

## CURRICULUM VITAE

**Name** FIRDAUS-E-BAREEN  
**CNIC No.** 35201-1505920-4  
**Nationality** Pakistani  
**Present Occupation** Professor  
**Mailing Address** Dean of Life Sciences,  
University of the Punjab,  
Quaid-e-Azam Campus,  
Lahore 54590, Pakistan.  
**Email address:** [fbareen@gmail.com](mailto:fbareen@gmail.com)  
[firdaus.botany@pu.edu.pk](mailto:firdaus.botany@pu.edu.pk)  
[dean.ls@pu.edu.pk](mailto:dean.ls@pu.edu.pk)

### Qualification

Ph.D. in Fungal Ecology (1998)

### Specialization

Fungal Ecology, Environmental Biotechnology

### Research Interests

1. Taxonomy and Ecology of Aquatic Hyphomycetes
2. Phytoremediation of metal contaminated sites
3. Chelate assisted metal phytoextraction
4. Biodiversity studies in metal polluted habitats
5. Role of antioxidant enzymes in stress alleviation in plants
6. Fertilizer perspective of contaminated solid waste and sludge
7. Sustainable use of biochar and compost
8. Constructed wetlands

### Theses supervised in the Past 5 years

#### Ph.D.

1. Qurat-ul-Ain. 2019. Sustainable management of *Parthenium hysterophorus* L. through biochar and compost and their use as soil amendment.
2. Ali Ahmad Sabir. 2018. Environment friendly synthesis of acetic-acid based compounds and their biological characterization.
3. Saima Siddique. 2018. Appraisal of ecofriendly aspects of essential oils of selected species of family Myrtaceae.

#### M.Phil./ M.Sc. Hons/ MS

1. Rajia Munir. 2020. Ligation compatibility between EDTA and Cr concentrations in different types of soils

2. Faiza Muzaffar. 2020. Relative effects of organic amendments and crop rotation on soil microbial communities assessed by DNA extraction analysis
3. Hajira Zubair Hashmi. 2020. EDTA and biochar-assisted heavy metal phytoextraction from tannery solid waste using *Helianthus annuus* L.
4. Sumera Yaqub. 2020. Developing microbial biosorption filter for removal of soluble fraction of heavy metals from tannery effluent
5. Iram Sher. 2020. Role of ethylenediamine in redistribution of Cd in sandy, silty and clayey soils
6. Muhammad Naeem. 2020. Health risk assessment of heavy metals based on cereals cultivated in the fields adjacent to KTWMA Kasur, Pakistan
7. Tasmia Maqbool. 2020. Role of selected organic amendments in transitioning productivity in saline soils of Bahawal Nagar, Pakistan
8. Umarah Syed. 2020. Controlling soil nutrient loss by applying selected mineralized organic amendments during onion cultivation
9. Sehar Nawaz. 2020. Worm castings as soil health indicators and organic amendments for plant growth
10. Muhammad Ramzan. 2020. Comparative performance of three spp. of *Brassica* for heavy metal phytoextraction from paper and pulp effluent
11. Um-e-Laila. 2019. Integrated approach for management of toxic tannery solid waste
12. Farwa Safdar. 2019. *Moringa oleifera* Lam. extract as a novel natural biostimulant for growth of *Phaseolus vulgaris* L.
13. Samara Tariq. 2019. Overcoming challenges of hydrophyte nursery establishment for constructed wetland system
14. Muhammad Amjad. 2019. Effect of wastewater composition and hydrological parameters on pollution treatment efficiency of a constructed wetland system
15. Kinza Aslam. 2019. Preparation, characterization and soil application of biochar derived from *Syzygium cumini* (L.) Skeels.
16. Maleeha Naeem Khan. 2019. Managing biomass of selected local weeds through biochar and its application as soil amendment
17. Saliha Zahid. 2019. Managing garden waste through Pit Composting
18. Saima Shaheen. 2019. Performance evaluation and residue assessment of selected chemicals and biopesticides applied on some vegetable crops
19. Kiran Khalid. 2019. Assessment of direct crop weed competition in wheat fields established on cleared off grassland vegetation
20. Iqra Anwar. 2019. Ecophysiological assessment of wheat crop in a productivity-challenged field derived from cleared off grassland vegetation
21. Syeda Hadia Raza. 2019. Managing Weed Biomass through Co-Composting with Cow Dung in Pits

