

# Curriculum Vitae



## Muhammad Ilyas, PhD

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**Web Link to Google Scholar:** <https://scholar.google.com.pk/citations?user=dfe6ae0AAAAJ&hl=en>

**ORCID: Muhammad Ilyas** (<https://orcid.org/0000-0001-7399-7743>)

## Education

2012-2017      **PhD.** Plant sciences (Plant Biochemistry & Molecular biology)  
Quaid-i-Azam University Islamabad (Pakistan)

**Thesis Title:** Molecular characterization of rice root Germin-like protein gene-1 (*Osrqlp1*) promoter.

2010-2012      **M.Phil.** Plant sciences (Plant Biochemistry & Molecular biology)  
Quaid-i-Azam University Islamabad (Pakistan)

**Thesis Title:** Capturing the D-genome genetic diversity for tolerance to Boron toxicity and some essential nutritional mineral in wheat.

2008-2010      **MSc. in** Botany Quaid-i-Azam University Islamabad, Pakistan

2005-2007      **BSc.** University of Peshawar, K.P, Pakistan

## Employment

- ✓ **1 Year** Internship training as **Research Assistant** at **Quaid-i-Azam university**, Islamabad under the National Internship Program (NIP), Govt of Pakistan (2010 to 2011).
- ✓ **1 Year** research experience as **Research Associate**, at **Wheat-wide crosses and cytogenetics lab, National agriculture research Centre** Islamabad. Major duties were collection and analysis of data regarding wheat response to various biotic and abiotic stresses and compilation and publication of data (2011 to 2012).
- ✓ **5 years** of post-graduate field and laboratory research experience during PhD as Research associate at **Plant Biochemistry & Molecular Biology lab, Department of Plant Sciences, Quaid-i-Azam University Islamabad, Pakistan**. Major duties during this period was designing Scientific projects, collecting and analyzing the Molecular data from plants using wet and dry lab skills, compiling and publishing papers. Teaching wet and dry lab skills to M. Sc and M. Phil students (2012 to 2017).

- ✓ **Join Department of Botany, University of Swabi as Assistant professor (BPS-19) (2018 – 2022).**
- ✓ **Join Department of Botany, Kohsar university Murree as Assistant professor (BPS-19) (2022-continued till now).**

## **ADMINISTRATIVE EXPERIENCE**

1. Establishment of Department of Botany, University of Swabi.
2. HOD Department of Botany, University of Swabi (2018- 2022).
3. QEC and ORIC Focal person, Department of Botany, University of Swabi.
4. Member of Board of studies of Department of Botany and Environmental sciences, University of Swabi.
5. Program Team (PT) and Assessment team member for Self-Assessment Report (SAR) Writing at Department of Botany, University of Swabi.
6. Exam coordinator Department of Botany University of Swabi.
7. Former Member of the need assessment committee department of Botany, University of Swabi.
8. Taking steps to enhance Faculty Research output
9. Developing New Courses for existing Programs
10. Advising HR for Recruiting Suitable Faculty
11. Reviewing/Evaluation of Faculty Performance at the end of each term.
12. HOD Department of Botany, Kohsar university Murree.
13. Member of the scrutiny committee, Kohsar university Murree.
14. Member of the technical committee for procurement of medical & laboratory Equipments.
15. In-Charge Department of Botany, Kohsar University Murree (29 April 2022-till now)

## **AREAS OF INTREST**

- ✓ Plant Biochemistry & Molecular biology
- ✓ Plant Genomics
- ✓ Plant Biotechnology
- ✓ Plant Bioinformatics

## **WET LAB SKILLS**

- ✓ DNA Extraction,
- ✓ PCR
- ✓ Gel Electrophoresis
- ✓ Plasmid Isolation

- ✓ Ligation
- ✓ Restriction Digestion
- ✓ Gene Cloning
- ✓ Construct Preparation
- ✓ Plant Transformation
- ✓ Promoter Analysis
- ✓ Microscopy
- ✓ Cell and Tissue culturing
- ✓ Real-time PCR

## **COMPUTATIONAL SKILLS**

- ✓ Phylogenetic analysis tools (NT-SYS, MEGA6, Geneious, PAST)
- ✓ Promoter analysis tools (Genomatix software tools [MatInspector, DiAlign, Common TFs, ModelInspector, Farmworker], PLACE, SCOPE, PLANT PAN)
- ✓ DNA & Protein analysis tools (BioEdit, Molecular Docking tools [HADDOCK web server, 3D-Dart, PyMOL, Displar], ApE plasmid editor, ExPASy-ProtParam, MEME server, CELLO, Blast2GO, STRING, CIMminer, Genevestigator)
- ✓ Molecular Search Engines & Databases (NCBI, Plant Ensemble, Phytozome, EMBL, RiceXPro)
- ✓ Molecular Imaging (Photoshop, Image J, Discovery studio, DOG2, IBS)

## **ACADEMIC SOFTWARES**

- ✓ Proficient in MS office (MS word, MS excel, MS PowerPoint)
- ✓ Typing speed of 70 WPM.
- ✓ Proficient in using referencing softwares such as Endnote, Mendeley etc.

