



Faculty Details proforma for DU Web-site

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cc: director@ducc.du.ac.in)

Title	Dr, (Mrs)	First Name	Rupam	Last Name	Kapoor	Photograph
Designation	Professor					
Address	E4/23C Model Town Delhi -110 009					
Phone No Office						
Residence	27248600					
Mobile	9818497035					
Email	kapoor_rupam@yahoo.com					
Web-Page						
Educational Qualifications						
Degree	Institution				Year	
Ph.D.	University of Delhi, Delhi				1998	
M.Phil. / M.Tech.	Panjab University, Chandigarh				1992	
PG	Panjab University, Chandigarh				1991	
UG	Panjab University, Chandigarh				1989	
Any other qualification						
Career Profile						
Organisation / Institution	Designation		Duration	Role		
University of Delhi	Research Associate (Part time)		3rd May 1999-14th Jan., 2002	Research		
University of Delhi	Research Associate		15th Jan. 2002-14th Jan. 2007	Research and Teaching		
University of Delhi	DST, Woman Scientist		15th Sept. 2004 -14th Sept., 2009	Research and Teaching		
University of Delhi	Reader		10 th Oct 2007-9 th Oct., 2010	Research and Teaching		
	Associate Professor		10 th Oct., 2010 -9 th Oct., 2013			
	Professor		10 th October 2013			

Administrative Assignments				
1. Member, Garden Committee, University of Delhi. 2. Member, Flower Show, 2017 3. Editor-in-chief, The Botanica (Official Magazine of Delhi University Botanical Society).				
Areas of Interest / Specialization				
Interaction of plants with pathogenic and symbiotic fungi; microbial biotechnology				
Subjects Taught				
Pathogens and Pests of Crop Plants; Microbes and Microbial Technology; Molecular Interactions of Plants with Symbionts, Pathogens and Pests				
Time table of the subjects taught during the current semester				
S.No.	Subject	Days	Time	Classroom (# Room/Lab Number)
1.	BOT 204 Pathogens and Pests of Crop Plants	Monday Thursday	Theory: 9:40-10:35 Practical: 10:35-2:15 Theory: 8:45-9:40 Practical: 10:35-2:15	Theory: 37 Lab: 3/47 Theory: 37 Lab: 3/47
2.	BOT 302 Microbes and Microbial Technology	Tuesday Wednesday	Theory: 8:45-9:40 Practical: 9:40-12:25 Theory: 9:40- 10:35	Theory: LH 1 Lab: 4 Theory: LH 1
3.	BOT 403 Molecular interactions of Plants with symbionts, pathogens and pests.	Friday (Theory and Practical)	Theory: 8:45-10:35 Practical: 10:35-2:15	Theory: 208 Lab: 2/26
4.	Ph.D Coursework GR6: Methods for microbiology and plant parasite interactions	Monday	Time: 2:00-4:00	Theory: Committee Room
5.	M.Phil. Coursework Topics and Techniques in Plant Pathology 7A.	Tuesday	Time: 2:00-4:00	Theory: Committee Room
Research Guidance				

List against each head (If applicable)

Supervision of awarded M.Phil dissertations

- Interactive effects of arbuscular mycorrhiza and arsenic toxicity on arsenic uptake and oxidative stress in *Triticum aestivum* L. (2016).
- Ameliorative role of *Rhizophagus intraradices* in wheat against Arsenic toxicity induced oxidative stress (2015).
- Cultural, Morphological and Molecular Characterization of *Alternaria carthami* isolates causing leaf spot disease of safflower (2013)
- Biocontrol mechanisms in *Trichoderma* and molecular advancements to improve its biocontrol potential – A review (2009)
- Standardization of the technique for monoxenic culture of arbuscular mycorrhizal fungus through root organ culture (2009)
- Arbuscular Mycorrhiza in Synergism with *Trichoderma viride* and *Psuedomonas* sp. for Biocontrol of *Fusarium oxysporum* f. sp. *lycopersici* ≠ An Integrated Approach.(2007)
- Arbuscular Mycorrhizal in Conservation and Improving Growth of *Curculigo orchioides*: a Vulnerable Medicinal Plant. (2006)
- Effect of Arbuscular Mycorrhiza on Growth and Productivity of *Artemisia annua* L. (2005)