22. Someya Rasheed. 2019. Production of activated weed biochar through co-composting approaches
23. Anam Sehar. 2018. Phytoextraction of heavy metals by *Tagetes erecta* L. using EDTA in a hydroponic system.
24. Khadija Aslam. 2018. Determining efficiency limiting factors for heavy metal phytoextraction from different wastewaters
25. Tanzeela Ibrahim. 2018. Health risk assessment of heavy metals in fruits from Lahore and Kasur, Punjab.
26. Hina Fatima. 2018. Characterization of sawdust biochar and its effect on growth of *Helianthus annuus* L.
27. Muntaha Munir. 2018. Isolation and screening of heavy metal resistant microbes and their role in phytoextraction
28. Sehrish Shad. 2017. Role of EDTA in enhanced phytoextraction of heavy metals in hydroponically grown sunflower
29. Yousra Hafeez. 2017. EDTA induced mobilization pattern of different heavy metals in soil columns and subsequent effect on uptake in sunflower
30. Aysha Iftikhar. 2016. Quantification of aerobic and anaerobic methanotrophs in thermokarst ponds.
31. Ayesha Binte Abdul Aziz. 2016. Microbial community based soil productivity transition from rice harvest to wheat cultivation in PU Fields.

#### **M.Sc./BS**

1. Mishkaat-ul-Huda. 2020. Effect of Organic Matter and Heavy Metal Distribution in Wheat Irrigated with Effluents and Co-cropped with Hyperaccumulator Plants
2. Nimra Iqbal. 2020. Impact of composting on properties of biochar derived from different weeds based on soil amendment trials
3. Saba Ashraf. 2020. Assessing C-sequestration potential of *Conocarpus erectus* L. while cultivating it as source of woody biomass through short rotation forestry
4. Sana Iftikhar. 2020. Monitoring growth of *Broussonetia papyrifera* (L.) Vent. as quick source of woody biomass
5. Tania Rani. 2020. Heavy metal uptake by *Spinacia oleracea* L. cultivated on leachate arising from tannery solid waste open dumps
6. Attia Amin. 2020. Phytoextraction of heavy metals from tannery waste by using *Ocimum basilicum* L.
7. Ammara Naseer. 2019. Assessing *Parthenium hysterophorus* L. seed bank in soils as potential indicator of weed invasion
8. Ayesha Shoukat. 2019. Study of morpho-physiological changes as indicator of transplantation shock in selected hydrophytes

9. Gul-e-Zahra. 2019. Derivation of biochar from selected types of biomass and their effect on growth of spinach.
10. Samavia Tahir. 2019. Isolation of fungi from dead *Parthenium hysterophorus* L. for their cellulase activity under submerged fermentation
11. Farwa Safdar. 2019. *Moringa oleifera* Lam. Extract as a novel natural biostimulant for growth of *Phaseolus vulgaris* L.
12. Asma Tahir. 2019. Production of cellulase using *Broussonetia papyrifera* (L.) Vent through activity of cellulase producing fungi.
13. Anum Ramzan. 2019. Effect of tannery solid waste biochar and metal resistant bacteria on phytoextraction potential of *Helianthus annuus* L.
14. Muhammad Naeem. 2018. Leaching hazard of heavy metals with EDTA application and its control by cost effective adsorbents in soil columns
15. Iqra Zulfiqar. 2018. Health risk assessment of heavy metals in vegetables from selected markets of Lahore
16. Farwa Iqbal. 2018. Competitive adsorption of chromium and cadmium by biochar prepared from different plant materials.
17. Fakhra Mushtaq. 2018. Role of antioxidant enzymes in detoxification of metals in tannery wastewater by using macrophytes and algae
18. Amina Ayoub. 2017. Trace elements and antioxidant analysis of lemon grass *Cymbopogon citratus* (D.C.) Stapf. Growing in tannery sludge amended soil.
19. Tasmia Maqbool. 2017. Tannery solid waste derived biochar and its upshot on the growth of *Helianthus annuus* L.
20. Saiqa Khanum. 2016. Preparation and characterization of Paper Mulberry (*Broussonetia papyrifera*) biochar collected from Botanical Garden University of the Punjab Lahore.

