

CURRICULUM VITAE OF DR. MD NUREALAM SIDDIQUI



I, **Dr. Md. Nurealam Siddiqui** is an early career scientist born in 28 December 1987 in a remote village of Kurigram. Currently, I am serving as an Associate Professor & Head of the Department of Biochemistry and Molecular Biology, Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU) in Bangladesh with 12 years of teaching and research experiences in the field of plant biochemistry, plant molecular biology, abiotic stress physiology, quantitative genetics and molecular breeding of water and nutrient use efficiency, plant molecular nutrition, and crop functional genomics. My current research focuses on developing new strategies to increase the nutrient use efficiency and abiotic stress tolerance in cereal crops using cutting-edge high-throughput phenotyping, physiological, biochemical, genetic and genomic tools.

For developing robust skill in plant science research, I have conducted PhD in Crop Molecular Genetics from the University of Bonn, Germany in 2022 through prestigious German Academic Exchange Service (DAAD) Fellowship. Thereby, I have acquired experience in research methods and teaching strategies of plant molecular biology. Besides this, I do have experience in high-throughput phenotyping, quantitative genetics and genome analysis in modern plant breeding. I have developed a unique skill set that encompasses genome-wide association studies (GWAS), large-scale phenotyping, statistical analysis of phenotypic data, modern molecular tools, transcriptomics, nutrient uptake and transport assays and biochemical analyses. In recognition of academic achievements, Dr. Siddiqui awarded several prestigious national and international fellowship and awards notably “German Academic Exchange Service (DAAD)” fellowship for pursuing PhD, “Make Our Planet Great Again (MOPGA) Visting Fellowship” funded by the French Ministry for Europe and Foreign Affairs, “Japan-East Asia Network Exchange (JENESYS) Fellowship 2011” in Japan as Visiting Fellow, “BSMRAU-TA Research Award” in 2021 and 2022 for outstanding research accomplishment and “DAAD Outstanding Involvement Award 2021” among international students studying in German Universities, Next Generation Scientist Award 2023 by the New Phytologist Foundation and Young Scientist Travel Award 2024 by the International Plant Phenotyping Network (IPPN). Recently, he has been awarded “**BAS-Gold Medal Award 2023**” by the Bangladesh Academy of Sciences (BAS) in Biological Science (Junior Group) for his excellent research contribution in science among young scientist in Bangladesh. He also elected as an **Associate Fellow** of Bangladesh Academy of Sciences (BAS) for the year of 2023.

As a faculty member at university level, I am actively engaged in both teaching and research. In my current role, I have demonstrated genetic and genomic skills through investigation of mechanisms related to abiotic stress tolerance and nitrate transport in crop plants. I also provide mentoring to both my postgraduate students, lab members and to colleagues. I have published >50 research articles in high reputed peer-reviewed journals. However, I have presented research findings in many international conferences/symposia in USA, Germany, Japan, Pakistan and Singapore. I am actively involved in many professional networks/organizations at home and abroad. I also enjoy participating and serving as the guest editor and reviewer in several highly reputed journals. I do have >2350 citations in Google Scholar with 24 h-index and +150 impact factor as of today.

CONTACT INFORMATION

Dr. Md. Nurealam Siddiqui

Associate Professor & Head

Department of Biochemistry and Molecular Biology

Faculty of Agriculture

Bangabandhu Sheikh Mujibur Rahman Agricultural University

Gazipur 1706, Bangladesh

Tel: +880-2-920531-14

Fax: +880-2-9205316

Cell: +88-01324514142

Email: nuralambmb@bsmrau.edu.bd

Web: <https://bsmrau.edu.bd/nurealam>

DATE OF BIRTH AND PERSONAL LIFE

Born 28 December 1987

Married, 03 children

AREA OF RESEARCH SPECIALIZATION

- Plant biochemistry and stress physiology
- Quantitative genetics, GWAS mapping, genomics and molecular breeding
- Molecular plant nutrition
- High-throughput phenotyping
- Functional characterization of genes in crop plants.

RESEARCH/EMPLOYMENT HISTORY

- (Nov. 2022 to till now) **Head**, Dept. of Biochemistry and Molecular Biology, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Bangladesh
- (Feb. 2022 to till now) **Associate Professor**, Dept. of Biochemistry and Molecular Biology, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Bangladesh
- (Feb. 2015 to Feb 2022) **Assistant Professor**, Dept. of Biochemistry and Molecular Biology, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Bangladesh
- (Feb. 2013 to Feb. 2015) **Lecturer**, Dept. of Biochemistry and Molecular Biology, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Bangladesh
- (Sep. 2012 to Feb. 2013) **Lecturer**, Dept. of Basic Sciences, Sheikh Fajilatunnessa Mujib Fisheries College (now university), Jamalpur.
- (Jan. 2010 to Sep. 2011) **Research Assistant**, Dept. of Biochemistry and Molecular Biology, Haje Mohammad Danesh Science and Technology University

EDUCATION

- (Oct. 2018 to Oct. 2022) **Doctor of Philosophy (Ph.D.) in Agricultural Sciences**
Faculty of Agriculture, University of Bonn, Germany
- (Oct. 2010 to April 2012) **Master of Science (MS) in Biochemistry and Molecular Biology**
Haje Mohammad Danesh Science and Technology University, Bangladesh
- (Jan. 2006 to Dec. 2009) **Bachelor of Science (BS) in Agriculture**

Hajee Mohammad Danesh Science and Technology University,
Bangladesh.

