Dr. ZAHID ULLAH

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Deputy Director Quality Enhancement Cell

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Research Interests

My research interests are focused on plant Biodiversity (systematics, taxonomy and phylogeny) of grasses (*Poaceae*), sedges (*Cyperaceae*), Legumes (Fabaceae) and other flowering plants of temperate and alpine region of northern Pakistan. I am working on the DNA barcoding database of the grasses, sedges and *Astragalus* of Pakistan. Recently I have also worked on crops wild relatives (CWRS) distribution and diversity. My other research interests include cultivation and exploration of medicinal plants for phytochemical and antimicrobial potentials and synthesis and characterization of nanoparticles. I regularly conduct field work across Hindukush, Himalayas and Karakurum ranges and have made more than 10,000 plant collections.

Education

- Ph.D in Botany (Plant Systematics and Biodiversity): Quaid-i-Azam University Islamabad, Pakistan (2014)
- M.Phil (Plant Sciences): Quaid-i-Azam University Islamabad, Pakistan (2009)
- M.Sc (Botany): Govt. Jahanzeb College, University of Malakand, Pakistan (2005)
- B.Sc (Botany, Zoology, Chemistry): University of Peshawar Pakistan (2002)

Present Position

- Associate Professor of Botany (BPS-20) at the Centre for Plant Sciences and Biodiversity, University of Swat, KP, from December 29th 2023 till to date.
- Assistant Professor (BPS-19) at the Centre for Plant Sciences and Biodiversity, University of Swat, KP, Pakistan since August 31, 2015 to 28-12-2023.
- Assistant Professor of Botany (BPS-19) on contract, at the Centre for Plant sciences and Biodiversity, University of Swat, KP, Pakistan July 06, 2015 to August 30, 2015.
- Assistant Professor IPFP at the Centre for Plant sciences and Biodiversity, University of Swat, KP, Pakistan, July 03, 2014 to July 04, 2015.
- Lecturer in Botany (BPS-17), Federal Directorate of Education Islamabad 13th May 2009 to 14th February 2014.

Experience and additional relevant responsibilities

- Deputy Director Quality Enhancement Cell (QEC) University of Swat August 08 2022 till date.
- Member Board of Faculty, Faculty of Life Sciences, University of Swat
- Member Board of Studies, Center for Plant Sciences and Biodiversity, University of Swat
- Member Board of Studies, Allied Health Sciences, University of Swat
- Member Board of studies SBBU Sheringal Dir Upper
- Member Graduate studies committee (GSC) CPSB UoS.
- Member University Ranking Committee
- In-charge Botanical Garden University of Swat
- Herbarium Curator University of Swat
- Member Departmental Purchase Committee CPS and B.

- Member Departmental Semester Committee CPSB.

Research specialties

- Plant Systematics: Taxonomy, Phylogenetics and Evolution, DNA barcoding
- Grasses (*Poaceae*), Sedges (*Cyperaceae*) and (*Fabaceae), Nepeta, Astragalus, Vicia, Salvia*
- Temperate and Alpine flora, Flora of Swat
- Alien and invasive flora of Pakistan
- Phytogeography
- Phytosociology and vegetation analysis
- Biodiversity and Conservation
- Nanotechnology
- Medicinal plants

Research Techniques

- Plant identification, particularly flora of the higher altitudes of Northern Pakistan
- Morphometrics, anatomy, microtomy, palynological techniques and scanning electron microscopy
- Molecular techniques including DNA extraction, gel electrophoresis, PCR amplification, DNA sequencing
- Analysis of DNA sequence data
- Reconstructing phylogenetic trees using Maximum Parsimony (MP), Maximum Likelihood (ML) and Neighbor Joining methods
- DNA Barcoding techniques based on matK and rbcL genes
- Use of PC-ORD, MEGA, PAUP and GIS software for ecological, phylogenetic and phytogeographic purposes
- Statistical analysis using Statistica, Graph pad Prism, SPSS and MANITAB.
- Herbarium management & Botanic Garden Establishment

International Experience

- Six months fellowship as PhD Research Scholar to Institute of Molecular Plant Sciences University of Edinburgh, UK and the Royal Botanic Gardens Edinburgh, United Kingdom

