

Date: October 6, 2015

CURRICULUM – VITAE

Name: Dr Bhoopander Giri

Personal Information:

Date of Birth: June 1, 1973

Citizenship: Indian

Present Position: Assistant Professor

Official Address: Department of Botany, Swami Shraddhanand College
University of Delhi, Delhi 110036, India

Address for Correspondence: Department of Botany, Swami Shraddhanand College
University of Delhi, Delhi 110036, India

Mobile No.: 09540077805

E-mail address: bhoopg@yahoo.com

Date of Appointment in the College: October 16, 2008

Total Teaching Experience: > Seven years

Native Place: Bulandshahr, UP

Education:

Sl No.	Institution Place	Degree Awarded	Year	Field of Study
1.	CCS University, Meerut	B.Sc.	1994	Botany, Chemistry, Zoology
2.	CCS University, Meerut	M.Sc.	1996	Botany
3.	University of Delhi, Delhi	M. Phil.	1997	Botany
4.	University of Delhi, Delhi	Ph. D	2001	Botany
5.	Department of Plant Pathology, North Carolina State University, Raleigh, North Carolina, USA	Post Doctoral Fellow	2014-2015	Climate change

Fellowship and Awards: (including convener/co-convener/member organizing committees etc for International and national conferences/workshops/seminars)

- **Post Doctoral Fellowship** (2014-2015) Department of Plant Pathology, North Carolina State University, Raleigh, North Carolina, United States.
- Best poster presentation award in 98th Indian Science Congress, SRM University Chennai from 3-7 January, 2011.
- **Research Associate** (2006-2008) Biotechnology and Bioresources Division, The Energy and Resources Institute (TERI), India Habitat Center, Lodhi Road, New Delhi.
- Department of Science and Technology Young Scientist Fast-Track Project 2006.
- **Research Associate ship** (2003-2004) School of Life sciences, Jawaharlal Nehru University, New Delhi New Delhi.
- **Research Associate ship** (2001-2003) Department of Microbiology, University of Delhi South Campus, New Delhi.
- Council of Scientific and Industrial Research Associate ship award 2003.

International /National Positions and/or Awards/ Fellowships

- Travel grant by Pennsylvania State University to attend The 20th Penn State Plant Biology Symposium during 13-16 May, 2015.
- Travel award by University Grant Commission to participate in 5th International Symposium on Physiological Processes in roots of woody plants, University of Victoria, BC, Canada, from 8-12th August, 2010.

List of Students Awarded Ph.D./M/Phil.: Nil

List of Students Pursuing Ph.D./M.Phil.: Nil

List if Students guided for B.Sc. Projects etc: nil

List of students guided for summer projects: nil

List of Students guided for Innovation Projects:

1. Gursharanjeet Singh, B.Sc. Botany Honors III year
2. Apurwa Kestwal B.Sc. Botany Honors III year
3. Parul B.Sc. Microbiology Honors I year

4. Hemant Pandey	B.Sc. Botany Honors III year
5. Diksha Chauhan	B.Sc. Botany Honors III year
6. Akanksha Sharma	B.Sc. Botany Honors III year
7. Vaishali Dhalwal	B.Sc. Botany Honors III year
8. Pooja Singh	B.Sc. Botany Honors III year
9. Sangeeta Kumari	B.Sc. Botany Honors III year

REVIEWER INTERNATIONAL/National JOURNALS:

Acting as manuscript reviewer for the following journals:

- Experimental and Environmental Botany, Elsevier Science
- Planta, Springer Verlag,
- Agroforestry System, Springer Verlag
- Colloids and Surfaces B: Biointerfaces, Elsevier Science
- Scientia Horticulturae, Elsevier Science
- Acta Physiologia Plantarum, Springer Verlag
- Journal of Agricultural Science and Technology (JAST)
- Basic and Applied Ecology, Elsevier Science
- Tropical Ecology, USA
- Science Asia, Bangkok Thailand
- Proceedings of National Academy of Science: Biological Section (NASB), India

Member International/National Journal editorial Board etc.:

- Secretary and lead for membership/advocacy committee, International Symbiosis Society from 2012-2015, USA

Research Projects/ Innovation Projects Undertaken:

Completed:

- (i) Biochemical and physiological characterization of salt-tolerance mechanisms in mycorrhizal plants for optimum usage of mycorrhizal technology for the reclamation of saline soils. Funded by UGC, Government of India.
- (ii) Cost Effective *Glomus fasciculatum* formulation to improve the yield of three commercially important medicinal plants—*Artemisia annua*, *Stevia rebaudiana* and *Andrographis paniculata*. Funded by the Department of Biotechnology, Government of India.

