



DESHBANDHU COLLEGE
(UNIVERSITY OF DELHI)
KALKAJI, NEW DELHI - 110019
Faculty Details Proforma for College Website

Title	Prof.	First Name	Rajender	Last Name	Kumar	Photograph
Designation	Professor					
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Phone No. Office	011-26439565					
Residence						
Mobile	9958598104					
Email	rksharmabio@yahoo.co.in rkumar12@db.du.ac.in					
Web-Page						
Educational Qualifications						
Degree	Institution					Year
Ph.D.	Himachal Pradesh University, Shimla					2008
M.Phil.	Himachal Pradesh University, Shimla					2002
PG	Himachal Pradesh University, Shimla					2001
UG	Himachal Pradesh University, Shimla					1999
Any other qualification	UGC-NET/CSIR-JRF					2000, 2000, 2001
Career Profile						
Postdoctoral research: worked as Research Associate (RA) of CSIR, New Delhi (Oct. 2008 to July 2010) at Department of Biosciences, H.P. University, Shimla. Assistant Professor: joined Department of Botany, Deshbandhu College, University of Delhi as Assistant Professor (July 21, 2010 to September 30, 2020). Associate Professor: Department of Botany, Deshbandhu College, University of Delhi (October 01, 2020 to September 30, 2023) Professor: Department of Botany, Deshbandhu College, University of Delhi, since, October 01, 2023.						
Administrative Assignments						
- Teacher-in-charge (Botany) 2019-21 - Liaison Officer 2013-15 - Observer (SC, ST) 2013-15 - Advisor, Botanical society 2016-17 - Admission Incharge, Botany 2019-20 - Superintendent Practical Exam., Botany 2018-20 - Convener, Botany, INSPIRE- 2019 - Admission Incharge, Botany 2020-21 - Member, DBT-Star-College Project, DBC 2019-20 - Member Prospectus committee 2011-12 - Member Proctorial committee 2011-12 - Member Cultural committee 2012-13 - Member Proctorial committee 2013-14 - Member Sports committee 2013-14 - Member Sports committee 2014-15						

• Member Cultural committee 2014-15 • Member Garden committee 2015-16 • Member, Building and Furniture committee 2017-18 • Member Garden Committee 2018-19 • Member Prospectus Committee 2018-19 • Member, Development Fund Committee 2019-20 • Member, Development Fund Committee 2020-21 • Member Eco club 2020-21 • Member Garden Committee 2021-22 • Member Union Advisory Committee 2021-22 • Member Students Grievance Committee (Admission) 2021 • Member Eco club 2021-22 • Member Eco club 2022-23																																											
Areas of Interest/Specialization																																											
Plant Physiology and Biochemistry Cell Biology Seed Physiology of high altitude medicinal herbs																																											
Subjects Taught																																											
<table border="1"> <thead> <tr> <th>Name of the Course</th><th>Name of the Subject</th><th></th><th></th><th></th></tr> </thead> <tbody> <tr> <td rowspan="6">B.Sc.(H) Botany</td><td>Plant physiology</td><td></td><td></td><td></td></tr> <tr> <td>Biomolecules and Cell Biology</td><td></td><td></td><td></td></tr> <tr> <td>Plant Metabolism</td><td></td><td></td><td></td></tr> <tr> <td>Analytical techniques in plant sciences</td><td></td><td></td><td></td></tr> <tr> <td>Plant tissue culture</td><td></td><td></td><td></td></tr> <tr> <td>Environmental Biotechnology</td><td></td><td></td><td></td></tr> <tr> <td rowspan="2">B.Sc. Life Sciences</td><td>Plant physiology and metabolism</td><td></td><td></td><td></td></tr> <tr> <td>Medicinal Botany</td><td></td><td></td><td></td></tr> </tbody> </table>					Name of the Course	Name of the Subject				B.Sc.(H) Botany	Plant physiology				Biomolecules and Cell Biology				Plant Metabolism				Analytical techniques in plant sciences				Plant tissue culture				Environmental Biotechnology				B.Sc. Life Sciences	Plant physiology and metabolism				Medicinal Botany			
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1. Research papers published in Refereed/Peer Reviewed Journals