- (Jan. 2003 to Dec. 2005) **Higher Secondary Certificate (HSC) in Science**
Rajshahi board, Bangladesh
- (Jan. 1998 to De. 2003) **Secondary School Certificate (SSC) in Science**
Rajshahi board, Bangladesh

FELLOWSHIPS/AWARDS

- **Gold Medal Award 2023** by Bangladesh Academy of Sciences (BAS) in Biological Sciences (Junior Group) for outstanding research accomplishment among Bangladeshi young scientists.
- **Associate Fellow** (Elected) at Bangladesh Academy of Sciences (BAS) in 2023.
- **Make Our Planet Great Again (MOPGA) Visiting Fellowship 2024** by the French Ministry for Europe and Foreign Affairs.
- **Travel Grant Award** by the International Plant Phenotyping Network (IPNN) to attend the International Society of Root Research 12th International Symposium in Leipzig, Germany from June 2 - June 7, 2024.
- **Visiting Fellowship** as Postdoc Researcher at the Division of Plant Science & Technology in University of Missouri, Columbia, USA in 2023 (Not attain).
- **New Phytologist Next Generation Scientist 2023** travel grant by the New Phytologist Foundation and National University of Singapore.
- **BSMRAU-TA Research Impact Award 2022** for excellent research impact by the Bangabandhu Sheikh Mujibur Rahman Agricultural University Teachers Association (BSMRAUTA).
- **BSMRAU-TA Research Award 2021** for outstanding research accomplishment by the Bangabandhu Sheikh Mujibur Rahman Agricultural University Teachers Association (BSMRAUTA).
- **DAAD outstanding involvement award 2021** among international students studying at German Universities by German Academic Exchange Service.
- **German Academic Exchange Service (DAAD) Fellowship** (June 2018 - Sep. 2022), PhD candidate, INRES-Plant Breeding, University of Bonn, Germany
- **NSICT Fellowship** (2011-2012) by Ministry of National, Science and Information and Technology, People's Republic of Bangladesh
- **Visiting Fellowship 2011** "Invitation Program for Science and Technological Human Resources under the Japan- East Asia Network of Exchange for Students and Youths (JENESYS) 2011" by Japan International Cooperation Centre.
- **Merit Scholarship** (2008-2010) by HOPES (Helping Organization for Promising and Energetic Students), Paragon House, 5 Mohakhali C/A, Dhaka, Bangladesh.
- **Dean List Award** (2010) at undergraduate level for outstanding academic achievements by Faculty of Agriculture, Hajee Mohammad Danesh Science and Technology University, Bangladesh.
- **University Merit Scholarship** at undergraduate level, Hajee Mohammad Danesh Science and Technology University, Bangladesh (2006-2009).

CURRENT RESEARCH FOCUS

- Genetics of environmental adaptation in crop plants
- Nutrient-dependent dynamics of root system architecture in cereal crops
- Genetic and genomic basis of abiotic and nutrient stress tolerance.
- Phenotyping of agronomic traits to understand genetic basis of drought adaptation
- Plant responses to abiotic stresses using genetic, genomics and phenotypic tools.

RESEARCH EXPERTISE

Analytical works: Quantitative genetics, Genome-wide association study (GWAS) using rrBLUP, GAPIT and TASSEL, QTL mapping, molecular marker (SNP) data processing and analysis, phenotypic data analysis and visualization (ANOVA, PCA and correlogram) in R studio, primer designing, identification of candidate genes and syntenic regions, functional annotation of genes, analysis of *cis*-acting regulatory elements, promoter analysis, prediction of protein-protein interaction using STRING, and cystoscope.

Molecular/Lab works: DNA and RNA extraction and quantification, gradient PCR, purification of PCR products, gene sequencing, qRT-PCR, enzymatic analysis, determination of nutrient translocation in root and shoot, and nutrient content analysis.

Phenotyping works: Root-shoot phenotyping under field, greenhouse and rhizotron experiments, Nutrient analysis, Shovelomics for field-based root phenotyping, Root scanning, WinRHIZO analysis, Digital microscopy and image analysis, Photosynthesis measurements using SPAD, MINI-PAM, LICOR, FluroPen, and PolyPen.

Bioinformatic tools: NCBI database, protein sequence analysis, protein domain analysis, phylogenetic analysis, and genomic sequence alignment (pairwise and multiple).

SCIENTIFIC PUBLICATIONS

Total citations: **2357**, h-index: 24 (as of September 03, 2024, Google Scholar).

For current citation metrics please visit:

<https://scholar.google.com/citations?user=BSslWlkAAAAJ&hl=en>

1. **Siddiqui, M.N.**, Pandey, K., Bhadhury, S.K., Sadeqi, B., Schneider, M., Stich, B., Léon, J., & Ballvora, A. (2023). Convergently selected NPF2.12 coordinates root growth and nitrogen use efficiency in wheat and barley. *New Phytologist*, 238: 2175-2193 (Impact Factor 9.4).
2. **Siddiqui, M.N.**, Melesech, T. G., Abebaw, A.M., Tesfaye, J.T., Dadshani, S., Léon, J., & Ballvora, A. (2023). Genetic dissection of candidate genes underlying root phenotypic plasticity for adaptation to drought in bread wheat. *BMC Genomic Data* 24(1), 1-16 (Impact Factor 2.9).