- (iii) Innovation Project SSNC 201 “Isolation, Identification and Process Development of Fungal Lipases for their Potential Applications in Industry”. Funded by University of Delhi.

Ongoing: Nil

Research Interest:

Osmotic stress (in particular that due to drought and salinity) is the most serious problem that limits plant growth and crop productivity in agriculture. Many plants accumulate compatible osmolytes, such as proline, glycine betaine and sugar alcohols, when they are exposed to drought or salinity stresses. Instead, proline is probably the most widely distributed osmolyte among known compatible solutes, and is found to be the most common compatible osmolyte in drought stressed plants. Proline accumulation in plant tissues, acts as a clear marker to cope up plants with drought and salinity stresses. I am interested to understand; Do arbuscular mycorrhizal fungi and elevated atmospheric CO₂ (eCO₂) exhibit synergistic or antagonistic effects on the growth of crop plants under drought stress conditions? How do mycorrhizal fungi facilitate plant under salinity stress (Salinity-Mycorrhiza Interaction); and to unraveling mechanisms of salt-tolerance in mycorrhizal plants grow under salinity stress?

Computer Literacy: Basic usage of MS Office, Internet Application

Contribution in International Conferences/Seminars/Workshops:

- Presented a research paper “Regulatory Effect of Arbuscular Mycorrhizal Fungi on the Uptake of Na⁺ and Cl⁻ ions and Alteration in Plant Under Salinity Stress” in the 20th Penn State University Plant Biology Symposium held on May 13-16, 2015 University Park, Pennsylvania, PA, USA.
- Participated in the 29th Annual Plant Molecular Biology retreat organized by Plant Molecular Biology Consortium, Asheville, North Carolina, United States, held on 18-20, September, 2015.
- Paper presentation in 5th International Symposium on the Physiological Processes in Roots of Woody Plants, held at the University of Victoria, BC, Canada from 8-12 August, 2010.
- Poster presented in the mycorrhizal conference “*Mycorrhiza: Systems Research from Genes to Communities*” held in Monte Verita, Ascona, Switzerland from March 4-9, 2006.

- Participated in International Conference on Applied Phycology ‘Algae in Biotechnology and Environment’, held at University of Delhi on 14-15, February 2006.

Contribution in National Conferences Seminars/Workshops:

1. Delivered a talk on *Trigonella*-AM fungus Interaction in a **National conference on Environmental Sciences and Plant Biotechnology** from 4-5 February, 2013 held at Deen Dyal Upadhaya College, University of Delhi, Delhi, India
2. Attended 7th **International Conference on Mycorrhiza (ICOM 7)** on Mycorrhiza for All: An Under Earth Revolution from 6-11 January 2013, held at The Energy and Resources Institute, New Delhi, India
3. Delivered a talk in **53rd Annual conference of Association of Microbiologists of India (AMI)**, and International Conference on Microbial World: Recent Innovations and Future Trends from 22-25 Nov. 2012 held at KIIT University Bhubaneswar, Orissa, India
4. Attended a workshop on **Fundamentals of Bioinformatics**, organized by the Department of Botany, Ramjas College at the Institute of Life Long Learning, University of Delhi, Delhi from 26th to 30th September, 2011.
5. Poster presentation on “Mitigation of salt stress in *Trigonella foenum-graecum* by inoculation with *Glomus intraradices*” in **98th Indian Science Congress** held at SRM University, Chennai, India from 3-7 January, 2011. [Received best poster presentation award]
6. Delivered a talk on “Arbuscular mycorrhizal fungi under salt stress conditions: genesis and functions” in **Indo–German workshop in the frame of the program “Initiation and Intensification of Bilateral Cooperation** held on March 22nd - 24th, 2011 at Amity University Campus, Noida, India.
7. Attended “**Indo–Italian Workshop on Bacteria and Fungi for Environmental Sustainability**” held on November 29th, 30th, & December 1st 2010 at Amity University Campus, Noida, India.
8. Attended **International Workshop on Rhizosphere Biology of Agriculture, Horticulture and Forestry: Present & Future**, held at the Department of Biological sciences, College of Basic Sciences and Humanities, G B Pant University of Agriculture and Technology, Pantnagar, U S Nagar, Uttarakhand, from February 25-27, 2010.
9. Participated in workshop entitled **Development of online Quizzes in Life Sciences**, organized by Institute of Life Long Learning, University of Delhi, Delhi April 8, 9 and 16, 2009.

