

Resume
of
Dr. Nahmina Begum
Lecturer, Department of Botany,
BSMRSTU, Gopalganj
Contact No.: +88-01756974814
E-mail: nahmina20007@yahoo.com



Objectives

To perform break through research in the field of Microbiology and Plant Biology specially on utilizing beneficial Microbes for environmental management through possible ways, to save the humanity from energy crisis using plants and microbes, exploit microbes commercially and on the application of bio-inspired solution and evolutionary techniques in solving real life problems. To develop a creative curricula and favorable learning and teaching environments for teachers and students.

Strengths

1. Excellent presentation skill, analytical ability and conversant with scientific paper writing.
2. Quick learning ability and capacity to work under stress.
3. Self-motivated, innovative and capable of thinking critically.
4. Leadership quality and interpersonal skill.

Education

1. **PhD**, Nanjing Agricultural University, PR. China, June 2020.

Thesis Title: The Function of plant growth promoting bacterial endophyte in alleviating cadmium toxicity in switchgrass (*Panicum virgatum* L) and its possible mechanisms.

2. **Master of Science (M. S. thesis group Microbiology) in Botany**, University of Dhaka, Bangladesh; 2005 (Exam held on 2008).

Thesis Title: Isolation and characterization of Iron related Bacteria and their possible application in Biohydrometallurgy.

Result: 1st class 5th position.

- 3. Bachelor of Science (B. Sc. Honours) in Botany with the achievement of Deans Award,** University of Dhaka, Bangladesh; 2004 (Exam held on 2006).
Result: 1st class 7th position.
- 4. H.S.C. Shaheed Anwar Girls' College, 2000. Result: 1st division.**
- 5. S.S.C. Shaheed Anwar Girls' College, 1998. Result: 1st division.**

Professional and Research Experiences

- 1.** Lecturer, Department of Botany, Bangabandhu Sheikh Mujibur Rahman Science and Technology University (BSMRSTU), Gopalganj, Bangladesh; (08 June 2022– till now)
- 2.** PhD, College of Life Sciences, Nanjing Agricultural University, PR. China, September 2013 to June 2020.
- 3.** Lecturer, Department of Botany, Lalmatia Mohila College, Dhaka, Bangladesh; (21 July 2008- 14 November 2017; September 2013 to September 2017 was in study leave).
- 4.** Research Fellow at the Laboratory of Microbiology, Department of Botany; University of Dhaka; (Nov. 2008 - 2011).
- 5.** M. S. Research Fellow at the Laboratory of Microbiology, Department of Botany; University of Dhaka; (Mar. 2007 - Oct. 2008).
- 6.** Arrangement and organization of study tour, cultural program, sports, student welfare activities, etc. during the service of Lalmatia Mohila College.

Research Interests

- 1.** Exploitation of microbes as a potential source for bioenergy
- 2.** Plant-bacteria interactions
- 3.** Plant growth promoting bacteria (PGPB)
- 4.** Development of agronomy using PGPB
- 5.** Toxicology alleviation through plant and bacteria
- 6.** Plant Pathology
- 7.** Metal-microbes interaction
- 8.** Petroleum microbiology and its biotechnological approach
- 9.** Waste management through microbial biotechnological approach
- 10.** Plant Biotechnology, Environmental Biotechnology.

Professional Training

Teaching at B.Sc. Honours and Masters on the courses of Botany, Microbiology and microbial Biotechnology, Biotechnology and Genetic Engineering, Agronomy, Plant Tissue Culture, Genetics, Plant Pathology, etc. Trained in Microbiological Lab Techniques e.g. Media preparation and cultivation of microorganisms; Sterilization; Preservation of microbial cultures; Isolation and purification of unknown microorganisms; and Water quality test (microbiological), in vitro plant cultivation; heavy metal determination; plant-microbe interaction monitoring; Total RNA extraction; Gel electrophoresis, cDNA, PCR, QRT-PCR etc., Expertise in statistical analysis such as DMRT, Principal component analysis, correlation matrix, F-test, ANOVA, etc. using the SPSS and Origin software.