## **COURSES TAUGHT**

- ✓ Cytology & Genetics and Evolution
- ✓ Molecular Biology
- ✓ Genetics I
- ✓ Genetics II
- ✓ Research and Scientific Writing
- ✓ Cell biology
- ✓ Plant physiology & Ecology
- ✓ Plant Biochemistry I
- ✓ Basic Biochemistry

## **RESEARCH PUBLICATIONS**

**Sequences in Gene bank**

~71 sequences related to *atpB-rbcL* intergenic spacer region and *rps11* gene from diverse plant species were allotted accession numbers by GenBank (NCBI).

**D) Papers published: (IF ~23)**

**As Principle Author**

1. **Ilyas M. M.** Irfan, T. Mahmood, H. Hussain, L. Rehman, I Naeem (2020). Analysis of Germin-like protein genes (*OsGLPs*) family in rice using various *in silico* approaches. Current Bioinformatics. 14:1-12. **(IF 3.5)**
2. **Ilyas M,** W. Akhtar, S. Rehman and T. Mahmood (2019). Functional characterization of rice root Germin-like protein (*OsRGLP1*) Gene-1 promoter in *Nicotiana tabacum*. 3Biotech 9:130. **(IF 2.4).**
3. **Ilyas, M. A.** Rasheed, T. Mahmood (2016). Functional characterization of Germin (GER) and Germin-like protein (GLP) using transgenic approach. Biotechnology letters. 38(9):1405-21. **(IF 2.5)**
4. **Ilyas, M.** S.M.S Naqvi, T. Mahmood (2016). *In-silico* analysis of rice GLP genes promoter using transcriptional factor binding sites. Archives of Biological Sciences 68(4):863-876. **(IF 0.956)**
5. **Ilyas, M.** T. Mahmood, A. Ali, M. Baber, A. Rasheed1, A. Mujeeb-Kazi (2015). Characterization of D-genome genetic diversity for tolerance to boron toxicity in synthetic hexaploid wheat and *in silico* analysis of candidate genes. Acta Physiologiae Plantarum, 37: 17. **(IF 2.3)**
6. **Ilyas, M,** A. Rahman, N.H. Khan, M. Hussain (2021). Analysis of Germin-like protein genes family in *Vitis vinifera* (*VvGLPs*) using various *in silico* approaches. Brazilian journal of biology. 2024, vol. 84, e256732. **(IF 1.651)**

**As Co-Author**

7. Ibrahim, M. N. Nazar, **M. Ilyas** and T. Mahmood (2014). Assessment of genetic variability among selected species of *Apocynaceae* based on *rps11* gene. Journal of Animal and Plant Sciences. 24(4) Pp: 1266-69. **(IF 0.5)**
8. Qadir, A. **M. Ilyas,** W. Akhtar, A. Mujeeb-kazi, T. Mahmood (2015). Study of genetic diversity in synthetic hexaploid wheats using random amplified polymorphic DNA markers. Journal of Animal and Plant Sciences, 25(6): 1660-1666. **(IF 0.5)**
9. Rehman, S. E. Aziz, W. Akhtar, **M. Ilyas,** and T. Mahmood (2016). Structural and functional characteristics of plant proteinase inhibitor-II (PI-II) family: A review. Biotechnology letters, 39 (5): 647–666. **(IF 2.5)**
10. Aziz, E. W. Akhtar, **M. Ilyas,** S. Rehman, H. Koiwa, Z. K. Shinwari and T. Mahmood (2017). Response of Tobacco Polyphenol Oxidase Gene to Wounding, Abscisic Acid (ABA) and Methyl Jasmonate (MeJ). Pakistan Journal of Botany, 49(2): 499-502. **(IF 0.9)**
11. Irfan, M. H. Khan, M. Faiz, R Khan, H. Ahmad, N Younas, S. Khan, M. Kamil, **M. Ilyas,** Saifullah, M. Ishaq (2018). Taxonomic studies of pennate diatoms from Tehsil Landikotal, District Khyber, Khyber Pakhtunkhwa, Pakistan. International Journal of Biosciences. 13 (4), 128-138. **(HEC Recognized)**
12. Irfan, M. Nabeela, M Kamil, NA Khan, **M Ilyas,** A Ali, Saifullah, M Shah, G Jan, W Murad (2018). Ethnomedicinal and traditional knowledge of phanerogames of Tehsil Munda, district