3. Kamruzzaman M, **Siddiqui, M.N.**, Ballvora, A., León, J., Naz, A.A. (2023). Hydrogen peroxide-induced genetic diversity of bread wheat and mapping of candidate loci by genome-wide association study. *Plant Direct* (Under revision) (Impact Factor 3.0).
4. **Siddiqui M. N.**, Jahiu, M., Kamruzzaman, M., Mason, A.S., León, J., & Ballvora, A. (2023). Genetic control of root architectural traits under drought stress in spring barley (*Hordeum vulgare* L.). *The Plant Genome*, doi:10.1002/tpg2.20463 (Impact Factor 4.2).
5. R. A. Ibn, U. K. Ghosh, M. S. Hossain, A. Mahmud, A. K. Saha, M. M. Rahman, M. A. Rahman, **M. N. Siddiqui*** and Md. A. R. Khan. (2024). Enhancing nitrogen use efficiency in cereal crops: from agronomy to genomics perspectives. *Cereal Research Communications*, doi: 10.1007/s42976-024-00515-5 (Impact Factor 1.6).
6. P. K. Ghosh, M. M. Rahman, A. K. Saha, M. Ashrafuzzaman, M. T. Islam, **M. N. Siddiqui***. (2024). Mechanistic insight into the physiological and biochemical traits improvement by mycorrhiza biofertilization in soybean under phosphorus-starved conditions. *Journal of Plant Growth Regulation* (Under review) (Impact Factor 4.8).
7. Koua, A.P., **Siddiqui, M.N.**, Heß, K., Klag, N., Duarte-Delgado, D., Oyiga, B.C., León, J., & Ballvora, A. (2023). Genome-wide dissection and haplotype analysis identified candidate loci for nitrogen use efficiency under drought conditions in winter wheat. *The Plant Genome*. doi: 10.1002/tpg2.20394 (Impact Factor 4.2).
8. Fatema, K., Mahmud, N. U., Gupta, D. R. G., **Siddiqui, M. N.**, Sakif, T. I., Sarker, A. & Islam, T. (2024). Enhancing rice growth and yield with weed endophytic bacteria *Alcaligenes faecalis* and *Metabacillus indicus* under reduced chemical fertilization. *bioRxiv*, 2023-12. *PLOS One* (Under revision) (Impact Factor 3.7).
9. Khan, M. A. R., Mahmud, A., Ghosh, U. K., Hossain, M. S., **Siddiqui, M. N.**, Islam, A. A., ... & Tran, L. S. P. (2023). Exploring the phenotypic and genetic variabilities in yield and yield-related traits of the diallel-crossed F5 population of Aus rice. *Plants*, 12(20), 3601 (Impact Factor 4.5).
10. Kamruzzaman, M., Shrestha, A., **Siddiqui, M. N.**, Oyiga, B. C., Ballvora, A., León, J., & Naz, A. A. (2023). Genetic mapping of candidate loci for water-deficit stress-induced proline accumulation in bread wheat (*Triticum aestivum*). *Plant Breeding*, 142(4), 449-462 (Impact Factor 2.0).
11. **Siddiqui, M.N.**, Schneider, M., Barbosa, M., León, J., & Ballvora, A. (2022). Natural selection under conventional and organic cropping systems affect root architecture in spring barley. *Scientific Reports*, 12, 20095 (Impact Factor 4.6).
12. Kamruzzaman, M., Beyene, M.A., **Siddiqui, M.N.**, Ballvora, A., León, J., Naz, A.A. (2022). Pinpointing genomic loci for drought-induced proline and hydrogen peroxide accumulation in bread wheat under field conditions. *BMC Plant Biology*, 22, 584 (Impact Factor 5.3).
13. Mohamed, M., **Siddiqui, M. N.**, Oyiga, B. C., León, J., & Ballvora, A. (2022). Validation of a QTL on chromosome 1ds showing a major effect on salt tolerance in winter wheat. *International Journal of Molecular Sciences*, 23(22), 13745 (Impact Factor 5.6).

14. Doumbia, I. Z., **Siddiqui, M. N.**, Diallo, M., Dembélé, S., Dolo, A., & Mulaudzi, T. (2022). Performance of Malian cowpea (*Vigna unguiculata* (L.) Walp) genotypes to drought stress under field conditions. *Journal of Agricultural and Crop Research*, 10(8), 154-166 (Impact Factor 1.24).
15. Ali, M. A., Kamal, M. M., Rahman, M. H., **Siddiqui, M. N.**, Haque, M. A., Saha, K. K., & Rahman, M. A. (2022). Functional dairy products as a source of bioactive peptides and probiotics: Current trends and future prospectives. *Journal of Food Science and Technology*, 59(4), 1263-1279 (Impact Factor 3.1).
16. **Siddiqui, M.N.**, Tesfaye, J.T., Abebaw, A.M., Melesech, T. G., Koua, P., Léon, J., & Ballvora, A. (2021). New drought-adaptive loci underlying candidate genes on wheat chromosome 4B with improved photosynthesis and yield responses. *Physiologia Plantarum*, 173 (4): 2166-2180 (Impact Factor 6.4).
17. **Siddiqui, M. N.**, Léon, J., Naz, A. A., & Ballvora, A. (2021). Genetics and genomics of root system variation in adaptation to drought stress in cereal crops. *Journal of Experimental Botany*, 72(4), 1007-1019 (Impact Factor 6.9).
18. Akter, M., Mahmud, A., Akter, M., **Siddiqui, M. N.*** & Khan, M. A. R. (2021). Dissecting the salt tolerance potential of cowpea genotypes based on morpho-physiology and yield-related attributes. *Annals of Applied Biology*, 180: 428-437 (Impact Factor 2.6).
19. Rahman, M., Mostofa, M. G., Keya, S. S., **Siddiqui, M.**, Ansary, M., Uddin, M., & Tran, L. S. P. (2021). Adaptive Mechanisms of Halophytes and Their Potential in Improving Salinity Tolerance in Plants. *International Journal of Molecular Sciences*, 22(19), 10733 (Impact Factor 5.6).
20. Ghosh, U. K., Islam, M. N., **Siddiqui, M. N.**, Cao, X., & Khan, M. A. R. (2021). Proline, a multifaceted signalling molecule in plant responses to abiotic stress: understanding the physiological mechanisms. *Plant Biology*, 24 (2): 227-239 (Impact Factor 3.9).
21. Ghosh, U.K., Islam, M.N., **Siddiqui, M.N.**, Khan, A.R. (2021). Understanding the roles of osmolytes for acclimatizing plants to changing environment: A review of potential mechanism. *Plant Signaling & Behavior*, 16 (8): 1913306 (Impact Factor 2.9).
22. **Siddiqui, M. N.**, Mostofa, M. G., Rahman, M. M., Tahjib-Ul-Arif, M., Das, A. K., Mohi-Ud-Din, M., & Tran, L. S. P. (2021). Glutathione improves rice tolerance to submergence: insights into its physiological and biochemical mechanisms. *Journal of Biotechnology*, 325, 109-118 (Impact Factor 4.1).
23. Rana, R. A., **Siddiqui, M.N.**, Skalicky, M., Brestic, M., Hossain, A., Kayesh, E., ... & Islam, T. (2021). Prospects of nanotechnology in improving the productivity and quality of horticultural crops. *Horticulturae*, 7(10), 332 (Impact Factor 3.1).
24. Mohi-Ud-Din, M., **Siddiqui, M. N.**, Rohman, M., Jagadish, S. K., Ahmed, J. U., Hassan, M. M., ... & Islam, T. (2021). Physiological and biochemical dissection reveals a trade-off between antioxidant capacity and heat tolerance in bread wheat (*Triticum aestivum* L.). *Antioxidants*, 10(3), 351 (Impact Factor 7.0).