- i. **Rajender Kumar Sharma**, Shashi Sharma and Shanti S. Sharma (2006). Seed germination behavior of some medicinal plants of Lahaul and Spiti cold desert (Himachal Pradesh): implications for conservation and cultivation. **Current Science** **90**: 1113-1118.
- ii. **Rajender Kumar Sharma** and Shashi Sharma (2010). Effect of Storage and Cold-stratification on Seed Physiological Aspects of *Bunium persicum*: a Threatened Medicinal Herb of trans-Himalaya. **International Journal of Botany** **6**: 151-156.
- iii. **Rajender Kumar Sharma**, Shashi Sharma and Shanti S. Sharma (2010). Storage-dependent changes in dormancy and germination of Himalayan Mayapple (*Podophyllum hexandrum* Royle) seeds and their response to gibberellic acid. **Journal of Herbs, Spices & Medicinal plants** **16**: 1-14. <http://dx.doi.org/10.1080/10496475.2010.481944>
- iv. Shashi Sharma and **Rajender Kumar Sharma** (2010). Seed physiological aspects of Pushkarmool (*Inula racemosa*), a threatened medicinal herb: response to storage, cold-stratification, light and gibberellic acid. **Current Science** **99**: 1801-1806.
- v. Shashi Sharma and **Rajender Kumar Sharma** (2010). Long-term storage-dependent changes in seed physiological aspects of *Hyoscyamus niger* from a cold desert region of Trans-Himalaya. **International Journal of Plant Biology** **1**:e17: 84-88. doi:10.4081/pb.2010.e17
- vi. **Rajender Kumar Sharma**, Shashi Sharma and Shanti S. Sharma (2014). The long-term ambient storage-induced alterations in seed viability, germination and seedling vigour of *Saussurea costus*, a critically endangered medicinal herb of North West Himalaya. **Journal of Applied Research on Medicinal and Aromatic Plants** **1**(3): 92-97. <http://dx.doi.org/10.1016/j.jarmap.2014.07.002>
- vii. **Rajender Kumar Sharma** and Shashi Sharma (2017). Seed longevity, germination and seedling vigour of *Rheum australe* D. Don.: A step towards conservation and cultivation. **Journal of Applied Research on Medicinal and Aromatic Plants** **5**(1): 47-52. <https://doi.org/10.1016/j.jarmap.2016.10.004>
- viii. **Rajender Kumar Sharma** (2021). Physical seed dormancy in *Abrus precatorious* (Ratti): A scientific validation of indigenous technique. **Experimental Results** **2**, e8: 1-8. doi:10.1017/exp.2020.64
- ix. Anupriya Sharma, **Rajender Kumar Sharma**, Shanti S. Sharma (2021). A comparable stimulation of seed germination by gibberellic acid and sodium nitroprusside in *Hyoscyamus niger* L., a threatened medicinal herb, from Spiti (Himachal Pradesh). **The Journal of Indian Botanical Society** **101** (3): 194-203. DOI: 10.5958/2455-7218.2021.00029.2
- x. **Rajender Kumar Sharma** and Deepa Sharma (2022). Drying Willow (*Salix fragilis* L.) Population Under Agroforestry System in Cold Desert Region of trans-Himalaya: a Possible Consequence of Repeated Vegetative Propagation. **International Journal of Ecology and Environmental Sciences** **48**(1): 119-125. <https://doi.org/10.55863/ijeec.2022.0018>
- xi. Krishan, R., **Rajender Kumar Sharma**, Kumar, V. et al. (2023). Seed longevity and storage dependent changes in seed germination aspects of *Berberis aristata* and *B. lycium* from Western Himalaya: implications for seed storage and conservation. **Vegetos** **36**, 1191-1198. <https://doi.org/10.1007/s42535-022-00505-0>
- xii. Krishan, R., **Rajender Kumar Sharma** & Sharma, S.S. (2022). Assessment of seed biology of the Himalayan medicinal herb *Phytolacca acinosa* Roxb., the Indian pokeweed, from the perspective of longevity, conservation and propagation. **Nucleus** **65** (3): 331-339. <https://doi.org/10.1007/s13237-022-00404-4>
- xiii. Deepa Sharma and **Rajender Kumar Sharma** (2022). Herbs Loaded with Psychoactive Molecules: A Potential Role to Cure Mental Disorders. **Indian Journal of Health and Well-Being** **13**(4): 543-549.
- xiv. **Rajender Kumar Sharma**, Chhibber AK, Saxena V, Kandpal M, Swami M, Sagar S (2023). Assessment of Viability, Germination and Efficacy of Pre-treatments in Seeds of *Jurinea dolomiaea*, a Critically Endangered Medicinal and Aromatic Herb of Alpine Himalaya, from the Perspective of Conservation.

