

Dr. Md. Injamum-Ul-Hoque

Associate Professor of Crop Botany

Email: injamum@gstu.edu.bd | Phone: +8801689180414

Links: [ResearchGate](#) | [Google Scholar](#) | [ORCHID](#) | [LinkedIn](#)

EDUCATION

- **Doctor of Philosophy (PhD)** | Kyungpook National University | Sep 2021 – Aug 2025
- **Master of Science (MSc) in Crop Botany** | Bangladesh Agricultural University (BAU) | 2017
CGPA: 4.00/4.00
- **Bachelor of Science (BSc) in Agriculture** | Bangladesh Agricultural University (BAU) | 2016
CGPA: 3.851/4.00

RESEARCH INTERESTS

- Plant-microbes Interaction
- Stress Physiology
- Secondary Metabolites
- Phytohormones

RESEARCH EXPERIENCES

PhD Researcher | Kyungpook National University | September 2021 – August 2025

- Synergistic Effects of Clay Minerals and Microbes in Mitigating Abiotic Stress in Soybean Plants

Principal Investigator

Project Title: Responses of drought and the first phase of salt stress on some important morpho-physiological and growth parameters in maize genotypes.

Funding Source: Research and Development (R&D) from the Ministry of Science and Technology, Bangladesh, National Science and Technology Fellowship (MoST) (2020–2021).

Role: Project design, data collection, statistical analysis, conducted laboratory analyses, and prepared technical reports.

ACADEMIC & PROFESSIONAL APPOINTMENTS

- **Associate Professor** | Gopalganj Science and Technology University | Jun 2026 – Present
- **Assistant Professor** | Gopalganj Science and Technology University | Nov 2021 – Jun 2026
- **Lecturer** | Gopalganj Science and Technology University | Feb 2019 – Nov 2021

Teaching Focus:

- **Undergraduate:** Fundamentals of Crop Botany, Plant Anatomy and Embryology, Plant Physiology, Plant Ecology and Biodiversity.
- **Postgraduate:** Plant Morphology, Crop Physiology, Advanced Plant Defense Systems, Environmental Pollution and Agriculture, Plant Anatomy, Stress Physiology, Plant Nutrition, Economic Botany, and Advanced Microbial Ecology.