Supervision of awarded Ph.D. thesis

- Characterization of mutants to identify the roles of three genes in virulence of *Botrytis cinerea* Persoon ex. Fries (2018)
- Effect of elevated CO₂ on Plant-pathogen interactions in *Brassica juncea* L. (Czern. & Coss.) (2016)
- Unravelling the mechanisms involved in Arbuscular mycorrhizal fungi mediated increase in Secondary metabolite produced in *Artemisia annua* L. and *Stevia rebaudiana* Bertoni (2016)
- Analyses of genetic and pathogenic variation among *Botrytis cinerea* isolates (2014)
- A Computational, Cultural and Metagenomic Approach to Study Carbon Dioxide Utilizing Microorganisms (2014)
- Tagging pathogenicity genes in *Botrytis cinerea* by insertional mutagenesis (2013).
- AM symbiosis and salinity tolerance: alleviation of ionic, osmotic and oxidative stress in *Trigonella foenum-graecum* L. colonized by *Glomus intraradices* Schenck and Smith (2013).
- Transcriptional regulation of *cry4A* gene of *Bacillus thuringiensis israelensis* (2011).

Publications Profile (in the last five years)

Research papers published in Refereed/Peer Reviewed Journals

- Mathur P, Singh V P and **Kapoor R** 2018. Interactive effects of CO₂ concentrations and *Alternaria brassicae* (Berk.) Sacc. infection on defense signalling in *Brassica juncea* (L.) Czern. & Coss. European Journal of Plant Pathology 151: 413–425.

- Sharma E, Tayal P, Anand G, Mathur P and **Kapoor R**. 2018. Functional analysis of Diacylglycerol O-acyl transferase 2 gene to decipher its role in virulence of *Botrytis cinerea*. *Current Genetics* 64(2), 443-457.
- Narayan OP, Verma N, Singh AK, Oelmüller R, Kumar M, Prasad D, **Kapoor R**, Dua M, and Johri AK 2017. Antioxidant enzymes in chickpea colonized by *Piriformospora indica* participate in defense against the pathogen *Botrytis cinerea*. *Scientific Reports* 7: 13553. doi: [10.1038/s41598-017-12944-w](https://doi.org/10.1038/s41598-017-12944-w)
- Sharma E and **Kapoor R** 2017. Insights into the molecular interplay of virulence factors in *Botrytis cinerea*. *Australasian Plant Pathology* 46(6): 551-561 (DOI [10.1007/s13313-017-0519-7](https://doi.org/10.1007/s13313-017-0519-7))
- Sharma E and **Kapoor R** 2017. Expression of a novel gene encoding predicted protein affects pathogenicity in *Botrytis cinerea*. *Kavaka* 48:52-63.
- Tayal P, Raj S, Sharma E, Kumar M, Dayaman V, Verma N, Jogawat A, Dua M, **Kapoor, R** and Johri A 2017. A *Botrytis cinerea* KLP-7 Kinesin acts as a Virulence Determinant during Plant Infection. *Scientific Reports* | 7: 10664 | DOI:[10.1038/s41598-017-09409-5](https://doi.org/10.1038/s41598-017-09409-5).
- Sharma S, Anand G, Singh N, **Kapoor R** 2017 Arbuscular mycorrhiza augments arsenic tolerance in wheat (*Triticum aestivum* L.) by strengthening antioxidant defense system and thiol metabolism. *Frontiers in Plant Science* (section Plant Traffic and Transport). doi: [10.3389/fpls.2017.00906](https://doi.org/10.3389/fpls.2017.00906).
- Sharma E, Anand G and **Kapoor R** 2017 Terpenoids in plant and arbuscular mycorrhiza-reinforced defence against herbivorous insects. *Annals of Botany* 119: 791-801
- **Kapoor R**, Anand G, Pooja, Mandal S 2017 Insight into the mechanisms of enhanced production of valuable terpenoids by arbuscular mycorrhiza. *Phytochemistry Reviews* Volume 16: 677–692. doi: [10.1007/s11101-016-9486-9](https://doi.org/10.1007/s11101-016-9486-9).
- Mandal S, Upadhyay S, Singh VP and **Kapoor R** 2015 Enhanced production of steviol glycosides in mycorrhizal plants: a concerted effect of arbuscular mycorrhizal symbiosis on transcription of biosynthetic genes. *Plant Physiology and Biochemistry* 89: 100-106.
- Mandal S, Upadhyay S, Wajid S, Ram M, Jain DC, Singh VP, Abdin MZ and **Kapoor R** 2015 Arbuscular mycorrhiza increase artemisinin accumulation in *Artemisia annua* by higher expression of key biosynthesis genes via enhanced jasmonic acid levels. *Mycorrhiza* 25: 345-357.
- Kumari S, Tayal P, Sharma E and **Kapoor R** 2014 Analyses of genetic and pathogenic variability among *Botrytis cinerea* isolates. *Microbiological Research* 169: 862-872.
- Evelin H and **Kapoor R** 2014 Arbuscular mycorrhizal symbiosis modulates antioxidant response in salt stressed *Trigonella foenum-graecum* plants. *Mycorrhiza* 24:197–208.
- Mandal S, Evelin H, Giri B, Singh VP, **Kapoor R** 2013 Arbuscular mycorrhiza enhances the production of stevioside and rebaudioside-A in *Stevia rebaudiana* via nutritional and non-nutritional mechanisms. *Applied Soil Ecology* 72: 187-194.
- Mathur P, Sharma E, Singh SD, Bhatnagar AK, Singh VP and **Kapoor R** 2013 Effect of elevated CO₂ on infection of three foliar diseases in oilseed *Brassica juncea*. *Journal of Plant Pathology* 95: 135-144.

