

|                               |                                                                                                                                                                                                                                                  |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name: Dr. Noreen Zahra</b> |                                                                                                                                                                                                                                                  |
| Positions                     | <b>IPFP Fellow</b> (Assistant professor), Government College Women University Faisalabad, 2022<br><b>Visiting Lecturer</b> , University of Education, Faisalabad, 2021<br><b>Teacher Assistant</b> , University of Agriculture Faisalabad, 2018. |
| Father's Name:                | Dr. Abdul Ghafoor Nasir                                                                                                                                                                                                                          |
| Date of Birth:                | September 12, 1991                                                                                                                                                                                                                               |
| Place of Birth:               | District Faisalabad                                                                                                                                                                                                                              |
| Nationality:                  | Pakistani                                                                                                                                                                                                                                        |
| Phone:                        | Cell: +92 3016096956                                                                                                                                                                                                                             |
| Email:                        | <a href="mailto:noreenzahra59@gmail.com">noreenzahra59@gmail.com</a> ; <a href="mailto:noreenzahra.vf@ue.edu.pk">noreenzahra.vf@ue.edu.pk</a>                                                                                                    |
| Research gate:                | <a href="https://www.researchgate.net/profile/Noreen_Zahra2">https://www.researchgate.net/profile/Noreen_Zahra2</a>                                                                                                                              |
| ORCID                         | <a href="https://orcid.org/0000-0003-4599-0901">https://orcid.org/0000-0003-4599-0901</a>                                                                                                                                                        |
| Publons                       | <a href="https://publons.com/researcher/3671944/noreen-zahra/">https://publons.com/researcher/3671944/noreen-zahra/</a>                                                                                                                          |
| Google Scholar                | <a href="https://scholar.google.com.pk/citations?user=lQaieC0AAAAJ&amp;hl=en">https://scholar.google.com.pk/citations?user=lQaieC0AAAAJ&amp;hl=en</a>                                                                                            |
| Home Address                  | Bata Pur, Jalomore, Lahore near silk bank                                                                                                                                                                                                        |
| Associate Editor              | 1) Agronomy Research (HEC recognized)<br>2) Journal of Crop Science and Biotechnology (HEC recognized)                                                                                                                                           |
| Reviewer                      | <b>Elsevier Publisher</b> (Plant stress)<br><b>Springer Publisher</b> (Physiology and Molecular Biology of Plants)<br>(Silicon)<br>(Wetlands Ecology and Management)<br><b>MDPI Publisher</b> (Genes)                                            |
| Citation score                | <b>446</b>                                                                                                                                                                                                                                       |
| H-index                       | <b>12</b>                                                                                                                                                                                                                                        |
| I10-Index                     | <b>15</b>                                                                                                                                                                                                                                        |
| Impact factor                 | <b>94.72</b>                                                                                                                                                                                                                                     |

## RESEARCH ACHIEVEMENTS

**Milk Thistle** I have honor to work on medicinal plant concept in Pakistan, I took it as my PhD project during 2016-2020. Then I did research on “**Physiological and biochemical aspects of milk thistle ecotypes**” with especial concern to silymarin synthesis. I have developed techniques for extracting silymarin in the seeds of milk thistle.

**Project:** Oric project for two years (2018-2020) on “*Mechanism of salinity tolerance in milk thistle ecotypes from diverse habitats*”

## EDUCATIONAL QUALIFICATIONS:

[Ph.D (Botany)] – [Dept. of Botany, University of Agriculture, Faisalabad-38040, Pakistan] [2020] **CGPA: 3.82/4.00 (79.625%)**  
[Project title: “*Mechanism of salinity tolerance in milk thistle ecotypes from diverse habitats*”.]

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[M.Phil. (Botany)] – [Dept. of Botany, University of Agriculture, Faisalabad-38040, Pakistan] [2016] CGPA: 3.81/4.00 (76.25%)

[Thesis title: “Effect of seed pre-treatment and application of calcium on the growth and productivity of field grown wheat”.]

