



# Dr. Mohammad Mobarak Hossain

Senior Scientific Officer

Bangladesh Wheat and Maize Research Institute (BWMRI)

## Professional Profile

More than 13 years of expertise in the on-farm research on wheat, maize and rice agronomy and breeding research. Particularly in developing and disseminating superior agro-technologies to the farmers, aiming to increase farm income and achieve food sufficiency through the most efficient use of resources.

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📍 On-Farm Research Division, BWMRI, Nashipur, Dinajpur-5200

## Education

### Doctor of Philosophy

Agronomy | Bangladesh Agricultural University | 2020

“Crop Productivity and Weed Dynamics in Two Cropping Patterns as Influenced by Weed Management Under Conservation Agriculture”

### Master of Science

Agronomy | Bangladesh Agricultural University | 2011  
Cumulative GPA 4.00/4.00 (University Gold Medal)

“Effect of Sowing Dates and Variety on The Yield of Tropical Sugar Beet (*Beta vulgaris* L.)”

## Work Experience

### SENIOR SCIENTIFIC OFFICER

Bangladesh Wheat and Maize Research Institute | Dinajour | 2024 – present

- Extension of BWMRI developed wheat and maize varieties
- Motivating the farmers and extension workers to use of modern methods in wheat and maize cultivation
- Conduct on-farm research and coordination for reducing the yield gap of farmers' fields and above all increasing farmers' income

**Overview:** Extension of climate resilience wheat and maize varieties and adoption of smart production technologies to minimize yield gap in farmers' field

### ASSOCIATE SCIENTIST

International Rice Research Institute | Dhaka | 2017 – 2023

- Research program planning, development and execution on IRRI breeding lines to be released as Bangladeshi varieties for different environments.
- Data collection, analysis, reporting and presentation
- Dissemination of superior agro-technologies through participatory varietal selection and demonstration trials
- Administer the on-farm trials and supervise the project staff of nationally and internationally funded projects.
- Organize trainings, workshops, crop-cut and field days to share knowledge related to activities, varieties and technologies.

**Overview:** Developed (as a team member) HYV rice varieties : BAU Dhan3 for Boro season and RaBi dhan 1 for T. aman season.

### ON-FARM RESEARCHER

Murdoch University Australia | Bangladesh Agricultural University | 2013 – 2017

- Conducted 16 on-farm research to validate the effect of conservation agriculture on the soil weed seedbank dynamics crop productivity under rice-mustard-rice and rice-wheat-mungbean cropping systems.

**Overview:** Awarded the Doctor of Philosophy in Agronomy degree.

### MS RESEARCH FELLOW

Bangladesh Agricultural University Research System | Mymensingh | 2010 – 2011

- Conducted on-station experiments to identify the best seeding date and cultivar of tropical sugar beet (*Beta vulgaris* L.) in Bangladesh

**Overview:** Awarded the Master of Science in Agronomy degree.

### EDITORIAL BOARD MEMBER | 2020 – present

- International Journal of Applied Agricultural Sciences
- Journal of Current Opinion in Crop Science

## Field of Specialization

- Wheat, maize and rice agronomy and breeding
- On-farm research and technology transfer
- Conservation agriculture
- Cropping systems
- Tillage, crop residues and herbicides
- Soil weed seedbank dynamics
- Participatory varietal testing

## Publications

	International	National
Articles	32	23
Books	01	
Short-com.	01	
Conference paper	06	11
Posters	04	

## Research Achievements

Technology Developed	06
Research Program Developed	12
Research Program Executed	12
Research Program Supervised	12

