc; Dr. Rashmi Raghuvanshi, **2012-2015**)
2. Biodegradation of chlorpyrifos by bacterial isolates: developing biocatalysis for effective remediation under mountain ecosystem (Post doc; Dr. Shivani Uniyal, **2016- 2018**)

Doctorate

1. Heavy metal analysis of vegetable crops grown on contaminated soil in Kullu Valley of North-Western Indian Himalaya (Ph. D., thesis; Neha Sharma **2020, Awarded**).
2. Isolation, identification and characterization cadmium resistant bacteria for remediation of contaminated soil (Ph. D., thesis; Jay Shanker Yadav, **2022, Awarded**).
3. Study of spatial pattern of phytochemicals diversity and antioxidant properties of *Azadirachta indica* A. Juss seeds from Eastern Uttar Pradesh (Ph. D., thesis; Indrajeet Kumar, **2023, Awarded**).
4. Study on distribution of heavy metals and their risk assessment in wastewater irrigated soil-crop systems (Ph. D., thesis; Prince Kumar Singh, **2023, Awarded**)
5. Mitigation of nickel toxicity in selected cereal crops using organic amendments (Ph. D., thesis; Umesh Kumar, **2024, Awarded**)
6. Studies on cadmium-induced changes in selected medicinal plants (Ph. D., thesis; Akanksha Dwivedi **2026, Awarded**)

Post-Graduate dissertation: Awarded: 50

Research projects (ongoing/completed)

1. Risk assessment and rhizoremediation of chlorpyrifos contaminated soils of Indo-Gangetic plains (IoE-TDRS BHU, **Principal Investigator**; 2023-2025, Rs. 12 Lakhs)
2. Remediation of nickel contaminated soil using organic amendments” (IoE-Faculty incentive grant-BHU; **Principal Investigator**, 2021-2024, 12 Lakhs, Completed)
3. Bioactive compounds and antioxidant potential of Indo-Gangetic biodiversity elements (UGC, New Delhi, **Principal investigator**, 2017-2019, 10 Lakhs)

4. Risk assessment and management of heavy metal contaminated soils in peri-urban ecosystems (BHU Seed grant; **Principal Investigator**, 2016-2017, 1.5 lakhs)
5. Study of heavy metal transfer from contaminated soil to food chain and their health risk to local people of HP (SERB, New Delhi, **Principal Investigator**, 2012-2015; 10 Lakhs)
6. Promoting conservation and sustainable utilization of Himalayan biodiversity elements using biotechnological and physiological approaches (GBPNIHE, **Principal Investigator**, 2012-2017, 6.79 Lakhs)
7. Extremophiles from Himalaya: Ecological resilience and biotechnological applications (GBPNIHE, **Principal Investigator**, 2012-2017, 8.00 Lakhs)
8. Pesticide residue contamination of food chain: appropriate monitoring and control measures from field studies in HP (GBPNIHE, **Principal Investigator**, 2009-2012, 7.56 Lakhs)
9. Development of propagation protocols, multiplication and field evaluation of selected economically important plants in the Indian Himalayan region (GBPNIHE, **Principal Investigator**, 2011-2012, 4.42 Lakhs)
10. Population assessment, standardization of propagation protocols and establishment (ex situ & in situ) of selected species as a part of biodiversity conservation plan under Sainj Hydro-Electric Project in HP (HPPCL, Kullu, **Co-Principal Investigator**, 2014-19, 49.962 Lakhs)
11. Preventing extinction and improving conservation status of threatened plants through application of biotechnological tools (DBT, New Delhi, **Co-Principal Investigator**, 2012-2017, 39.372 Lakhs)
12. Ecological evaluation, mapping and conservation prioritization of floristic diversity of the Spiti Valley in Cold Desert Biosphere Reserve (MOEF, New Delhi, **Co-Principal Investigator**, 2011-2014, 18.17 Lakhs)

Publications

Edited Book

1. Kumar I, **Sharma RK**, Singh PK and Hullebusch ED (2026). Sustainable Agricultural Waste Management: Advantages, challenges and future improvements, Academic Press, Elsevier, London, UK, ISBN: 978-0443383021, PP;1-448
2. Foo KY and **Sharma RK** (2026). Insight into the Resource Utilization and Recovery of Urban Waste Streams in Developing Countries: Selected Papers of 2025 International Conference on Urban Environmental Pollution Monitoring and Remediation (UEPMR 2025), Springer-Nature Group, Switzerland AG, ISBN: 978-3-032-16256-4.

Research Papers

1. Singh PK, Singh N, Kumar I, Kumar U, Dwivedi A, Singh P, Mishra S, Pal K, Prajapati A, **Sharma RK** (2026) Mapping of microplastic toxicity: uptake, trophic transfer, and ecotoxicological risks in marine ecosystems. *Aquatic toxicology*, AQTOX_107921 **Impact factor, 4.6**
2. Singh PK, Kumar I, Kumar U, Singh RP, Singh RS, **Sharma RK** (2026) Next generation risk assessment and new approach methodologies for sustainable management of heavy metal contaminated environments: A critical review. *Environmental Pollution* 128415 **Impact Factor: 7.3: Q1**
3. Kumar U, Kumar I, Singh PK, **Sharma RK** (2026) Agro-waste amendments alleviate nickel stress: Insights into growth, physiology, metabolites, bioaccumulation and health risk assessment in wheat under tropical ecosystems. Accepted in *Physiology and Molecular Biology of Plants*, **Impact Factor: 3.3: Q1**
4. Mishra S, Sharma RK, Singh RS and Nandi MN (2026). Integrative assessment of cadmium stress adaptation in *Ocimum* spp.: Linking biochemical defense, anatomical plasticity, and essential oil biosynthesis. *Science of the Total Environment* 1035 (2026) 181846