PUBLICATIONS

1. **Injamum-Ul-Hoque, M.**, Imran, M., Ahsan, S. M., Mahadi hasan, M., Latif, S., Kang, S.-M., Kumar das, A., Gam, H.-J., Woo, J.-I., Yun, B.-W. & Lee, I.-J. 2026. Combined application of *Pseudomonas qingdaonensis* strain BD1 and Illite in improving soybean plant resilience to salinity stress. **Plant Physiology and Biochemistry**, 232, 111142.
2. **Injamum-Ul-Hoque, M.**, Imran, M., Ahsan, S. M., Mahadi hasan, M., Atikur rahman, M., Kang, S.-M., Shaffique, S., Kumar das, A., Yun, B.-W. & Lee, I.-J. 2026. Heavy metal tolerance and metal ion homeostasis in soybean (*Glycine max* L.) driven by the synergistic effect of *Pseudomonas qingdaonensis* strain BD1 and Illite. **Ecotoxicology and Environmental Safety**, 309, 119674.
3. **Injamum-Ul-Hoque, M.**, Rahman, M.-M., Howlader, N.-C., Tavakoli, S., Rahman, M.-M., Imran, S., Bulle, M., Ahsan, S.-M. & Choi, H.-W. 2025. Revolutionizing Metabolic Engineering in Cannabis sativa L.: Harnessing the Power of Hairy Root Culture. **Phyton-International Journal of Experimental Botany**, 94, 3805--3826.
4. **Injamum-Ul-Hoque, M.**; Rahman, M.M.; Das, A.K.; Ali, M.; Ahsan, S.M.; Sarker, A. Exploring microplastics as a macro problem for agricultural lands and terrestrial ecosystems: A review focuses on the research insights and challenges. **Precision Agriculture Science and Technology** 2024, 6, 296-336, doi:10.22765/pastj.20240021.
5. **Injamum-Ul-Hoque, M.**; Ahsan, S.M.; Imran, M.; Shaffique, S.; Shazad, R.; Rahman, M.M.; Lee, I.-J.; Woo, C.-H.; Ray, R.L. Nanotechnology in Crop Protection. In **Revolutionizing Agriculture: A Comprehensive Exploration of Agri-Nanotechnology**, Shahzad, R., Fiaz, S., Qayyum, A., Ul Islam, M., Lee, I.-J., Eds.; **Springer Nature Switzerland**: Cham, 2024; pp. 101-120.
6. **Injamum-Ul-Hoque, M.**; Shaffique, S.; Husen, A.; kang, S.-M.; Lee, I.-J. Revolutionizing heat stress tolerance in Glycine max: Exploring the latest advances in microbial application. **Plant Stress** 2025, 15, 100725, doi:<https://doi.org/10.1016/j.stress.2024.100725>.
7. **Injamum-Ul-Hoque, M.**; Imran, M.; Zainurin, N.; Shaffique, S.; Kang, S.-M.; Ahsan, S.M.; Odongkara, P.; Lee, I.-J. Isolation and Identification of Multi-Traits PGPR for Sustainable Crop Productivity Under Salinity Stress. **Sustainability** 2024, 16, 9263.
8. **Injamum-Ul-Hoque, M.**; Jony, M.; Das, A.; Shaffique, S.; Rahman, M.; Sharif, I.; Ahsan, S. Coordination of elicitors and ascorbate-glutathione cycle: A vital nexus for mitigating post-harvest injury and losses of cultivated fruits. **Plant Trends** 2, 24, doi:10.5455/pt.2024.03.
9. **Injamum-Ul-Hoque, M.**; Woo, J.-I.; Zainurin, N.; Shaffique, S.; Kwon, E.-H.; Gam, H.-J.; Jeon, J.R.; Lee, I.-J.; Joo, G.-J.; Kang, S.-M. Gibberellin-Producing Bacteria Isolated from Coastal Soil Enhance Seed Germination of Mallow and Broccoli Plants under Saline Conditions. **BioTech** 2023, 12, 66.
10. Ahsan, S. M., **Injamum-Ul-Hoque, M.**, Howlader, N. C., Rahman, M. M., Rahman, M. M., Haque, M. A. & Choi, H. W. 2025. Haploid Production in Cannabis sativa: Recent Updates, Prospects, and Perspectives. **Biology**, 14, 701.