[M.Sc. (Botany)] – [Dept. of Botany, The Government College University, Faisalabad-38040, Pakistan] [2014] CGPA: 3.65/4.00 (70.05%)

[Thesis title: “Efficacy of amino acid priming for antioxidant production in salt stresses maize (*Zea mays* L.)”]

RESEARCH PAPERS ACCEPTED/SUBMITTED FOR PUBLICATION IN INTERNATIONAL/NATIONAL JOURNALS

A) RESEARCH PAPERS PUBLISHED IN JOURNALS HAVING IMPACT FACTOR

|     |      | Title of paper/journal/volume/page numbers                                                                                                                                                                                                                                                                        | IF    |
|-----|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1)  | 2022 | Samad A, K Shaukat, MR Ansari, M Nizar, N Zahra. et al. 2022. Role of Foliar Spray of Plant Growth Regulators in Improving Photosynthetic Pigments and Metabolites in <i>Plantago ovata</i> Under Salt Stress -A Field Appraisal. <i>Biocell</i> (Accepted)                                                       | 1.11  |
| 2)  | 2022 | Zahra N, MB Hafeez, A Ghaffar, A Kausar, Maryam Al Zeidi, KH Siddique, M Farooq. 2022. Plant Photosynthesis under Heat Stress: Effects and Management. <i>Environmental and Experimental Botany</i> <a href="https://doi.org/10.1016/j.envexpbot.2022.105178">https://doi.org/10.1016/j.envexpbot.2022.105178</a> | 6.028 |
| 3)  | 2022 | Shomali A, S Das, N Arif, M Sarraf, N Zahra, V Yadav, S Aliniaiefard, DK Chauhan, M Hasanuzzaman. 2022. Diverse Physiological Roles of Flavonoids in Plant Environmental Stress Responses and Tolerance. <i>Plants</i> 11(22):3158.                                                                               | 4.658 |
| 4)  | 2022 | Shahid S, A Kausar, N Zahra, MB Hafeez, A Raza, MY Ashraf. 2022. Methionine-induced regulation of secondary metabolites and antioxidants in maize ( <i>Zea mays</i> L.) subjected to salinity stress. <i>Gesunde Pflanzen</i> <a href="https://doi.org/10.1007/s10343-022-00774-4">10.1007/s10343-022-00774-4</a> | 2.082 |
| 5)  | 2022 | Zahra N, MB Hafeez, A Wahid, MH Al Masruri, A Ullah, KH Siddique, M Farooq. 2022. Impact of climate change on wheat grain composition and quality. <i>Journal of the Science of Food and Agriculture</i> <a href="https://doi.org/10.1002/JSFA.12289">10.1002/JSFA.12289</a>                                      | 4.125 |
| 6)  | 2022 | Zahra N, A Wahid, MB Hafeez et al. 2022. Effect of Salinity and Plant Growth Promoters on Secondary Metabolism and Growth of Milk Thistle Ecotypes. <i>Life</i> 12:1530.                                                                                                                                          | 3.251 |
| 7)  | 2022 | Mohammadi Alagoz S, N Zahra, M Hajiaghahi Kamrani, et al. 2022. Role of Root Hydraulics in Plant Drought Tolerance. <i>J Plant Growth Regul</i> <a href="https://doi.org/10.1007/s00344-022-10807-x">https://doi.org/10.1007/s00344-022-10807-x</a>                                                               | 4.640 |
| 8)  | 2022 | Hafeez MB, N. Zahra, N Ahmad, Z Shi, A Raza, X Wang, J Li. 2022. Growth, physiological, biochemical and molecular changes in plants induced by magnetic fields: A review. <i>Plant Biol</i> <a href="https://doi.org/10.1111/plb.13459">https://doi.org/10.1111/plb.13459</a>                                     | 3.877 |
| 9)  | 2022 | Zahra N, MB Hafeez MB, A Nawaz, M Farooq 2022. Rice production systems and grain quality. <i>J Cereal Sci</i> 19:103463.                                                                                                                                                                                          | 4.075 |
| 10) | 2022 | Zahra N, MS Al Hinai, MB Hafeez, A Rehman, A Wahid, KH Siddique, M Farooq. 2022. Regulation of photosynthesis under salt stress and associated tolerance mechanisms. <i>Plant Physiol Biochem</i> 178: 55-69.                                                                                                     | 5.437 |
| 11) | 2022 | Hafeez MB, S Iqbal S, Y Li, MS Saddiq, SMA Basra, H Zhang, N Zahra, MZ Akram, D Bertero, RN Curti. 2022. Assessment of Phenotypic Diversity in                                                                                                                                                                    | 4.658 |

