

Curriculum Vitae of M. Harun-or Rashid

Senior Scientific Officer, Biotechnology Division
Bangladesh Institute of Nuclear Agriculture (BINA)
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Education

Post doctoral research (December, 2016): Department of Plant Biotechnology, Institute of System Biology, UNIVERSITY KEBANGASAN MALAYSIA (UKM), Malaysia.

Project: Cloning and transformation of stress induced genes on rice and Arabidopsis

Doctor of Science (June, 2013): Department of Biology, Institute of Pharmacy and Molecular Biotechnology, HEIDELBERG UNIVERSITY, Germany.

Thesis: Genetic Diversity of Rhizobia Nodulating Lentil (*Lens culinaris*, Medik.)

Master of Science (1998): Department of Soil Science, BANGLADESH AGRICULTURAL UNIVERSITY, Bangladesh.

Thesis: Effect of Cyanobacteria on Growth and Yield of Rice.

Bachelor of Science (1992 held at 1996): Faculty of Agriculture, BANGLADESH AGRICULTURAL UNIVERSITY, Bangladesh.

Subjects: Botany, Genetics, Bio-chemistry, Soil Science, Agronomy, Pathology, Entomology, Horticulture etc.

Higher Secondary Certificate Examination (1988): KBI College, Mymensingh.

Subjects: Bengali, English, Science, Mathematics etc.

Secondary Certificate Examination (1986): Rupshi high school, Fulpur, Mymensingh.

Subjects: Bengali, English, Science, Mathematics, Geography etc.

Employment Records

Senior Scientific officer (September 2015 – to present), Biotechnology Division, Bangladesh Institute of Nuclear Agriculture (BINA), BAU Campus, Mymensingh-2202, Bangladesh.

Senior Scientific officer (2013 – September 2015), Soil Science Division, Bangladesh Institute of Nuclear Agriculture (BINA), BAU Campus, Mymensingh-2202, Bangladesh.

Scientific officer (1999 - 2013), Soil Science Division, Bangladesh Institute of Nuclear Agriculture (BINA), BAU Campus, Mymensingh-2202, Bangladesh.

Current Research

- Gene cloning and transformation on rice and Arabidopsis for over expression of stress induced genes.
- Genetic diversity of rhizobia from Soybean and Mimosa

- Evaluation of rhizobial strains at field conditions to find superior strains for bio-fertilizer production for soybean and lentil.

Research interest

1. Gene cloning, transformation and over expression.
2. Molecular mechanisms that can explain how plants-microbe interact.
3. Microbial diversity and adaptation.
4. Rhizobial evolution and taxonomy

Research Skills

A. Molecular Biology

- Gene isolation, cloning and construct development from prokaryotes and eukaryotes
- Southern blotting and colony hybridizations using radioactive and non- radioactive Probes
- Rice tissue culture (mature and immature embryo) and transformation
- Arabidopsis cultivation and transformation
- Construction of genomic libraries
- Mutation Breeding
- Gene amplification and sequencing
- Bioinformatics analysis of gene sequences
- High resolution PCR using P³³ isotope
- SDS PAGE preparation and analysis

B. Plant cultures and Plant–microbe interaction

- Legumes and Rice cultivation and management
- Isolation, purification and characterization of symbiotic, associative and free living bacteria from plant, soil and water
- Isolation, purification and preservation of cyanobacteria from soil
- General microscopy/light microscopy
- Morphological, physiological, and biochemical characterization of microorganisms
- Bacterial colonization and competition study on plant roots
- Evaluation of bacterial strains for nitrogen fixation and plant growth enhancement at field and glass conditions

Teaching

- Helping MS and PhD student for conducting laboratory and field experiments
- Helped MS students in Heidelberg University during my PhD study
- Supervised MS students of Bangladesh Agricultural University
- Supervising MS students from the Biotechnology and Soil Science Division of Bangladesh Agricultural University
- Trained NGO peoples for using bio-fertilizers (bacterial inoculum) for enhancing plant growth

Administrative

- Organized training for farmers, scientists and government officials
- Played key roles in establishing Molecular Biology Laboratory at Soil Science Division of BINA
- Involved in preparing research projects those were submitted to national and international organization
- Worked as resource person in several training programs organized for scientist and extension peoples
- Involved in staff management, recruitment and their promotional activities
- Involved in institutional service role and organogram updating

Software familiarities for Bioinformatics Analyses

Arlequin, BioEdit, ClonalFrame, DnaSP, FAMD, MEGA, Mr.BAYES, MAPPAD, SPLIT4, STRUCTURE.