25. Bostami, A. R., Khan, M. R. I., Rabbi, A. Z., **Siddiqui, M. N.**, & Islam, M. T. (2021). Boosting animal performance, immune index and antioxidant status in post-weaned bull calves through dietary augmentation of selective traditional medicinal plants. *Veterinary and Animal Science*, 14, 100197 (Impact Factor 1.5).
26. Mostofa, M. G., Rahman, M. M., **Siddiqui, M. N.**, Fujita, M., & Tran, L. S. P. (2020). Salicylic acid antagonizes selenium phytotoxicity in rice: selenium homeostasis, oxidative stress metabolism and methylglyoxal detoxification. *Journal of Hazardous Materials*, 394, 122572 (Impact Factor 13.6).
27. Islam, T., Talukder, A. K., **Siddiqui, N.**, & Islam, T. (2020). Tackling the COVID-19 pandemic: The Bangladesh perspective. *Journal of Public Health Research*, 9(4), jphr-2020.
28. Tahjib-Ul-Arif, M., **Siddiqui, M. N.**, Sohag, A. A. M., Sakil, M. A., Rahman, M. M., Polash, M. A. S., & Tran, L. S. P. (2018). Salicylic acid-mediated enhancement of photosynthesis attributes and antioxidant capacity contributes to yield improvement of maize plants under salt stress. *Journal of Plant Growth Regulation*, 37(4), 1318-1330 (Impact Factor 4.8).
29. Tahjib-Ul-Arif, M., Sayed, M. A., Islam, M. M., **Siddiqui, M. N.**, Begum, S. N., & Hossain, M. A. (2018). Screening of rice landraces (*Oryza sativa* L.) for seedling stage salinity tolerance using morpho-physiological and molecular markers. *Acta Physiologiae Plantarum*, 40(4), 1-12 (Impact Factor 2.73).
30. Tusher, T. R., Akter, S., Ashraf, Z., Kabir, M. H., & **Siddiqui, M.N.** (2018). Phytomonitoring of brick kiln induced air pollution at Konabari of Bangladesh. *Malaysian Journal of Science*, 37(1), 50-69 (Impact Factor 0.61).
31. Mostofa, M. G., Ghosh, A., Li, Z. G., **Siddiqui, M. N.**, Fujita, M., & Tran, L. S. P. (2018). Methylglyoxal—a signalling molecule in plant abiotic stress responses. *Free Radical Biology and Medicine*, 122, 96-109 (Impact Factor 7.4).
32. **Siddiqui, M. N.**, Mostofa, M. G., Akter, M. M., Srivastava, A. K., Sayed, M. A., Hasan, M. S., & Tran, L. S. P. (2017). Impact of salt-induced toxicity on growth and yield-potential of local wheat cultivars: oxidative stress and ion toxicity are among the major determinants of salt-tolerant capacity. *Chemosphere*, 187, 385-394 (Impact Factor 8.8).
33. Mostofa, M. G., Hossain, M. A., **Siddiqui, M. N.**, Fujita, M., & Tran, L. S. P. (2017). Phenotypical, physiological and biochemical analyses provide insight into selenium-induced phytotoxicity in rice plants. *Chemosphere*, 178, 212-223 (Impact Factor 8.8).
34. Akram, S., **Siddiqui, M. N.**, Hussain, B. N., Al Bari, M. A., Mostofa, M. G., Hossain, M. A., & Tran, L. S. P. (2017). Exogenous glutathione modulates salinity tolerance of soybean [*Glycine max* (L.) Merrill] at reproductive stage. *Journal of Plant Growth Regulation*, 36(4), 877-888 (Impact Factor 4.8).
35. Islam, M. S., Tahjib-Ul-Arif, M., Islam, M. A., Hossain, M. A., **Siddiqui, M. N.**, & Sayed, M. A. (2016). Dietary effects of buckwheat (*Fagopyrum esculentum*) and black cumin (*Nigella sativa*) seed on growth performance, serum lipid profile and intestinal microflora of broiler chicks. *South African Journal of Animal Science*, 46(1), 103-111 (Impact Factor 0.678).