Journal of Plant Science and Research 10(1): 240

- xv. **Rajender Kumar Sharma (2023)**. Kukumseri: a home to *Colchicum luteum* Baker (Colchicaceae), a rare and endangered medicinal herb. *Journal of Threatened Taxa* 15(9): 23925-23927. <https://doi.org/10.11609/jott.8199.15.9.23925-23927>
- xvi. **Rajender Kumar Sharma**, Bhatia, B., Chhibbar, A.K., Mukherjee, S., Ritika, Kumari, K. and Indu (2024). Substitute of light requirement for germination in positive photoblastic seeds of *Inula racemosa*; a critically endangered medicinal and aromatic plant of NW Himalaya. *International Journal of Ecology and Environmental Sciences*, 50: 377-383. <https://doi.org/10.55863/ijees.2024.0015>
- xvii. Ram Krishan, **Rajender Kumar Sharma**, Vijay Kumar, Shanti S. Sharma (2024) Double dormancy in a threatened Western-Himalayan population of *Polygonatum cirrhifolium* (maha-meda): Response to ambient storage and pretreatments. *Proceedings of the National Academy of Sciences, India, Section B: Biological Sciences*, 94: 959-965. <https://doi.org/10.1007/s40011-024-01595-3>
- xviii. Dhyani, A., K. Shantanu, **Rajender K. Sharma** & P.L. Uniyal (2024). Diversity of mosses (Bryophyta) in Pangi valley (Himachal Pradesh, India): an unexplored domain of northwestern Himalaya. *Journal of Threatened Taxa* 16(5): 25227-25234. <https://doi.org/10.11609/jot.8733.16.5.25227-25234>
- xix. Sharma, R.K. Harvesting seeds before dormancy induction in *Hyoscyamus niger*, a threatened medicinal herb of trans Himalaya: implication for propagation without seed pre-treatments. *Discov. Plants* 1, 13 (2024). <https://doi.org/10.1007/s44372-024-00013-2>
- xx. Kumar, V., Sharma, S., Sharma, R. K., Kumar, V., & Sharma, S. S. (2024). Influence of seed pre-treatment and storage on germination and physiological characteristics of seeds of common mullein (*Verbascum thapsus* L.). *Journal of Applied Research on Medicinal and Aromatic Plants*, 43: 100573. <https://doi.org/10.1016/j.jarmap.2024.100573>
- xxi. Nirmla Negi, **Rajender Kumar Sharma** and Shanti S. Sharma (2025) Antioxidative potential of *Angelica glauca* Edgew. and *Dioscorea deltoidea* Wall.: high value, endangered medicinal herbs of north west Himalaya. *Journal of Indian botanical Society*, 105 (1): [https://doi: 10.61289/jibs2024.12.02.405](https://doi.org/10.61289/jibs2024.12.02.405)

2. Research papers Published in Conferences/Seminar other than Refereed/Peer Reviewed Conferences

- I. **Rajender Kumar Sharma**, Shashi Sharma and Shanti S. Sharma (2005). Seed characterization of some medicinal plant species of Lahaul and Spiti cold desert region (Himachal Pradesh). In: *Herbal drugs and environmental pollution*. Jamia Hamdard, New Delhi, pp. 81-83.

Conference Organization/ Presentations

Organization of a Conference: None

Participation as Paper/Poster Presenter:

- I. **Rajender K. Sharma**, Shashi Sharma and Shanti S. Sharma (2003). Ecophysiological aspects of seeds of some medicinal plant species of Lahaul and Spiti (H.P.). 2nd International Congress of Plant Physiology, IARI New Delhi. Abstract: p-617.
- II. Shashi Sharma, **Rajender K. Sharma** and Shanti S. Sharma (2006). Physiochemical and hormonal methods for dormancy removal in some medicinal plant species of Lahaul and Spiti (Himachal Pradesh): Potential role in field cultivation including agro-forestry systems. Status and potential of agroforestry in North-Western Himalayas, HFRI, Shimla. Abstract: p-12
- III. **Rajender K. Sharma**, Shashi Sharma and Shanti S. Sharma (2008). Storage-dependent changes in dormancy/germination status of seeds and their response to gibberellic acid in Himalayan Mayapple (*Podophyllum hexandrum* Royle). Conference on "Molecular Biology and Biotechnology (ICMBB-2008)" Banasthali University, Rajasthan.
- IV. **Rajender K. Sharma** and Shashi Sharma (2008). Seed germination behaviour of *Hyoscyamus niger* from cold desert area of trans-Himalayan Cold Desert region as affected by storage. National Symposium on "New Biology in Agriculture". Punjab University, Chandigarh. Abstract: p-91.
- V. **Rajender K. Sharma** and Shashi Sharma (2010). Ecophysiological characterization of seeds of Pushkarmool (*Inula*