Awards, fellowships and research funding

- Best Agricultural scientist award-2016 from Krishibid Institute Bangladesh (KIB), Bangladesh.
- Special research allocation from the Ministry of Science and Technology, Government of the people's republic of Bangladesh from July, 2014 to June, 2016.
- DAAD-STIBET grants from January, 2013 to May, 2013, Heidelberg University, Germany.
- EMMA Scholarship from the European Union from September, 2009 to June, 2012 for PhD study at Heidelberg University, Germany.
- IDB Research Fellowship from the Bangladesh Institute of Nuclear Agriculture, Government of Bangladesh, July to November 2005, training in molecular biology techniques in England. Department of Biology, University of York and Department of Molecular Microbiology, John Innes Centre. UK.
- IAEA Research Fellowship from the International Atomic Energy Agency (IAEA), September to December 1999, for training in general microbiology in India, Microbiology Division, Indian Agricultural Research Institute.

Publications

Journal Publications

1. Rahman MH, Khatun S, Ali SR, Yasmin S, Kamruzzaman M and **Rashid MH.** (2018) Morpho-Physiological Diversity of Root Nodule Rhizobia from Mimosa (*Mimosa pudica L*) and Water Mimosa (*Neptunia oleracea L*). J Bacteriol Mycol. 5: 1061.
2. **Rashid , MH.**, Rouf, MA., Sarker, RR and Uddin, MI (2017) Indigenous rhizobial strains perform better on growth and yield of lentil. Academia Journal of Agricultural Research. doi: 10.15413

