

Curriculum Vitae of Md. Rafiqul Islam, PhD

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Academic Background

Doctor of Philosophy (PhD) in Agriculture (Biotechnology), 2020. Division of Horticulture & Plant Medicine, Sunchon National University, South Korea.

Dissertation: Inheritance and Development of Molecular Markers Linked to Bacterial Fruit Blotch Resistance in Melon.

Supervisor: Prof. Dr. Jong-In Park

Master of Science (MS) in Genetics and Plant Breeding, 2010. Sher-e-Bangla Agricultural University, Dhaka, Bangladesh.

Thesis: Genetic Variability, Correlation and Path Coefficient Analysis of Yield Traits in Bitter Gourd.

Supervisor: Prof. Dr. Md. Sarowar Hossain

Bachelor of Science (BSc) in Agriculture (Hons.), 2007. Patuakhali Science and Technology University, Bangladesh.

Research Interest

- Areas of research interest include plant-microbe interactions (bacterial and fungal), molecular biology related to various plant diseases.

Research Skills:

- Capable of creating, organizing, and executing plant disease research projects in laboratory, greenhouse, and field settings
- Bioassaying plants infected with pathogens and evaluating illness
- Able to separate, cultivate, and describe microorganisms from plant tissue
- Capable of performing PCR and qPCR, extracting gDNA, RNA, and cDNA, and quantifying utilizing techniques.
- Cloning, sequencing, creating, and producing molecular markers (particularly In/Del, SCAR, SSR, HRM, etc.) are all possible.
- Examine in silico data from plant expression studies.
- Keeping the greenhouse and lab clean and safe.
- Gathering information to effectively improve the research program.
- Helping with extra work that management requests.
- Proficiency with Microsoft Word, Excel, and PowerPoint.
- Utilizing "R" for statistical analysis and bioinformatics analysis

Professional Experience

Associate Professor

Department of Biotechnology, Faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka, Bangladesh. Duration: 07 July 2021 to date.

Assistant Professor

Department of Biotechnology, Faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka, Bangladesh. Duration: 27 December 2018 to 06 July 2021.

Assistant Professor

Department of Biotechnology, Faculty of Agriculture, Patuakhali Science and Technology University, Patuakhali-8602, Bangladesh. Duration: 07 July 2015 to 26 December 2018.

Lecturer

Department of Biotechnology, Faculty of Agriculture, Patuakhali Science and Technology University, Patuakhali-8602, Bangladesh. Duration: 04 December 2012 to 06 July 2015.

Teaching Experience

Courses taught include: Fundamentals of Biotechnology, Food Biotechnology, Introductory Biotechnology, Recombinant DNA Technology, Nucleic Acids and Protein Biosynthesis, Regulation of Gene Expression, and laboratory and field-based practical courses.

Research projects

- **Principal investigator** in the research project on “Assessment of salinity tolerance of sweet potato under *in vitro* conditions” funded by Sher-e-Bangla Agricultural University Research System (SAURES), 2025, Dhaka, Bangladesh.
- **Principal investigator** in the research project on “Screening of tomato germplasm through molecular markers for identifying tomato yellow leaf curl virus resistance,” funded by SAURES, 2023, Dhaka, Bangladesh.
- **Principal investigator** in the research project on “Molecular screening of cabbage (*Brassica oleracea* L.) genotypes in response to major diseases (Blackleg and Black rot)” funded by University Grants Commission, 2020, Dhaka, Bangladesh.
- **Principal investigator** in the research project on “Molecular Screening for identifying bacterial blight (BB) resistant rice (*Oryza sativa* L.) germplasm to enhance food security in Bangladesh” funded by the National Science and Technology, Ministry of Science and Technology, 2021, Bangladesh.
- **Principal investigator** in the “Morphological and Molecular Genetic Diversity of Exotic Muskmelon Germplasm” research project funded by SAURES, 2022, Dhaka, Bangladesh.
- Member of the **sub-project management team (SPMT)** in the research project “Strengthening Research Capabilities of Postgraduate Programs in Genetics and Plant Breeding of Patuakhali Science and Technology University” funded by the World Bank, 2014-2017.
- **Principal investigator** in the research project on “Effect of Growth Regulator on Plantlet Regeneration of Potato Through Meristem Culture Technique” funded by Patuakhali Science and Technology University, Patuakhali, Bangladesh, 2015.