Thesis/Dissertation

- ➢ **Ph.D Thesis:**
- ❖ *Systematics and Phytogeography of Temperate and Alpine Poales s.l. from Northern Pakistan*
- ❖ **M.Phil Thesis:**
- ❖ *Systematic studies of the Grasses of Swat, Pakistan*
- ❖ **M.Sc Thesis:**
- ❖ *Phytosociological studies on moist temperate forests of Miandam Swat, Pakistan*

Scholarships Availed

- IRSIP Scholarship for Six Months to Institute of Molecular Plant Sciences, University of Edinburgh, Scotland UK.
- HEC Indigenous 5000 Fellowship for PhD
- QAU merit scholarship in MPhil

Research Projects

- ➢ HEC NRPU research project on "DNA Barcoding and phylogenetics of the grasses (Poaceae) of Pakistan" worth 5.3 million PKR. June 2018-June 2021. Project No. NRPU-6932

- ➢ BIFA- GBIF research grant for "Digitization of Swat University Herbarium" in collaboration with Quaid-i-Azam University Islamabad. 20,000 Euros.

- Awarded Start-up Research Grant from HEC Pakistan worth 0.5 million PKR. The title of the project is "Systematic and evolutionary implications of leaf anatomical and pollen morphological features in Sedges (Cyperaceae) from district Swat Pakistan".

New species discovered

- *Astragalus kanjuensis*
- *Pedicularis mahboobensis*
- *Galium swatensis*

Research Students Supervised

- **M.PHIL and PhD Students**

Nasir Ali	Systematics studies of sedges Cyperaceae from Swat Pakistan	2014-18
Anwar Ali	The alien flora of Swat Pakistan	2014-18
Saad Malook	Quantitative Ethnobotany of Gurnai Bahrain Swat	2014-18
Saddiq Ur Rehman PhD	Ethnobotanical knowledge of floral biodiversity among native communities of Buner, Pakistan	2014-21 completed
Nasir Ali PhD	A three-locus DNA barcoding and molecular phylogeny of the taxonomically contentious plant lineage: the grasses (Poaceae) of Pakistan	2018-in progress
Fazli Rahman PhD	Taxonomic revision and molecular phylogeny of *Salvia* L. (Lamiaceae) from Pakistan	2018-in progress
Akbar Zeb PhD	Functional traits and carbon stock estimation in *Cedrus deodara* communities in northern Pakistan	2019- in progress
Fatima	Biosynthesis of antibacterial silver nanoparticles using *Heracleum candicans* Wall. ex DC.	2018-20 Completed
Sher Muhammad Khan	Ecological impact assessment of invasive *Parthenium hysterophorus* L. and *Silybum marianum* (L.) Gaertn. in Swat Pakistan	2018-20 Completed
Abdul Wahid	Evaluation of ecological impact of *Verbesina encelioides* on native plant communities and habitats in Malakand division Pakistan	2018-20 Completed
Irfanul Haq	Morpho-physiological characterization of wild relatives of *Vicia faba* L. For drought stress tolerance	2018-20 Completed
Sommaya Bibi	Biological synthesis of silver nanoparticles using *Rhamnus purpurea* leaf extract and their antimicrobial activity against phytopathogens	2019-21 Completed
Aftab Ahmad Khan	Taxonomic revision of *Geranium* L. (Geraniaceae) from northern Pakistan	2019-21 Completed
Rahman Ali Khan	Taxonomic studies of *Mentha* L. (Lamiaceae), with special emphasis on infraspecific variation within *Mentha longifolia* L. from northern Pakistan	2019-21 Completed
Sadaf Bibi	Green synthesis of silver nanoparticls using *Thymus linearis* Benth. and their antibacteral properties	2019-21 Completed
Kashif Ilahi	DNA barcoding and phylogenitic studies of *Carex* L. (Cyperaceae) from Swat Pakistan	2019-21 Completed
Rawasia	Pollen morphology of spring flora of Swat Pakistan	2020-22
Amjad Ali	Systematic studies of Apiaceae from Swat Pakistan	2020-22
Ihtishamul Haq	Taxonomic studies of Nepeta (Lamiaceae) from Swat Pakistan	2020-22
Musarrat Ali	DNA barcoding of *Astrgalus* from Pakistan.	2020-22
Anila Iqbal	Green Synthesis of silver nanoparticles from *Sorbaria tomentosa* and its antimicrobial activities	2020-22
Amna Khan	Traditional knowledge of folk herbal medicine used by women in tehsil Barikot, Swat Pakistan	2020-22 Co-supervision