36. Sayed, M. A., Imam, R., **Siddiqui, M. N.**, Raihanun-Nabi, S. M., Aktar, S., & Das, S. R. (2016). Allelopathic activity of *Leonurus siribicus* L. on seed germination and seedling growth of wheat and identification of 4-hydroxy benzoic acid as an allelochemical by chromatography. *Pak. J. Bot*, 48(3), 1189-1195 (Impact Factor 1.10).
37. Hasan, A., Hafiz, H. R., **Siddiqui, N.**, Khatun, M., Islam, R., & Mamun, A. A. (2015). Evaluation of wheat genotypes for salt tolerance based on some physiological traits. *Journal of Crop Science and Biotechnology*, 18(5), 333-340.
38. Mondal, M. A., Yeasmin, T., Karim, R., **Siddiqui, M. N.***, Nabi, S. R., Sayed, M. A., & Siddiky, M. N. A. (2015). Effect of dietary supplementation of turmeric (*Curcuma longa*) powder on the growth performance and carcass traits of broiler chicks. *SAARC Journal of Agriculture*, 13(1), 188-199.
39. **Siddiqui, M. N.**, & Sayed, M. A. (2015). Effect of dietary black seed (*Nigella Sativa* L.) extract supplemented diet on growth performance, serum metabolites and carcass traits of commercial broiler. *J. Anim. Sci. Adv*, 5(8), 1380-1385.
40. **Siddiqui, M. N.**, Islam, M. T., Sayed, M. A., & Hossain, M. A. (2015). Effect of dietary supplementation of acetone extracts of *Nigella sativa* L. seeds on serum cholesterol and pathogenic intestinal bacterial count in broilers. *Journal of Animal & Plant Sciences*, 25(2) (Impact Factor 0.70).
41. Sayed, M. A., Islam, M. T., Haque, M. M., Shah, M. J. H., Ahmed, R., **Siddiqui, M. N.**, & Hossain, M. A. (2015). Dietary effects of chitosan and buckwheat (*Fagopyrum esculentum*) on the performance and serum lipid profile of broiler chicks. *South African Journal of Animal Science*, 45(4), 429-440 (Impact Factor 0.678).
42. Bostami, A. B. M. R., Selim, A. S. M., Hoque, S. A. M., Rabbi, A. K. M. Z., & **Siddiqui, M. N.** (2015). Effects of medicinal herb (*Embllica officinalis*) on growth performance, fecal microbiota and diarrhea prevalence in growing sheep. *International Journal of Current Research*, 7(3), 13720-13727.
43. Islam, M. R., **Siddiqui, M. N.***, Khatun, A., Siddiky, M. N. A., Rahman, M. Z., Bostami, A. B. M. R., & Selim, A. S. M. (2014). Dietary effect of mulberry leaf (*Morus alba*) meal on growth performance and serum cholesterol level of broiler chickens. *SAARC Journal of Agriculture*, 12(2), 79-89.
44. Roni, M. S., Zakaria, M., Hossain, M. M., Golam, M., Rasul, M., & **Siddiqui, M.N.** (2014). Effect of temperature on shelf life and ascorbic acid content of broccoli produced with different combinations of nitrogen level and spacing. *International Journal of Biosciences*, 5(6), 81-86.
45. Kakoly, M. K. J., Rashid, M. M., Hasan, M. S., & **Siddiqui, M. N.** (2014). Study of seed-borne fungal pathogens of Kataribhog aromatic rice and comparison of field intensity with laboratory counts. *International Journal of Biosciences*, 4(1), 66-74.

46. Roni, M. S., Zakaria, M., Hossain, M. M., & **Siddiqui, M. N.** (2014). Effect of plant spacing and nitrogen levels on nutritional quality of broccoli (*Brassica oleracea* L.). *Bangladesh Journal of Agricultural Research*, 39(3), 491-504.
47. Roy, T. K., Hafiz, M. H. R., Islam, M. R., Hasan, M. A., & **Siddiqui, M. N.** (2013). Late planting heat stress on ear growth physiology of wheat. *International Journal of Biosciences*, 3(11), 8-19.
48. Barman, H. K., **Siddiqui, M. N.***, Siddique, M. A., Roni, M. S., & Nuruzzaman, M. (2013). Combined effect of organic manure and potassium on growth and yield of onion cv. Bari Piaz-i. *International Journal of Agricultural Research, Innovation and Technology (IJARIT)*, 3(2355-2020-1521), 47-51.
49. Khatun, M., Hafiz, M. H. R., Hasan, M. A., Hakim, M. A., & **Siddiqui, M. N.** (2013). Responses of wheat genotypes to salt stress in relation to germination and seedling growth. *International Journal of Bio-resource and Stress Management*, 4(4), 635-640.
50. Rahman, Z., **Siddiqui, M. N.***, Khatun, M. A., & Kamruzzaman, M. (2013). Effect of guava (*Psidium guajava*) leaf meal on production performances and antimicrobial sensitivity in commercial broiler. *Journal of Natural Products*, 6(2013), 177-187.
51. Ahad, M. A., Sayed, M. A., **Siddiqui, M. N.**, & Haque, M. M. (2012). Evaluation of some indigenous plant extracts against pulse beetle, *Callosobruchus chinensis* L. (Bruchidae: Coleoptera) in stored green gram (*Vigna radiata* L.). *Global Journal of Medicinal Plant Research*, 1(1), 33-41.
52. Islam, M. T., Selim, A. S. M., Sayed, M. A., Khatun, M. A., **Siddiqui, M. N.**, Alam, M. S., & Hossain, M. A. (2011). *Nigella sativa* L. supplemented diet decreases egg cholesterol content and suppresses harmful intestinal bacteria in laying hens. *Journal of Animal and Feed Sciences*, 20(4), 576-587 (Impact Factor 1.77).