#### **Conferences/Symposia/Seminars organized in the past 5 years**

1. Organized an International Conference of The University of the Punjab on **Recent Innovations in Molecular Sciences (ICPU 2019)** as Co-Patron on 6-8 November, 2019
2. A seminar was organized on **Integrated approaches for wheat breeding to mitigate production risk** by **Dr. Harpinder Singh Randhawa** on March 26, 2019
3. A seminar was organized on **Identification on differential gene expression during different stages of Mango fruit ripening using RNA-Seq data** by **Dr. Aziz Mithani** on March 19, 2019
4. A seminar was organized on **Opportunities and Prospects of study under the Von Humbolt scholarship program** by **Prof. Dr. Samina Mehnaz** in February, 2019.
5. A seminar on **“Traffic Awareness”** by the Motorway Police Department was organized on April 4, 2018.
6. A seminar By Prof. Dr. Javed Iqbal was organized on **“Towards two decades of Plant Biotechnology (1995-2015): Successes, Failures and Prospects”** on February 13, 2018.

7. A seminar by Prof. Dr. S.R.A. Shamsi was organized on “**Smog: origin, nature and Impact**” on January 25, 2018
8. Organized the **First International Conference on Conventional and Modern Approaches in Plant Sciences (CMAPS 17)**, held on November 28-29, 2017 at Department of Botany, University of the Punjab, Lahore
9. Organized the Pre-Conference Workshops on **Use of Molecular techniques for Naming of Fungi** and **Atomic Absorption Spectrophotometry and Heavy Metal Analysis** held on November 27, 2017 at Department of Botany, University of the Punjab, Lahore
10. Organized a seminar on **Department of Botany, University of the Punjab: A historical Perspective by Prof. Dr. Khalid Hamid Sheikh** on October 25, 2017
11. Organized the Workshop on **Innovative Ideas in Kitchen Gardening and Mushroom Cultivation** on October 4, 2017 held in the Botanical Garden, University of the Punjab, Lahore

#### **Invited/Keynote lectures delivered in the past 5 years**

1. Attended the **International Conference on “SMART PLANTATION” An Ultimate Solution to Climate Change (ICSP 2020)**, held at Department of Botany, Lahore College for Women University, Lahore on 2-4 March, 2020 and delivered a keynote talk on “**Smart Plantation, an ultimate solution to climate change**”.
2. Attended the **Parthenium Management Action Plan Review Workshop CABI** held at Islamabad on 8-9 Oct 2018 and delivered a talk on “*Parthenium hysterophorus*: **Quantification and characterization of its biomass**”
3. Attended the **3<sup>rd</sup> International Conference on BioSciences 2018** held on 9-11 May, 2018 at GCU, Lahore and delivered the lead lecture on “**Crop and weed biomass for exigenting soil organic matter in rice-wheat system**”
4. Chaired the technical session of **Environmental Microbiology** in the **Conference on Microbiology and Molecular Genetics 2018**, held on February 7-9, 2018 and delivered a keynote lecture on “**Forlorn calls to Pakistan for composting: a thus far unachievable ideal**”