5. Kumar I, Vishwakarma SK, Singh PK, Kumar U, Singh RK, Madheshiya P, Dwivedi A, Singh P, **Sharma RK** (2026) Ethnopharmacological exploration of Indian medicinal plants: from traditional knowledge to modern medicine. Accepted in *Phytochemistry Review*, **Impact factor: 7.6, Q1**
6. Dwivedi A, **Sharma RK** (2026) Integrative insight into cadmium-induced alterations in accumulation, antioxidant defense, antibacterial potential, and metabolite profile of *Mentha arvensis* L. under dry tropical conditions. *Physiology and Molecular Biology of Plants*, <https://doi.org/10.1007/s12298-026-01724-4>, **Impact Factor: 3.3: Q1**
7. Kumar U, Singh PK, Kumar I, **Sharma RK** (2026) Trace metal contamination and health risk assessment in irrigated soils: Seasonal dynamics and multivariate insights from a tropical ecosystem. *Soil Research* 64 (1) SR25180, **Impact Factor: 1.5: Q2**
8. Singh P, Singh PK, **Sharma RK** (2025). Heavy metal analysis of commercial rice grains from Varanasi city of India: insight into contamination level, daily intake and associated health risks, *Biological Trace Element Research*, <https://doi.org/10.1007/s12011-025-04827-3>, **Impact Factor: 3.6: Q1**
9. Mariyam S, Kumar V, Roychoudhury A, Ghodake GS, Muneer S, Duha JS, Ahmad F, **Sharma RK**, Singh S, Seth CS (2025). Functional Diversification and Mechanistic Insights of MYB Transcription Factors in Mediating Plant Growth and Development, Secondary Metabolism, and Stress Responses, *Journal of Plant Growth Regulation* 0123456789, **Impact Factor: 3.200; Q1**
10. Dwivedi A, Singh PK, Kumar U, Kumar I, Singh P, **Sharma RK** (2025) Insights into cadmium uptake and changes in morphophysiological and biochemical characteristics of *Eclipta alba* L., plants exposed to elevated cadmium in soil, *Journal of Soil Science and Plant Nutrition* 25, 1855–1870, **Impact Factor: 3.40, Q1**
11. Kumar U, Kumar I, Singh PK, Dwivedi A, Singh P, Mishra S, Seth CS, **Sharma RK** (2025) Nickel contamination in terrestrial ecosystems: insights into impacts, phytotoxicity mechanisms and remediation technologies. *Reviews of Environmental Contamination and Toxicology*, 263(2):1-29, **Impact factor: 6.1, Q1**
12. Kumar U, Singh PK, Kumar I, **Sharma RK** (2025) Heavy metal accumulation, yield and health risk assessment of wheat crop grown in contaminated soil amended with agro-waste derived ashes for sustainable agriculture. *Journal of Food Composition and Analysis*, 139, 107140, **Impact factor: 4.0 Q1**
13. Kumar I, Kumar U, Singh PK, Yadav JS, Dwivedi A, Singh P, Tripathi A, **Sharma RK** (2024) Phytochemical composition, antioxidant and antibacterial properties of methanol stem and leaf extract of *Croton bonplandianus* Baill. *Vegetos*. <https://doi.org/10.1007/s42535-024-01060-6>
14. Singh PK, Kumar U, Kumar I, Dwivedi A, Singh P, Mishra S, Seth CS, **Sharma RK** (2024) Critical review on toxic contaminants in surface water ecosystem: Sources, monitoring, and its impact on human health. *Environmental Science and Pollution Research*, 31; 56428 – 56462, **Q1**
15. Dwivedi A, Singh AN, Kumar A, Nath G, **Sharma RK** (2024) Cadmium content, metabolite profile, biological properties of *Eclipta alba* (L.) Hassk plant exposed to elevated cadmium in soil. *Environmental and Experimental Botany* 225,105865, **Impact factor: 5.70, Q1**
16. Kumar U, Singh PK, Kumar I, **Sharma RK** (2024) Nickel accumulation, growth performance and yield attributes of *Oryza sativa* L. crop exposed to Ni polluted soil. *Plant Archives* 24 (2), 41-46
17. Kumar U, Kumar I, Singh PK, Yadav JS, Dwivedi A, Singh P, Mishra S, **Sharma RK** (2024) Total phenolic content and antioxidant activities in methanol extracts of medicinal herbs from Indo-Gangetic plains of India. *Applied Biology and Biotechnology* 12 (2), 1-11
18. Singh PK, Kumar I, Kumar U, **Sharma RK** (2024) Soil-mustard revitalization via rice husk ash, a promising soil amendment material for sustainable management of heavy metal contamination in tropical ecosystem, *Journal of Environmental Management* 355: 120538, **Impact Factor: 8.70, Q1**