## List of Publications

### (a) Scientific journal

(i) Full paper: 55

### (a) Paper Published in the Reputed International Journal

Principal Author: 17

1. **Hossain, M.**, Biswas, P., & Islam, R. (2023). Cold-Tolerant and Short-Duration Rice (*Oryza sativa* L.) for Sustainable Food Security of the Flash Flood-Prone Haor Wetlands of Bangladesh. *Sustainability*, 15(24), 16873. <https://doi.org/10.3390/su152416873>
2. **Hossain, M.M.** & Islam, M.R. (2022). Farmers' Participatory Alternate Wetting and Drying Irrigation Method Reduces Greenhouse Gas Emission and Improves Water Productivity and Paddy Yield in Bangladesh. *Water*, 14, 1056. <https://doi.org/10.3390/w14071056>
3. **Hossain, M.M.**; Islam, M.; Biswas, P. (2022). Participatory Variety Testing to Replace Old Mega Rice Varieties with Newly Developed Superior Varieties in Bangladesh. *International Journal of Plant Biology*, 13, 356–367. <https://doi.org/10.3390/ijpb13030030>
4. **Hossain, M.**, Begum, Bell, R., Hashem, A., Rahman, M., & Sharif, A. (2022). Plant bioassays to detect herbicide residues in intensive rice-based cropping patterns under Conservation Agriculture. *Journal of Research in Weed Science*, 5(3), 126-136. <https://doi.org/10.26655/JRWEEDSCI.2022.5.6>
5. **Hossain, M.M.**, Begum, M., Hashem, A., Rahman, M.M., Haque, M. E., & Bell, R.W. (2021). Continuous Practice of Conservation Agriculture for 3–5 Years in Intensive Rice–Based Cropping Patterns Reduces Soil Weed Seedbank. *Agriculture*, 11 (9), 895. <https://doi.org/10.3390/agriculture11090895>
6. **Hossain, M.M.**, Begum, M., Hashem, A., Rahman, M.M., Sabagh, A.E., & Bell, R.W. (2021). Strip tillage and crop residue retention decrease the size but increase the diversity of the weed seed bank under intensive rice–based crop rotations in Bangladesh. *Agronomy*, 11(6), 1164. <https://doi.org/10.3390/agronomy11061164>
7. **Hossain, M.M.**, Begum, M., Bell, R.W., 2022. Land Use, Productivity, and Profitability of Traditional Rice–Wheat System Could be Improved by Conservation Agriculture. *Research on World Agricultural Economy*, 3(2), 516. <http://dx.doi.org/10.36956/rwae.v3i2.516>
8. **Hossain, M.M.**, Begum, M., & Bell, R. W. (2022). Higher Profitability of Wheat–Mungbean–Rice System Through Conservation Agriculture Practice in Sub–Tropical Climate of Bangladesh. *Archives of Agriculture Research and Technology*, 3(2), 1033. <https://doi.org/10.54026/AART/1033>
9. **Hossain, M.M.**, Begum, M. & Rahman, M. M. (2021). Studies the residual effect of six herbicides applied to the minimum tillage non–puddled transplanted winter and summer rice in Bangladesh. *Journal of Agricultural Research Pesticides and Biofertilizers*, 2(2), 1–6. <http://doi.org/07.2021/1.1033>
10. **Hossain, M.M.**, Begum, M., Rahman, M., Hashem, A., Bell, R.W., & Haque, M.E. (2021). Effects of the components of conservation agriculture on the profitability of rice (*Oryza sativa* L.) in the Eastern Gangetic Plain of Bangladesh. *International Journal of Agricultural and Life Sciences*, 7(1), 333–337. <https://doi.org/10.22573/spg.ijals.021.s122000103>
11. **Hossain, M.M.**, Begum, M., Rahman, M.M., Hashem, A., Bell, R., & Haque, M.E. (2021). Influence of non–puddled transplanting and residues of previous mustard on rice (*Oryza sativa* L.). *International Journal of Agricultural Sciences and Technology*, 1(1), 8–14. <https://doi.org/10.51483/IJAGST.1.1.2021.8–14>
12. **Hossain, M.M.**, Begum, M., Rahman, M., Hashem, A., & Bell, R. (2021). Resource conservation technology for sustainable productivity of intensive rice–based cropping pattern in Bangladesh. *International Journal of Agricultural Science and Food Technology*, 7(1), 053–060. <https://doi.org/10.17352/2455–815X.000088>
13. **Hossain, M.M.**, Begum, M., Hashem, A., Rahman, M., & Bell, R. (2021). Minimum tillage non–puddled transplanted rice (*Oryza sativa* L.): Weed control and economics under conservation agriculture practice in Bangladesh. *Acta Scientifica Malaysia*, 5(2), 47–55. <https://doi.org/10.26480/asm.02.2021.41.48>
14. **Hossain, M.M.**, Begum, M., Hashem, A., Rahman, M.M., & Bell, R.W. (2021). Soil weed seedbank response to tillage types and crop residue mulches in different cropping patterns. *Journal of Research in Weed Science*, 4(2), 165–176. <https://doi.org/10.26655/JRWEEDSCI.2021.2.3>
15. **Hossain, M.M.**, Begum, M., Hashem, A., Rahman, M., & Bell, R.W. (2021). Mulching and weed management effects on the performance of rice (*Oryza sativa* L.) transplanted in non–puddled soil. *Journal of Wastes and Biomass Management*, 3(1), 13–21. <https://doi.org/10.26480/jwbm.01.2021.13.21>