Malaika Noor	Leaf micromorphological studies of the spring flora of Swat Pakistan	2020-22 Co-supervision
Arshad Ali	Taxonomic study of the genus *Lonicera* from Pakistan	2022-24
Javiria Sanam	Antioxidant, antimicrobial activities and phytochemical investigation of *Geranium swatense*	2022-24
Irshad Ul Haq	Vegetation structure and distribution pattern along environmental gradients in Kandia valley upper Kohistan Pakistan	2022-24
Waheed Ullah	Exploring geographic distribution and diversity of Family Fabaceae through digitization of specimens data stored in Swat University Herbarium	2022-24
Muhammad Zeb	Systematic studies of *Galium* (Rubiaceae) from Northern Pakistan	2022-24
Uzma Akhtar	Diversity of family Poaceae on the basis of swat university herbarium record	2022-24
Uzma Bibi	Synthesis and Characterization of silver nanoparticles from medicinal herb *Salvia lanata*	2023-25
Shamal Bibi	Antmicrobil potential of *Hippophae rhamnoides* mediated silver nanoparticles	2023-25
Aysha Iqbal	Digitization of Herbarium collection of Cyperaceae from Swat Pakistan	2023-25
Gulalai	Digitization of Herbarium Specimens of Lamiaceae in SWAT Herbarium	2023-25
Sara	Pollen Morphology of the genus *Astragalus* from Pakistan	2023-25
Zarina Rahman	Silver nanoparticles synthesis from aqueous extract of *Teucrium stocksinum*	2023-25
Danish Muhammad	Phytosociological studies of subtropical forests of Kotta Swat	2023-25
Shahid Khan	Vegetation structure and composition in Najigram Barikot	2023-25
Jamil Ahmad	Green synthesis of nanoparticles and antimicrobial efficacy using *Fessia pupurea* plant	2023-25
Kainat Behroz	Systematic Potential of Pollen And Leaf Micromorphological Features In Brassicaceae From Northern Pakistan	2024-26
Summaya Khurshid	Systematic studies of P*otentilla* L. (Rosaceae) in northern Pakistan	2024-26
Shamal Habib	Systematic studies of family Boraginaceae in district Swat Pakistan	2024-26
Uzma Begum	Nutritional and antioxidant potential of wild food plants from Swat	2024-26
Sheema	Nutritional and antioxidant value of selected wild food plants of Swat Pakistan	2024-26
Sidra Khan	Phytochemical, antioxidant and nutritional potential of selected wild tea species from Swat Pakistan	2024-26
Hayat Ali	Nutritional Evaluation and Antioxidant Properties of Some Selected Wild Food Plants	2024-26
Junaid Ali	Current status, distribution and environmental determinants of *Parrotiopsis jacquemontiana* (Decne.) Rehder in Swat	2024-26
Abdus Salam	Distribution and current status of selected endangered medicinal plants from Swat	2024-26
Sheeba Bibi	Nutritional analysis of *Rumes hastatus*, *R. dentatus* and Urtica dioica.	2024-26
Laila	Biological potential of *Astragalus pyrrhotrichus*	2024-26
Shafiullah	Nutritional and proximate analysis of selected fodder grasses from Pakistan	2024-26
Muhammad Fawad Khan	Analysis Of Vegetation Structure Along Environmental Gradient in Brinjal Valley Swat, Pakistan	2024-26
Shabnum Noor	Taxonomic potential of caryopsis micromorphology in grasses (Poaceae) of district Swat	2024-26
Marwa Rabbani	Achene (Nut) Micromorphology of Cyperaceae from Northern Pakistan Using Light And Scanning Electron Microscopy	2024-26