- Heikham Evelin, Giri B and **Kapoor R** 2013 Ultrastructural evidence for AMF mediated salt stress mitigation in *Trigonella foenum-graecum*. *Mycorrhiza* 23:71-86.
- Heikham Evelin, Giri B and **Kapoor R** 2012 Contribution of *Glomus intraradices* inoculation on nutrient acquisition and mitigation of ionic imbalance in NaCl stressed *Trigonella foenum-graecum*. *Mycorrhiza* 22: 203-217.

Other publications

EDITED BOOK

Kapoor R, Kaur I and Koul M (editors) 2015. Plant Reproductive Biology and Conservation. IK International Publishing House Pvt. Ltd. New Delhi. ISBN 978-93-82332-90-9.

(Chapters in Edited Books.)

- Sharma S, Singh N and Kapoor R 2017 Arbuscular Mycorrhizal Fungi in Redeeming Arsenic Toxicity in Plants. In A. Varma et al. (eds.), *Mycorrhiza - Eco-Physiology, Secondary Metabolites, Nanomaterials*, Springer International Publishing AG DOI 10.1007/978-3-319-57849-1_7.
- **Kapoor R** and Singh N 2016 Arbuscular Mycorrhiza and Reactive Oxygen Species. In: Q.-S. Wu (ed.), *Arbuscular Mycorrhizas and Stress Tolerance of Plants*, Springer Nature Singapore Pte Ltd. 2017 DOI 10.1007/978-981-10-4115-0_10.
- Sharma S and **Kapoor R** 2017 Arbuscular Mycorrhizal Fungi in Quenching the Detrimental Effects of Heavy Metals for Sustainable Agriculture of Crop Plants 75-92. In: Bagyaraj D.J. and Jamaluddin (Eds.) *Microbes for Restoration of Degraded Ecosystems*. New India Publishing Agency, New Delhi.
- Upadhyay S, Koul M and **Kapoor R**. 2015 Rhizosphere microflora in advocacy of heavy metal tolerance in plants. 323-337. In: Dilfuza E and Varma A (Eds.) *Plant-Growth-Promoting Rhizobacteria (PGPR) and Medicinal Plants*. Soil Biology 42 Springer
- Evelin H, Sharma E and **Kapoor R** 2015. Arbuscular mycorrhizal fungi: Potential Role in conservation of endangered plants. 424-437. In: Kapoor R, Kaur I and Koul M (Eds.) *Plant Reproductive Biology and Conservation*. IK international publishing Pvt. Ltd. New Delhi.
- Sharma E, Pal S, Giri B and **Kapoor R** 2014 Molecular interactions among partners of arbuscular mycorrhizal symbiosis. 335-366. In: Chakraborty B and Chokraborty U (Eds.) *Review of Plant Pathology*. Scientific Publishers Jodhpur, India on behalf of Indian Society of Mycology and Plant Pathology.
- **Kapoor R**, Evelin H, Mathur P and Giri B 2012 Arbuscular mycorrhiza: approaches for abiotic stress tolerance in crop plants for sustainable agriculture. In: Tuteja N and Gill S (Eds.) *Crop Improvement Under Adverse Conditions*. Springer Science + Business Media, New York, USA.