Supervised MS students as a supervisor

- **Research title:** *In vitro* plantlet regeneration of grape (*Vitis vinifera* L.), 2026.
- **Research title:** Development and optimization of a reproducible *in vitro* regeneration protocol for ashwagandha (*Withania somnifera* L.), 2026.
- **Research title:** *In vitro* regeneration of Aglaonema (*Aglaonema commutatum*) in different tissue culture media, 2025.
- **Research title:** Genetic diversity and molecular screening of cabbages against black rot and blackleg diseases, 2025.
- **Research title:** Comparative performance of strawberry (*Fragaria* × *ananassa* Duch.) regeneration in three different media, 2025.
- **Research title:** Genetic diversity analysis and molecular screening of rice (*Oryza sativa* L.) by markers for bacterial leaf blight, 2022.
- **Research title:** *In vitro* regeneration of tea [*Camellia sinensis* (L.) O. Kuntze], 2021.

Supervised MS students as Co-Supervisor

- **Research title:** *In vitro* morpho-physiological responses and progressive resilience of two tomato (*Solanum lycopersicum* L.) cultivars under induced NaCl salinity stress, 2026.
- **Research title:** Micropropagation of Banana (*Musa* sp.) in different tissue culture media, 2025.
- **Research title:** DNA fingerprinting and molecular diversity of Mung bean (*Vigna radiata* (L.) R. Wilczek) germplasm, 2022.
- **Research title:** Bioinformatics analysis of candidate Genes for bovine milk traits, 2022.
- **Research title:** Potato (*Solanum tuberosum* L.) plantlet regeneration potentiality in readymade media and newly developed plant tissue culture media, 2023.

Full-length Articles:

1. Ireen Nahar, Md Shafikur Rahman, Md. Mainul Islam Rashad, **Md. Rafiqul Islam** and Khadiza Khatun. Influence of Explants and Sterilants on *in vitro* Regeneration of Gerbera (*Gerbera jasmesonii*). Journal of Bioscience and Agriculture Research. 2026, 36(1): pp. 2836-2844
2. Kazi Meftahul Jannat, Khadiza Khatun, **Md. Rafiqul Islam**, Mokaram Hanifa Koly, Nazmun Naher. Molecular screening of Bangladeshi rice (*Oryza sativa* L.) genotypes for bacterial leaf blight. The International Journal of Biotechnology, 2025,14(1): 1-8.
3. Nazmun Nahar, Khadiza Khatun, Nazmul Alam Khan, **Md. Rafiqul Islam**, Mossammot Moriom, Nusrat Jahan, Shamim Akram and Muhammad Maruf Husain. Multivariate Analysis of Growth and Yield Traits of Aman Rice Genotypes in Barishal Region of Bangladesh. *Res. Agric. Livest. Fish.* 2024;11(3).
4. **Rafiqul Islam**, Khadiza Khatun, Salma Akter, Mokaram Hanifa Koly, Kazi Meftahul Jannat and Nazmun Naher. Morphological and molecular genetic diversity of exotic melon germplasm. *J. Agric. Biotech. Sustain. Dev.* 2024; 16(1), pp. 10-16.
5. Sayed Mashequl Bari, Md Isrfil Hossen, **Md Rafiqul Islam**, and Md Mostofa Uddin Helal. Genome-wide identification and characterization of interleukin-18 gene family in rainbow trout (*Oncorhynchus mykiss*). *J avd Biotechnol Exp Ther*, 2024; 7(2): 275-289.
6. Mokaram Hanifa Koly, Md. Ekramul Hoque, Khadiza Khatun, Kazi Meftahul Jannat and **Md. Rafiqul Islam**. Role of phytohormone on *in vitro* regeneration of tea [*Camellia sinensis* (L.) O. Kuntze]. *J. Biosci. Biotechnol. Discv.* 2023; 8: 92-99.
7. Md. Mainul Islam, Rashad Khadiza Khatun, Ireen Nahar, **Md. Rafiqul Islam**. Production Potential of Solanaceous Vegetables in Hydroponic System. International Journal of Innovative Research. 2022, 7: 33-36.
8. Mi-Young Chung Khadiza Khatun, Arif Hasan Khan Robin, **Md. Rafiqul Islam**, Subroto Das Jyoti, Do-Jin Lee, Chang Kil Kim. Genome-wide analysis of *Solanum lycopersicum* L. *cyclophilins*. *J. Plant Biotechnol.* 2022, 49(1): 15-29.
9. **Md. Rafiqul Islam**, Mohammad Rashed Hossain, Denison Michael Immanuel Jesse, Hee-Jeong Jung, Hoy-Taek Kim, Jong-In Park and Ill-Sup Nou. Characterization, Identification and Expression Profiling of Genome-Wide *R*-Genes in Melon and Their Putative Roles in Bacterial Fruit Blotch Resistance. *BMC Gent.* 2020, 21:80.
10. **Md. Rafiqul Islam**, Mohammad Rashed Hossain, Denison Michael Immanuel Jesse, Hee-Jeong Jung, Hoy-Taek Kim, Jong-In Park and Ill-Sup Nou. Development of Molecular Marker Linked with Bacterial Fruit Blotch Resistance in Melon (*Cucumis melo* L.). *Genes* 2020, 11(2), 220.
11. **Md. Rafiqul Islam**, Mohammad Rashed Hossain, Hoy-Taek Kim, Ujjal Kumar Nath, Md. Abuyusuf, Hee-Jeong Jung, Jong-In Park and Ill-Sup Nou. Molecular characterization of *Acidovorax citrulli* strain NIHHS15-280 causing bacterial fruit blotch disease in Korea and screening of resistance sources in melon. *Hortic Environ Biote* 2019, 61(1); 115–126.
12. **Md. Rafiqul Islam**, Mohammad Rashed Hossain, Hoy-Taek Kim, Denison Michael Immanuel Jesse, Md. Abuyusuf, Hee-Jeong Jung, Jong-In Park and Ill-Sup Nou. Development of Molecular Markers for Detection of *Acidovorax citrulli* Strains Causing Bacterial Fruit Blotch Disease in Melon. *Int. J. Mol. Sci.* 2019, 20(11), 2715.
13. Md. Abuyusuf, Arif Hasan Khan Robin, Hoy-Taek Kim, **Md. Rafiqul Islam**, Jong-In Park and Ill-Sup Nou. Altered Glucosinolate Profiles and Expression of Glucosinolate Biosynthesis Genes in Ringspot-Resistant and Susceptible Cabbage Lines. *Int. J. Mol. Sci.* 2018, 19(9), 2833.
14. Md. Abuyusuf, Ujjal Kumar Nath, Hoy-Taek Kim, **Md. Rafiqul Islam**, Jong-In Park and Ill-Sup Nou. Molecular markers based on sequence variation in *BoFLC1.C9* for characterizing early- and late-flowering cabbage genotypes. *BMC Genetics* 2019, 20:42.