16. **Hossain, M.M.**, Begum, M., Hashem, A., Rahman, M., & Bell, R. (2020). Weed control in strip planted wheat under conservation agriculture practice is more effective than conventional tillage. *Scientific Journal of Crop Science*, 9(6), 438–450. <https://doi.org/10.14196/sjcs.v9i6.1593>
17. **Hossain, M.M.**, Begum, M., Rahman, M.M., Hashem, A., Bell, R., & Haque, M.E. (2020). Assessing the trends of soil weed seed bank in conservation agriculture systems. *Fundamental and Applied Agriculture*, 5(4), 555–567. <https://doi.org/10.5455/faa.127820>

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**Co-Author: 01**

1. Bell, R.W., Haque, M.E., Jahiruddin, M., Rahman, M.M., Begum, M., Miah, M.A., Islam, M.A., Hossen, M.A., Salahin, N., Zahan, T., **Hossain, M.M.**, Alam, M.K., & Mahmud, M.N.H. (2019). Conservation agriculture for rice–based intensive cropping by smallholders in the eastern gangetic plain. *Agriculture (Switzerland)*, 9(1). <https://doi.org/10.3390/agriculture9010005>

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**(b) Other International & National Journal**

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**Principal Author: 19**

1. **Hossain, M.M.**, Begum, M., & Rahman, M. (2021). The behavior of weed seed bank to different tillage and residue mulch treatments after three years of cropping in Bangladesh. *Azarian Journal of Agriculture*, 8(1), 29–37. <https://doi.org/10.29252/azarinj.050>
2. **Hossain, M.M.**, Begum, M. & Rahman, M.M. (2021). Single–pass tillage combined with herbicides and rice stubbles enhances weed control and yield of rapeseed in Bangladesh. *DYSONA – Applied Science*, 2, 36–46. <http://dx.doi.org/10.30493/das.2021.288244>
3. **Hossain, M.M.**, Begum, M., & Rahman, M. (2021). Strip planted mechanical seeding of mustard and mungbean with crop residue retention is more profitable than conventional practice. *Journal of Agriculture and Applied Biology*, 2(1), 27–34. <https://doi.org/10.11594/jaab.02.01.04>
4. **Hossain, M.M.**, Begum, M., Hashem, A., Rahman, M., & Bell, R. W. (2021). Weed populations of intensive rice based cropping system as affected by tillage and increased crop residues in Bangladesh. *The Journal of Agriculture and Natural Resources Sciences*, 8(1), 1–12. <https://doi.org/10.5281/zenodo.4892291>
5. **Hossain, M.M.**, Begum, M., & Rahman, M. (2021). Distribution pattern of weed seedbank in strip and bed planted sandy clay loam soil after five years of cropping in Bangladesh. *Journal of Current Opinion in Crop Science*, 2(1), 20–26. <https://doi.org/10.5281/zenodo.5003918>
6. **Hossain, M.M.**, Begum, M., Rahman, M., Hashem, A., & Bell, R. W. (2021). Impact of unpuddled transplanting and crop residue mulching on the yield of rice (*Oryza sativa* L.). *International Journal of Agronomy and Agricultural Research*, 18(3), 11–19. <https://doi.org/10.5281/zenodo.4801584>
7. **Hossain, M.M.**, Kader, M.A. & Kashem, M.A. (2021). Optimum planting date for the maximum tuber yield of tropical sugar beet (*Beta vulgaris* L.) genotypes in the Old Brahmaputra Floodplain. *Journal of Scientific Agriculture*, 5, 44–48. <https://doi.org/10.5281/zenodo.7033649>
8. **Hossain, M.M.**, Begum, M., & Bell, R. (2020). On–Farm evaluation of conservation agriculture practice on weed control and yield of wheat in northern Bangladesh. *Current Research in Agricultural Sciences*, 7(2), 84–99. <https://doi.org/10.18488/journal.68.2020.72.84.99>
9. **Hossain, M.M.**, Begum, M., & Bell, R.W. (2020). Herbicides and rice straw mulching boosts the weed control and profit of strip planted rapeseed in old Brahmaputra Floodplain. *International Journal of Advanced Technology & Science Research*, 1(2), 184–199. <https://doi.org/10.5281/zenodo.5002810>
10. **Hossain, M.M.**, Begum, M., Hashem, A., & Bell, R.W. (2020). Interactive effects of strip planting, herbicides and wheat straw mulch on weed control and yield of mungbean in northern Bangladesh. *International Journal of Scientific Research in Multidisciplinary Studies*, 6(12), 1–9. <https://doi.org/10.5281/zenodo.4889117>
11. **Hossain, M.M.**, Begum, M., & Rahman, M. (2020). Yield potentials and economics of rice (*Oryza sativa* L.) as affected by unpuddled transplanting and crop residue retention. *Journal of Agricultural Research Advances*, 2(3), 30–36. <https://doi.org/10.5281/zenodo.5002795>
12. **Hossain, M.M.**, Begum, M., Rahman, & Akanda, M. (2016). Weed management on direct–seeded rice system–A review. *Progressive Agriculture*, 27(1), 1–18. <https://doi.org/10.3329/pa.v27i1.27526>
13. **Hossain, M.M.** (2016). Recent perspective of herbicide: Review of demand and adoption in world agriculture. *Journal of the Bangladesh Agricultural University*, 13(1), 19–30. <https://doi.org/10.3329/jbau.v13i1.28707>
14. **Hossain, M.M.**, Faruk, M., Begum, M., & Salam, M.A. (2016). Diversities of soil weed seed bank and rice yield performance in response to tillage method and weeding regime. *Progressive Agriculture*, 27, 39–44. <https://doi.org/10.3329/pa.v27i1.27533>