Special courses or Training

1. Computer Fundamental course, IIT, University of Dhaka, Bangladesh.
2. Basic Knowledge on Chinese language and Culture, Nanjing Agricultural University, Nanjing, China.
3. ICT Training on preparation, making content and giving class lecture, Ministry of Education, Bangladesh

Awards, Honors, and Fellowships:

1. **Chinese Government Full Scholarship;** to pursue PhD in Nanjing Agricultural University, Nanjing, China; 2013.
2. **NSICT Fellowship-2008;** Ministry of Science and Information & Communication Technology, Government of the People's Republic of Bangladesh; 2008.
3. **Dean's Award 2004;** (For outstanding Result) in Biological Science Faculty, University of Dhaka; 2004.

Publications

Original Articles:

1. **Nahmina Begum, Zhaoyang Hu, Qingsheng Cai, Laiqing Lou.** Influence of PGPB Inoculation on *HSP70* and *HMA3* Gene Expression in Switchgrass under Cadmium Stress. **Plants 2019, 8(11), 504.** <https://doi.org/10.3390/plants8110504>.

2. **Nahmina Begum**, Samreen Afzal, Huihui Zhao, Laiqing Lou, Qingsheng Cai. Shoot endophytic plant growth-promoting bacteria reduce cadmium toxicity and enhance switchgrass (*Panicum virgatum* L.) biomass. **Acta Physiologiae Plantarum** 2018, **40(9):170**. <https://doi.org/10.1007/s11738-018-2737-1>.
3. Samreen Afzal, **Nahmina Begum**, Huihui Zhao, Zhigang Fang, Laiqing Lou, Qingsheng Cai. Influence of endophytic root bacteria on the growth cadmium tolerance and uptake of switchgrass (*Panicum virgatum* L.). **Journal of Applied Microbiology** 2017, **123(2)**, 498-510. <https://doi.org/10.1111/jam.13505>.
4. Mahbubar Rahman Khan, Mihir Lal Saha, **Nahmina Begum**, Mohammad Nurul Islam and Sirajul Hoque. Isolation and Characterization of Bacteria from Rusted Iron Materials. **Bangladesh Journal of Botany**, 2010, **39(2)**, 185-191. <https://www.banglajol.info/index.php/BJB/article/view/7479>.
5. Wei Tian, Le Li, Xiao Xiao, Huili Wu, Yulong Wang, Hu Zhaoyang, **Nahmina Begum**, Yiping Zou, Laiqing Lou, Ming Chang, Qingsheng Cai. Identification of a plant endophytic growth-promoting bacteria capable of inhibiting cadmium uptake in rice. **Journal of Applied Microbiology** 2021. <https://doi.org/10.1111/jam.15201>.

Book/Book Chapter:

1. **Nahmina Begum**, Zhaoyang Hu, Qingsheng Cai, Laiqing Lou. Influence of PGPB Inoculation on *HSP70* and *HMA3* Gene Expression in Switchgrass under Cadmium Stress. **Plants** 2019, **8(11)**, 504. pp 200-217 *IN: Plant Responses and Tolerance to Metal/Metalloid Toxicity*. Mirza Hasanuzzaman and Masayuki Fujita (Eds.). June 2020, pp 318. <https://doi.org/10.3390/books978-3-03936-199-1>.

International Conference Presentations and conference attended

1. **Nahmina Begum**, Mahbubar Rahman Khan, and Mihir Lal Saha; Isolation and Characterization of Iron Related Bacteria and Their Iron Transformation Activities. **Abstract of the Fourth International Botanical Conference-2008, 16-18 January, 2008. pp 57.**
2. **Nahmina Begum** and Mihir Lal Saha; Textile Dye Decolourization by Bacteria Isolated from Rusted Iron Materials. **Abstract of the Fifth International Botanical Conference, 9-11 December, 2011. pp 20.**

3. Attended in the “**GCHERA World agriculture Prize Award Ceremony Conference** September 2014 held in the Nanjing Agricultural University, China.
4. The **2nd Qihaang Model United Nations conference** 2014 held in the Hohai University, Nanjing, China.

Language and Computer Skills

1. Good command in Bangla, English and basic skill in Chinese.
2. Microsoft Office, SPSS, Origin and others.

Personal Details:

Father: Mohammad Mohiuddin

Mother: Nurjahan

Home Town: Kishoreganj

Present Address: Dhaka

Date of Birth: 10 November 1982