- **MSc Students**

Name	**Research Title**	**Session**
Faridullah	Ecological and Taxonomic studies of *Morchella*	2012-2014
Sobia Bibi	Pollen morphology of some plants of Tehsil Dargai	2012-2014
Zainab Bibi	Palynology of Summer flora of Odigram and surrounding areas	2012-2014
Akbar Zeb	Quantitative ethnobotany of Buner	2013-2015

Ihsanullah	Quantitative studies on medicinal plants of Mamund tehsil Bajaur Agency	2013-2015
Jalal Udin	Quantification of Cultural values of the flora of Garhi Usmani Khel Area Dargai, Malakand	2013-2015
Muhammad Younus	Systematic studies in *Vicia* L. Fabaceae from Swat Pakistan	2014-2016
Rahman Ali Husna Ali Shah	Fuel wood utilization pattern in Biha Valley	2015-2017
Hira Khan Jameel Khan	The alien flora of Kanju Town	2015-2017
Sadaf Gul Shabnam Bibi	Palynology and leaf anatomy of Vicia.	2015-2017
Shujat Ali Sidra Bibi	Taxonomic studies in Rosaceae of District Swat	2015-2017
Nasibullah Shahid Hussain	Quantitative ethnobotany of Tehsil Khal Dir Lower	2016-2018
Ikramullah M. Nawaz	Medicinal flora of Tehsil Puran Shangla	2016-2018
Shawkat Ali Usman Ali	Indigenous knowledge of medicinal folk recipes among communities in Union council Arkot Matta Swat	2016-2018
Hussain Ahmad Adil Khan	Systematic studies of the genus *Ficus* from Pakistan.	2017-19
Hareem Farman Sara Ihsan	DNA Barcoding of the tribe Poeae (Poaceae) of Pakistan	2017-19
Mussarat Bibi Farida	DNA barcoding of the tribe Paniceae from Pakistan	2017-19
Muhammad Jan	Indigenous plant based recipes practiced by the local population of Gabaray valley, Bajour Pakistan	2017-19
Badiuzaman	Systematic studies of Salix from Swat Pakistan	2018-20
Kifayat Ullah and Zakirullah	Ethnomedicinal studies of Kaana valley Shangla Pakistan	2018-20
Shamal Bibi, Uzma Bibi, Anila	Antibacterial activity of *Primula rosea* aqueous extract against selected pathogens	2019-21
Syed Maroof Shah, Mehnaz Karam, Bibi Hasanat	Biocontrol potential of *Corydalis govaniana* aqueous extract against selected phytopathogens	2019-21
Seamoon Bibi,	Synthesis and characterization of silver nanoparticles from *Mentha asiatica* and its antimicrobial efficacy	2022-24
Nayab Usman	Green Synthesis of silver nanoparticles from and its antioxidant and anti phytopathogenic potential	2022-24

BS Research Students

Shahzada Azizullah	Leaf epidermal anatomy of Lamiaceae	2011-2015
Asma Waqas	Leaf epidermal anatomy in Brassicaceae	2011-2015
Nasar Khan	Palynology of Brassicaceae	2011-2015
Ruqya Naz	Indigenous knowledge of Women specific diseases	2013-2017
Shifa Bibi	Morphometric studies in complex genus Euphorbia	2013-2017
Riaz Ahmad	Ethnomedicinal recipes of Manglawar and adjoining areas	2013-2017
Aftab Ahmad Khan Aminullah	Phytosociological studies on Jarugo valley	2014-2018
Fazal Rabbi	Morphometric studies of Angiosperm flora of Kanju Town	2014-2018
Sana Bibi	Indigenous recipes used for curing women specific diseases in Charbagh area Swat Pakistan	2014-2018
Arshad Ali Hamidullah	Medicinal plant recipes and quantitative analysis of the medicinal flora of Shin and Fatehpur region	2014-2018