|     |      |                                                                                                                                                                                                                                                                                                  |       |
|-----|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|     |      | the USDA Collection of Quinoa Links Genotypic Adaptation to Germplasm Origin. <b>Plants</b> 11(6):738.                                                                                                                                                                                           |       |
| 12) | 2022 | Nazar M, K Shouakt, <b>N Zhara</b> et al. Exogenous application of salicylic acid and hydrogen peroxide ameliorate cadmium stress in milkthistle by enhancing morpho-physiological attributes grown at two different altitudes. <b>Front Plant Sci</b> 12:809183                                 | 6.627 |
| 13) | 2021 | <b>Zahra N</b> , A. Wahid, MB Hafeez et al. Plant growth promoters alleviate oxidative damages and improve the growth of Milk thistle ( <i>Silybum marianum</i> L.) under salinity stress. <b>J Plant Growth Regul</b> 20:1-26.                                                                  | 4.169 |
| 14) | 2021 | <b>Zahra N</b> , A Wahid, MB Hafeez et al. Plant growth promoters mediated quality and yield attributes of milk thistle ( <i>Silybum marianum</i> L.) ecotypes under salinity stress. <b>Sci Rep</b> 11(1):1-7                                                                                   | 4.996 |
| 15) | 2021 | Ali R, T Javaria, M Anwar, Sultana, <b>N. Zahra</b> , S. Yasir et al. Hydrogen sulfide: An emerging component against abiotic stress in plants. <i>Plant Biol</i> <a href="https://doi.org/10.1111/plb.13368">https://doi.org/10.1111/plb.13368</a>                                              | 3.877 |
| 16) | 2021 | Hafeez MB, Y Ramzan, S Khan, Ibrar D, Bashir S, <b>N Zahra</b> et al. Grain Quality and Productivity of Zinc-Efficient and Zinc-Inefficient Wheat Cultivars Were Improved with Zinc and Iron Biofortification. <b>Front Nutr</b> 8: 779595.                                                      | 6.590 |
| 17) | 2021 | <b>Zahra N</b> , A Wahid, SMA Basra, M Arfan (2021). Phenotypic plasticity for growth and nutrient uptake in milk thistle under salt stress: Modulatory role of soil supplementations with plant growth promoters. <b>Intl J Agric Biol</b> 25:692–700                                           | 0.822 |
| 18) | 2021 | <b>Zahra N</b> , MB Hafeez, A Wahid, K Shaukat, S Hussain, R Naseer, A Raza, S Iqbal, M Farooq (2021) Hypoxia and Anoxia stress: Plant responses and tolerance mechanisms. <b>J Agron Crop Sci</b> <a href="https://doi.org/10.1111/jac.12471">https://doi.org/10.1111/jac.12471</a>             | 4.153 |
| 19) | 2021 | <b>Zahra N</b> , MB Hafeez, K. Shaukat, A Wahid, M Hasanuzzaman (2021) Iron toxicity in plants: Impacts and remediation. <b>Physiol Plant</b> DOI: 10.1111/ppl.13361                                                                                                                             | 5.081 |
| 20) | 2021 | Abbas A, P Huang, S Hussain, S Hussain, Da Du, MB Hafeez, S Balooch, <b>N Zahra</b> , X Ren, M Rafiq, M Saqib (2021). Seed priming with sorghum water extract Improves the tolerance against salt stress in Camelina [ <i>Camelina sativa</i> (L.) Crantz.]. <b>Plants</b> 10(4):749.            | 4.658 |
| 21) | 2021 | <b>Zahra N</b> , A Wahid, K Shaukat, MB Hafeez, A Batool, M Hasanuzzaman (2021) Oxidative stress and tolerance potential of milk thistle ecotypes with medium supplementation of different plant growth-promoting agents under salinity stress conditions <b>Plant Physiol Biochem</b> 166:53-65 | 5.437 |
| 22) | 2021 | <b>Zahra N</b> , A Wahid, MB Hafeez A Ullah, KHM Siddique, M Farooq (2021) Grain Development in Wheat under Combined Heat and Drought Stress: Plant Responses and Management. <b>Environ Expe Bot</b> 188(12):104517                                                                             | 6.028 |
| 23) | 2021 | <b>Zahra N</b> , A Wahid, K Shaukat, T Rasheed (2020) Role of seed priming and foliar spray of calcium in improving flag leaf growth, grain filling and yield characteristics in wheat ( <i>Triticum aestivum</i> ) - a field appraisal. <b>Intl J Agric Biol</b> 24:1591–1600.                  | 0.822 |
| 24) | 2020 | <b>Zahra N</b> , S Mahmood, ZA Raza (2020). Effect of salinity stress on various growth and physiological attributes of two contrasting maize genotypes. <b>Braz Arc Biol Technol</b> 63: : e20200072                                                                                            | 1.18  |