11. Ahsan, S. M., **Injamum-Ul-Hoque, M.**, Rahman, M. M., Kang, S.-M., Lee, I.-J. & Choi, H. W. 2025b. Improved Biomass Production and Secondary Metabolism: A Critical Review of Grafting in *Cannabis sativa*. **Plants**, 14, 2347.
12. Ahsan, S. M., Keya, S. S., **Injamum-Ul-Hoque, M.**, Howlader, N. C., Hasan, M. R., Haque, M. A., Shekhar, H. U., Choi, H. W., & Rahman, M. M. (2026). Epigenome Editing for Cannabinoid Yield: Targets, Tools, and Priorities in *Cannabis sativa*. *International Journal of Molecular Sciences*, 27(14), 6299.
13. Das, A. K., Mostofa, M. G., Methela, N. J., Lee, D.-S., Woo, Y.-J., Lee, G.-J., **Injamum-Ul-Hoque, M.**, Kang, S.-M., Lee, I.-J., Hussain, A. & Yun, B.-W. 2026. S-nitrosogluthione enhances rice tolerance to salt-submergence by coordinating ethylene, GA, and ABA accumulation and improving ion transport. **Plant Physiology and Biochemistry**, 231, 111036.
14. Gam, H.-J., Woo, J.-I., **Injamum-Ul-Hoque, M.**, Ahsan, S. M., Imran, S., Sarker, A., Jeon, J., Back, M., Alam, R., Islam, N., Kim, S., Yun, B.-W., Kang, S.-M., Brestic, M. & Lee, I.-J. 2025. Unlocking key factors and mechanistic insight of cadmium toxicity mitigation using green-synthesized ZnO nanoparticles in soybean through advanced metabolomics. **Environmental Technology & Innovation**, 40, 104422.
15. Howlader, N. C., Hossain, M. M., Roy, T. K., Ahsan, S. M., **Injamum-Ul-Hoque, M.** & Miah, M. H. 2026. Application of Botanical Extracts for Postharvest Preservation and Quality Enhancement of Horticultural Produce in Developing Countries: A Potential Review. **Journal of Crop Health**, 78, 17.
16. Kang, S.-M., **Injamum-Ul-Hoque, M.**, Woo, J.-I., Jeon, J. R., Back, M. Y., Ha, J.-Y., Lee, M.-S., Lee, I.-J. & Mun, B.-G. 2025. Effect of combined treatment with *Bacillus amyloliquefaciens* H-2-5 and illite on mitigating salt stress in *Panicum miliaceum*. **Applied Biological Chemistry**, 68, 31.
17. Shaffique, S., Shahzad, R., Shah, A. A., Javier, A. T.-R., Khan, M. A., Kang, S.-M., **Injamum-Ul-Hoque, M.** & Lee, I.-J. 2026. Chapter 15 - Future perspectives in soil chemistry for optimal plant nutrition. In: SAUD, S., FAHAD, S., WANG, D. & NAWAZ, T. (eds.) **Sustainable Soil Chemistry and Plant Nutrition**. Elsevier.
18. Ahsan, S.M.; **Injamum-Ul-Hoque, M.**; Das, A.K.; Shaffique, S.; Hasan, M.; Kang, S.-M.; Lee, I.-J.; Choi, H.W. Tuning Up In Vitro Growth and Development of *Cannabis sativa*: Recent Advances in Micropropagational Approach. **Applied Biosciences** 2025, 4, 12.
19. Zainurin, N.; Imran, M.;Shaffique, S.; Khan, M.A.; Kang, S.-M.;**Injamum-UL-Hoque, M.**; Das, A.K.;Yun, B.-W.; Lee, I.-J. New Insights into the Synergistic Interaction Between *Pseudomonas qingdaonensis* NZ 1 and Silicon to Mitigate Drought Stress in Rice. **Microorganisms** 2025, 13, 1046.
20. Ahsan, S.M.; **Injamum-Ul-Hoque, M.**; Das, A.K.; Imran, M.; Tavakoli, S.; Kwon, D.B.; Kang, S.-M.; Lee, I.-J.; Choi, H.W. Biological Guardians: Unveiling Microbial Solutions to Combat *Cannabis sativa* Fungal Pathogens. **Stresses** 2025, 5, 16.
21. Gam, H.-J.; Adhikari, A.; Kang, Y.; **Injamum-Ul-Hoque, M.**; Shaffique, S.; Woo, J.-I.; Jeon, J.R.; An, B.-K.; Back, M.Y.; Kim, K.-Y.; et al. Investigating the Allelopathic and Bioherbicidal Potential of *Solidago altissima* with a Focus on Chemical Signaling in *Trifolium repens*. **Plants** 2025, 14, 96.
22. Shaffique, S.; Odongkara, P.; Imran, M.; **Injamum-Ul-Hoque, M.**; Ahsan, S.M.; Shah, A.A.; Khan, M.A.; Kang, S.-M.; Khan, A.L.; Lee, I.-J. Role of Green Synthesized Nanoparticles in Agriculture Technology. In **Revolutionizing Agriculture: A Comprehensive Exploration of Agri-Nanotechnology**, Shahzad, R., Fiaz, S., Qayyum, A., Ul Islam, M., Lee, I.-J., Eds.; **Springer Nature Switzerland**: Cham, 2024; pp. 369-378.