3. Braun, M.S., Zimmermann, S., Danner, M., **Rashid, M.H.**, and Wink, M. (2016) *Corynebacterium uropygialis* sp. nov., isolated from the preen gland of Turkeys (*Meleagris gallopavo*). Syst. Appl. Microbiol, Doi: 10.1016/j.syapm 2015.12.001
4. **Rashid, M.H.**, Young J.P.W., Overall, I., Clercx, P., Willems, A., Braun, M.S and Wink, W. (2015). Average nucleotide identity of genome sequences supports the description of *Rhizobium lentis* sp. nov., *Rhizobium bangladeshense* sp. nov. and *Rhizobium binae* sp. nov. from lentil (*Lens culinaris*) nodules. Inter. J. Syst. Evol. Microbiol, 65:3037-3045.
5. **Rashid, M.H.**, Gonzalez, H., Young, J.P.W., and Wink, M. (2014). *Rhizobium leguminosarum* is the symbiont of lentil in the Middle East and Europe but not in Bangladesh. FEMS Microbiol Ecol, 87: 64 -77.
6. **Rashid, M.H.**, Schafer, H., Gonzalez, H, and Wink, M. (2012). Genetic diversity of rhizobia nodulating lentil (*Lens culinaris*) in Bangladesh. Syst. Appl. Microbiol, 35:98-109.
7. **Rashid, M.H.**, Sattar, M.A., Uddin, M.I., and Young, J.P.W. (2009). Molecular characterization of symbiotic root nodulating rhizobia isolated from lentil (*Lens culinaris*). Electronic Journal of Environmental, Agriculture and Food Chemistry. 8: 602-612.
8. Fariullah, Irshad, M., Alam, A., Yamamoto, S., Uddin, M.I., Qasim, M., **Rashid, M.H.** and Ahmad, Z. (2009). Agronomic performances of different cucumber genotypes grown under plastic film as off-season cultivation in Northern areas of Pakistan. Bangladesh J. Environ. Sci. 17: 144-149.
9. Kabir, M.H., Sarkar, M.A.R., **Rashid, M.H.**, and Rahman, M.S. (2008). Effect of rhizobial inoculation on yield and yield attributing characters of summer mungbean cultivars. Bangladesh J. Prog. Sci & Tech. 6: 321-324.
10. Kabir, M.H., Chowdhury, A.K.M.S.H., **Rashid, M.H.**, Malaker, J.C., and Hassan, S.M.M. (2008). Effect of rhizobial inoculation on nodulation and growth of summer mungbean. Bangladesh J. Environ. Sci. 14: 129-133.
11. Saha, B.K., Chowdhury, M.A.H., and **Rashid, M.H.** (2008). Effect of rhizobia and host cultivar on some biochemical constituents and yield of lentil. Int. J. BioRes. 4:100-107.
12. **Rashid, M.H.**, Sattar., M.A., Uddin, M.I., and Young, J.P.W. (2007). Characterization of lentil rhizobia using BoxAi primer. Mol. Biol. Biotechnol. J. 5: 24-27.
13. Uddin, M.I., **Rashid, M.H.**, Khan, N., Perven, M.S.T.F., Tai, T.H., and Tanaka, K. (2007). Selection of promising salt tolerant rice mutants derived from cultivar "drew" and their antioxidant enzymes activity under salt stress. SABRAO J. Breed. Genet. 39: 89-98.
14. Alam, M.J., Uddin, M. M., **Rashid, M.H.**, Begum, S.J., and Haque, M.M. (2006). Status of some industrial waste contaminants in Bangladesh. Bangladesh J. Environ. Sci. 12: 340-343.
15. **Rashid, M.H.**, Islam M. Z., and Chowdhury, S. (2002). Performance studies of some *Bradyrhizobium* isolates on growth and yield of mungbean (*Vigna radiata*). Bangladesh J. Environ. Sci. 8: 55-59.
16. Lovely, A.B., **Rashid, M.H.**, and Haque, M.M. (2002). Effects of cultivar and spacing on weed infestation and yield of transplant Aman rice. Bangladesh J. Environ. Sci. 8: 172-178.
17. Podder, A.K, **Rashid, M. H.**, and Hossain, M.B. (2001). Effect of Bradyrhizobial strain and nitrogenous fertilizer on groundnut production. Bangladesh J. Microbial. 18: 9-14.

18. **Rashid, M.H.**, Hashem, M.A., and Mian, M.H. (2000). Effect of B, Zn and Mo on indigenous cyanobacteria (bluegreen algae) and rice yield with BRRI dhan-29. Bangladesh J. Environ. Sci. 6: 102-105.

19. **Rashid, M.H.**, Hashem M.A., and Hossain, M.B. (2000). Effect of B, Zn and Mo on nutrient uptake by BRRI dhan-29. Bangladesh J. Environ. Sci. 6: 97-101.

Book Chapter

Rashid, M.H., Krehenbrink, M., and Akhtar, M.S. (2014) Nitrogen-Fixing Plant-Microbe Symbioses. In "Sustainable Agriculture Reviews", pp. 193-234. Edited by Lichtfouse E. The Springer International Publishing, Switzerland. ISBN 978-3-319-09131-0; ISBN 978-3-319-09132-7 (eBook); DOI 10.1007/978-3-319-09132-7.

Booklet

Podder, A.K., Islam, Z.A., **Rashid, M.H.**, Chowdhury, S., and Uddin N. (1999). Zibanosar- O-amader Krishi. Published under Pilot Project for Bio-fertilizer Production, BINA, Bangladesh.