(* indicates corresponding author).

MANUSCRIPT UNDER REVIEW

1. Nahid Hasan⁺, **M. N. Siddiqui**⁺, M., Arifuzzaman, M., Anwar Hossain, M., H. Prodhana, S., & Ashrafuzzaman, M. (2024). Morpho-physiobiochemical dissection reveals insight into salt-induced differential responses in genetically modified *Solanum melongena* L. (Bt Brinjal) varieties. *Heliyon* (Under review) (Impact Factor 4.0) [+Equal 1st Author].

Edited Book

- Dheeman S., **Siddiqui, M.N.**, Egamberdieva D., Islam, T. (2024). Soil Bacteria: Biofertilization and Soil Health. Springer Nature (Manuscript Number 89192166, *In-press*).

Book Chapter

- Papi⁺ A.A., Masuda⁺ M.S., Ashrafuzzaman M., Arifuzzaman M., **Siddiqui M.N.***. (2024). Utilization of wheat wild relatives for improving ozone stress tolerance. Wheat Wild Relatives (Chapter 11), Elsevier (eBook ISBN: 9780443220890) [Corresponding author].

CONFERENCE TALK

- 1 **Siddiqui, M.N.**, Léon, J., & Ballvora, A. (2024). Natural variation in a nitrate transceptor homolog NPF2.12 modulates root growth and nitrogen use efficiency in wheat and barley. 12th International Symposium of the International Society of Root Research 2024, June 02-07, 2024 in Leipzig, Germany (poster presentation with Travel Award).
- 2 **Siddiqui, M.N.**, Léon, J., & Ballvora, A. (2024). Genetic control of *NPF2.12-NIA1* signalling cascade improve nitrogen utilization in cereals. 3rd Conference on "Plants for Food Security Under Changing Climate" by Bangladesh Society of Plant Science and Technology (BSPST) February 10-11, 2024 at Bangladesh Rice Research Institute (BRRI), Gazipur (abstract accepted).
- 3 **Siddiqui, M.N.**, Léon, J., & Ballvora, A. (2023). Genetic and molecular mechanisms of nitrogen use efficiency in cereal crops. 5th International Conference on Biotechnology in Health and Agriculture at University of Dhaka on 01-03 December 2023 by Global Network for Bangladeshi Biotechnologists (GNOBB), Dhaka, Bangladesh.
- 4 **Siddiqui, M.N.**, Léon, J., & Ballvora, A. (2023). A nitrate transceptor homolog NPF2.12 coordinates root growth and nitrogen use efficiency in wheat and barley. New Phytologist Next Generation Scientists Meeting, National University of Singapore, 2-5 July 2023.
- 5 **Siddiqui, M.N. (2023).** Variation in NPF2.12 improves nitrogen utilization by activating nitric oxide signalling in wheat and barley. Seminar Series Organized by Outreach Program at Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur on 31 May 2023 (Invited Talk).
- 6 **Siddiqui, M.N.**, Léon, J., & Ballvora, A. (2022). A syntenic loci underpin nitrate transport and root system architecture in wheat and barley. German Plant Breeding Society (GPZ) main conference on September 12-14, 2022 in Düsseldorf, Germany.
- 7 **Siddiqui, M.N.**, Léon, J., & Ballvora, A. (2022). Nitrate-dependent dynamics of root system architecture: Uncovering its molecular regulators in winter wheat. 3rd international conference on "Climate Smart Agriculture: The Way towards Ecosystem Restoration" March 15-16, 2022 organized by University of Agriculture Multan, Punjab, Pakistan.
- 8 **Siddiqui, M.N.**, Léon, J., & Ballvora, A. (2022). A syntenic loci tunes nitrate transport by regulating root system architecture between wheat and barley. International Conference on Sustainable Agriculture through Nuclear and Frontier Research, January 19-21, 2022 in Bangladesh Institute of Nuclear Agriculture (BINA), Bangladesh.
- 9 **Siddiqui, M.N.**, Léon, J., & Ballvora, A. (2021). Natural variation in the promoter of *NPF2.12* is associated with nitrate-use efficiency and grain yield in wheat by tailoring root growth and development. 11th Symposium of the International Society of Root Research, May 24-28, 2021. University of Missouri, USA.
- 10 **Siddiqui, MN.** Islam, MT., Sayed, MA., and Hossain MA. (2012). Supplementation of acetone extract of *Nigella sativa* L. seeds in diet decreases serum cholesterol and harmful intestinal bacteria in broiler. Proceedings on Conference of the Bangladesh Society for Biochemistry and Molecular Biology, Abstract ID-51, 0-S3-38, 25-26 February, 2012, University of Rajshahi (RU), Bangladesh.
- 11 Islam, M. T., **Siddiqui, M. N.**, Sayed, M. A., Selim, A. S. M., and Hossain M.A. (2012). *Nigella sativa* L. supplemented poultry feed for antibiotic free low cholesterol egg and safe

meat. Proceedings on Conference of the Chittagong Veterinary and Animal Sciences University (CVASU), Bangladesh was held at 7-8 March. Abstract No. 22.