23. Ahsan, S.M.; Kwon, D.B.; **Injamum-Ul-Hoque, M.**; Rahman, M.M.; Yeam, I.; Choi, H.W. De Novo Regeneration of Cannabis sativa cv. Cheungsam and Evaluation of Secondary Metabolites of Its Callus. **Horticulturae** 2024, 10, 1331.
24. Shaffique, S.; Shah, A.A.; Kang, S.-M.; **Injamum-Ul-Hoque, M.**; Shahzad, R.; Azzawi, T.N.I.A.; Yun, B.-W.; Lee, I.-J. Melatonin: dual players mitigating drought-induced stress in tomatoes via modulation of phytohormones and antioxidant signaling cascades. **BMC Plant Biology** 2024, 24, 1101, doi:10.1186/s12870-024-05752-8.
25. Kang, S.-M.; Shaffique, S.; **Injamum-Ul-Hoque, M.**; Gam, H.-J.; Woo, J.-I.; Jeon, J.R.; Lee, D.-S.; Lee, I.-J.; Mun, B.-G. Deciphering Whether Illite, a Natural Clay Mineral, Alleviates Cadmium Stress in Glycine max Plants via Modulation of Phytohormones and Endogenous Antioxidant Defense System. **Sustainability** 2024, 16, 10039.
26. Ahsan, S.M.; **Injamum-Ul-Hoque, M.**; Shaffique, S.; Ayoobi, A.; Rahman, M.A.; Rahman, M.M.; Choi, H.W. Illuminating Cannabis sativa L.: The Power of Light in Enhancing C. sativa Growth and Secondary Metabolite Production. **Plants** 2024, 13, 2774.
27. Ahsan, S.; Hoque, M.; kumar, A.; Shaffique, S.; Rahman, M.; Choi, H. Plant improvement and metabolite production in Cannabis sativa: Recent biotechnological advances. **Plant Trends** 2, 74, doi:10.5455/pt.2024.07.
28. Shaffique, S.; Shah, A.A.; Peter, O.; **Injamum-Ul-Hoque, M.**; Elansary, H.O.; kang, S.-M.; Al Azzawi, T.N.I.; Yun, B.-W.; Lee, I.-J. The rhizobacterial Priestia megaterium strain SH-19 mitigates the hazardous effects of heat stress via an endogenous secondary metabolite elucidation network and molecular regulation signalling. **BMC Plant Biology** 2024, 24, 827, doi:10.1186/s12870-024-05534-2.
29. Peter, O.; Imran, M.; Shaffique, S.; Kang, S.-M.; Rolly, N.K.; Felistus, C.; Bilal, S.; Dan-Dan, Z.; **Injamum-Ul-Hoque, M.**; Kwon, E.-H.; et al. Combined application of melatonin and Bacillus sp. strain IPR-4 ameliorates drought stress tolerance via hormonal, antioxidant, and physiomolecular signaling in soybean. **Frontiers in Plant Science** 2024, Volume 15 - 2024, doi:10.3389/fpls.2024.1274964.
30. Kang, S.M., S. Shaffique, O. Peter, M. **Injamum-Ul-Hoque** and I.J. Lee. 2024. Physiological and molecular adaptation response of soybean seedlings under osmotic stress. **Pak. J. Bot.**, 56(3): DOI: [http://dx.doi.org/10.30848/PJB2024-3\(34\)](http://dx.doi.org/10.30848/PJB2024-3(34)).
31. Gam, H.-J.; **Injamum-Ul-Hoque, M.**; Kang, Y.; Ahsan, S.M.; Hasan, M.M.; Shaffique, S.; Kang, S.-M.; Lee, I.-J. Allelopathic effect of the methanol extract of the weed species-red sorrel (Rumex acetosella L.) on the growth, phytohormone content and antioxidant activity of the cover crop - white clover (Trifolium repens L.). **BMC Plant Biology** 2024, 24, 523, doi:10.1186/s12870-024-05240-z.
32. Ahsan, S.M.; Choi, H.W.; **Injamum-Ul-Hoque, M.**; Mezanur Rahman, M.; Hritik, T.H.; Mahamud, A.G.M.S.U.; Sarker, A.; Tusher, T.R. Valorization of Agro-food Wastes and Byproducts into Bioactive Peptides. In **Agro-waste to Microbe Assisted Value Added Product: Challenges and Future Prospects: Recent Developments in Agro-waste Valorization Research**, Saha, S.P., Mazumdar, D., Roy, S., Mathur, P., Eds.; **Springer Nature Switzerland**: Cham, 2024; pp. 61-92.
33. Imran, M., Zhao, D. D., Shaffique, S., Khan, I., Peter, O., **Injamum-Ul-Hoque, M.**, & Lee, I. J. (2027). Interaction Between Plant Enzymes and Hormonal Regulation in Growth. In *Plant Enzyme Systems and Their Biochemical and Environmental Interactions* (pp. 181-191). CRC Press.
34. Ahsan, S.M.; **Injamum-Ul-Hoque, M.**; Das, A.K.; Rahman, M.M.; Mollah, M.M.I.; Paul, N.C.; Choi, H.W. Plant–Entomopathogenic Fungi Interaction: Recent Progress

and Future Prospects on Endophytism-Mediated Growth Promotion and Biocontrol. **Plants** 2024, 13, 1420.