Conference Organization/ Presentations (in the last three years)

Organization of a Conference

- **Organizing Secretary, National Conference on Plant Science Research: Looking Beyond 21st Century for Environmental and Agricultural Revolution**” under the

aegis of Society for Plant Research and Department of Botany, University of Delhi during February 5-7, 2016. University of Delhi

- **Co-convenor**, Workshop “Physiological Ecology” at 7th International Conference on Mycorrhiza “Mycorrhiza for all – An Under Earth Revolution”, New Delhi 6-11, 2013

Participation as Paper Presenter

- Presented a Plenary lecture on “Arbuscular mycorrhiza (AM) and sustainable agriculture of medicinal plants” in the national conference on “Emerging Environmental Challenges and Sustainable Development” jointly organized by Swami Shraddhanand College, Department of Botany, University of Delhi, Delhi and Society for Environment and Development, (SED India), New Delhi 21-23 March 2018.
- Delivered an invited lecture on “Arbuscular mycorrhiza (AM) in augmenting the yield of medicinal plants” in the 13th J&K Science Congress “Emerging Technologies and Human Society: Applications and Constraints” University of Kashmir, Srinagar 2-4 April 2018.
- Delivered an invited lecture on “Arbuscular Mycorrhizal Fungi – Adept Companions of Plants” in the national Seminar on “New Vistas in Plant and Microbial Sciences” organized by the Department of Botany, University of Jammu, Jammu 11-12 March 2016
- Presented an invited lecture entitled “Disentangling the Mechanisms for Superior Employment of Arbuscular Mycorrhiza in Cultivation of Medicinal Plants” in National Conference on Emerging trends in Fungal Biology and Plant Protection (42nd Annual Meeting of the Mycological Society of India) February 16-18th, 2016, Banaras Hindu University, Varanasi.
- Presented an invited lecture entitled “Arbuscular Mycorrhizal Fungi for Improving Production of Terpenoids in Medicinal Plants: A Sustainable Approach” in 56th annual conference of association of Microbiologists of India (AMI-2015) & International symposium on “Emerging Discoveries in Microbiology”. December 7-10 2015 at JNU, New Delhi
- Presented an invited lecture entitled “Enhancing plant secondary metabolites through AM symbiosis: An underground approach” in Indian Science Congress 2015, Mumbai
- Presented a paper entitled “AM symbiosis and synthesis of terpenoids in aerial parts of Plant” in 7th International conference on “Mycorrhiza for all – An Under Earth Revolution”, New Delhi 6-11, 2013.

Research Projects (Major Grants/Research Collaboration)

- (2010 – 2013) DBT Project entitled “Cost effective *Glomus fasciculatum* Formulation to Improve the Yield of Three Commercially Important Medicinal Plants- *Artemisia annua*, *Stevia rebaudiana* and *Andrographis paniculata*” to be carried out in collaboration with The Energy Resources Institute (TERI), New Delhi.
- (2010 – 2013) Ministry of Environment and Forests Project entitled “Effect of Elevated CO₂ on some important plant diseases of India”.
- (2009-2013) DST-University of Delhi Purse grant entitled “Genetic and genomic approaches for improvement of oilseed crop *Carthamus tinctorius* (safflower)”.
- (2013-2016) DST-SERB project entitled “Application of *Agrobacterium tumefaciens*

mediated transformation for tagging genes responsible for virulence in *Botrytis cinerea*

Awards and Distinctions

- **Elected Fellow**, Mycological Society of India, 2015
- **Y. S. Murty Medal - 2010** for Young Scientist by Indian Botanical Society, India
- **DST-BOYSCAST Fellow (2008-09)** Plant-Microbe Interaction at Department of Biology, University of Alabama in Huntsville, Huntsville, USA

Association With Professional Bodies

- **Editor-in Chief** The Botanica (an official magazine of Delhi University Botanical Society) (**2011-2016**)
- *Member* of Council Mycological Society of India, Chennai India
- *Member, Editorial Board Journal of Mycology and Plant Pathology, Udaipur, India*

Membership

- **Member**, International Mycorrhiza Society, (member number 20121228i21271)
- **Member**, International Symbiosis Society, Boston, USA
- **Life Member** Mycological Society of India, Chennai
- **Life Member**, Indian Society of Mycology and Plant Pathology, Udaipur
- **Life Member**, Indian Botanical Society, Jaipur
- **Life Member**, Delhi University Botanical Society, Delhi
- **Life Member**, International Society of Plant Morphologists, Delhi
- **Life Member**, Society for Conservation and Resource Development of Medicinal Plants, Delhi
- **Life Member**, Association of Microbiologists of India, Hissar (LM-32-11)
- **Life Member**, Indian Science Congress Association, Kolkata

Other Activities

Signature of Faculty Member