19. Mariyam S, Upadhyay SK, Chakraborty KK, Verma KK, Duha JS, Muneer S, Meena M, **Sharma RK**, Ghodake G, Seth CS (2024). Comprehensive journey from past to present to future about seed priming with hydrogen peroxide and hydrogen sulfide in relation to drought, temperature, UV and ozone stresses- A review, *Plant and Soils*, **Impact Factor: 4.900; Q1**
20. Mariyam S, Upadhyay SK, Chakraborty KK, Verma KK, Duha JS, Muneer S, Meena M, **Sharma RK**, Ghodake G, Seth CS (2024). Nanotechnology, a frontier in agricultural science, a novel approach in abiotic stress management and convergence with new age medicine - A Review *Science of the Total Environment* 912, 169097, **Impact Factor: 9.800 Q1**
21. Singh PK, Yadav JS, Kumar I, Kumar U, Singh P, Dwivedi A, **Sharma RK** (2024) Screening of mustard cultivars for phytoremediation of heavy metals contamination in wastewater irrigated soils. *Environmental Monitoring and Assessment* 196: 321, **Impact Factor: 3.00; Q1**
22. Mahto S, Kumar I, **Sharma RK** (2024). Cadmium accumulation, growth performance and antioxidant properties of bacterial consortium inoculated *Mentha arvensis* L. grown on polluted oil. *National Academy of Science Letters*, **Impact Factor: 1.100 Q3**
23. Sahoo, A, Dwivedi A, Madheshiya P, Kumar U, **Sharma RK**, Tiwari S (2024). Insights into the management of food waste in developing countries: with special reference to India. *Environmental Science and Pollution Research* 31: 1887- 1913, **Impact Factor: 5.80 Q1**
24. Bhardwaj P, **Sharma RK**, Chauhan A, Ranjan A, Rajput VD, Mandzhieva SS, Mina U, Wadhwa S, Bobde P, Minkina T, Tripathi A (2023) Assessment of heavy metal distribution and health risk of vegetable crops grown on soils amended with municipal solid waste compost for sustainable urban agriculture, *Water*, 15, 228, **Impact Factor: 3.530 Q1**
25. Kumar I, Kumar U, Singh PK, Yadav JS, **Sharma RK** (2022) Total phenolics and *in-vitro* antioxidant activities in methanol extracts of raw, ripe and overripe neem (*Azadirachta indica* A. Juss) seeds. *International J. Plant and Environment* 8 (4); 1-6, **NAAS Score 4.46**
26. Singh PK, Yadav JS, Kumar I, Kumar U, **Sharma RK** (2022) Carpet industry irrigational sources risk assessment: heavy metal contaminated vegetables and cereal crops in northern India, *Toxicology Reports*, 9: 1906-1919, **Cite Score: 7.2 Q2**
27. Yadav JS, **Sharma RK**, Yadav J, Tiwari S, Kumar U, Singh UK and Kumar I (2022) Isolation, identification and characterization of Cd-resistant bacterial isolates from long-term wastewater irrigated soil. *Journal of Scientific Research* 66 (1), 201-208, **UGC Care list**
28. **Sharma RK**, Sharma N, Kumar U, Samant SS (2022) Antioxidant properties, phenolics, and flavonoids content of some economically important plants from north-west Indian Himalaya, *Natural Product Research* 36 (6);1565-1569, **Impact Factor: 2.861 Q2**
29. Kumar I, **Sharma RK** (2021) Antioxidant properties in methanol extract of kernels of commonly marketed Indian fruits, *International Journal of Fruit Science*, **Impact Factor: 1.534 Q2**
30. Uniyal S, **Sharma RK**, Kondakal V (2021) New insights into the biodegradation of chlorpyrifos by a novel bacterial consortium: Process optimization using general factorial experimental design, *Ecotoxicology and Environmental Safety* 209, 111799, **Impact Factor: 6.291 Q1**
31. Khatri S, **Sharma RK**, Shridhar V (2020) Influence of cadmium tolerant and plant growth promoting rhizobacteria on cadmium accumulation and growth response of wheat seedlings under mountain ecosystem, *Agriculture Research* 9 (1): 56-65, **Impact Factor: 1.10 Q1**
32. Kundra R, Samant SS, **Sharma RK** (2020) Assessment of antioxidant potential of *Trillium govanianum* Wall ex D. Don, a critically endangered medicinal plant of North-Western Indian Himalaya, *Proceedings of National Academy of Sciences, India Section B: Biological Sciences*, 90 (1): 95-101, **Impact Factor: 0.396 Q2**
33. Khatri S, **Sharma RK**, Shridhar V (2019) Rapid screening of wheat cultivars suitable for cultivation in Cd contaminated soils under mountain ecosystem, *International Journal of Plant and Environment* 5 (2): 117-120, **NAAS Score 4.46**
34. Uniyal S, **Sharma RK** (2018) Technological advancement in electrochemical biosensor-based detection of organophosphate pesticide chlorpyrifos in the environment: a review of status and prospects, *Biosensors and Bioelectronics* 116; 37-50, **Impact Factor: 10.618 Q1**