Rahim Ullah Inamullah	Trade potential and socioeconomic aspects of wild edible fruits and vegetables sold in local markets of Swat Pakistan	2015-19
Hameed Ullah and Shamsul Islam	DNA barcoding and molecular phylogeny of the Aveneae Poaceae from Pakistan	2015-19
Muhammad Zeb and Abuzar Khan	Systematic studies of the genus *Lathyrus* from Northern Pakistan	2015-19
Sohail Khan and Iftikhar Hussain	Systematic studies of the genus *Astragalus* L. Fabaceae from Malakand division Pakistan	2016-20
Muhammad Iqbal Shah, Muhammad Abdullah and Sara Khan	Diversity of trichomes in the alpine flora of Swat Pakistan	2016-20
Asghar Ali, Inayat Ullah	Evaluation of biocontrol potential of *Rubus ellipticus* aqueous extract against selected phytopathogens	2017-21
Ikram Ali, Raza Khan, Malak Saqlain Khan	Biosynthesis, characterization and antimicrobial efficacy of silver nanoparticles synthesized from *Myrsine Africana*	2019-2023
Mehar Nigar, Farukh Sultan, Usra Bibi	Antimicrobial and antioxidant potential of *Mentha* species	202-25

Research Publications

1. Rahman Ullah, Ahmad Ali, **Zahid Ullah,** Hassan Sher (2025). Agro-morphological and grain-quality responses of barley accessions to zinc foliar application. Pesquisa Agropecuária Brasileira 60: e03973. 10.1590/S1678-3921.pab2025.v60.03973
2. F Rahman, **Z Ullah,** A Sultan, A Ali, H Sher, M Ahmad. (2025). Palynological characterization and taxonomic delimitation of the genus *Salvia* L. in Pakistan. Palynology, 2495223
3. F Rahman, **Z Ullah,** A Ali, H Sher, S Zaman, TD Sert, S Kayani. (2025). Palynological Characterization and Taxonomic Delimitation of the Genus *Impatiens* L. in Pakistan: An LM and SEM Study. Microscopy Research and Technique
4. A Ali, R Ullah, S Anwar, A Ali, **Z Ullah,** H Sher, J Iqbal, BA Abbasi. (2025). Morphological and genetic diversity of barley (*Hordeum vulgare* L.) germplasm. Genetic Resources and Crop Evolution 72 (3), 3465-3478
5. N Alam, **Z Ullah,** B Ahmad, A Ali, K Syed (2025). Population growth poses a significant threat to forest ecosystems: A case study from the Hindukush-Himalayas of Pakistan. Plos one 19 (11), e0302192
6. **M Ayaz, A Ali, Z Ullah, H Sher,** J Iqbal, R Iqbal. (2025). Exploring antioxidant potential and microsatellite based genetic diversity in different germplasm of *Aegilops tauschii*. Genetic Resources and Crop Evolution, 1-13
7. A Malik, M Adnan, FF ben Hasher, AM Abbasi, MK Gatasheh, **Z Ullah** (2025). Wild food plant knowledge in multicultural peri-urban area of North-Western Punjab, Pakistan. Journal of Ethnobiology and Ethnomedicine 20 (1), 99
8. **Zahid Ullah,** Amjad Khan, Amir Sultan, Ahmad Ali, Abdul Samad Mumtaz. (2024). *Astragalus kanjuensis,* a new species of section *Aegacantha* (*Galegeae*-Fabaceae) from Swat, Pakistan. Phytotaxa, 671 (03): 211-230.
9. N Alam, **Z Ullah,** B Ahmad, A Ali, K Syed. (2024). Population growth poses a significant threat to forest ecosystems: A case study from the Hindukush-Himalayas of Pakistan. PloS one 19 (11), e0302192

