

Md. Rafiqul Islam, PhD

Academic Background

- **Doctor of Philosophy (PhD) in Agriculture**, Division of Horticulture & Plant Medicine (Major in Biotechnology) Suncheon National University, South Korea (2020).
Dissertation: Inheritance and Development of Molecular Markers Linked to Bacterial Fruit Blotch Resistance in Melon. Supervisors: Prof. Dr. Jong, In-Park.
- **Master of Science (MS) in Genetics and Plant Breeding**, Department of Genetics and Plant Breeding, Sher-e-Bangla Agricultural University, Dhaka-1207, Bangladesh (2010). Supervisors: Prof. Dr. Md. Sarowar Hossain.
- **Bachelor of Science in Agriculture (Hons.)**, Faculty of Agriculture, Patuakhali Science and Technology University, Patuakhali-8602, Bangladesh (2007).

Research Background

Research Interest

- Areas of research interest are plant-microbe interaction (bacterial and fungal), molecular biology concerning different plant diseases, and biotic and abiotic stress.

Research Skills

- Skills in molecular biology (including DNA, RNA, cDNA handling, PCR, qPCR, and quantification methods).
- Capable in cloning, sequencing, designing, and developing molecular markers (especially In/Del, SCAR, SSR, HRM, etc.).
- Able to analyze *in silico* analysis related to plant expression experiments.

Supervision

Supervisor

- **Research title:** *In vitro* regeneration of *Aglaonema (Aglaonema commutatum)* in different tissue culture media, 2025. (**Lovely Akter**; Reg. no. 22-010122).
- **Research title:** Genetic diversity and molecular screening of cabbages against black rot and blackleg diseases, 2025. (**Bijoya Sarker**; Reg. no. 16-07108).
- **Research title:** Comparative performance of strawberry (*Fragaria × ananassa* Duch.) regeneration in three different media, 2025. (**Sudeb Chandra Singhi**; RegNo.:22-010127).
- **Research title:** Genetic diversity analysis and molecular screening of rice (*Oryza sativa* L.) by markers for bacterial leaf blight, 2022. (**Kazi Meftahul Jannat**; Reg. No.15-06528).
- **Research title:** *In vitro* regeneration of tea [*Camellia sinensis* (L.) O. Kuntze], 2021. (**Mokaram Hanifa Koly**; Reg. No.19-10234).

Co-Supervisor

- Micropropagation of Banana (*Musa* sp.) in different tissue culture media, 2025. (**Kazi Rifat Shahrin**; Reg. no. 16-07052).
- **Research title:** DNA fingerprinting and molecular diversity of Mung bean (*Vigna radiata* (L.) R. Wilczek) germplasm, 2022. (**Name: Tamanna Tawfiq**; Reg. No.15-06822).
- **Research title:** Bioinformatics analysis of candidate Genes for bovine milk traits, 2022. (**Name: Mst. Saumik Afroz Era**; Reg. No.20-11102).
- **Research title:** Potato (*Solanum tuberosum* L.) plantlet regeneration potentiality in readymade media and newly developed plant tissue culture media, 2023. (**Name: Zinat Ara Eakut**; Reg. No. 16-07257)

Research projects (Completed)

- **Supervisor** for a research project titled "*In vitro* regeneration of pineapple (*Ananas comosus*)," funded by the Ministry of Agriculture, Department of Agriculture Extension (DAE), Khamarbari, Dhaka, Bangladesh, 2024-2025.
- **Principal investigator** for a research project titled "Screening of tomato germplasm through molecular markers for identifying resistance to tomato yellow leaf curl virus," funded by Sher-e-Bangla Agricultural University research system (SAURES), Dhaka, Bangladesh, 2023-2024.
- **Principal investigator** for a research project titled "Morphological and Molecular Genetic Diversity of Exotic Muskmelon Germplasm," funded by SAURES, Dhaka, Bangladesh, 2022-2023.
- **Principal investigator** for a research project titled "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, Bangladesh, 2021-2022.
- **Principal investigator** for a research project titled "Molecular screening of cabbage (*Brassica oleracea* L.) genotypes in response to major diseases (Clubroot, Blackleg, and Black rot)" funded by University Grants Commission, Dhaka, Bangladesh, 2020-2021.
- **Principal investigator** for a research project titled "Effect of Growth Regulator on Plantlet Regeneration of Potato Through Meristem Culture Technique" funded by Patuakhali Science and Technology University, Patuakhali, Bangladesh, 2015-2016.
- **Member** of sub-project management team (SPMT) for a research project of HEQEP titled "Strengthening Research Capabilities of Postgraduate Programs in Genetics and Plant Breeding of PSTU" funded by the World Bank, 2014-2017.

Research projects (On-going)

- **Supervisor** for a research project titled "*In vitro* regeneration of the red heart variety of Guava," funded by the Ministry of Agriculture, Department of Agriculture Extension (DAE), Khamarbari, Dhaka, Bangladesh, 2024-2025.
- **Supervisor** for a research project titled "Development and optimization of a *reproducible in vitro* regeneration protocol for Ashwagandha," funded by the Ministry of Agriculture, Department of Agriculture Extension (DAE), Khamarbari, Dhaka, Bangladesh, 2024-2025.