|     |      |                                                                                                                                                                                                                                                            |                         |
|-----|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 25) | 2020 | Shaukat K, A Wahid, <b>N Zahra</b> , SMA Basra (2020). Metabolites adjustment is crucial to cross-locational adaptability of lemongrass populations from quetta and faisalabad: evidence from reciprocalswap study. <b>Intl J Agric Biol</b> 24:1855–1866. | 0.822                   |
| 26) | 2020 | Nazeer S, SMA Basra, S Iqbal, A Mateen, MB Hafeez, MZ Akram, <b>N Zahra</b> , S Khan, MS Saddiq, Jahanzaib (2020). Adaptability and yield potential of different species of amaranth under semiarid conditions. <b>Intl J Agric Biol</b> 24:1558–1564      | 0.822                   |
| 27) | 2020 | Raza A, M Habib, SN Kakavand, Z Zahid, <b>N Zahra</b> , R Sharif, M Hasanuzzaman (2020) Phytoremediation of cadmium: physiological, biochemical, and molecular mechanisms. <b>Biology</b> 9(7):177.                                                        | 5.168                   |
| 28) | 2020 | <b>Zahra N</b> , S Mahmood, ZA Raza. Salinity stress on various physiological and biochemical attributes of two distinct maize ( <i>Zea mays</i> L.) genotypes. <b>J Plant Nutr</b> 41(11):1368-80.                                                        | 2.277                   |
|     |      |                                                                                                                                                                                                                                                            | <b>Total:<br/>94.72</b> |