10. M Abdullah, M Ahmad, **Z Ullah**, A Khan, S Ahmad, H Shah, A Ullah. (2024). Palynological diversity in the Rosaceae flora of Northern Khyber Pakhtunkhwa, Pakistan. Genetic Resources and Crop Evolution, 1-19
11. MA Aziz, A Ullah, **Z Ullah**, A Pieroni. (2024). Cultural Homogenization Has Affected Palula Traditional Plant Foraging in Multilingual Chitral, Hindukush, NW Pakistan. Human Ecology, 1-13
12. A Ali, R Ullah, S Anwar, A Ali**, Z Ullah**, H Sher, J Iqbal, BA Abbasi. (2025). Morphological and genetic diversity of barley (Hordeum vulgare L.) germplasm. Genetic Resources and Crop Evolution, 1-14
13. M Abdullah, **Z Ullah**, SMI Shah, M Ahmad, A Khan, H Shah, A Ullah. (2024). Systematic implication of trichome morphology in alpine flora from Hindukush Mountain range. Genetic Resources and Crop Evolution, 1-2
14. W Ahmad, N Alam, **Z Ullah,** HU Rahman, S Sakhi, S Shah, A Alam. (2024). Floral Wealth of Hindukush: Ethnobotanical Insights into Indigenous Plant Uses and Conservation Challenges. Kurdish Studies 12 (2), 1512-1534
15. B Naz, A Afzal, H Ali, N Ahmad, H Fazal, R Ullah, EA Ali, M Ali, **Z Ullah.** (2024). Melatonin-Induced Stress Enhanced Biomass and Production of High-Value Secondary Cell Products in Submerged Adventitious Root Cultures of Stevia rebaudiana (Bert.)., ACS omega 9 (5), 5548-5562
16. AA Maaz Ahmad, MA Ali, MA Farah, **Z Ullah,** H Ali, SM Hassan Sher. (2024). GC-MS characterization of polygonatum geminiflorum depicted by antibacterial efficacy of the biosynthesized silver nanoparticles using its leaf extract.
17. Nasar Ali, **Zahid Ullah,** Ali Ahmad, Zaheer Abbas, Bushra, Aftab Ahmad Khan. (2024). Taxonomic studies of Cyperaceae (sedges) in swat pakistan: using a multivariate approach. Pak. J. Bot 56 (4), 1517-1531
18. H Sher, A Ali, H Sher, RW Bussmann, IU Rahman, H Ullah, A Ali, **Z Ullah.** 2023. Sustainability and socio-economic impacts of plant resources utilization in Valley Lalku, District Swat, Pakistan. Ethnobotany Research and Applications, 26, 1-18.
19. Hina Rehman, Waqar Ali, Rabia Javed, Nadir Zaman Khan, Muhammad Aasim, Tariq Khan, Ayaz Ali Khan, Saeed Ahmad, Mohammad Ali, **Zahid Ullah.** 2023. In vitro evaluation of antioxidant, antimicrobial, cytotoxic, anti-inflammatory, anti-aging, enzyme inhibition potential, and hplc analysis of traditionally used plant *Delphinium uncinatum* wall. Pharmaceutical Chemistry Journal, 57(7): 1056-1069.
20. Muhammad Abdul Aziz, Musheerul Hassan, Aman Ullah, **Zahid Ullah**, Renata Sõukand, Andrea Pieroni. 2023. Keeping their own and integrating the other: medicinal plant use among Ormurs and Pathans in South Waziristan, Pakistan. Journal of Ethnobiology and Ethnomedicine, 19(1): 62.
21. I Ali, S Anwar, A Ali**, Z Ullah,** DN Binjawhar, H Sher, UK Abdel-Hameed. 2023. Biochemical and phenological characterization of diverse wheats and their association with drought tolerance genes. BMC Plant Biology 23 (1), 1-14.
22. N Ahmad, S Ali, M Abbas, H Fazal, S Saqib, A Ali, **Z Ullah,** S Zaman . 2023. Antimicrobial efficacy of *Mentha piperata*-derived biogenic zinc oxide nanoparticles against UTI-resistant pathogens. Scientific Reports 13 (1), 14972
23. S Bahadur, S Dilbar, H Sher, A Ali, **Z Ullah,** M Shuaib, M Yaseen. 2023. Novel medicinal plants uses for the treatment of respiratory disorders-An overview from Madyan Swat, Pakistan. Ethnobotany Research and Applications 26, 1-15
24. S Dilbar, H Sher, H Ali, R Ullah, A Ali, **Z Ullah.** 2023. Antibacterial Efficacy of Green Synthesized Silver Nanoparticles Using *Salvia nubicola* Extract against *Ralstonia solanacearum,* the Causal Agent of Vascular Wilt …ACS omega 8 (34), 31155-31167.
25. Z Bibi, M Ali, M Abohashrh, I Ahmad, H Khan, M Ali, F Akbar, N Ahmad . 2023. Biologically Synthesized Silver Nanoparticles Efficiently Control Plant Pathogenic Bacteria-*Erwinia carotovora* and *Ralstonia solanacearum*. Inorganics 11 (7), 309
26. S Sumbal, A Ali, D Nasser Binjawhar, **Z Ullah,** SM Eldin, R Iqbal, H Sher . 2023. Comparative Effects of Hydropriming and Iron Priming on Germination and Seedling Morphophysiological Attributes of Stay-Green Wheat. ACS Omega

