Curriculum vitae



Dr. BADAR JAHAN

Plant Physiology
Department of Botany
Aligarh Muslim University
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RESEARCH INTEREST:

- Abiotic Stress (salinity)
- Physiology and Biochemistry

ACADEMIC CREDENTIALS:

- Awarded Ph.D. thesis on the title" **The involvement of nitric oxide and ethylene in alleviation of salt stress in *Brassica juncea***" in Plant Physiology, Department of Botany Aligarh Muslim University, Aligarh.
- Worked on the dissertation entitled **"Response of *Brassica juncea* to chromium (VI) induced toxicity modulated by salicylic acid"** as M.Sc. Project, at Department of Botany Aligarh Muslim University, Aligarh.

ACADEMIC QUALIFICATIONS:

Class	Board/university	Subjects	Division	Year
Ph.D	A.M.U	Botany	AWARDED	2021
M. Sc	A.M.U	Botany	FIRST	2014
B. Sc	C.C.S	Biology, Chemistry	FIRST	2010
Intermediate	U.P Board	Science Side	FIRST	2007
High School	U.P Board	Science Side	FIRST	2005

FELLOWSHIP AND AWARDS:

- DBT-BUILDER Programme M.Sc Scholarship 2012-13
- Awarded **Young Scientist** National Environmental Science Academy 2019

LECTURE DELIVERED:

- Topic: "Lipids as Signal Transducters" *[(at M Sc. (BOTANY) level)]*

TRAVEL GRANTS RECEIVED

- From Department to attending the Conferences

QUALIFIED:

- **ARS-NET 2018**

MAJOR RESEARCH CONTRIBUTION:

Objective of my research is mainly to characterize the mechanisms on how plants perceive salt stress and respond it and also enlighten the potential mechanisms underlying the involvement of phytohormones such as nitric oxide and ethylene in plant response in order to alleviate the salt stress-impact in *Brassica juncea L.* These phytohormones regulate antioxidant systems and plant photosynthesis and growth. In fact, salinity-accrued decreases in plant photosynthesis; growth and productivity involve salt stress-induced excessive reactive oxygen species (ROS) production that results in induced oxidative damage. To date, my research has shown that both nitric oxide and ethylene in isolation and/or combination can scavenge ROS, strengthen antioxidant defense system and improve plant health and productivity to a great extent.

WORKSHOPS ATTENDED:

- National workshop on "RESEARCH METHODOLOGY" Organized by Dr. B. R. Ambedkar Hall, A.M.U. Aligarh, on 5-11 Feb, 2018.
- National Symposium cum Bioinformatics workshop on 'Trends in Genomics: Congruence with Contemporary Biotechnological Tools' Organized by Interdisciplinary Biotechnology Unit A.M.U Aligarh on 20-21 March, 2018.
- One Week Workshop on Statistics and Optimization Techniques Using Software Packages Organized by Department of Statics and Operations Research, A.M.U. Aligarh, on 11-16 March, 2019.
- Two days International webinar on " RECENT TRENDS IN APPLIED SCIENCES: CHALLENGES & OPPORTUNITIES DUE TO COVID-19'' Organized by Sir Syed Faculty of Science, Mohammad Ali Jauhar University on 17-18 June, 2020.
- Webinar on "Plant micro RNA Research'' Organized by Department of Botany, A.M.U.

Aligarh, 27th October, 2020.

- Webinar on "Advances in Resilience of Sustainable Crop production'' Organized by Department of Botany, A.M.U. Aligarh, 9th December, 2020.

LIST OF PUBLICATIONS

1. **Badar Jahan**, Zebus Sehar, Asim Masood, Naser. A. Anjum, M. Iqbal R. Khan and Nafees A. Khan. 2018. Sulfur availability potentiates phytohormones-mediated action in plants. In; Plant Signalling Molecules (Eds. M.I.R. Khan, P.S. Reddy, A. Ferrante and N.A. Khan). **Elsevier** Woodhead Publishing Duxford, UK, pp. 287-301.
2. M. Iqbal R. Khan, **Badar Jahan**, Mohamed F Alajmi, Md Tabish Rehman and Nafees A. Khan. 2019. Exogenously-Sourced Ethylene Modulates Defense Mechanisms and Promotes Tolerance to Zinc Stress in Mustard (*Brassica juncea* L.). Plants 8: 540 **(IF: 3.935).**
3. **Badar Jahan**, Mohamed F AlAjmi, Md Tabish Rehman, and Nafees A. Khan. 2020. Nitric oxide regulates photosynthetic performance and stomatal behaviour supplemented with nitrogen and sulfur in mustard under salt stress. Physiologia Plantarum168: 490-510 **(IF: 4.5).**
4. M. Iqbal R. Khan, **Badar Jahan**, Mohamed F Alajmi, Md Tabish Rehman and Nafees A. Khan. 2020. Ethephon mitigates nickel stress by modulating antioxidant system, glyoxalase system and proline metabolism in Indian mustard. Physiology and Molecular Biology of Plants 26:1201-13 **(IF: 3.9).**
5. Zebus Sehar, **Badar Jahan**, Asim Masood, Naser A. Anjum, Nafees A. Khan. 2020. Hydrogen peroxide potentiates defense system in presence of sulfur to protect chloroplast damage and photosynthesis of wheat under drought stress. Physiologia Plantarum 172:922-34 **(IF: 4.5).**
6. M. Iqbal R. Khan, Nafees A. Khan, **Badar Jahan**, ……Manzer H. Siddiqui. 2020. Phosphorus supplementation modulates nitric oxide biosynthesis and stabilizes defense system to improve arsenic stress tolerance in mustard. Plant Biology 23:152-161 **(IF: 3.08).**
7. Risheek R. Khanna, **Badar Jahan**, Noushina Iqbal, …. and M. Iqbal R. Khan. 2020. GABA reverses salt-inhibited photosynthetic and growth responses through its influence on NO-mediated nitrogen-sulfur assimilation and antioxidant system in wheat. Journal of Biotechnology 325: 73-82 **(IF: 3.307).**
8. **Badar Jahan**, Noushina Iqbal, …. and Nafees A. Khan. 2021. Ethylene supplementation combined with split application of nitrogen and sulfur protects salt-inhibited photosynthesis through optimization of proline metabolism and antioxidant system in mustard (*Brassica juncea* L.) Plants 10: 1303 **(IF: 3.935).**