35. Kumar I and **Sharma RK** (2018) Production of secondary metabolites in plants under abiotic stress: An overview. *Significances of Bioengineering and Biosciences* 2 (4)
36. Kundra R, Samant SS, Nandi SK, **Sharma RK** (2017) Investigation of antioxidant properties of *Withania somnifera* L. Dunal and physico-chemical properties of soil along the topographical gradients in subtropical region of Indian Himalaya. *International Journal of Phytomedicine* 9: 407-415
37. **Sharma RK**, Kundra R, Samant SS, Nandi SK (2017) Antioxidant Properties of Methanol Extracts from *Olea ferruginea* Royle Seeds. *National Academy of Science Letters* 40 (5): 379-382, **Impact Factor: 0.331**
38. Uniyal S, Paliwal R, **Sharma RK**, Rai JPN (2016) Degradation of fipronil by *Stenotrophomonas acidaminiphila* isolated from rhizospheric soil of *Zea mays*. *3 Biotech* 6:48-59, **Impact Factor: 2.406**
39. Uniyal S, Paliwal R, Verma M, **Sharma RK**, Rai JPN (2016) Isolation and characterization of fipronil degrading *Acinetobacter calcoaceticus* and *Acinetobacter oleivorans* from rhizospheric zone of *Zea mays*. *Bulletin of Environmental Contamination and Toxicology* 96 (6): 833-838, **Impact Factor: 2.807**
40. Raghuvanshi R, **Sharma RK** (2016). Response of two cultivars of *Phaseolus vulgaris* L. (French beans) plants exposed to enhanced UV-B radiation under mountain ecosystem. *Environmental Science and Pollution Research* 23 (1): 831-842, **Impact Factor: 5.190**
41. **Sharma RK**, Sharma P (2015). Spatial pattern of terrestrial biodiversity: an overview. In: *Biodiversity, Biotechnology and Environmental Conservation* (Eds. Bharti PK, Bhandari G) Discovery Publishing House Pvt. Ltd., Delhi. ISBN 9789350567500, pp 5-30
42. Renuka, Thakur DR, **Sharma RK** (2014) Bioefficacy of *Bidens pilosa* L. against *Acanthoscelides obtectus* (Say) and *Zabrotes subfasciatus* (Boheman), stored pests of Kidney beans, worldwide. *International Journal of Agriculture and Crop Sciences* 7 (15): 1470-1477, **Impact Factor: 0.576**
43. **Sharma RK**, Agrawal M, Agrwal, SB (2014) Responses of *Beta vulgaris* L. exposed to cadmium and zinc through soil drenching, *Journal of Environmental Biology* 35 (4): 727-732, **Impact Factor: 0.781**
44. **Sharma RK**, Sharma N, Samant SS, Nandi SK, Palni LMS (2013) Antioxidant activities in methanolic extracts of *Olea ferruginea* Royle fruits, *International Journal of Bioscience, Biochemistry and Bioinformatics*, 3 (2): 154-156
45. **Sharma RK**, Sharma P, Devi S, Samant SS (2013) Enhancement of pea production using leaf extract of *Withania somnifera* L. under tropical field conditions of Kullu, North-Western Himalaya, India, *Journal of Plant Nutrition* 36 (11): 1754-1764, **Impact Factor: 1.707**
46. **Sharma RK**, Samant SS, Sharma P, Devi S (2012) Evaluation of antioxidant activities of *Withania somnifera* growing in natural habitats of north-west Himalaya, India, *Journal of Medicinal Plant Research* 6 (5): 657-661, **Impact Factor: 0.87**
47. Negi GCS, Samal PK, Kuniyal JC. Kothiyari BP, **Sharma RK**, Dhyani PP (2012) Impacts of climate change on western Himalayan Mountain ecosystems: An overview, *Tropical Ecology* 53 (3): 345-356, **Impact Factor: 0.850**
48. **Sharma RK** (2011) Combined effects of copper and cypermethrin on growth and biomass accumulation in French beans, *Pesticide Research Journal*, 23 (2): 224-226
49. Singh A, **Sharma RK**, Agrawal M, Marshall FM (2010) Risk assessment of heavy metal toxicity through contaminated vegetables from waste water irrigated areas of Varanasi, India, *Tropical Ecology* 51 (2S): 375-387, **Impact Factor: 0.850**
50. Singh A, **Sharma RK**, Agrawal M, Marshall FM (2010) Health risk assessment of heavy metals via dietary intake of foodstuffs from the wastewater irrigated site of a dry tropical area of India, *Food and Chemical Toxicology* 48:611-619, **Impact Factor: 5.572**