Lower Dir, Khyber Pakhtunkhwa, Pakistan. International Journal of Biosciences. 13 (4), 208-218. **(HEC Recognized)**

13. Irfan, M. Nabeela, M. Kamil, NA Khan, A Ali, Z Ullah, **M Ilyas**, I Ahmad, A Ali, Saifullah1, F Subhan, U Khan (2018). Ethnomedicinal applications of plant taxa by the local communities of Tehsil Adenzai, District Lower Dir, Khyber Pakhtunkhwa, Pakistan. International Journal of Biosciences. 13, No. 5, p. 40-49, 2018. **(HEC Recognized)**
14. Irfan M, Nabeela, **M. Ilyas**, K. Rehman. 2019. Effect of Ascorbic acid against salt stress on the morphological and toxicological parameters of *Solanum melongena*. Pure and Applied biology 8(2): 1425-1443. **(HEC Recognized)**
15. Mahmood, T. H. Arshad, **M. Ilyas**, W. Akhtar, Z.K Shinwari. 2020. Tissue culture optimization for *Lallementia royleana* L. an important medicinal plant. Série Botânica 76: e2021009, 2021. **(IF 0.6)**.
16. ur Rahman, A. Khan, S. M. Ahmad, Z. Alamri, S. Hashem, **M. Ilyas**, M., ... & Khan, G. 2021. The impacts of multiple environmental factors on species abundances in various forest layers using an integrative modeling approach. Global Ecology and Conservation, e01712. **(IF 3.38)**.
17. Fahad., S, L. Rehman, S. Akram, T. Ahmad, H. Hussain, **M. Ilyas**, H. Khan, N.U. Qazi, S. Khalid, S.U. Amin, S.M Shah. 2022. Morphological characterization of *Verticillium dahliae* isolated from olive trees in district Mardan. Biomedical letters 8(1): 14-20. **(X-category)**
18. Ali., I. M. Ilyas. 2022. Drought stress enhances the efficiency of floral dip method of Agrobacterium-mediated transformation in *Arabidopsis thaliana*. Brazilian journal of biology. (Accepted). **(IF 1.651)**
19. Ullah R, A. Rauf, F. Hussain, I. Ali, J. Muhammad, H. Hussain, **M. Ilyas**, M. Kamil, S, Abidulalh, M. Shuaib. 2022. Biological investigation on novel natural dye extracted from the bark of *Calligonum polygonoides* L. and their application on cotton fiber. Polish Journal of Environmental studies (Accepted) **(IF 1.66)**.

## **II) Submitted Papers:**

1. Akhtar, A. E. Aziz, **M. Ilyas**, S. Rehman, T. Mahmood (2020) Plant regeneration from mature embryos of Pakistani wheat varieties. Open life sciences. (Under review).
2. Akhtar, W., E. Aziz, S. Rahman, **M. Ilyas**, Tariq Mahmood. (2022). Plant polyphenol oxidases in responses to abiotic and biotic stresses: A review. Frontier in plant Sciences (submitted).
3. Shaukat, M. **M. Ilyas\***, F Khalid, Y Aman, Z Mahmood, JI Mirza, A Shahzad, Sania and F Munis (2022). Screening of advance lines of bread wheat for yellow rust resistance. (Submitted).
4. Barkatullah, IU Haq, M Ibrar, A Rauf, MS Mubarak, TB Hadda, S Patel, M Irfan, **M Ilyas**. 2022. An ethnobotanical survey of medicinal plants of Kass Lilownai Valley, District Shangla, Khyber Pakhtunkhwa, Pakistan (submitted).

## **JOURNAL REVIEWER**

- ✓ Physiology and Molecular Biology of Plants
- ✓ Pakistan Journal of Botany
- ✓ Crop Breeding and Applied Biotechnology
- ✓ Current Journal of Applied Science and Technology

## **RESEARCH PROJECTS & GRANTS**

5. Genetic characterization of different citrus varieties of Khyber Pakhtunkhwa, Pakistan by Higher Education commission of Pakistan (HEC). **(0.5 Million)**

## **AWARDS AND SCHOLARSHIPS**

1. Indigenous PhD Scholarship (2012-2016) for PhD studies, awarded by Higher Education Commission (Pakistan).
2. Talent Scholarship (2010-2012) during M.Phil. studies from Quaid-i-Azam University, Islamabad (Pakistan).