9. M. Iqbal R. Khan, **Badar Jahan**, … Nafees A. Khan. 2021. Crosstalk of plant growth regulator protects photosynthetic performance from arsenic damage by modulating defense systems in rice. Ecotoxicology and Environmental Safety 222: 112535 **(IF: 6.291).**
10. **Badar Jahan,** Faisal Rasheed……..Nafees A. Khan. 2021. Salinity stress impacts and mitigation strategies: contribution and coordination of nitric oxide and ethylene with nitrogen and sulfur. Stresses 1:14.
11. Mehar Fatma, Gausiya Bashri…. **Badar Jahan,** … Nafees A. Khan. 2022. Nitric oxide synthesis affects potassium and nitrogen homeostasis in plants for salt tolerance. In; Role of Potassium in Abiotic Stress (Eds. Iqbal N., Umar S). **Springer,** Singapore, pp. 263-281.

PAPERS PRESENTED IN CONFERENCES (INTERNATIONAL /NATIONAL)

1. **Badar Jahan*,** Nafees A. Khan (2020). Ethylene supplementation ameliorates salt stress inhibited photosynthetic performance by interacting with single or split nitrogen and sulfur application in mustard (**International Plant Physiology Virtual Conference, December, 6-7, 2020).**

2. **Badar Jahan*,** Zebus Sehar, and Nafees A. Khan(2019).Nitric oxide application improves photosynthesis performances in mustard through increase in use efficiency of nitrogen and sulfur under adverse effects of salinity stress. **(Golden Jubilee National Symposium on Current interventions to plants and Microbes for environmental and agricultural sustainability, Amritsar March 6-8, 2019).**

3. **Badar Jahan*,** Nafees A. Khan (2019).Nitric Oxide supplementation ameliorates salt stress inhibited photosynthetic performance by interacting with single or split sulfur and nitrogen application in mustard **(Trends in Biochemical and Biomedical Sciences AMU, Aligarh March 2-3, 2019).**

4. **Badar Jahan*,** Zebus Sehar, Asim Masood and Nafees A. Khan (2018).Single or split sulfur and nitrogen application differentially optimize photosynthesis under salt stress in mustard (**4th International Plant Physiology Congress. CSIR-National Botanical Research Institute, Lucknow India December 2-5, 2018).**

5. **Badar Jahan,** Qazi Fariduddin (2017).Salicylic Acid improves physiological and biochemical attributes in *Brassica juncea L.* under chromium stress **(Third International Conference on Bioresource and Stress Management. State Institute of Agriculture Management, Jaipur, Rajasthan, India November 8-11, 2017).**

CAPABILITIES:

- ❖ Patient listener.
- ❖ Optimist, Honest, commitment of work.
- ❖ Better understanding of basic scientific principles.

❖ PROFICIENCY IN COMPUTING TOOLS:

- ❖ Application software's: MS-Office (PowerPoint, MS Word, MS Excel)
- ❖ Basic Internet Application: Email programs, File Transfer Protocol (FTP), Downloading, Uploading Chatting etc.

SKILLS:

- ❖ Handle various scientific instruments viz. Infrared gas analyzer (IRGA), SPAD chlorophyll meter, Junior PAM, Water and Osmotic Potential Units, Leaf Area Meter, Ultracentrifuge, UV-vis Spectrophotometer with ease.

Member of Scientific Societies:

- ❖ National Environmental Sciences Academy, New Delhi

PERSONAL PROFILE:

Name	:	Badar Jahan
Father's name	:	Ameeruddin
Date of Birth	:	July 15, 1989
Gender	:	Female
Marital Status	:	Single
Linguistic ability	:	English, Urdu and Hindi.
Nationality	:	Indian

I hereby declare that the information and facts given above are correct to best of my knowledge and belief.

Date: 22-Feb-2022 **Ms. Badar Jahan**

Place: Aligarh