#### **Conferences Attended**

1. Younas, H, Nazir, A. and **Bareen, F.** 2020. Metal immobilization and uptake potential of tannery solid waste derived biochar and its effect on the growth of *Helianthus annuus* L. **In: International Conference on “SMART PLANTATION” An Ultimate Solution to Climate Change (ICSP 2020)**, held at Department of Botany, Lahore College for Women University on 2-4 March, 2020 at Lahore
2. Shafiq, M. and **Bareen, F.** 2020. Role of composting in Smart Plantation. **In: International Conference on “SMART PLANTATION” An Ultimate Solution to Climate Change (ICSP 2020)**, held at Department of Botany, Lahore College for Women University on 2-4 March, 2020 at Lahore
3. Zubair, F., Mubeen, R., Shafiq, M. and **Bareen, F.** 2020. Assessment of spatio-temporal variation in the occurrence of *Parthenium hysterophorus* L. in botanical garden of University of the Punjab Lahore. **In: International Conference on “SMART**

**PLANTATION” An Ultimate Solution to Climate Change (ICSP 2020)**, held at Department of Botany, Lahore College for Women University on 2-4 March, 2020 at Lahore

4. Mubeen, R., Zubair, F., Shafiq, M. and **Bareen, F.** 2020. Effect of mulching on seed bank of *Parthenium hysterophorus* L. **In: International Conference on “SMART PLANTATION” An Ultimate Solution to Climate Change (ICSP 2020)**, held at Department of Botany, Lahore College for Women University on 2-4 March, 2020 at Lahore
5. Batool, S., Shafiq, M. and **Bareen, F.** 2020. Suppressing *Parthenium hysterophorus* L. invasion through root allelochemy of co-cultivated plants **In: International Conference on “SMART PLANTATION” An Ultimate Solution to Climate Change (ICSP 2020)**, held at Department of Botany, Lahore College for Women University on 2-4 March, 2020 at Lahore
6. Shafiq, M., **Bareen, F.** and Nazir, A. 2020. Sustainable Ecosystem Services of Managing Biomass of Invasive Plants. In: International Conference of The University of the Punjab on **Recent Innovations in Molecular Sciences (ICPU 2019)** held on 6-8 March, 2019 at Lahore
7. Shafiq, M., **Bareen, F.** and Nazir, A. Managing on and off field Biomass of *Parthenium hysterophorus*: brain waving future configuration of UAV with UGV. In: CABI Technical Workshop titled **Remote Sensing of Parthenium in Pakistan** 09th to 10th October 2019 at Islamabad
8. Iqbal, F. **Bareen, F.** Nazir, A. and Maqbool, T. Characterization of tannery solid waste biochar and its effects on *Helianthus annuus*. In: **International conference on conventional and modern approaches in Plant Sciences**, Dept. of Botany, University of the Punjab, Lahore in November 28-29, 2017.
9. **Bareen, F.** Rafiq, A. and Nazir, A. Uptake and leaching of Cu, Cd and Cr after EDTA application in sorghum and pearl millet. In: **International conference on conventional and modern approaches in Plant Sciences**, Dept. of Botany, University of the Punjab, Lahore in November 28-29, 2017.
10. Shad, S. Nazir, A and **Bareen, F.** Effect of EDTA in phytoextraction of different heavy metals in hydrponically grown sunflower. In: **International conference on conventional and modern approaches in Plant Sciences**, Dept. of Botany, University of the Punjab, Lahore in November 28-29, 2017.
11. Shakeel, S. Nazir, A. Bareen, F. and Ahmad, S.R. Characterization of tannery wastewater during tanning process and after treatment at KTWMA, Kasur. In: **International conference on conventional and modern approaches in Plant Sciences**, Dept. of Botany, University of the Punjab, Lahore in November 28-29, 2017.
12. Qurat-ul-Ain, **Bareen, F.** Shafiq, M. and Capareda, S. C. Effect of temperature on physico-chemical properties of biochar prepared from *Parthenium hysterophorus* and its use as soil amendment. In: **International conference on conventional and modern approaches in Plant Sciences**, Dept. of Botany, University of the Punjab, Lahore in November 28-29, 2017.