27. T Bahar, F Qurashi, MS Haider, MA Rahat, F Akbar, M Israr, A Ali, **Z Ullah** Unveiling *Lathyrus aphaca* L. as a Newly Identified Host for Begomovirus Infection: A Comprehensive Study. Genes 14 (6), 1221
28. A Ali, **Z Ullah**, H Sher, Z Abbas, A Rasheed. 2023. Water stress effects on stay green and chlorophyll fluorescence with focus on yield characteristics of diverse bread wheats. Planta 257 (6), 104
29. S Dilbar, H Sher, A Ali, **Z Ullah,** I Ali. 2023. Biological synthesis of Ag-nanoparticles using Stachys parviflora and its inhibitory potential against Xanthomonas campestris. South African Journal of Botany 157, 409-422
30. S Anwar, A Ali, **Z Ullah,** DN Binjawhar, H Sher, R Ali, R Iqbal, B Ali, I Ali. 2023. The Impact of *Trichoderma harzianum* Together with Copper and Boron on Wheat Yield. ACS Agricultural Science & Technology
31. S Hussain, H Sher, **Z Ullah,** MS Elshikh, DA Al Farraj, A Ali, AM Abbasi. 2023. Traditional Uses of Wild Edible Mushrooms among the Local Communities of Swat, Pakistan. Foods 12 (8), 1705
32. S Anwar, SM Khan, Z Ahmad, Z Ullah, R Afza, Z Abbas, A Abdullah . 2023. Plant diversity and communities pattern with special emphasis on the indicator species of a dry temperate forest: A case study from Liakot area of the Hindu Kush mountains. Tropical Ecology 64 (1), 37-52
33. N Alam, E Bohnett, M Zafar, H Sher, B Ahmad, MF Ramadan, M Ahmad . 2023. Impact of Anthropogenic Threats on Species Diversity: A Case Study of the Sub-Himalayan Tropical Dry Deciduous Forests of Pakistan. Sustainability 15 (3), 2829.
34. A ur Rahman, Z Ullah, A Saleem, R Qureshi, DFRP Burslem. 2023. Distribution Pattern of Tree Species and Richness along an Altitude Gradient in the Sub-Alpine Temperate Zone of Hindu Kush Mountainous Forests, Pakistan: Tree species richness. Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental.
35. H Ullah, SM Khan, M Jaremko, S Jahangir, Z Ullah, I Ali, Z Ahmad. 2023. Vegetation assessments under the influence of environmental variables from the Yakhtangay Hill of the Hindu-Himalayan range, North Western Pakistan. Scientific Reports 12 (1), 20973
36. A Zada, A Ali, DN Binjawhar, UK Abdel-Hameed, AH Shah, SM Gill, Zahid Ullah et al. 2023. Molecular and Physiological Evaluation of Bread Wheat (*Triticum aestivum* L.) Genotypes for Stay Green under Drought Stress. Genes 13 (12), 2261
37. AU Rahman, **Z Ullah,** R Qureshi, D Burslem, ZUR Mashwani. 2022. Composition and structure of plant communities in the Moist Temperate Forest Ecosystem of the Hindukush Mountains, Pakistan. Brazilian Journal of Biology 82
38. Rahman, Saddiq Ur; **Ullah, Zahid**; Ali, Ahmad; Ahmad, Mushtaq; Sher, Hassan; Shinwari, Zabta Khan; Nazir, Abdul (2022). Ethnoecological knowledge of wild fodder plant resources of district buner Pakistan. Pak. J. Bot., 54 (02): 645-652
39. Rahman, Saddiq Ur; **Ullah, Zahid**; Ali, Ahmad; Aziz, Muhammad Abdul; Alam, Naveed; Sher, Hassan; Ali, Iftikha. (2022). Traditional knowledge of medicinal flora among tribal communities of Buner Pakistan. Phytomedicine Plus, 2(3): 100277, Elsevier
40. Sher, Hazrat; Ali, Ahmad; **Ullah, Zahid**; Sher, Hassan. (2022). Alleviation of Poverty through Sustainable Management and Market Promotion of Medicinal and Aromatic Plants in Swat, Pakistan: Alleviation of Poverty through Sustainable Management. Ethnobotany Research and Applications, 23
41. Anwar, Sohail; Khan, Shujaul Mulk; Ahmad, Zeeshan; **Ullah, Zahid**; Afza, Rabia; Abbas, Zaheer; Abdullah, Abdullah; Hussain, Murtaza. (2022). Plant diversity and communities pattern with special emphasis on the indicator species of a dry temperate forest: A case study from Liakot area of the Hindu Kush mountains, Pakistan. Tropical Ecology
42. Ullah, Hameed; Khan, Shujaul Mulk; Jahangir, Sadia; Ullah, Zahid; Ali, Iftikhar; Ahmad, Zeeshan; Badshah, Hussain. (2022). Vegetation assessments under the influence of environmental variables from the Yakhtangay Hill of the Hindu-Himalayan range, North Western Pakistan. Scientific Reports, 12(1)
43. Matiullah, A.U. Rahman., **Zahid Ullah**., Rahmatullah Qureshi., David R. Burslem & Zia Ur Rahman Mashwani. (2022). Composition and structure of plant communities in the Moist Temperate Forest Ecosystem of the Hindukush Mountains, Pakistan. Brazilian Journal of Biology, vol. 82, e266637.