10. Participated in the National Workshop on **Understanding Educational TV Programmes: Problems and Prospects**, December 17, 2009 organized by UGC-Consortium for Educational Communication, New Delhi.
11. Participated in the workshop on the **Developments in Bacterial Diversity and Systematics** held during March 10-11, 2007, at the Department of Microbiology, University of Delhi South Campus, New Delhi, sponsored by the Ministry of Environment and Forests, Govt. of India.
12. Participated in national seminar on **Genetically Modified Organisms-Biosafety Aspects**, organized by Delhi University Botanical Society, Department of Botany, University of Delhi, Delhi from March 10-11, 2005.
13. Participated in the DBT-CAMS sponsored training workshop on **Molecular Taxonomy of the Symbiotic Fungi** held during December 1-21, 2003, at the School of Life Sciences, Jawaharlal Nehru University, New Delhi, India.
14. Participated in 44th annual conference of the association of microbiologists of India on **Microbes and Human Sustenance** at the Department of Agricultural Microbiology, University of Agricultural Sciences, Dharward, Karnataka from 12-14 November 2003.
15. Participated in the Indo-US workshop and national congress on **Molecular Biology and Microbial Biotechnology** held during March 23-28, 2003, at the School of Life Sciences, Jawaharlal Nehru University, New Delhi, India.
16. Participated in the Basic training on **Recombinant DNA technology and PCR** conducted from December 17-20, 2002 by Genei Pvt Ltd., Bangalore, India.
17. Participated in orientation programme in NMITLI- Biotechnology for Leather from November 18-22, 2002, conducted by CLRI, Chennai, India.
18. Participated in workshop-cum-training course on **Molecular tagging of inoculants strains for ecological studies** held at the Division of Microbiology, IARI, New Delhi, from August 24 - 30, 2000 under NATP programme of Team of Excellence, HRD.
19. Participated in Training course on **Biofertilizers** held at the Division of Microbiology, IARI, New Delhi, from March 13-26, 2000, under NATP programme of Team of Excellence, HRD.
20. Participated in National training course on **Biology and Biotechnology of Ectomycorrhiza** organized by the Department of Bio-Sciences, Himachal Pradesh University, Shimla, H.P. from October 9-14, 1999 sponsored by DST, Govt. of India.

LIST OF PUBLICATION (with title of the papers/articles, list of authors along with journal title, year of publication, ISSN/ISBN No. and Impact factor):

List of Research Publications:

1. Hemant Pandey, Apurwa Kestwal, Diksha Chauhan, Sangeeta Kumari, Vaishali Dhalwal, Gursharan J. Singh, Puja Singh, Parul Mann, Akanksha Sharma, Geeta Saxena, Anjana Kapoor and **Bhoopander Giri** (2015) Isolation and screening of potential fungi and standardization of a process for the production of extracellular lipase. *DU Journal of Undergraduate Research and Innovation* 1: issue 1, 116-123 ISSN: 2395-2334
2. Shantanu Mandal, Heikham Evelin, **Bhoopander Giri**, VP Singh and Rupam Kapoor 2013 Arbuscular mycorrhiza enhances the production of stevioside and rebaudioside-A in *Stevia rebaudiana* via nutritional and non-nutritional mechanisms. *Applied Soil Ecology* ISSN: 0929-1393, 72: 187-194. Cited by 14 articles Impact Factor 2.644 (Five Year 3.105)
3. Heikham Evelin, **Bhoopander Giri** and R Kapoor 2013 Ultrastructural evidence for AMF mediated salt stress mitigation in *Trigonella foenum-graecum*. *Mycorrhiza* ISSN: 0940-6360, 23(1):71-86 Springer Verlag. Cited by 16 articles. Impact Factor: 3.459.
4. Heikham Evelin, **Bhoopander Giri** and R Kapoor 2012 Contribution of *Glomus intraradices* inoculation on nutrient acquisition and mitigation of ionic imbalance in NaCl stressed *Trigonella foenum-graecum*. *Mycorrhiza* ISSN: 0940-6360, 22 (3): 203 -217. Springer Verlag. Cited by 34 articles. Impact Factor: 3.459
5. Heikham Evelin, R Kapoor and **Bhoopander Giri** 2009. Arbuscular mycorrhiza in alleviation of salt stress: A review (an invited review). *Annals of Botany* ISSN 0305-7364 104: 1263-1280 Oxford press, UK. Cited by 290 articles. Impact Factor: 3.659 (Five Year 4.338).
6. **Bhoopander Giri**, R Kapoor and KG Mukerji 2007 Improved tolerance of *Acacia nilotica* to salt stress by arbuscular mycorrhiza, *Glomus fasciculatum* may be partly related to elevated K: Na ratios in root and shoot tissues. *Microbial Ecology* ISSN: 0095-3628 54 (4): 753-760 Springer Verlag, Germany. Cited by 171 articles. Impact Factor: 2.973
7. **Bhoopander Giri**, R Kapoor and KG Mukerji 2005 Effect of the arbuscular mycorrhizae *Glomus macrocarpum* and *Glomus fasciculatum* on the growth and nutrient content of *Cassia siamea* in a semi-arid Indian wasteland soil. *New forests* ISSN: 0169-4286, 27: 1-11 Kluwer Academic Publishers (now Springer), Dordrecht, The Netherlands. Cited by 30 articles. Impact Factor: 1.829
8. **Bhoopander Giri** and KG Mukerji 2004 Mycorrhizal inoculant alleviates salinity stress in *Sesbania aegyptiaca* Pres and *S. grandiflora* Pres under field conditions:

- Evidence for improved magnesium and decreased sodium uptake. *Mycorrhiza* ISSN: 0940-6360 14 (5): 307-312 Springer Verlag. Cited by 113 articles. Impact Factor: 3.459
9. R Kapoor, **Bhoopander Giri** and KG Mukerji 2004 Improved growth and essential oil yield and quality in *Foeniculum vulgare* mill on mycorrhizal inoculation supplemented with P-fertilizer. *Bioresource Technology* ISSN: 0960-8524 93 (3): 307-311 Elsevier Science U.K. Cited by 186 articles. Impact Factor: 4.494 (Five Year 5.330)
 10. **Bhoopander Giri**, R Kapoor and KG Mukerji 2004 Preinoculation with arbuscular mycorrhizae helps *Acacia auriculiformis* in a degraded Indian wasteland soil. *Communications in Soil Science and Plant Analysis* ISSN 0010-3624 35: 193-204 Marcel Dekker, New York. Cited by 13 articles Impact Factor: 0.390
 11. **Bhoopander Giri**, Rupam Kapoor and KG Mukerji 2003 Influence of arbuscular mycorrhizal fungi and salinity on growth, biomass, and mineral nutrition of *Acacia auriculiformis*. *Biology and Fertility of Soils* ISSN: 0178-2762, 38: 170-175 Springer Verlag, Germany. Cited by 167 articles. Impact Factor: 3.398
 12. R K Saxena, W S Davidson, A Sheoran, and **Bhoopander Giri** 2003 Purification and characterization of an alkaline thermostable lipase from *Aspergillus carneus*. *Process Biochemistry* ISSN: 1359-5113, 39: 339-345 Elsevier Science, UK Ltd. Cited by 149 articles. Impact Factor: 2.516 (Five Year 2.909)
 13. .
 14. R K Saxena, A Sheoran, **Bhoopander Giri** and W S Davidson 2003 Purification strategies for microbial lipases. *Journal of Microbiological Methods* ISSN: 0167-7012, 52: 1-18, Elsevier Science, UK Ltd. Cited by 242 articles. Impact Factor: 2.026 (Five Year 2.338)
 15. M A Rahim, R K Saxena, A Sheoran, **Bhoopander Giri** and R Gupta 2003 A novel and quick plate assay for acetamidase producer and process optimization for its production by *Aspergillus candidus*. *Process Biochemistry* ISSN: 1359-5113 38: 861-866, Elsevier Science Ltd, UK. Cited by 7 articles. Impact Factor: 2.516 (Five Year 2.909)
 16. R Kapoor, **Bhoopander Giri** and KG Mukerji 2002 *Glomus macrocarpum*: a potential bioinoculant to improve essential oil quality and concentration in Dill (*Anethum graveolens*) and Carum (*Trachyspermum amni* (Linn.) Sprague). *World Journal of Microbiology and Biotechnology* 18: 459-463, ISSN: 0959-3993, Kluwer Academic Publishers, The Netherlands. Cited by 86 articles. Impact Factor:1.779
 17. R Kapoor, **Bhoopander Giri** and KG Mukerji 2002 Mycorrhization of coriander