- racemosa*), a threatened medicinal herb from cold desert region in Lahaul and Spiti (Himachal Pradesh): implications for conservation and cultivation. Biodiversity and Environmental Governance in Canada and India: Safeguarding Ecosystems for Human Welfare (October 21-23, 2010). Organized by Centre for Canadian Studies Department of English, Gurukul Kangri University, Haridwar, India and Department of Biology, McMaster University, Hamilton, Canada.
- VI. **Rajender K. Sharma**, Shashi Sharma and Shanti S. Sharma (2012). Assessment of seed germination, viability and seedling growth performance with respect to long-term storage in *Saussurea costus* (kuth), a critically endangered medicinal herb. National Seminar on "Medicinal Plants Research in India". Department of Botany, Jamia Hamdard University, New Delhi. Abstract: p-82.
 - VII. National conference on "BIOTIKOS 2017; trends in Nanobiotechnology" organized by Department of Biotechnology, TERI University, New Delhi, 28-29 September 2017.
 - VIII. **Rajender K. Sharma**, Presented paper on 'Seed longevity and germination characteristics of some high valued, endangered medicinal plants of NW Himalaya: implications for conservation and propagation' at national conference on Ashwagandha- A health promoter, organized by Deshbandhu College, University of Delhi (March 4-5, 2025).
 - IX. **Rajender K. Sharma**, Presented paper on 'Seed longevity and germination features of two high valued, critically endangered medicinal herbs, *Saussurea costus* and *Inula racemosa*: implication for conservation and cultivation' at International conference on medicinal plants (ICGPMP-2025), organized by Ramjas College, University of Delhi (March 20-21, 2025)

Conferences and workshops attended:

1. Presented research paper in 2nd International Congress of Plant Physiology on "Sustainable Plant Productivity under Changing Environment" at IARI New Delhi, organized by Indian Society of Plant Physiology and International Association of Plant Physiology. Jan. 08-12, 2003.
2. Actively participated in Conservation Assessment and Management Prioritization (CAMP) workshop on Medicinal Plants of Indian Himalayan Region organized by FRLHT, Bangalore and HFRI, Shimla. May 22-25, 2003.
3. Attended four days training workshop on "Principles and uses of sophisticated Instruments in Biological Sciences" at CPRI, Shimla in collaboration with sophisticated Analytical Instrumentation Facility, Punjab University Chandigarh. May 24-27, 2004.
4. Attended National Roving Seminar on "Patenting in Biotechnology" organized by Department of Biotechnology, H.P. University Shimla and sponsored by Department of Biotechnology, Ministry of Science and Technology Govt. of India, New Delhi. Nov. 21, 2005.
5. Presented research paper in "Herbal Drugs and Environmental Pollution: a satellite session of Third International conference on Plants and Environment Pollution", organized by Department of Botany, Jamia Hamdard University, New Delhi. Dec. 04, 2005.
6. Attended workshop on "Status and Potential of Agroforestry in North-Western Himalayas" organised by HFRI, Shimla, Nov. 14-16, 2006.
7. Presented research paper in International Conference on "Molecular Biology and Biotechnology (ICMBB-2008)" at Department of Bioscience and Biotechnology, Banasthali University, Rajasthan. Oct. 19-21, 2008.
8. Presented research paper in National Symposium on "New Biology in Agriculture" at Punjab University, Chandigarh, organized by P.U. Chandigarh in collaboration with All India Biotech Association (AIBA). Nov. 07-08, 2008.
9. Participated in national seminar on "Role of Analytical Techniques in Biological & Environmental Sciences" at the conference Centre and Kirori Mal College, University of Delhi. Jan. 27-29, 2011.
10. Attended International Conference on "Recent Trends in Developing Bioremediation Strategies for Hexachlorocyclohexane (HCH) & other Chlorinated Contaminants" at University of Delhi. Feb. 9-11, 2011.
11. Participated in one day orientation programme on "Climate Change & its Mitigation" at Mahatma Gandhi Institute for Combating Climate Change, Alipur, Delhi. Feb. 28, 2011.
12. Presented research paper in National Seminar on "Medicinal Plants Research in India" at Jamia Hamdard University, New Delhi. Mar. 16-17, 2012.
13. Actively participated as member organizing committee in the "INSPIRE Internship Program-2012" organized by Deshbandhu College, University of Delhi, from October 1-5, 2012.
14. Participated as member organizing committee in the "INSPIRE Internship Program-2013" organized by Deshbandhu College, University of Delhi, from December 16-20, 2013.
15. Participated 4-week UGC-sponsored Orientation Programme (OP-114) held at Academic Staff College, Himachal Pradesh University, Shimla from 14-04-2014 to 10-05-2014.
16. Participated as organizing member in the "INSPIRE Internship Program-2015" organized by Deshbandhu College, University of Delhi, from December 14-18, 2015.
17. Presented research paper in National conference on "BIOTIKOS 2017; trends in Nanobiotechnology" organized by Department of Biotechnology, TERI University, New Delhi, 28-29 September 2017.
18. Participated in national seminar on "Technical terminology in science teaching" at Deshbandhu College, University of Delhi, organized by Commission for scientific and technical terminology, Govt. of India, October 26-27, 2017.