| <b>B) RESEARCH PAPERS PUBLISHED IN LOCAL JOURNALS AND HEC RECONGNIZED JOURNALS HAVING NO IMPACT FACTOR</b> |      |                                                                                                                                                                                                                                                                                                                                     |            |
|------------------------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|                                                                                                            |      | <b>Title of paper/journal/volume/page numbers</b>                                                                                                                                                                                                                                                                                   | <b>HEC</b> |
| 1)                                                                                                         | 2022 | Batool A, T Rasheed, MB Hafeez, <b>N Zahra</b> , A Kausar, A Raza. 2022. Magnetic Field and Agriculture Sustainability. <b>Transdiscip J Eng Sci</b> 13. <a href="https://doi.org/10.22545/2022/00206">https://doi.org/10.22545/2022/00206</a>                                                                                      | Yes        |
| 2)                                                                                                         | 2022 | Granaz, K Shaukat, <b>Zahra N</b> , A Wahid, et al. Foliar Application of Thiourea, Salicylic Acid, and Kinetin Alleviate Salinity Stress in Maize Grown under Etiolated and De-etiolated Conditions. <b>Discover Food</b> 2:27 <a href="https://doi.org/10.1007/s44187-022-00027-3">https://doi.org/10.1007/s44187-022-00027-3</a> | No         |
| 3)                                                                                                         | 2021 | Akram MZ, SMA Basra, MB Hafeez, S Khan, S Nazeer, S Iqbal, MS Saddiq, <b>N Zahra</b> . 2021. Adaptability and yield potential of new quinoalines under agro-ecological conditions of Faisalabad-Pakistan. <b>Asian J Agric Biol</b> DOI: 10.35495/ajab.2020.05.301                                                                  | Yes        |
| 4)                                                                                                         | 2021 | <b>Zahra N</b> , M. Farooq, K. H.M. Siddique. Strategies for Improving Water Use Efficiency in Dryland Agroecosystem. <b>Front. Agri. Sci. Eng.</b>                                                                                                                                                                                 | Yes        |
| 5)                                                                                                         | 2021 | Anwar Z, Z Basharat, M. B. Hafeez, S. Khan, <b>N Zahra</b> , Z. Rafique, M. Maqsood. 2021. Biofortification of Maize with Zinc and Iron not only Enhances Crop Growth but also Improves Grain Quality <b>Asian J Agric Biol</b> 10.35495/ajab.2021.02.079                                                                           | Yes        |
| 6)                                                                                                         | 2021 | MB Hafeez, <b>N. Zahra</b> , K. Zahra, A. Raza, A. Khan, K. Shaukat, S. Khan. 2021 "Brassinosteroids: Molecular and physiological responses in plant growth and abiotic stresses." <b>Plant Stress</b> 2: 100029.                                                                                                                   | Yes        |
| 7)                                                                                                         | 2017 | <b>Zahra N</b> , K Shaukat, A Raza. A Short Review on Ethnomedicinal Uses and Phytochemistry of <i>Silybum marianum</i> . <b>Natur Prod Chem Res</b> 05(07)                                                                                                                                                                         | No         |

|                            |
|----------------------------|
| <b>ABSTRACTS PUBLISHED</b> |
|----------------------------|

|                                    |      |                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1)                                 | 2019 | Nazeer, S., SMA Basra, MB Hafeez, H Rahman, <b>N Zahra</b> , S Iqbal and MZ Akram. 2019. Adaptability of newly introduced amaranth germplasm under agro-ecological condition of Faisalabad. Innovations in Agriculture Nourishing Pakistan in Changing Climate. University of Agriculture, Faisalabad, Pakistan Agricultural Scientist Forum. February 13-15, P, 173.      |
| 2)                                 | 2022 | Rasheed T, A Wahid, <b>N Zahra</b> , MB Hafeez, B Tariq. 2022. Comparative efficacy of foliar and medium supplemented diammonium phosphate in improving reproductive growth in wheat. Climate agriculture. Innovations and adaptations. Faculty of agriculture, University of Poonch Rawalakot Azad Jammu and Kashmir, Pakistan. June 15-17, P (33)                        |
| <b>BOOKS/CHAPTERS IN THE BOOKS</b> |      |                                                                                                                                                                                                                                                                                                                                                                            |
| 1)                                 | 2021 | Hafeez MB, A Raza, <b>N Zahra</b> , K Shaukat, MZ Akram, S Iqbal, SMA Basra (2021). Gene regulation in halophytes in conferring salt tolerance. In Handbook of Bioremediation (pp. 341-370). Academic Press ( <b>elsevier</b> ).                                                                                                                                           |
| 2)                                 | 2021 | <b>Zahra N</b> , Shaukat K, Hafeez MB, Raza A, Hussain S, Chaudhary MT, Akram MZ, Kakavand SN, Saddiq MS, Wahid A (2021). Physiological and Molecular Responses to High, Chilling, and Freezing Temperature in Plant Growth and Production: Consequences and Mitigation Possibilities. Harsh Environment and Plant Resilience: Molecular and Functional Aspects. 2021:235. |
| 3)                                 | 2020 | Raza A, MB Hafeez, <b>N Zahra</b> , K Shaukat, S Umbreen, J Tabassum, S Charagh, RS Khan, M Hasanuzzaman (2020). The plant family brassicaceae: introduction, biology, and importance. In The plant family brassicaceae (pp. 1-43). <b>Springer</b> , Singapore.                                                                                                           |
| 4)                                 | 2020 | Raza A, <b>N Zahra</b> , MB Hafeez, M Ahmad, S Iqbal, K Shaukat, G Ahmad (2020) Nitrogen Fixation of Legumes: Biology and Physiology. In the Plant Family Fabaceae 2020 (pp. 43-74). <b>Springer</b> , Singapore.                                                                                                                                                          |
| 5)                                 | 2021 | Shaukat K, <b>Zahra N</b> , MB Hafeez, Naseer, R, Batool, A, Batool H, Wahid A (2020) Role of Salicylic Acid induced abiotic stress tolerance and underlying mechanisms in plants ( <b>elsevier</b> ).                                                                                                                                                                     |
| 6)                                 | 2021 | Batool A, <b>N Zahra</b> , MB Hafeez, R. Naseer, K Sahukat. Role for Genetically Modified Plants in Protection against Heavy Metal Toxicity. ( <b>Taylor and francis</b> )                                                                                                                                                                                                 |