44. Iftikhar Ali, Ajab Khan, Ahmad Ali, **Zahid Ullah,** Dong-Qin Dai, Naveed Khan, Asif Khan, Abdel Rahman Al-Tawaha, Hassan Sher. (2022). Iron and zinc micronutrients and soil inoculation of *Trichoderma harzianum* enhance wheat grain quality and yield. Frontiers in Plant Science,13:960948. doi: 10.3389/fpls.2022.960948
45. Khan, S., Bibi, G., Dilbar, S., Iqbal, A., Ahmad, M., Ali, A., **Ullah, Z**., Jaremko, M., Iqbal, J., Ali, M., Haq, I., & Ali, I. (2022). Biosynthesis and characterization of iron oxide nanoparticles from Mentha spicata and screening its combating potential against Phytophthora infestans. Frontiers in Plant Science, 13. https://doi.org/10.3389/fpls.2022.1001499
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1. **Zahid Ullah**, Mushtaq Ahmad, Hassan Sher, Shujaul Mulk Khan, Hamayun Shaheen and Naveed Alam. (2015). Systematics and Diversity of the genus Poa (Poaceae) in the Western Himalayas Pakistan. Published in Pharmacology online.

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i. **Conferences / Seminars / Workshops organized/attended during the year 2024**

1. **Dr. Zahid Ullah** Successfully completed technical training program on "Research Administration and Productivity" from December 16-19, 2024, organized by USAID's Higher Education System Strengthening Activity (HESSA).
2. **Dr. Zahid Ullah** Participated as Speaker in 2nd International Conference and Expo of Plant Sciences titled "Plant Biodiversity and Food Security in the Wake of Climate Change: from November 19–21, 2024 Jointly organized by PMAS-Arid Agriculture University, Rawalpindi, Pakistan and Himalayan Hemp and Herbal Products (Pvt.) Ltd.
3. **Dr. Zahid Ullah** Participated as **Resource Person** in three-day' workshop on "Plant Systematics (Training of Trainers)" August 29-31 at SBBU Sheringal Dir Upper, Organized by Weed Science Society of Pakistan in Collaboration with Pakistan Science Foundation (PSF) and Botanical Society of Pakistan (BSP).

References

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