- (*Coriandrum sativum L.*) to enhance the concentration and quality of essential oil. *Journal of the Science of Food and Agriculture* 82: 339-342, ISSN: 0022-5142, Society of Chemical Industry, UK. Cited by 82 articles. Impact Factor 1.714
18. R Kapoor, **Bhoopander Giri** and KG Mukerji 2001 Effect of VAM inoculation on growth responses and essential oil of *Anethium graveolens L.* *Indian Journal of Plant Physiology* 6: 77-80, ISSN: 0974-0252, Springer.
 19. **Bhoopander Giri**, R Kapoor and KG Mukerji 2000 *Sesbania aegyptiaca* Pers seedling response to VA mycorrhization in two types of soil. *Phytomorphology* 50: 327-332. ISSN. 0031-9449 International Phytomorphological Society, India. Cited by 7 articles

List of Books/Monographs Published: Nil

Articles in Edited Books/Conference Proceedings/Book Chapter Published:

1. R Kapoor, H Evelin, P Mathur and **Bhoopander Giri** 2013 Arbuscular mycorrhiza: approaches for abiotic stress tolerance in crop plants for sustainable agriculture" In: Plant Acclimation to Environmental Stress, N Tuteja and SS Gill (eds.) Springer Science, New York, ISBN 978-1-4614-5000-9 USA (page 359-401) Cited by 9 articles.
2. **Bhoopander Giri**, P H Giang, R Kumari and A Varma 2004 Microbial Diversity in Soils. In: Microorganisms in Soils: Roles in Genesis and Functions, Soil Biology Series vol. 3: 15-40, F Buscot and A Varma (eds) Springer Varleg, Germany. ISBN: 978-3-540-22220-0 (Print) Cited by 69 articles
3. **Bhoopander Giri**, M Suchdev, P H Giang, R Kumari, R Olemuler and A Varma 2004 Mycorrhizosphere: Strategies and Functions. In: Microorganisms in Soils: Roles in Genesis and Functions, Soil Biology Series vol. 3: 213-252, F Buscot and A Varma (eds) Springer Varleg, Germany. ISBN: 978-3-540-22220-0 (Print) Cited by 14 articles
4. **Bhoopander Giri** and KG Mukerji 2004 Ecology and distribution of vesicular arbuscular mycorrhizal fungi. In: Plant Diversity in India, JS Dargan and TA Sarma (eds) Published by BSMPS, Dehra dun, ISBN 10: 8121103002, India, pp. 397-426.
5. **Bhoopander Giri**, R Kapoor and KG Mukerji 2001 VAM/VA mycorrhizal technology in establishment of plants under salinity stress conditions. In: Techniques in Mycorrhizal Studies, KG Mukerji, C Manorachari and BP Chamola (eds) Kluwer Academic Publishers ISBN 978-94-017-3209-3, The Netherlands, pp. 313-327. Cited by 5 articles
6. R Kapoor, **Bhoopander Giri** and KG Mukerji 2001 Soil factors in relation to distribution and occurrence of vesicular arbuscular mycorrhiza. In: Techniques in