## **CONFERENCES AND SEMINARS**

### **Organized**

- ✓ Seminar on proteomics at QAU Islamabad.
- ✓ 13 National and 2nd international botanical conference organized by botanical society of Pakistan.
- ✓ 1st international conference on cancer and other infectious diseases by Department of Chemistry (University of Swabi)
- ✓ Attended
- ✓ 1st International Conference on Climate change impact on agriculture and food supply, Uni of Swabi.
- ✓ International seminar on integration of classical and non-classical techniques to improve crop yield (19th September 2018, Uni of Swabi).
- ✓ International Pharmacy Conference & Exhibition on “Emerging Trend in Drug Development, Therapeutics and commercialization”. June, 18-20, 2019 University of Swabi, Khyber Pakhtunkhwa, Pakistan

### **Trainings & Workshops**

- ✓ Workshop on SPSS and Endnote by ORIC, Quaid-i-Azam university.
- ✓ Policy makers & practitioner’s awareness workshop on Dual-Use education by Pakistan Academy of Sciences.
- ✓ One-day Workshop on Self-Assessment & Report writing (Uni of Swabi).
- ✓ One-day workshop on HEC’s plagiarism policy & usage of Turnitin software (30 June 2018 by Uni of Swabi).
- ✓ One-day awareness workshop on Anti plagiarism policy by University of Swabi (25 October 2018)
- ✓ One-day workshop on MPhil and PhD program review (University of Swabi) (7 January, 2019)
- ✓ One-day workshop on SAR report writing University of Swabi (16 May 2019).
- ✓ Online workshop on Pandemic preparedness: Science and countermeasures by AASSA-PAS Webinar series, Pakistan academy of sciences (Webinar I on 27 April 2021).
- ✓ Online workshop on Pandemic preparedness: One health: Lesson learnt by AASSA-PAS Webinar series, Pakistan academy of sciences (Webinar II 04 May 2021).
- ✓ One-day Workshop on “University Ranking” by QEC university of Swabi (13 October, 2021).
- ✓ One-day Seminar on “Climate change” by Environment Green club & ORIC University of Swabi (07 December, 2021).

## **STUDENT SUPERVISION**

- ✓ PhD 1

- ✓ MSc 23
- ✓ BS 10

## BOOK OR BOOK CHAPTER

1. **M. Ilyas.**, T. Mahmood, A.U. Rahman, T. Mahmood, F. Wahid, N.H. Khan, M. Irfan. 2022. **Biomolecular intervention in understanding plant adaptation to climate change.** In: Fahad S. et al. (eds) “Climate Change and Ecosystems: Challenges to Sustainable Development” by CRC Press. Routledge Taylor and Francis group London UK. ISBN 9781032260686.
2. F. Wahid., M. Sharif, A. Ali, S. Fahad, M. Adnan, M. Noor, IA. Mian, IA. Khan, M. Alam, M. Saeed, **M. Ilyas**, R. Ullah, H. Ilahi, and M. Azeem. 2020. **Plant-Microbes Interactions and Functions in Changing Climate.** In: Fahad S. et al. (eds) Environment, Climate, Plant and Vegetation Growth. Springer, Cham Switzerland AG. ISBN 978-3-030-49732-3. [https://doi.org/10.1007/978-3-030-49732-3\\_16](https://doi.org/10.1007/978-3-030-49732-3_16)
3. N.H Khan., T. Saeed, **M. Ilyas.** 2022. **Interaction of environment and entomology.** In: Fahad S. et al. (eds) “Climate Change and Ecosystems: Challenges to Sustainable Development” by CRC Press. Routledge Taylor and Francis group London UK. ISBN 9781032260686.
4. N.H. Khan, A. Rahman, F. Zuljalal, T. Saeed, S. Aziz, **M. Ilyas.** 2022. Food additives as environmental Micropollutants. In: Hashmi et al. (eds) Environment Micropollutants. Elsevier Inc. Amsterdam Netherland. Paperback ISBN: 9780323905558. <https://doi.org/10.1016/B978-0-323-90555-8.00013-1>.

## LANGUAGES

- ✓ Proficient in speaking, reading and writing Urdu
- ✓ Proficient in speaking, reading and writing English
- ✓ Proficient in speaking, reading and writing Pashtu

## REFERENCES

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Focal Point (2013-), Wheat Wide Crosses and Cytogenetics, National Agricultural  
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Note: All references and certifications will be provided on demand.