13. Hafeez, Y., **Bareen, F.** and Nazir, A. EDTA induced mobilization pattern of different heavy metals in soil columns. In: **International conference on conventional and modern approaches in Plant Sciences**, Dept. of Botany, University of the Punjab, Lahore in November 28-29, 2017.
14. Younas, H., Nazir, A. and Bareen, F. Characterization of tannery wastewater during tanning process and after treatment at KTWMA, Kasur In: **First International Conference on Emerging Trends in Earth and Environmental Sciences** held on March 12-13, 2017, held in University of the Punjab, Lahore

### **Publications in the past 5 years**

#### **Published papers**

1. Younis, H., Nazir, A and **Bareen, F.** 2021. Management of tannery solid waste (TSW) through pyrolysis and characteristics of its derived biochar. **Polish Journal of Environmental Studies**. 30:453–462 (**I.F. 1.383**)
2. Qurat-ul-Ain, Shafiq, M., Capareda, S.C. and **Bareen, F.** 2021. Effect of different temperatures on the properties of pyrolysis products of *Parthenium hysterophorus*. **Journal of the Saudi Chemical Society**. 25: 101197 (**3.567**)
3. Iqbal, I.M., Shabbir, A., Shabbir, K., Barkworth, M.E., **Bareen, F.** and Khan, S.M. 2020. *Evolvulus nummularius* (L.) L. (Convolvulaceae): a new alien plant record for Pakistan. **BioInvasions Records**. 9: (**I.F. 1.210**)
4. Iqbal, I.M., Shabbir, A., Shabbir, K., Naveed, M., Urooj, F., Butt, A., Khan, R., Singh, N. and **Bareen, F.** 2020. Tree flora of the Botanical Garden and Punjab University, Lahore, Pakistan. **Biologia**. 66:99-124
5. Zaheer, I.E., Ali, S., Rizwan, M., **Bareen, F.**, Abbas, Z., Bukhari, S.A.H., Wijaya, L., Alyemini, M.N., Ahmad, P. 2019. Zinc-lysine prevents chromium-induced morphological, photosynthetic, and oxidative alterations in spinach irrigated with tannery wastewater. **Environmental Science and Pollution Research**. 26: 28951–28961 (**I.F. 3.056**)
6. **Bareen, F.**, Rafiq, K., Shafiq, M. and Nazir, A. 2019. Uptake and leaching of Cu, Cd and Cr after EDTA application in sand columns using sorghum and pearl millet. **Polish Journal of Environmental Studies**. 28: 2065-2077 (**I.F. 1.186**)
7. Sabir, A.A., **Bareen, F.**, Rahman, Z. and Ahmad, S.R. 2019. Growth and acclimatization response of sunflower plantlets treated with naphthyl acetic acid-based environment friendly plant growth promoters. **Polish Journal of Environmental Studies**. 28: 1897-1907 (**I.F. 1.186**)
8. Gillani, R.A., **Bareen, F.** and Chaudhary, H.J. 2018. Biosorption analysis of Cd(II) from industrial wastewater using endophytic bacterium *Agrobacterium tumefaciens* 12b3 by kinetic modeling and equilibrium studies. **Desalination and Water Treatment**. 124: 117-124 (**I.F. 1.383**)
9. Siddique, S., Mazhar, S., **Bareen, F.** and Perveen, Z. 2018. Chemical characterization, antioxidant and antimicrobial activities of essential oil from *Melaleuca quinquenervia* leaves. **Indian Journal of Experimental Biology**. 56: 686-693. (**I.F. 1.475**)