35. Ji-in, W.; **Injamum-Ul-Hoque, M.**; Sang-mo, K.; Shifa, S.; Nazree, Z.; Gil-jae, J.; Joon-ik, S.; Ho-jun, G.; Jin Ryeol, J.; In-jung, L. **Journal of Applied Biological Chemistry** 2024, 67, 8-17.
36. Shaffique, S.; Imran, M.; adhikari, A.; **Injamum-Ul-Hoque, M.**; Zainurin, N.; Peter, O.; Alomrani, S.O.; Aaqil khan, M.; kang, S.-M.; Lee, I.-J. Unraveling the new member *Bacillus pumilus* SH-9 of Bacillaceae family and its potential role in seed biopriming to mitigate drought stress in *Oryza sativa*. **Plant Stress** 2024, 11, 100318, doi:<https://doi.org/10.1016/j.stress.2023.100318>.
37. Kang, S.-M.; Shaffique, S.; **Injamum-Ul-Hoque, M.**; Alomrani, S.O.; Park, Y.-S.; Lee, I.-J. Foliar treatment with melatonin modulates photosynthetic and antioxidant responses in *Silybum marianum* L. under salt stress. **Scientia Horticulturae** 2024, 325, 112664, doi:<https://doi.org/10.1016/j.scienta.2023.112664>.
38. Shaffique, S.; Hussain, S.; Kang, S.-M.; Imran, M.; **Injamum-Ul-Hoque, M.**; Khan, M.A.; Lee, I.-J. Phytohormonal modulation of the drought stress in soybean: outlook, research progress, and cross-talk. **Frontiers in Plant Science** 2023, Volume 14 - 2023, doi:10.3389/fpls.2023.1237295.
39. Shaffique, S.; khan, M.A.; Alomrani, S.O.; **Injamum-Ul-Hoque, M.**; Peter, O.; Imran, M.; kang, S.-M.; Lee, I.-J. Unlocking the potential of newly isolated phytohormone-producing bacterial strains for enhanced plant growth and stress tolerance. **Plant Stress** 2023, 10, 100260, doi:<https://doi.org/10.1016/j.stress.2023.100260>.
40. Shaffique, S.; Kang, S.-M.; **Injamum-Ul-Hoque, M.**; Imran, M.; Aaqil khan, M.; Lee, I.-J. Research Progress in Soybean by Phytohormone Modulation and Metal Chelation over the Past Decade. **Agriculture** 2023, 13, 1325.
41. Kang, S.-M.; **Injamum-Ul-Hoque, M.**; Woo, J.-I.; Lee, I.-J. Mitigation of Salinity Stress on Soybean Seedlings Using Indole Acetic Acid-Producing *Acinetobacter pittii* YNA40. **Agriculture** 2023, 13, 1021.
42. Shaffique S, Shahzad R, Peter O, Injamum-Ul-Hoque M, Ahsan SM, Shah AA, Kang S-M, Trujillo-Rugamas JA, Lee I-J (2025) Chapter 6 - Role of trehalose-6-phosphate in plant system under adverse situations. In: A Husen (ed) **Roles of Osmolytes in Changing Environment**. Academic Press.
43. Uddin, MN, **Injamum-Ul-Hoque M**, Monira S, Al Bari MA (2019) Gas exchange and chlorophyll fluorescence parameters in four maize genotypes influenced by first phase of salt stress. *Progressive Agriculture*, 30 (1): 26-32.
44. Ara I, Rasel M, Hassan L, Islam MF, **Injamum-Ul-Hoque M.**, 2019. Screening of local landraces of rice (*Oryza sativa* L.) at the seedling stage for salinity tolerance based on genetic divergence analysis. *Fundamental and Applied Agriculture* 4(2): 849–857. doi: 10.5455/faa.30474
45. **Injamum-Ul-Hoque, M.**, Uddin, M.N., Fakir, M.S.A. and Rasel, M., 2018: Drought and salinity affect leaf and root anatomical structures in three maize genotypes. *J Bangladesh Agril Univ.*16(1):47–55.
46. Islam, R., Uddin, M.N., Ashrafuzzaman, M. and **Injamum-Ul-Hoque, M.**, 2018: Phenolics and Carotenoids Contents and Radical Scavenging Capacity of some selected Solanaceous Medicinal Plants. *J Bangladesh Agril Univ.*16(1):56–61.
47. Rasel, M., Hasan, L., **Injamum-Ul-Hoque, M.** and Saha R.S., 2018: Genetic Variability, Correlation and Path Coefficient Analysis of Morphological Traits in Local Landraces of Rice (*Oryza sativa* L.). *J Bangladesh Agril Univ.*16(1):41–46.