Mycorrhizal Studies, KG Mukerji, C Manorachari and BP Chamola (eds) Kluwer Academic Publishers, ISBN 978-94-017-3209-3 The Netherlands, pp. 51-85.
Cited by 7 articles

7. **Bhoopander Giri**, BP Chamola, Neelu and KG Mukerji 2000. Vesicular arbuscular mycorrhizal fungal association under stress conditions. In: Glimpses in Botany, KG Mukerji, BP Chamola and AK Sharma (eds) APH Publishing Corporation, New Delhi ISBN: 9788176482042 pp. 407-420.
8. BP Chamola, **Bhoopander Giri** and KG Mukerji 1999 Vesicular arbuscular mycorrhiza: biofertilizer for future. In: From Ethno-mycology to Fungal Biotechnology, J Singh and RK Aneja (eds) Plenum Publishing Corporation, New York, ISBN 978-1-4613-7182-3 pp.225-234.
9. **Bhoopander Giri** and BP Chamola 1999 Vesicular arbuscular mycorrhizal fungi under salinity and drought stress. In: Advances in Microbial Biotechnology, JP Tewari, TN Lakhnupal, J Singh, R Gupta, and BP Chamola (eds). APH Publishing Corporation, New Delhi, ISBN: 8176482048, 9788176482042, pp. 421-430.
10. Saxena B and **Giri B.** 2015. Mycorrhizal inoculants improve secondary metabolites production in medicinal and aromatic plants: A Sustainable Approach. In Microbes and Sustainable Agriculture. Accepted (In Press).

Journal Proceedings/ Journals Edited (with title of the journal, year of publication etc.): Nil

Popular articles published / Articles published in newspapers etc.:

- **Bhoopander Giri** and Bhawna Saxena 2014 Mycorrhizal associations in plants Institute of Life Long Learning, University of Delhi, Delhi, pp. 1-33.

Professional Association and Membership of Learned Bodies:

- **Member** International Symbiosis Society (2012-15), USA
- **Life Member** Delhi University Botanical Society, India
- **Life member** Indian Science Congress Association, India
- **Life member** Association of Microbiologists of India (AMI), India
- **Life member** Mycological Society of India (MSI-195), India
- **Life member** Indian Society of Mycology and Plant Pathology, India
- **Member** Botanical Society of America (2012-13-14), USA
- **Member** American Society of Plant Biologists (2013-2014), USA
- **Life Member** International Society of Applied Life sciences, Turkey

Any Other information:

Administrative Activities:

- **Teacher-In-Charge** (2013-2014) Botany Department, Swami Shraddhanand College, University of Delhi, Delhi.
- **Coordinator** Seminar on Public Speaking (2014) Swami Shraddhanand College, University of Delhi, Delhi.
- **Assist** Liaison Officer, Swami Shraddhanand College, University of Delhi, Delhi, (2014-till date).
- **Convener** ECO-CLUB (2013-2014) Swami Shraddhanand College, University of Delhi, Delhi.
- **Convener** Computer Committee (2012-2013) Swami Shraddhanand College, University of Delhi, Delhi.
- **Member** Grievance Committee (2012-2013) Swami Shraddhanand College, University of Delhi, Delhi.
- **Subject Expert** for Academic Previews of the Educational T.V Programs and e-contents (2009-12), organized by Consortium for Educational Communication, UGC, New Delhi-67
- **Convener** Library Committee (2011-2012) Swami Shraddhanand College, University of Delhi, Delhi.
- **Convener** Library Committee (2010-2011) Swami Shraddhanand College, University of Delhi, Delhi.
- **Member** Verification Committee (2011-2012) Swami Shraddhanand College, University of Delhi, Delhi.
- Participated in **Orientation Program** (Code OR-62), Organized by CPDHE-ILLL, University of Delhi from 2-30th March, 2010.
- **Co-convener Environment Society** (2010) Swami Shraddhanand College, University of Delhi, Delhi
- **Member** Prospectus Committee (2009-2010) Swami Shraddhanand College, University of Delhi, Delhi.
- **Member** Placement Committee (2009-2010) Swami Shraddhanand College, University of Delhi, Delhi.