51. Mishra S, Singh S, **Sharma RK**, Agrawal SB (2010) The interactive effect of heavy metals and UV-B radiation on two cucumber cultivars, *Turkish Journal of Biology* 34; 367-378, **Impact Factor: 1.452**
52. **Sharma RK**, Agrawal SB (2010) Responses of *Abelmoschus esculentus* L. (lady's finger) to elevated levels of Zn and Cd, *Tropical Ecology* 51 (2S): 389-396, **Impact Factor: 0.850**
53. **Sharma RK**, Agrawal M, Agrawal SB (2010) Physiological, biochemical and growth responses of lady's finger (*Abelmoschus esculentus* L.) plants as affected by Cd contaminated soil, *Bulletin of Environmental Contamination and Toxicology* 84: 765-770, **Impact Factor: 2.807**
54. **Sharma RK**, Agrawal M, Agrawal SB (2010) Physiological and biochemical responses resulting from Cd and Zn accumulation in carrot plants, *Journal of Plant Nutrition* 33 (7): 1066 – 1079, **Impact Factor: 1.707**
55. **Sharma RK**, Dhyani PP, Samant SS (2010) Toxic chemicals in fruits and vegetables: an overview, *Everyman's Science* 45 (4), 215-218
56. Singh A, **Sharma RK**, Agrawal M, Marshall FM (2009) Effects of wastewater irrigation on physicochemical properties of soil and availability of heavy metals in soil and vegetables. *Communication in Soil Science and Plant Analysis* 40:3469-3490, **Impact Factor: 0.687**
57. **Sharma RK**, Agrawal M, Marshall FM (2009) Heavy Metals in vegetables collected from production and market sites of tropical urban area of India, *Food and Chemical Toxicology* 47: 583–591, **Impact Factor: 5.572**
58. **Sharma RK**, Agrawal M, Marshall FM (2008) Heavy metals contamination of vegetables in urban India: a case study in Varanasi, *Environmental Pollution* 154: 254 – 263, **Impact Factor: 9.983**
59. Singh A, **Sharma RK**, Agrawal SB (2008) Effect of fly-ash incorporation on heavy metals accumulation, growth and yield responses of *Beta vulgaris* L. plants, *Bioresource Technology* 99: 7200-7207, **Impact Factor: 9.642**
60. **Sharma RK**, Agrawal M, Marshall FM (2008) Atmospheric depositions of heavy metals (Cd, Pb, Zn, and Cu) in Varanasi city, India, *Environmental Monitoring and Assessment* 142 (1-3): 269 – 278, **Impact Factor: 2.513**
61. **Sharma RK**, Agrawal M, Agrawal SB (2008) Interactive effects of cadmium and zinc on carrots: growth and biomass accumulation, *Journal of Plant Nutrition* 31(1): 19 – 34, **Impact Factor: 1.707**
62. **Sharma RK**, Agrawal M, Marshall FM (2007) Heavy metal contaminations of soil and vegetables in suburban areas of Varanasi, *Ecotoxicology and Environmental Safety* 66: 258-266, **Impact Factor: 6.291**
63. Agrawal SB, Singh A, **Sharma RK**, Agrawal M (2007) Bioaccumulation of heavy metal in vegetables: a threat to human health. *Terrestrial and Aquatic Environmental Toxicology* 1(2): 13-23
64. **Sharma RK**, Agrawal M, Marshall FM (2006) Heavy metal contamination of vegetables grown in wastewater irrigated areas of Varanasi, India, *Bulletin of Environmental Contamination and Toxicology* 77: 312-318, **Impact Factor: 2.807**
65. **Sharma RK**, Agrawal M (2006) Single and combined effects of cadmium and zinc on carrots: uptake and bioaccumulation. *Journal of Plant Nutrition* 29 (10): 1791-1804 **Impact Factor: 1.707**
66. **Sharma RK**, Agrawal M (2005). Biological effects of heavy metals: an overview. *Journal of Environmental Biology* 26 (3/4): 301 – 313, **Impact Factor: 0.781**

Book Chapters

1. Singh P, Singh PK, Kumar I, Kumar U, Dwivedi A, Mishra S, Prajapati P, Pal A, Mishra AK, Tiwari S, **Sharma RK** (2026). Biodiesel production from oil waste and animal fat, In: Bioenergy and Biomass: Production, Sustainability and Value-Added Byproduct (Eds: Singh V, Singh N,