10. Sabir, A.A., **Bareen, F.**, Rahman, Z., Ahmad, S.R. and Shafiq, M. 2018. In vitro response of *Bougainvillea* explants and their antioxidant enzymatic activities treated with new naphthyl acetic acid based synthetic plant growth promoters. **Polish Journal of Environmental Studies**. 27: 1-10. (I.F. 1.120)
11. Siddique, S., Perveen, Z., **Bareen, F.**, Mazhar, S. and Chaudhary, M.N. 2018. Antibacterial and antioxidant activities of leaves essential oils of seven *Eucalyptus* species grown in Pakistan. **The Journal of Animal and Plant Sciences**, 28: 222-230 (I.F. 0.422)
12. Siddique, S., Perveen, Z., **Bareen, F.**, Mazhar, S. Chaudhary, M.N. Mazhar, S. and Nawaz, S. 2017. The essential oil of *Melaleuca armillaris* (Sol. ex Gaertn.) Sm. leaves from Pakistan: A potential source of eugenol methyl ether. **Industrial Crops and Products**, 109: 912-917. (I.F. 3.181)
13. Shafiq, M., Shoukat, T., Nazir, A. and **Bareen, F.** 2017. Modeling of Cr contamination in the agricultural lands of three villages near the leather industry in Kasur, Pakistan, using statistical and GIS techniques. **Environmental Monitoring and Assessment** 189: 423. <https://doi.org/10.1007/s10661-017-6126-9> (I.F. 1.687)
14. Siddique, S., Parveen, Z., **Bareen, F.**, Butt, A. and Chaudhry, M.N. 2017. Chemical composition and insecticidal activities of essential oils of Myrtaceae against *Tribolium castaneum* (Coleoptera: Tenebrionidae). **Polish Journal of Environmental Studies**, 26: 1653-1662 (I.F. 0.793)
15. **Bareen, F.** Saeed, S and Afrasiab, H. 2017. Differential mobilization and metal uptake versus leaching in multi-metal soil columns using EDTA and three metal bioaccumulators. **International Journal of Phytoremediation**, 19: 1109-1117. (I.F. 1.770)
16. Siddique, S., Perveen, Z., **Bareen, F.** and Mazhar, S. 2017. Chemical Composition, antibacterial and antioxidant activities of essential oils from leaves of three *Melaleuca* species of Pakistani flora. **Arabian Journal of Chemistry**. <https://doi.org/10.1016/j.arabjc.2017.01.018> (I.F. 4.553)
17. Siddique, S., Perveen, Z., **Bareen, F.**, Chaudhry, M.N. and Saeed, K. 2017. Chemical composition, antioxidant and antimicrobial activities of essential oil from *Callistemon viminalis* (Gaertn.) G. Don leaves. **Journal of Essential Oil Bearing Plants**, 20: 524-534. [doi.org/10.1080/0972060X.2017.1289126](https://doi.org/10.1080/0972060X.2017.1289126) (I.F. 0.493)
18. **Bareen, F.** and Shafiq, S. 2016. Combined Treatment of PGR and EDTA increases the phytoextraction potential of three crop plants from tannery solid waste amended soil. **International Journal of Agricultural and Environmental Research**. 3: 71-78.
19. Qurat-ul-Ain, **Bareen, F.** and Shafiq, M. 2016. Management of the *Parthenium hysterophorus* through biochar formation and its application to rice-wheat cultivation in Pakistan. **Agriculture, Ecosystems & Environment**. 235: 265-276 (I.F. 3.564)
20. Khilji, S.A., **Bareen, F.** 2016. Efficiency of duckweed (*Lemna minor* L.) in phytotreatment of tannery sludge. **Biologia**, 62:45-55

#### Conference Proceedings

21. Aslam, H.M.U., Butt, M.A., **Bareen, F.**, Shafiq, M., Butt, F.A., Shahid, M. Javaid, A. and Husnain, A. 2019. Organic waste composting: A resource recovery approach towards



sustainable environment. **Proceedings of the World Conference on Waste Management**, 1: 30-41 DOI <https://doi.org/10.17501/26510251.2019.1203>

22. Khilji, S.A., **Bareen, F.**, Nasrullah M. and Ali, S. 2016. Multivariate analyses of heavy metal contamination in vegetables and fruits in the vicinity of some industrial areas of the Punjab. **Proceedings of the International Symposium on Biotechnology and other Omics in Vegetable Science, held in Turkey on 29 April- 2 May, 2012.** Onus, A.H. (Ed.), Acta Hortic. 1145: 159-178 DOI 10.17660/ActaHortic.2016.1145.25