COMPLETED/ONGOING RESEARCH PROJECTS

- “Genomic dissection of phosphorous use efficiency in wheat by genome-wide association mapping” special research grant allocation 2023-2024 by the Ministry of Science & Technology (MoST), People’s Republic of Bangladesh, Grant No. SRG231006 (**Principal Investigator**).
- “Enhancement of phosphorous use efficiency in soybean by mycorrhiza application” by the University Grants Commission (UGC) of Bangladesh for the year 2023-2024 (Under review) (**Principal Investigator**).
- “Elucidating key root-shoot architectural traits under nitrogen deficiency and their improvement by growth promoting bacteria in rice for breeding nitrogen use efficient cultivars” 2023-2026 (decision pending) BANBEIS, Ministry of Education, People’s Republic of Bangladesh, Grant No. LS20232470 (**Principal Investigator**).
- “Breeding Innovations in Wheat for Resilient Cropping Systems” (BRIWECS) funded by the German Federal Ministry of Education and Research (BMBF), PTJ for the year 2018-2022 (**Research Assistant**).
- “Nutrient Use Efficiency in Wheat” funded by the German Federal Office for Agriculture and Food Project “POeWER” FKZ: 2818105815 for the Year 2018-2022 (**Research Assistant**).
- “Physiological Responses of Exogenous Glutathione in Mitigating Submergence Damage in Rice” funded by the University Grants Commission (UGC) of Bangladesh for the year 2016-2017 (**Principal Investigator**).
- “Salt tolerant mechanism and involvement of *AOX* gene in wheat cultivars in Bangladesh” funded by RMC (BSMRAU-UGC), Bangladesh for the year 2014-2015 (**Principal Investigator**).
- “Studies on seed extract of buckwheat in broiler diets for decreasing serum lipid profile and harmful intestinal microflora” funded by Ministry of Science & Technology, People’s Republic of Bangladesh from 2013-2014 (**Co-Investigator**).
- “Sustainable food production by the application of natural resources” funded by Ministry of Science & Technology, People’s Republic of Bangladesh from 2011-2012 (**Research Assistant**).

PROFESSIONAL MEMBERSHIP

1. **Member** of the German Society for Plant Sciences (DBG)
2. **Member** of International Society of Root Research (ISRR)
3. **Member** of the Journal Club of Plant Breeding Group, University of Bonn, Germany
4. **Member** (GM759) of Global Network for Bangladeshi Biotechnologists (GNOBB), Dhaka, Bangladesh
5. **Member** of Asian Council of Science Editors (ACSE), Dubai U.A.E

6. **Member** of the Society for Redox Biology and Medicine (SfRBM), Indiana, USA
7. **Life member** of Bangladesh Association for the Advancement of Science (BAAS), Dhaka, Bangladesh
8. **Life Member** Alumni Association of German Universities in Bangladesh
9. **Life member** of Ecological Society of Bangladesh, BSMRAU, Gazipur, Bangladesh
10. **Life Member** of the Krishibid (Agriculturist) Institution, Dhaka, Bangladesh.

ADMINISTRATIVE, ACADEMIC AND OTHER POSITION ---

- **Head**, Department of Biochemistry and Molecular Biology, BSMRAU, Bangladesh from November 2022 to till date.
- **Chairman**, Board of Studies (BOS), Department of Biochemistry and Molecular Biology, BSMRAU, Bangladesh from November 2022 to till date.
- **Member**, Academic Council, BSMRAU, Bangladesh from October 2022 to till date.
- **Member**, Planning & Development Committee, Bangabandhu Sheikh Mujibur Rahman Agricultural University.
- **Expert Member** nominated by the University Grants Commission (UGC) of Bangladesh for the establishment of Biochemistry & Molecular Biology Department at Jashore University of Science and Technology (JUST) in 2023.
- **Publication Secretary**, Ecological Society of Bangladesh, Executive Committee 2023-2024.

JOURNAL EDITOR AND REVIEWING EXPERIENCE ---

- **Guest Editor** in “Agriculture” (Impact Factor 3.408) for a Special Issue (2023): Plant Stress Tolerance: Physiological, Molecular and Genetic Perspectives (https://www.mdpi.com/journal/agriculture/special_issues/412P9JX1JR).
- **Section Editor** (genetics and development): *Plant Science Today*, Scopus indexed Impact Factor 0.98.

Manuscript reviewed for following international peer-reviewed journals:

- Protoplasma
- Functional Plant Biology
- Plant Breeding
- PLOS ONE
- Plant Methods
- Plant Directs
- Physiologia Plantarum
- Plant Physiology and Biochemistry
- Chemosphere
- Ecological Genetics and Genomics
- Environmental and Experimental Botany

TEACHING AND MENTORING

- Courses taught at undergraduate level: Chemistry of Biomolecules, Metabolisms of Biomolecules, Biophysics and Chemistry of Biomolecules and Molecular Biology
- Courses taught at graduate level: Plant physiology, Plant Biochemistry, and Plant Molecular Biology
- Supervised 07 students during their Master thesis works under Agricultural Sciences and Resource Management in Tropics and Subtropics (ARTS) and Master of Science in Plant Science programs in Universität Bonn, Germany
- Supervised and mentored 04 Internship students from Erasmus Mundus Master Program in Plant Breeding in France and master's in plant science of University of Bonn.
- One master student has been awarded as “**Best Thesis**” in 2020 among different European Universities under Erasmus Mundus Master Program in Plant Breeding in France.