- Praveen SM), Springer Publication, Chapter 7; pp 133-168, ISBN 978-981-95-9302-6 (eBook) DOI: <https://doi.org/10.1007/978-981-95-9302-6>
2. Singh N, Fayaz F, Anwar M, Kumar U, **Sharma RK** (2026) Nanotechnology-infused strategies for recycling and elimination of agro-waste using advanced Nanosensors. In: Sustainable Agricultural Waste Management-Advantage, Challenges and Future Improvements (Eds: Kumar, I, Singh PK, Sharma RK, Hullebusch ED) [10.1016/B978-0-443-38301-4.00005-9](https://doi.org/10.1016/B978-0-443-38301-4.00005-9), Chapter 13; 301-320
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 4. Mishra S, Singh PK, Kumar I, Kumar U, Singh P, Prajapati A, Pal K, **Sharma RK** (2026). Phytomanagement of Heavy Metal Contaminated Soils Using Medicinal and Aromatic Plants (MAPSs) for a Sustainable Future. In: Innovations, Challenges, and Solutions for a Sustainable Future (Eds: Gupta AK, Kumar S, Gupta T), Cambridge Scholar (in press), Chapter 24, ISBN: 978-1-0364-6081-5, PP-432 - 463
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 6. Singh P, Singh PK, Kumar U, Mishra S, Madheshiya P, Singh RP, **Sharma RK**, Kumar I (2025). Climate change and secondary metabolism in plants: resilience to disruption. In: Climate Change and Agricultural Ecosystem: Current Challenges and Adaptation (Eds: Kumar A, Babalola OO, Singh J and Santoyo G), Elsevier Publication (in press), Chapter 13; pp 267-296, ISBN: 978-0-443-26521-1. DOI: [10.1016/B978-0-443-26520-4.00010-X](https://doi.org/10.1016/B978-0-443-26520-4.00010-X)
 7. Prajapati A, Dwivedi A, Singh P, Mishra S, Singh N, Pal K, **Sharma RK** (2025). Agricultural practices and biodiversity decline. In: Vanishing Diversity: Global Threats to Flora and Fauna (Eds: Khalid MA, Kumar S, Yadav E, Pankaj PP, Kharwar RK), S Academic Publishers & Distributors, Lucknow, India, pp. 371-400, <https://doi.org/10.5281/zenodo.17841457>
 8. Mishra S, Singh Garg N, **Sharma RK** (2025). Essential Oils Used in Medicinal and Functional Foods. In: Medicinal Plants as Functional Food Candidates: Challenges and Opportunities (Eds: Singh S and Upadhyay G), Cambridge Scholar (in press), Chapter 3, ISBN: 1-0364-5337-5, ISBN 13: 978-1-0364-5337-4
 9. Mishra S, Singh PK, Kumar U, Singh P, Kumar I, **Sharma RK** (2025). Impact of climate change on plant productivity and ecosystem sustainability: challenges and solutions. In: Climate Change and Agricultural Ecosystem: Current Challenges and Adaptation (Eds: Kumar A, Babalola OO, Singh J and Santoyo G), Elsevier Publication (in press), Chapter 9; pp 133-156, ISBN: 978-0-443-26521-1. DOI: [10.1016/B978-0-443-26520-4.00016-0](https://doi.org/10.1016/B978-0-443-26520-4.00016-0)
 10. Dwivedi A, Kumar U, Singh PK, Kumar I, Singh S, Mishra S, Prajapati A, **Sharma RK** (2025). Treatment methods for food wastes. In: Resource Recycling and Management of Food waste (Eds: Singh P, Singh RP), Springer Nature Publications (in press), Chapter 4, ISBN: 978-3-031-86687-6, 606413_1. DOI: 10.1007/978-3-031-86688-3
 11. Singh S, Kumar U, Dwivedi A, Singh PK, Kumar I, Mishra S, Prajapati A, Tiwari S, **Sharma RK** (2024). Green Solutions for Heavy Metal Remediation: Unveiling the Potential of Agricultural Waste through Techno-Economic Analysis and Life Cycle Assessment. In: Heavy metals contamination in the Environment: Health impacts and potential remediation approaches (Eds: Singh V, Kumar A, Mishra V, Rai SN), CRC Press (Boca Raton), Chapter 15; 25 pages, ISBN 9781032685793; DOI: <https://doi.org/10.1201/9781032685793>
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14. Singh PK, **Sharma RK** (2021) Wastewater reuse in peri-urban agriculture ecosystem: current scenario, consequences and control measures, In: *Water pollution and Management Practices* (Eds. Singh A, Agarwal SB and Agrawal M), Springer Publisher, Singapore, pp 121-145
15. Uniyal S, Kumar I, Singh PK, **Sharma RK** (2019) Genetic engineering: an emerging approach for fostering bioremediation, current status, challenges and outlook. In “*Innovations in Life Science Research*” (Eds. Sinha R, Pandey S, Ghoshal N), NOVA Sci. Publishers, USA ISBN: 9781536158687, Chapter 8, pp 1-21
16. **Sharma RK**, Pandey B, Uniyal S (2018). Phytotoxicity: an essential tool in ecological risk assessment In “*Advances in Phytoremediation of Environmental Pollutants*” (Eds. Chandra R, Dubey NK, Kumar V), CRC Press, Taylor & Francis Group, USA, ISBN: 9781138062603, pp 361-385
17. Uniyal S, Paliwal R, Kaphaliya B, **Sharma RK** (2017). Human Overpopulation: Impact on Environment. In: *Environmental Issues Surrounding Human Overpopulation* (Eds. Singh RP., Singh A., Srivastwa B), IGI Global, ISBN 9781522516835, pp. 20-30 [**Citation 1**]
18. Raghuvanshi R, **Sharma RK**, Kundra R (2016). Screening of pea (*Pisum sativum* L.) cultivars for promoting their cultivation in Kullu Valley, north-western Indian Himalaya. In: *Agro-biodiversity Conservation and Sustainable Development* (Eds. Sharma P, Singh N, Bharti PK) Discovery Publishing House Pvt. Ltd., Delhi. ISBN: 9789350567821, Pp. 56-64
19. Samant SS, Joshi R, **Sharma RK** (2013) Biodiversity of Indian North-West Himalaya In: *Himalayan Biodiversity-Richness, Representativeness and life support values* (Eds. R.S. Rawal, I. D. Bhatt, K. Chandrasekar, S.K. Nandi), Hylanders Communications (P) Ltd., Delhi. ISBN:81-927373-1-4, Pp. 20-23,
20. **Sharma RK**, Agrawal M, Marshall FM (2008) Effects of wastewater irrigation on heavy metal accumulation in soil and plants. In: Kumar A, Somashkar RK (Eds.) *Environmental Science and Technology in India*, Daya Publishing House, New Delhi, India, ISBN: 9788170355410, Pp. 161-167.
21. Marshall FM, Holden J, Ghose C, Chisala B, Kapungwe E, Volk J, Agrawal M, Agrawal R, **Sharma RK**, Singh RP (2007). Contaminated irrigation water and food safety for the urban and peri-urban poor: appropriate measures for monitoring and control from field research in India and Zambia. *Inception Report DFID (R8160)*, SPRU, University of Sussex, UK.