15. Akter, M., S. Akter, M. R. Islam, K. Parvin. Study on Host Preference of Rice Weevil on Selected Grains. *Int. J. Bio Res.* 2016; 21(1):1-5
16. Akter, S., M. Akter, M.R. Islam and R. Amin. Effect of Some Promising Insecticides on Ladybird Beetle in Mustard Aphid under Field and Laboratory Conditions. *Int. J. Sustain. Agril. Tech.* 2016;12(7): 08-13.
17. Akter, S., R. Ali, M. Akter and M.R. Islam. Mass Rearing of Trichogramma Evanescens West wood Egg Parasitoid of Lepidopterous Insect Pests. *Int. J. Sustain. Agril. Tech.* 2016, 12(8): 08-15.
18. A. Husna, M. A. Maih, S. Begum, S. Z. Shilpi and **M. R. Islam**. Genetic Variability, Correlation and Path Co-Efficient Analysis Based on Vegetative Characters in Bottle Gourd (*Lagenaria Siceraria* L.). *Advance in Agriculture and Biology.* 2 (1), 2014: 8-12
19. Lipu, A. M. Z. H., Shamsuddoha, A. T. M., Mondal, R., and **Islam, M. R.** Effect of Nitrogen on Morphological Characters in Five Genotypes of Mustard. *International Journal of Agriculture and Crop Sciences.* 2013, **6-12**: 856-860.
20. Chowdhury, M.T.I, Razzaque, M.A., Nasim Sultana, Mustafiz, S.S.B., Shakila Akter, Ayesha Akter and **Md. Rafiqul Islam**. Chlorinated Pesticide Residue Status in Some Winter Vegetables. *International Journal of Agriculture and Crop Sciences.* 2013, **6-11**: 667-675.
21. Hossain, M.Z., Hassan, M.K., Hasan, G.N. and **Islam, M.R.** Effects of modified atmosphere packaging and low temperatures on the physico-chemical changes and shelf - life of Banana. *Academic journal of Plant Sciences.* 2013, **6** (1): 19-31.
22. Syed, M. A., **Islam, M. R.**, Hossain, M. S., Alam, M. M. and Amin, M. N. Genetic divergence in Chickpea (*Cicer arietinum* L.). *Bangladesh journal of agricultural Research.* 2012, **37** (1): 129-136.
23. Hossain, M. D., Bhuiyan, M. S. R., Talukder, K. H., **Islam, M. R.** and Syed M. A. Study on vegetative Propagating materials, flower characteristics and production of true seed through crossing among the different Gladiolus genotypes. *Advances in Biological Research.* 2012, **6** (2): 52-58.
24. M.A.A. Mahmud, M.A. Syed, M. Mamunur Rahman, **M.R. Islam** and A. Husna. Genetic Divergence in 58 Advanced Lines of *Brassica rapa*. *Libyan Agriculture Research Center Journal International.* 2 (5): 209-214, 2011.
25. A. Husna, F. Mahmud, **M.R. Islam**, M.A.A. Mahmud and M. Ratna. Genetic Variability, Correlation and Path Co-Efficient Analysis in Bottle Gourd (*Lagenaria siceraria* L.). *Advances in Biological Research.* 5 (6): 323-327, 2011.
26. Rahman, M. Mamunur, Rasul, M. G, Bashar, M. K, Syed, M. A. and **Islam, M. R.** Parent Selection for Transplanted Aman Rice Breeding by Morphological, Physiological and Molecular Diversity Analysis. *Libyan Agriculture Research Center Journal International.* 2011, **2** (1): 26-28.
27. **Islam, M. R.**, Hossain, M. S., Bhuiyan, M. S. R., Hasan, G. N. and Syed, A. Multivariate Analysis of Bitter Gourd (*Momordica charantia* L.). *Middle-East Journal of Scientific Research.* 2010, **5** (2): 86-90.
28. **Islam, M. R.**, Hossain, M. S., Bhuiyan, M. S. R., Husna, A. and Syed, M. A. Genetic Variability and Path-Coefficient Analysis of Bitter Gourd (*Momordica charantia* L.). *International Journal of Sustainable Agriculture.* 2009, **1** (3): 53-57.
29. Alam, M. M., Ali, M. H., Hasanuzzaman, M., Nahar, K. and **Islam, M. R.** Dry Matter Partitioning in Hybrid and Inbred Rice Varieties under Variable Doses of Phosphorus. *International Journal of Sustainable Agriculture.* 2009, **1** (1): 10-19.
30. Hassanuzzaman, M., Nahar, K., Alam, M. M., Hossain, M. Z. and **Islam, M. R.** Response of Transplanted Rice to Different Application Methods of Urea Fertilizer. *International Journal of Sustainable Agriculture.* 2009, **1** (1): 01-05.