List of Master's supervised students in Germany

Student name	Thesis Title	Year
Marissa B. Barbosa	Root morphological characterization and haplotype allele frequency estimation in barley (<i>Hordeum vulgare</i> L.) evolved from long-term selection trial under conventional and organic cropping systems	2020
Melesech Teshale Gabi	Genome-wide association study of root architectural traits adaptive to drought stress in winter wheat	2020
Tesfaye Jorgi Teferi	Genetic dissection of shoot physiological variability and identification of drought-responsive loci in bread wheat	2020
Abebaw Misganaw Ambaw	Genome-wide association study of root anatomical phenes in adaptation to drought stress in bread wheat	2020
Mst. Mahmuda Akter	Uncovering drought-induced natural genetic diversity, heritability, and genetic advance of physiological traits in the barley (<i>Hordeum vulgare</i> L.) gene pool	2021
Walid Ben Yahia	Identification of drought adaptive traits in diverse spring barley (<i>Hordeum vulgare</i> L.) germplasms	2022
Melisa Jahiu	Genome-wide natural variation affects root architectural adaptation to drought stress in spring barley	2022

RESEARCH STUDENT SUPERVISION

- **Current MS research student: 05**
- **Former MS research student: 07**

SELECTED POPULAR ARTICLES IN DAILY NEWSPAPER

- Ensure crop insurance for devastated farmers: *The Daily Kalerkantho*, 29 April, 2017
- Budget for agriculture and farmers: *The Daily Kalerkantho*, 21 May, 2015
- Impact of climate change on agriculture in Bangladesh: *The Daily Kalerkantho*, 06 Sep 2012
- Budget for disable community: *The Daily Kalerkantho*, 12 April 2013
- Save forests, biodiversity: *The Daily Star*, May 18, 2009
- Poverty and vision-2021: *The Daily Star*, May 25, 2009
- Budget and the Disabled: *The Daily Star*, June 1, 2009
- Women and agriculture: *The Daily Star*, June 10, 2009
- Biodiversity and our existence: *The Daily Star*, July 8, 2009
- No tree, no life: *The Daily Star*, July 17, 2009
- Save the environment: *The Daily Star*, July 27, 2009
- Corruption: *The Daily Star*, August 30, 2009
- Child labour: *The Daily Star*, October 19, 2009
- Drug and young generation: *The Daily Star*, January 3, 2010

INTERNATIONAL MEDIA NEWS

- How plants adapt to nitrogen deficiency, 30 March 2023, *University of Bonn Press*, Germany, <https://www.uni-bonn.de/en/news/045-2023>
- Genetic variants help plants adapt to nitrogen deficiency, 04 April 2023, earth.com, <https://www.earth.com/news/genetic-variants-help-plants-adapt-to-nitrogen-deficiency/>
- How plants adapt to nitrogen deficiency, 30 March 2023, *Environmental News Network (ENN)*, USA, <https://www.enn.com/articles/72267-how-plants-adapt-to-nitrogen-deficiency>
- Researchers discover gene variants in wheat and barley that improve nitrogen utilization, 30 March 2023, *Phys.Org*, <https://phys.org/news/2023-03-gene-variants-wheat-barley-nitrogen.html>
- How plants adapt to nitrogen deficiency, 30 March 2023, *Informationsdienst Wissenschaft (idw)*, Germany, <https://idw-online.de/en/news811818>
- How plants adapt to nitrogen deficiency, 30 March 2023, *EurekAlert*, *American Association for the Advancement of Science (AAAS)*, USA, <https://www.eurekalert.org/news-releases/984540>

MEDIA NEWS IN BANGLA

- নাইট্রোজেন নিয়ন্ত্রণকারী জিনের সন্ধান, [Channel24Live](https://www.facebook.com/channel24krishi/videos/790255845607277) কৃষি 24 | Krishi 24 | ০৯ মে ২০২৩
(<https://www.facebook.com/channel24krishi/videos/790255845607277>)
- ফসলে নাইট্রোজেন নিয়ন্ত্রণকারী নতুন জিন আবিষ্কার, দৈনিক কালের কণ্ঠ ০৮ অক্টোবর ২০২২
- ফসলে নাইট্রোজেন নিয়ন্ত্রণকারী নয়া জিন আবিষ্কার, দৈনিক জনকণ্ঠ ০৮ অক্টোবর ২০২২

COUNTRY VISITED

Japan, Singapore, Germany, Italy, France, Belgium, Switzerland, Netherland, Croatia, Luxemburg

LANGUAGE SKILLS

Bengali	Native
English	Fluent in speaking and writing
German	Competence level A2
Arabic	Good in reading and writing

REFERENCES

- 1. Professor Dr. Jens Léon (PhD Supervisor)**
INRES-Plant Breeding, University of Bonn
D-53115, Bonn
Head of Charge, Field Lab Campus Klein-Altendorf, University of Bonn
Klein-Altendorf 2, 53359 Rheinbach, Germany
Email: j.leon@uni-bonn.de
- 2. Dr. Agim Ballvora (PhD Mentor)**
INRES-Plant Breeding, University of Bonn
D-53115, Bonn, Germany
Email: ballvora@uni-bonn.de
- 3. Professor Dr. Tofazzal Islam (Master's Supervisor)**
Founding Director, Institute of Biotechnology and Genetic Engineering
Bangabandhu Sheikh Mujibur Rahman Agricultural University
Gazipur 1706, Bangladesh
Email: tofazzalislam@bsmrau.edu.bd
- 4. Prof. Dr. Lam-Son Phan Tran (Collaborator)**
Department of Plant and Soil Science
Institute of Genomics for Crop Abiotic Stress Tolerance
Texas Tech University, Lubbock, Texas, USA

Email: son.tran@ttu.edu