#### **Symposium/Webinar**

|      |                                                                                                         |
|------|---------------------------------------------------------------------------------------------------------|
| 2022 | FAO's The Global Symposium on Soils for Nutrition ( <b>Two days</b> ).                                  |
| 2022 | Global symposium on soils for nutrition ( <b>4 days</b> )                                               |
| 2022 | International webinar Fruit breeding for fruit security: A dire need of time. MNS, University of Multan |

#### **ENGLISH ARTICLES**

|      |                                                                                                                            |
|------|----------------------------------------------------------------------------------------------------------------------------|
| 2020 | Shaukat K, <b>N Zahra</b> , T Rasheed, A Wahid (2020) Phytochemical diversity and health benefits. Mahana Knowledge point. |
| 2020 | Rasheed T, <b>Zahra N</b> , Shaukat K, A Wahid (2020) Mint- A plant with immense health benefits. Mahana Knowledge point.  |

#### **URDU ARTICLES**

|      |                                                                    |
|------|--------------------------------------------------------------------|
| 2020 | <b>Zahra N</b> , Shaukat K, A Wahid (2020) Milk thistle importance |
|------|--------------------------------------------------------------------|

**Hands on Training**

Awarded with certificate of successful training on PCR

Awarded with certificate of successful training on Primer designing

Awarded with certificate of successful training on Elisa based diagnostics

**CERTIFICATES**

Awarded with certificate of participation in “International seminar on biochar impact on soil, crop, human health and society”

Awarded with certificate of participation in “Innovation in agriculture”

Awarded with certificate of participation in “Climate change adaptation strategies to ensure food security”

Awarded with certificate of participation in “Edible land scape”

Awarded with certificate of participation in “Bioassays for exploration of bio- actives”

Awarded with certificate of participation in “Agronomic, socio-economic & policy perspective on biochar & C-market”

Awarded with certificate of participation in “Major environmental constrains to plants: Assessments and reclamation”

Awarded with certificate of successful completion of module on “How to write a manuscript (Elsevier)”

Awarded with certificate of successful completion of module on “What to expect from certified peer reviewer course (Elsevier)”

Awarded with certificate of successful completion of module on “Introduction to the certified peer reviewer course (Elsevier)”

Awarded with certificate of successful completion of module on “CRISPR/Cas9 and Cre-lox Technologies Certificate Program (The Jackson Laboratory)”

Awarded with certificate of successful completion of module on “Basics of CRISPR/Cas9 (The Jackson Laboratory)”

Awarded with certificate of successful completion of module on “Beyond Genes: Epigenetics, Environment, and Health (The Jackson Laboratory)”

Awarded with certificate of successful completion of module on “How to write a helpful peer review report (Elsevier)”

Awarded with certificate of successful completion of module on “How to become a reviewer and what do editors expect? (Elsevier)”

Awarded with certificate of successful completion of module on “The comments to editors and decision recommendations (Elsevier)”