Other publications

1. **Sharma RK**, Kumar U (2023). Toxic chemicals: effects and prevention. *Madai se khaprail*, 21;27-28
2. Kumar U, **Sharma RK** (2022) Shahari thosh kachre ke prabandhan me hamari bhumika, *Vaigyanik* 54 (1):60-64
3. **Sharma RK** (2019) Bhumi awala: an important medicinal plant, KAHAR, 6: 27-29
4. Sharma N, **Sharma RK**, Dhyani PP (2013) Pahadi palak: a rich source of natural antioxidants for local population, *Himachal Pradesh Newsletter* 25 (2); 15-16
5. Sharma N, **Sharma RK**, Dhyani PP (2013) Effect of Cd contaminated soil on antioxidant potential of *Spinacea oleracea* L. leaves, *ENVIS Newsletter on Himalayan Ecology* 10; 3-4
6. **Sharma RK**, Devi S, Dhyani PP (2010) Comparative assessment of the toxic effects of copper and cypermethrin using seeds of *Spinacea oleracea* L. plants, *ENVIS Bulletin on Himalayan Ecology* 18: 10-13.
7. **Sharma RK**, Dhyani PP (2013) Cd mobility in soil-vegetable ecosystems and their possible risk to human health, *ENVIS Bulletin on Himalayan Ecology* Vol 21; 15-19
8. Sinha S, Dhyani PP, **Sharma RK**, Samant SS (2013) Badhte vayumandaliy tapman se chintit manaw, *ENVIS Bulletin on Himalayan Ecology* Vol 21; 124-125

9. **Sharma RK**, Sharma N, Dhyani PP (2012). Toxic chemicals: sources, status in food chain and their impacts on human health. GBPIHED, Mohal-Kullu pp. 1-25
10. **Sharma RK**, Dhyani PP (2012) Heavy metal contamination of ground water in Kullu: A case study from Mohal village, *Himachal Pradesh Newsletters* 24 (1); 33-34
11. Sinha S, Dhyani PP, **Sharma RK**, Samant SS (2012) Badte jal pardushn se manwa jati ko khatra, *ENVIS Bulletin on Himalayan Ecology* Vol 20; 100-103
12. **Sharma RK**, Sinha S, Agrawal M (2012) Rasayanik sandushak and manaw shwathya, *Vigyan Ganga* 2 (4); 27-28
13. **Sharma RK**, Sinha S (2012) Himalaya khetra me apshist jal ka prbandhan, *Hima-Prabha* 5: 18-20
14. **Sharma RK**, Devi S, Agrawal SB (2011) Samajik awang arthic utthan me krishi rasyan ki bhumika: ek paridrishya, *Vigyan Ganga* 1;46-47.
15. Devi S, **Sharma RK**, Dhyani PP (2010) Single and combined effects of copper and zinc on tomato (*Lycopersicon esculentum* L. var. Him Sohna) seeds, *Hima-Paryavaran Newsletters* 22 (1): 14-15
16. **Sharma RK**, Dhyani PP, Samant SS (2010) Pesticide residues in food chain: an issue of socioeconomic development for the marginal farmers of Kullu, *ENVIS-Newsletters on Himalayan Ecology* 7: pp 8.
17. **Sharma RK**, Devi S (2010) Himalayai kshetro par kitnasak rasayano ka prabhaw: ek sankshipt vivran, *Him-Prabha* 3: 25-29.
18. **Sharma RK**, Samant SS (2009) Monitoring of pesticide residue in soil and crops: a priority issue for research in western Himalaya, *Hima-Paryavaran Newsletter* 21(1&2): pp 20.

Invited lectures

1. Delivered an **invited talk** on “Contribution of cadmium stressed medicinal plants in pharma industries” in an international conference on “Pharma and Allied Science in the Age of AI: Innovation and IPR Strategies” organized by KRM University, Haryana, India during April 27-28, 2026.
2. Delivered an **invited talk** on “Water and soil pollution: Ecological impacts and Control measures” in workshop on “Environmental Pollution and its Mitigation: Towards Environmental Stewardship” Organized by Mirinda House College, New Delhi on 30th March, 2026
3. Delivered an **invited talk** on “Methods for determination and risk assessment of heavy metal content in environmental and biological sample” in National Workshop on “Tools and Techniques in Wildlife Research” organized by WRCAC, JNV University, Jodhpur, India during February 26-27, 2026
4. Delivered an **invited talk** on “Elucidating the responses of herbal plants to contaminated soil” in international conference on International Conference on “Agroclimatology, Health Biotechnology Interventions in Global Prosperity and Herbal Medicines”, organized by RCSS and SPR at Kochi, Kerala, India during February 11–13, 2026.
5. Delivered an **invited talk** on “Heavy metal decontamination of selected crops using bioash” in international conference on “Recent advances in environmental research, biodiversity conservation and sustainable development organized by Department of Environmental Science, Pachhunga University College, Aizawl, Mizoram, India, during February 3-4, 2026.
6. Delivered an **invited talk** on “Cadmium induced changes in *Mentha arvensis* L.: insights into growth traits, antioxidant defense, metabolite profile” in an international conference on “Current trends in natural products” organized by Botany MMV section, Banaras Hindu University, Varanasi, India during December 9-11, 2025.
7. Delivered a **keynote lecture** on “Behavior of medicinal plants in heavy metal contaminated soil” in National Seminar on “Recent Advances in Medicinal and Aromatic Plant Biotechnology” organized by Graphic Era University, Dehradun, India During November 10, 2025