48. Islam R, **Injamum-Ul-Hoque M**, Ashrafuzzaman M and Uddin MN, 2018. Leaf phenolics and pigments along with their antioxidative potential in some medicinal plants. Asian Australas. J. Food Saf. Secur., 2 (2): 86-92

CONFERENCES

1. *Pseudomonas qingdaonensis* strain BD1 and Illite: A potential source in Enhancing Salinity Stress Tolerance in Soybean Plants. **Md. Injamum-Ul-Hoque**, Muhammad Imran, Sang-Mo Kang, Nazree Zainurin, Ashim Kumar Das, Shifa Shaffique, Ho-Jun Gam, Ji-In Woo, Byung-Wook Yun, In-Jung Lee. BK conference, 2025. Kyungpook National University, Daegu, Republic of Korea.
2. Gibberellin-Producing Bacteria Isolated from Coastal Soil Enhance Seed Germination of Mallow and Broccoli Plants under Saline Conditions. **Injamum-Ul-Hoque, M.**; Woo, J.-I.; Zainurin, N.; Shaffique, S.; Kwon, E.-H.; Gam, H.-J.; Jeon, J.R.; Lee, I.-J.; Joo, G.-J.; Kang, S.-M. 3rd International Conference of BSPST Plants for food security under changing climate, February 2024, BRRI, Gazipur, Bangladesh.
3. Heavy metal tolerance and metal homeostasis in soybean (*Glycine max* L.) driven by the synergistic effect of *Pseudomonas qingdaonensis* strain BD1 and Illite. **Md. Injamum-Ul-Hoque**, Muhammad Imran, Sang-Mo Kang, In-Jung Lee. 4th International Conference of BSPST, Plant Science for Climate Resilience and Sustainable Agriculture, November 2025, Bangladesh Agricultural University, Bangladesh
4. Uddin, M.N., **Injamum-Ul-Hoque, M.** and Islam, R., 2016: Phenolics in the growing region of leaf in maize genotypes under salinity. Proceedings of the workshop of BAU Research

AWARDS & FELLOWSHIPS

- **University Gold Medal**, Bangladesh Agricultural University (2023).
- **Global Korea Scholarship (GKS)** for pursuing PhD program (2021)
- **NST Fellowship**, Ministry of Science & Technology, Bangladesh (2016-2017).

SKILLS

- Data Analysis (Statistical analysis, interpretation, reporting)
- Microsoft Word (Professional document preparation)
- Microsoft Excel (Data organization, analysis, charts, formulas)
- Microsoft PowerPoint (Scientific and academic presentations)
- Research Data Management
- Scientific Writing & Reporting
- Lab Safety Management
- Experimental Design and Data Collection

ADMINISTRATIVE EXPERIENCE

- **Assistant Proctor**, Feb 2026- Present

VOLUNTEER & COMMUNITY ENGAGEMENT

- **Local Advisor**, IAAS Bangladesh. GSTU
- **Advisor**, GSTU Global Affairs Council (2025-present)
- **Advisor**, CRC Foundation, GSTU

PROFESSIONAL MEMBERSHIPS

- Bangladesh Society of Plant Science and Technology (BSPST)
- GKS Alumni Association, Bangladesh
- Krishibid Institution Bangladesh (KIB)

REFEREES

1. **Dr. Nesar Uddin** | Professor, Crop Botany, BAU | mnesarcb@gmail.com
2. **Dr. Solaiman Fakir** | Professor, Crop Botany, BAU | fakirmsa@yahoo.com