Conference Proceeding and Posters

1. Hossain, M. M., Uddin, M. I., Islam, M. A., Kader, M. A., Islam, N., **Rashid, M. H.**, Islam, M. M., Razaia, S. and Imran, S. Expression of *OsNHX1*, *OsNHX2* and *OsSOS1* transporters in salt tolerant Pokkali and salt sensitive BRRI dhan-29 rice induced by salinity rice. In, the 10th Biennial Conference 2017, Plant Breeding and Genetics Society of Bangladesh, Dhaka, Bangladesh, p 62, January 7-8, 2017.
2. Islam, M. A., Uddin, M. I., **Rashid, M. H.**, Hossain, M. M., and Imran, S. Expressional analysis novel stress tolerant genes *DREB*, *OsSAP* and *OsSalT* in rice induced by drought and submergence. . In, the 10th Biennial Conference 2017, Plant Breeding and Genetics Society of Bangladesh, Dhaka, Bangladesh, p 63, January 7-8, 2017.
3. Uddin, M. I., slam, M. A., **Rashid, M. H.**, Hossain, M. M., and Imran, S. Expression of novel stress tolerant genes *OsARP*, *OsMGD* and *OsGGT* in rice induced by salinity and submergence. 10th Biennial Conference 2017, Plant Breeding and Genetics Society of Bangladesh, Dhaka, Bangladesh, pp. In, the 63-64, January 8-9, 2017.
4. Islam, M. A., Uddin, M. I., **Rashid, M. H.**, Hossain, M.M., and Imran, S. Expression of novel ion transporters *OsNHX1*, *OsNHX2* and *OsSOS1* in rice induced by salinity and drought stresses.. 10th Biennial Conference 2017, Plant Breeding and Genetics Society of Bangladesh, Dhaka, Bangladesh, p 64, January 7-8, 2017.
5. **Rashid, M.H.** and Sattar, M.A. (2008). Response of lentil cultivars to rhizobial inoculation and nitrogen fertilizer. Paper presented in 24th annual conference of Bangladesh society of microbiologist, held at 28th June, Dhaka, Bangladesh.
6. **Rashid, M.H.**, Sattar, M.A. and Young, JPW. (2007). REP-PCR fingerprint of lentil Rhizobia isolated from Bangladesh. In, 1st international Conference on "Promotion of Biotechnology: National and international perspective". Dhaka, Bangladesh. 6-8th April. p. 106.

7. **Rashid, M.H.**, Sattar, M.A., Islam, M.R., and Young, J.P.W. (2007). Genotypic Characterization of Lentil (*Lens culinaris*) Rhizobia Isolated from Bangladesh, pp. 245-250. In, Proceeding of the International Symposium on Microbial Technologies for Sustainable Agriculture, Faisalabad, Pakistan.

Popular Scientific Articles

1. Sattar, M.A and **Rashid, M .H.** (2004). Heavy metal toxicity in fertilizers: A Threat to Health and Environment. Life Science and Environment pages. The Bangladesh Observer, p-4.
2. **M.H. Rashid** (2008). Mati Bachebe Zibano Shar, Khatkhamar Daily newspaper. The Prothom Alo. p. 15.
3. **M.H. Rashid** (2008). Zibano Sarer karjokaritar kusol. Krishi Biplob. A fortnightly National Newspaper. pp. 22-23.

Personal Information

Date of birth: 22-04-1971

Nationality: Bangladeshi

Marital status: Married

Scientific visit to

- Thailand
- Malaysia
- Switzerland
- China

Member in professional and social societies

- Life Member, Bangladesh Microbiologist Society, Bangladesh.
- Life Member, Krishibid Institution, Bangladesh.
- Life member, Indian Society of Microbiologist, India.
- Indian Society for Nuclear Techniques in Agriculture and Biology.

Member in journal editorial board

- Journal of bacteriology and Mycology

Referees

Professor Dr. Zamri Zainal: Was my postdoctoral research supervisor at UKM, Malaysia. Department of plant biotechnology, Institute of system biology, Kebangasan Malaysia (UKM), Malaysia
Email: zz@ukm.edu.my

Professor Dr. Michael Wink: Was my supervisor for Ph.D. study at Heidelberg University. Department of Biology, Institute of Pharmacy and Molecular Biology (IPMB), Heidelberg University, Germany.
Email: wink@uni-heidelberg.de

Professor Dr. M. A. Hashem: was my supervisor for MS study at Bangladesh Agricultural University. Department of Soil Science, Bangladesh Agricultural University, Bangladesh.
Email: mhashem71@yahoo.com

Dr. M. Harun-or Rashid Date: 22- 05- 2017