19. Participated in the “Fourth National Symposium on Environment: Green Technology for Environmental Sustainability” at Deshbandhu college, University of Delhi, September 25, 2018. 20. Member, Organizing Committee in two days Symposium on “Avenues in Plant Science: A Hope for Sustainable future” on 8th and 9th March 2019 in Deshbandhu College, Delhi University. 21. Participated in two days Faculty Development Programme on “Agriculture, Health and Society” (Interdisciplinary) on 15th and 16th March 2019 in Hansraj College, Delhi University 22. Attended two weeks refresher course in Life Sciences and Biotechnology at UGC-HRDC, Jawaharlal Nehru University, New Delhi from 19-30 August, 2019. 23. Worked as an organizing member and as a resource person in the “INSPIRE Internship Programme 2019”, organized by Deshbandhu college, University of Delhi, December 17-21, 2019. 24. Worked as an organizing member in the National Conference on Insect-Plant Biology in 21st Century organized by Department of Zoology, Deshbandhu College, University of Delhi, November 17-21, 2019. 25. Participated in an International Conference on “Natural Products and Human Health - 2020” organized by Department of Zoology, Deshbandhu college, University of Delhi, February 27-29, 2020. 26. Attended one week Faculty Development Programme organized by Sri Aurobindo College, University of Delhi during 15-20 June, 2020. 27. Attended one week Faculty Development Programme, organized by Deshbandhu College, University of Delhi in association with CUH from 26 June, 2020 to 01 July, 2020. 28. Attended Two week FDP on Blended learning, organized by Ramanujan College, University of Delhi from 14-29 January, 2021. 29. Attended Two weeks Refresher course on Research methodology, organized by Ramanujan College, University of Delhi from 30 January, 2021 to 14 Feb, 2021. 30. Attended one week FDP on Academic writing, organized by Ramanujan College, University of Delhi from 18-24 February, 2021. 31. Attended more than 30 online lectures/webinars during the period of May, 2020 to June, 2021. 32. FDP on NEP-2020. Organized by Ramanujan College, 29 May to 04 June, 2023. 33. Presented paper on ‘Seed longevity and germination characteristics of some high valued, endangered medicinal plants of NW Himalaya: implications for conservation and propagation’ at national conference on Ashwagandha-A health promoter, organized by Deshbandhu College, University of Delhi (March 4-5, 2025). 34. Presented paper on ‘Seed longevity and germination features of two high valued, critically endangered medicinal herbs, <i>Saussurea costus</i> and <i>Inula racemosa</i>: implication for conservation and cultivation’ at International conference on medicinal plants (ICGMP-2025), organized by Ramjas College, University of Delhi (March 20-21, 2025).
Research Projects (Major Grants/Research Collaboration) 1. Completed Innovation Research Project on “Impact of climate change on various physical parameters of weather in a highly polluted area and relatively pollution free area”. Funded by University of Delhi (Innovation Project 2014, DBC-206) 2. Minor Research Projects under DBT-Star-College scheme, Deshbandhu College (2019-2021): • Seed dormancy in some medicinally/economically important plants: causes and methods to overcome • To study the physiological roles of some plant growth regulators • Study of plant responses to various abiotic stresses
Awards and Distinctions 1. CSIR (NET-JRF-SRF) Fellowship by Council of Scientific and Industrial Research, New Delhi (2002 to 2007). 2. Postdoctoral Research Associateship by Council of Scientific and Industrial Research (CSIR), New Delhi (2008 to 2010). 3. First Prize for best Paper Presentation in Third International Conference on “Herbal Drugs and Environmental Pollution”. Organized by Department of Botany, Jamia Hamdard University, New Delhi. December 04, 2005. 4. 6 times class topper up to 10th class. 5. Second topper M.Phil. Botany (HPU Shimla, 2002).
Association With Professional Bodies ➤ Reviewing manuscripts from different Journals. ➤ Member, Himachal Pradesh University Biological Society. ➤ Member, Delhi University Botanical Society.

Other Activities
1. Delivered talks on medicinal uses, cultivation and conservation of threatened medicinal plant species of cold desert region of Himachal Pradesh for Doordarshan Shimla (2005-2010) .

Prof. Rajender Kumar Sharma