8. Delivered a **keynote lecture** on “Wastewater use in Agriculture: Risk assessment and Mitigation strategies” in an International Conference on “Urban Environmental Pollution Monitoring and Remediation” organized by Universiti Teknologi Malaysia, Malaysia, October 10, 2025,
9. Delivered a talk as a **resource person** on “Wastewater drain in natural water bodies need a rethink” in National Workshop on “Traditional Ecological Knowledge on Pond Conservation: A Discourse” organized by the Department of History, BHU, Varanasi During March 1, 2025
10. Delivered an **invited talk** on “Insights into the remediation of heavy metal polluted soil using agro-waste derived soil amendments for sustainable agriculture” in 12th International Conference on Advances in Environmental Research” at Osaka, Japan during January 17-19, 2025
11. Delivered an **invited talk** on “Insights into the remediation of heavy metal polluted soil using agro-waste derived soil amendments for sustainable agriculture” in 5th World Environment Summit organized by ESDA at New Delhi, India during November 16-18, 2024
12. Delivered a lecture as a **resource person** on topic entitled “Phytoremediation of heavy metal contaminated soil for sustainable agriculture” in Refresher course, organized by Department of Biochemistry, NEHU, Shillong, September 23, 2023
13. Delivered an **invited speaker** on “Spatial patterns of phytochemical compositions and antioxidant properties in methanol seed extracts of *Azadirachta indica* A. Juss plants” in 3rd Global Conference on Agriculture, Amsterdam, Netherlands, June 24, 2023
14. Delivered an **invited talk** on “Risk assessment of heavy metal concentrations in suburban food systems” in an international conference on “Emerging Trends in Plant & Environment Sciences” at University of Rajasthan, Jaipur During February 2-4, 2023
15. Delivered a lecture as a **resource person** on titled “Risk assessment and sustainable management of heavy metal contamination in Indo-Gangetic plains of India” Five Days Training Program on "Management Strategies for Environmental Health and Safety: A Step towards achieving SDGs" at Amity University, Noida, January 19, 2023
16. Delivered an **invited speaker** on “Risk assessment and sustainable management of heavy metal contamination in Indo-Gangetic plains of India” in an international Conference at Shri Mata Vaishno Devi University, Jammu, December 3, 2022
17. Delivered an **invited speaker** on “Recent trends in research on heavy metal contamination of vegetables and associated health risks in India” National Seminar, Sunbeam Women College, Varanasi, September 9, India 2017
18. Delivered an **invited talk** on “Transfer and accumulation of cadmium in vegetable crops: A human health risk assessment” in an international Conference, MLN National Institute of Technology, Allahabad, India November 22, 2013
19. Delivered an **invited talk** on “Antioxidant Activities in Methanolic Extracts of *Olea Ferruginea* Royle Fruits” in 3rd International Conference, CBEES, Rome, Italy February 24, 2013
20. Delivered an **invited talk** on “Exploring future research collaboration for sustainable agriculture in India and Germany” at Institute of Landscape and Plant Ecology, University of Hohenhom, Stuttgart, Germany February 21, 2013
21. Delivered a lecture as a **resource person** on “Impacts of heavy metals and other harmful chemicals on plants and human health” in a Training programme organized at GBPNIHE, Himachal Unit, Mohal-Kullu on March 26, 2012
22. Delivered a lecture as a **resource person** on “Conservation and sustainable use of Indian Olive plants” in a Training programme organized at GBPNIHE, Mohal-Kullu on March 27, 2012
23. Delivered a lecture as a **resource person** on “Impacts of toxic chemicals on crop biodiversity” on 22nd May 2010, at GSSS, Sainj Valley, Kullu, Himachal Pradesh
24. Delivered a lecture as a **resource person** on “Heavy metals in environment and human health” at “Nature Science Activity Camp” on 12th November 2009 at HP Unit Mohal-Kullu, H.P.
25. Delivered an **invited talk** on “Effects of fly-ash incorporation on heavy metals accumulation, growth and yield responses of Indian Spinach” at 23rd International conference on Solid Waste Management and Technology held in Philadelphia, USA during March 30 – April 2, 2008.

Membership of Academic Societies

1. Society for Plant Research, Noida, India
2. Linnean Society of London, UK
3. Environmental Social and Developmental Association, New Delhi
4. International Society of Environmental Botanist, Lucknow
5. Society for Pesticide Research, New Delhi
6. Society for Applied Biotechnology, Tamil Nadu
7. Indian Science Congress Association, Kolkata

Meeting and seminars organized

1. Organizing Secretary, International Seminar on “Ecosystem Functioning and Sustainability in Changing Environment ESCE-2025” Department of Botany, Banaras Hindu University, Varanasi during February 6-8, 2025
2. Coordinator, SERB-TARE PAC meeting during Novembre 23-24, 2023, ISLS, Banaras Hindu University, Varanasi
3. Organizing Secretary, International Seminar on “Ecosystem Functioning in Anthropocene SEFA 2022” Department of Botany, Banaras Hindu University, Varanasi during February 23-25, 2022
4. Organizing Secretary, National Symposium on “Issues and Challenges in Ecological Sciences” Department of Botany, BHU, India, February 23-25, 2017
5. Convener, organizing committee “World Environment Day” GBPNIHE, Kullu, June 5, 2015
6. Convener, consultation meeting “Farming systems and changing climate regimes: Present status and future prospects” GBNPIHE, Mohal-Kullu, March 21, 2014
7. Convener, training programme “Impacts of heavy metals and other harmful chemicals on plants and human health” GBPNIHE, Himachal Unit, Mohal-Kullu, March 26, 2012
8. Convener, training programme “Conservation and sustainable use of Indian Olive plants” GBPNIHE, Mohal, Kullu, March 27, 2012