Curriculum Vitae



Dr. Md Shafikur Rahman

Faculty Member
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Research focus: Organic agriculture | Organic plant breeding | Pulse crops | Sustainable horticulture

RESEARCH PROFILE

Agricultural scientist and plant breeder specializing in organic plant breeding, pulse crop diversity (*Lens culinaris*) and sustainable horticultural crop management. PhD degree (2025) in agricultural science (Dr. agr.) from the University of Kassel (Germany) investigating natural selection dynamics and adaptation strategies for lentil genotypes under organic cropping systems. Complementary training in horticultural science (International Master in Horticultural Sciences, Italy, Germany and Austria), plant tissue culture and micropropagation, and molecular marker characterization (SSR, R APD) across rice, Brassica, groundnut and other crops. Faculty member at Patuakhali Science and Technology University, Bangladesh, since 2010, with experience in student supervision and 18 peer-reviewed journal publications. Seeking postdoctoral opportunities focused on resilient pulse crops, organic breeding, and sustainable crop production systems.

CORE RESEARCH EXPERTISE AND TECHNICAL EXPERTISE

- **Plant breeding & field research:** Organic plant breeding and organic agriculture; natural selection and evaluation of elite genotypes and diverse populations; field trials and fieldwork; adapting genotypes to new environments.
- **Pulse crops:** Lentil (*Lens culinaris*) – principal doctoral crop (performance and adaptability of diverse populations); studies on grasspea and groundnut; co-author of lentil and chickpea yield-prediction research; conservation and management of agricultural commodities including cereals, oils and pulses.
- **Horticulture & tissue culture:** International Master in Horticultural Sciences; plant cell and tissue culture, in-vitro regeneration and micropropagation; research on tomato, gerbera and macadamia.
- **Molecular genetics:** DNA fingerprinting (DNA isolation, quantification, PCR, gel electrophoresis, SSR and RAPD markers) and genome sequence analysis.
- **Statistical and Computational Tools:** RStudio, PopGen, DNAfrag analysis, GenAlEx, PowerMarker and Arlequin, along with several online bioinformatics pipelines.
- **Languages:** English (full professional proficiency), Bengali (native or bilingual), German, Italian, Hindi, Urdu and Arabic (elementary).

EDUCATION

04/2021–08/2025: **Doctor of Agricultural Science (Dr. agr.),** University of Kassel, Germany. Dissertation: Performance and adaptability of diverse populations of lentils (*Lens culinaris* Medikus).

09/2012–08/2014: **International Master in Horticultural Sciences** (IMAS), Result: 105(1) (GPA, Italy), University of Bologna, Italy; Technical University of Munich, Germany; University of Natural Resources & Applied Life Sciences, Austria.

01/2006–06/2007: **M.Sc. in Genetics and Plant Breeding**, Result: 3.875 out of 4.00 (GPA, Bangladesh), Bangladesh Agricultural University, Mymensingh, Bangladesh.

01/2001–12/2005: **B.Sc. in Agricultural Science**, Result: First class, Bangladesh Agricultural University, Mymensingh, Bangladesh.

PROFESSIONAL AND RESEARCH EXPERIENCE

- 05/2010–present:

Faculty Member & Research Supervisor

Dept. of Plant Biotechnology, Patuakhali Science and Technology University, Bangladesh

• Conduct undergraduate and postgraduate courses in Plant Biotechnology, Plant Breeding, and Genetics.

• Lead research projects on morphological and molecular characterization of stress-tolerant crops (salt-tolerant rice, jute, and Brassica species). Supervise M.Sc. thesis research.

- 04/2021–08/2025:

Doctoral Researcher — "LinSel" Pulse Project

University of Kassel, Witzenhausen, Germany

• Designed field experiments across multiple locations to assess natural selection, yield stability, and agrobiodiversity of composite cross populations of lentil (*Lens culinaris*).

• Evaluated morphological traits, disease tolerance, and crop competitiveness under organic farming practices.

- 06/2005–09/2009:

Research Associate — National Crop Variety Characterization

Seed Wing, Ministry of Agriculture, Government of the People's Republic of Bangladesh

• Executed national project on morphological and SSR-marker based fingerprinting of released crop varieties (Rice, Groundnut, Pulses). Published 5 co-authored book volumes documenting national germplasm.

PEER-REVIEWD JOURNAL PUBLICATIONS:

1. A Triacca, G Nerucci, F Leoni, S Carlesi, M Reckling, B Horneburg, **MS Rahman**, AC Moonen, and C Nendel (2026). **Lentil and chickpea crop growth and yield prediction across Europe**. European Journal of Agronomy, 176: 128061.
2. NNahar, **MS Rahman**, MM Rashad, MR Islam, and K Khatun (2026). **Influence of Explants and Sterilants on *In-Vitro* Regeneration of Gerbera (*Gerbera jamesonii*)**. Journal of Bioscience and Agriculture Research, 36(01): 2836-2844.
3. MM Rashad , **MS Rahman**, A Biswas , SK Acharjee , MR Islam , A Husna , and K Khatun (2026). **Impact of Short-Term Waterlogging Stress on Plant Morphology, Chlorophyll, and Carotenoid Contents of Summer Tomato.** Journal of Patuakhali Science and Technology University, 16 (1-2).
4. **MS Rahman**, MKH Sohag, L Rahman, SMM Azam, and K Khatun 2020: **Heterosis in Hybrids between Local and High Yielding Rice (*Oryza sativa* L.) Varieties of Bangladesh**. International Journal of Innovative Research, 5(2):17–24.
5. **MS Rahman,** MKH Sohag, L Rahman, MS Alam, UK Nath, and MK Bashar 2020: **Genetic Fingerprinting for the Protection of Local Rice (*Oryza sativa* L.) Cultivars of Bangladesh**. Journal of Advance Biotechnology and Experimental Therapeutics 3(3): 182-193.
6. **MS Rahman** 2020: **A General Introduction of Propagation and Micropropagation Techniques of Macadamia Nut (*Macadamia spp.*)**. *Journal of Advance Biotechnology and Experimental Therapeutics 3(2)*: 102-108.
7. K Khatun, **MS Rahman**, B Ahmed, MR Islam, MZ Hassan, and MHJ Biplob 2019: **Growth and Yield Performance of Grasspea under Different Methods of Sowing and Pre-Emergence Irrigation**. Advances in Biological Research, © IDOSI Publications, 13 (3): 89-94.
8. SMM Azam, MS Islam, MS Rahman, P Shahanaz, and SMS Alam 2019: **DNA fingerprinting and molecular characterization of Brassica cultivars using RAPD markers**. Research Journal of Biotechnology, 14 (8): 40-44.
9. **MS Rahman**, SMM Azam, MS Islam, P Shahanaz, and SMS Alam 2019: **Molecular Characterization of Brassica Cultivars through RAPD Markers.** United International Journal for Research & Technology (UIJRT), 1(3):41-45.
10. **MS Rahman**, MK Alam, QKJ Mustakima, MKH Sohag, NU Ahmed, UK Nath, MS Alam, and L Rahman 2016: **SSR Based Molecular Diversity Study in Local Rice (*Oryza sativa* L.) Genotypes of Bangladesh**. International Journal of Innovative Research, 1(2):17–24.
11. MH Rashid, **MS Rahman**, SC Nath, SSRM Mahe, A Sorwar, and MT Ahmed 2016: **Use of RAPD Markers to Analyze Genetic Variability of Introgressed Brassica Lines**. The Agriculturists 14(1):

122-133.

12. **MS Rahman,** MKH Sohag, and L Rahman 2014: **Distinctness of 110 Rice (*Oryza sativa* L.) Varieties of Bangladesh Using Morphological Traits**. Journal of Bangladesh Agricultural University 12(1): 29–36.
13. **MS Rahman**, MKH Sohag, and L Rahman 2010: **Microsatellite Based DNA Fingerprinting of 28 Local Rice (*Oryza sativa* L.) Varieties of Bangladesh**. Journal of the Bangladesh Agricultural University. 8(1): 7-17.
14. **MS Rahman**, and MS Alam 2008: **Morphomolecular Genetic Study of Some Selected Groundnut Genotypes with Microsatellite Marker**. Journal of the Bangladesh Agricultural University 6(1): 1-9.
15. MS Islam, **MS Rahman**, MS Alam, and MN Islam 2008: **Isolation and Molecular Characterization of 23 Groundnut (*Arachis hypogaea* L.) Genotypes Using Microsatellite Markers**. Bangladesh Journal of Agricultural Science 35(1): 67-75.
16. **MS Rahman**, MS Islam, MN Islam, and L Rahman 2008: **Morphological Traits of Distinctness of 91 rice (*Oryza sativa* L.) Varieties/Cultivars/Landraces of Bangladesh**. Bangladesh Journal of Agricultural Science 35 (2):189-199.
17. L Rahman, MN Islam, **MS Rahman**, MS Islam, MS Alam, and MK Bashar 2008: **Characterization of 94 Rice (*Oryza sativa* L.) Varieties of BANGLADESH Based on Microsatellite Loci**. Bangladesh Journal of Agricultural Science 35(1): 97-112.
18. **MS Rahman**, and MS Alam 2007: **Genetic Diversity Study of 10 Groundnut (*Arachis hypogaea* L.) Genotypes Using Microsatellite Marker**. Journal of the Bangladesh Society of Agricultural Science & Technology 4(3&4): 165-168.

BOOKS AND PUBLISHED NATIONAL REPORTS: ****ISBN: 984-300-001120-8*

• Rahman L., *et al.* (including **Rahman MS**) (2007–2010). **Plant Varieties of Bangladesh: Morphological and Molecular Characterization** (Volumes 1–4 & Rice Special Edition). Seed Wing, Ministry of Agriculture, Govt. of Bangladesh.

IINTERNATIONAL FIELD EXPOSURE AND ACADEMIC EXCURSSION

- **Germany:** Genebank Leibniz Institute of Plant Genetics (IPK Gatersleben), Chicorée Boss, Scherzer Gemüse, Spargelhof Sigllechner, Marktgemeinschaft Bodenseeobst.
- **Italy & Austria:** University of Bologna Experimental Station, Agri-Food & Industrial Laboratories, Winery & Viticulture Wieselthaler, Stefan Weingut Alphart.
- **Bangladesh:** BRRI (Rice Research Inst.), BARI (Agricultural Research Inst.), BJRI (Jute Research Inst.), SRDI, Cotton Research Centre, Regional Agricultural Research Station (RARS), etc.

RESEARCH GRANTS, FELLOWSHIPS, AND AWARDS

• 2020 – 2024: PhD Fellowship for University of Kassel (Germany), Ministry of Science & Technology, Bangladesh.
• 2019 – 2021: PSTU Research Grant — Molecular and morphological profiling of local pulse/cereal landraces.
• 2016 – 2017: Ministry of Science and Technology (MoST) Research Grant, Government of Bangladesh.
• 2012 – 2014: ERASMUS MUNDUS MSc Scholarship, European Commission (Full double-degree grant).
• 2012: Plant Biotechnology MSc Fellowship, Wageningen University & Research (WUR), Netherlands.
• 2010 – 2011: University Grants Commission (UGC) Research Grant, Bangladesh

ACADEMIC REFEREES

Prof. Dr. Gunter Backes
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