Professional Development (Conferences/Seminars/ Symposiums/Workshops):

- Poster presentation at a 3-day conference on the International Plant Tissue Culture & Biotechnology Conference 2026, organized by the Bangladesh Association for Plant Tissue Culture & Biotechnology on 24-26 January 2026, at the University of Dhaka, Dhaka, Bangladesh.
- Participated in a 3-day workshop on Hands-on training “Experimental Data Analysis using R software,” Organized by the Institutional Quality Assurance Cell, on December 10, 12 and 13, 2025, at Sher-e-Bangla Agricultural University, Dhaka, Bangladesh.
- Participated in a 3-day workshop on Hands-on training, “Enhancement of Quality Education and Research Through Bioinformatics and Its Application in Agricultural Sciences,” Organized by the Institutional Quality Assurance Cell, on December 18-20, 2025, at Sher-e-Bangla Agricultural University, Dhaka, Bangladesh.
- Participated in “Annual Plant Tissue Culture & Biotechnology Conference 2024,” Organized by the Bangladesh Association for Plant Tissue Culture & Biotechnology on February 01, 2025, at Sher-e-Bangla Agricultural University, Dhaka, Bangladesh.
- Participated in 23rd. Science Council of Asia Conference, Bangladesh Academy of Sciences, National Science & Technology Complex, Dhaka 1207, Bangladesh, 30 November-02 December 2024.
- Oral presentation at 10th International Plant Tissue Culture & Biotechnology Conference, 11-13 March 2023, at the University of Dhaka, Dhaka, Bangladesh.
- Poster presentation at Bangladesh Seed Congress, 2023, 11-13 February 2023.
- Poster presentation at the 2nd International and 12th Biennial Conference, 10-11 December 2022.
- Poster presentation at the Annual Conference of Plant Tissue Culture & Biotechnology, December 2022, at the University of Dhaka, Dhaka, Bangladesh.
- Participated in the Biotechnology Policy and Regulatory Framework seminar held on February 16, 2022, at the Ministry of Agriculture, Dhaka, Bangladesh.

Honors and Fellowships

- National Science and ICT (NSICT) Fellowship, Government of Bangladesh, 2008–2009.
- Golden Seed Project PhD Fellowship, Ministry of Agriculture, Food and Rural Affairs (MAFRA), Republic of Korea, 2017–2020.

Administrative Experience

- **Chairman (Head of the Department)**, Department of Biotechnology, Sher-e-Bangla Agricultural University, 2022–2024.
- **Assistant Provost**, Sher-e-Bangla Hall-1, Patuakhali Science and Technology University, 2014–2017.

References

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