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: 26 December 2018 to 07 July 2015.

Lecturer

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

Job Responsibilities

Designed and delivered lectures on theory and practical: Fundamentals of biotechnology, Introductory Biotechnology, Recombinant DNA Technology: Principles and Methods, Nucleic Acids and Protein Biosynthesis, and Regulation of Gene Expression, group workshop, and provided student support.

Administrative Experience**Head of the department (Chairman)**

Performing as a chairman in the Department of Biotechnology, Faculty of Agriculture, Sher-e-Bangla Agricultural University, Sher-e-Bangla Nagar, Dhaka-1207, Bangladesh.

Duration: December 2022 to December 24

Assistant provost

Sher-e-Bangla Hall-1, Patuakhali Science and Technology University, Patuakhali-8602.

Duration: August 2014 to February 2017.

Seminars/Symposium/Workshops:

- Participated in “Annual Plant Tissue Culture & Biotechnology Conference 2024” Organized by: 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.
- Poster presentation at 2nd. International and 12th. Biennial conference, 10-11 December 2022.
- Poster presentation at Bangladesh Seed Congress, 2023, 11-13 February 2023.
- Poster presentation at Annual Conference of Plant Tissue Culture & Biotechnology, December 2022.
- Participated in the Biotechnology Policy and Regulatory Framework held on February 16, 2022.
- Participated Biotechnology Outreach Conference in July 2022.

Publications

Thesis

1. **MD. RAFIQUL ISLAM**, 2020. "Inheritance and Development of Molecular Markers Linked to Bacterial Fruit Blotch Resistance in Melon". PhD Thesis. Division of Horticulture & Plant Medicine, Major in Horticulture, Suncheon National University, Suncheon, South Korea.
2. **MD. RAFIQUL ISLAM**, 2010. "Genetic Variability, Correlation and Path Co-Efficient Analysis of Some Yield and Yield Contributing Characters in Bitter Gourd (*Momordica charantia* L.)". M. S. Thesis. Department of Genetics and Plant Breeding, Faculty of Agriculture, Sher-e-Bangla Agricultural University, Dhaka-1207, Bangladesh.
3. **MD. RAFIQUL ISLAM**, 2015. "Effect of Biotic and Abiotic Factors on the Quality of BRRI dhan 44 (*Oryza sativa*) Seeds Stored in Different Containers". Post-Graduate Certificate Course on Seed Technology. Department of Agronomy, Faculty of Agriculture, Patuakhali Science and Technology University, Dumki, Patuakhali-8602, Bangladesh.

Full-length Articles:

1. 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.
2. 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).
3. **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.
4. Sayed Mashequl Bari, Md Isrifil 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.
5. 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.
6. Md. Mainul Islam, Rashad Khadiza Khatun, Ireen Nahar, **Md. Rafiqul Islam**. Production Potential of Solanaceous Vegetables in Hydroponic System. *IJIR* 2022, 7: 33-36.
7. 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.
8. **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.
9. **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.
10. **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.
11. **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.
 12. 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.
 13. 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.
 14. 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
 15. 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 Condition. *Int. J. Sustain. Agril. Tech.* 2016;12(7): 08-13.
 16. Akter, S., R. Ali, M. Akter and M.R. Islam. Mass Rearing of Trichogramma Evanesceus West wood Egg Parasitoid of Lepidopterous Insect Pests. *Int. J. Sustain. Agril. Tech.* 2016, 12(8): 08-15.
 17. 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
 18. 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.
 19. 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.
 20. 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.
 21. 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.
 22. 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.
 23. 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 Internation.* 2 (5): 209-214, 2011.
 24. 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.

25. 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.
26. **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.
27. **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.
28. 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.
29. 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.

Academic Awards

- NSICT fellowship 2008-2009 for MS research work. 11 (Eleven) months NSICT (National Science and Information and Communication Technology) Fellowship was awarded by the Ministry of Science and Information and Communication Technology, Government of Bangladesh.
- Golden Seed project (Grant No. 213007-05-2,3,4-CG100) of the Ministry of Agriculture, Food and Rural Affairs (MAFRA), Republic of Korea, Fellowship 2017-2020 was awarded as a Doctor of Philosophy (PhD) researcher.

References

1. Park, Jong-In
Professor
Department of Horticulture & Plant Medicine
Sunchon National University
Jeollanam-do, Sunchon, South Korea
Cell No. +821085057238
Email: jipark@sunchon.ac.kr
2. Dr. Mirza Hasanuzzaman
Professor
Department of Agronomy
Faculty of Agriculture
Sher-e-Bangla Agricultural University
Dhaka-1207, Bangladesh
Cell No. +8801716587711
Email: mhzsauag@yahoo.com,
mirazhasanuzzaman@sau.edu.bd
3. **Dr. Md. Sarowar Hossain**
Professor
Department of Genetics and Plant Breeding
Faculty of Agriculture
Sher-e-Bangla Agricultural University
Dhaka-1207, Bangladesh
Cell No. +88001552499169
Email: sarowar2001@rediffmail.com,
sarowargpb@sau.edu.bd