15. **Hossain, M.M.**, & Begum, M. (2015). Soil weed seed bank: Importance and management for sustainable crop production– A Review. *Journal of the Bangladesh Agricultural University*, 13(2), 221–228. <https://doi.org/10.3329/jbau.v13i2.28783>
16. **Hossain, M.M.** (2014). The apotheosis of conservation agriculture– A review. *Journal of the Bangladesh Agricultural University*, 11(2), 241–248. <https://doi.org/10.3329/jbau.v11i2.19901>
17. **Hossain, M.M.**, Begum, M., Rahman, M.M., & Hashem, A. (2015). Response of T. Aman and Boro rice to residue retention under strip tillage. *Bangladesh Agronomy Journal*, 18(2), 39–44. <https://doi.org/10.3329/baj.v18i2.28902>
18. **Hossain, M.M.**, Begum, M., Rahman, M., & Hashem, A. (2014). Yield response of mustard as influenced by weed management practice under conservation agriculture system. *Bangladesh Journal of Weed Science*, 4 & 5, 87–92. <https://doi.org/10.5281/zenodo.5002940>
19. **Hossain, M.M.**, & Begum, M. (2014). Study on economically profitable cropping patterns in a selected area of Mymensingh district. *Bangladesh Journal of Crop Science*, 25, 103–113. <https://doi.org/10.5281/zenodo.5002862>

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#### Co-Author: 18

1. Mahmud, A., Begum, M., **Hossain, M.**, Munira, S., & Sultana, A. (2023). Field Assessment of Strip-Tillage for Summer Rice Cultivation in Bangladesh. *Sumerianz Journal of Agriculture and Veterinary*, 61, 6–11. <https://doi.org/10.47752/sjav.61.6.11>
2. Mahmud, A., **Hossain, M.M.**, Hossain, M., Bayazid, K., & Islam, M. (2021). Tobacco dust combined with fertilizers improves the soil health and profit of rice cultivation in silty loam soil of Bangladesh. *Journal of Agriculture, Food and Environment*, 2(1), 45–49. <https://doi.org/10.47440/JAFE.2021.2108>
3. Begum, M., Hasan, R., & **Hossain, M.M.** (2021). Optimizing the Seed Rate for Maximized Yield and Benefits of Wheat Under Strip Tillage in Bangladesh. *SAARC Journal of Agriculture*, 19(1), 45–56. <https://doi.org/10.3329/sja.v19i1.54777>
4. Islam, M., **Hossain, M.M.**, Sarker, M., Sardar, M., & Hossain, M. (2020). Evaluation of some traditional rice (*Oryza sativa* L.) cultivars for the earliness, yield and other agronomic traits in southern Bangladesh. *Research in Agriculture Livestock and Fisheries*, 7(3), 393–402. <https://doi.org/10.3329/ralf.v7i3.51358>
5. Shahabuddin, M., **Hossain, M.M.**, Salim, M., & Begum, M. (2016). Efficacy of pretilachlor and oxadiazon on weed control and yield performance of transplant Aman rice. *Progressive Agriculture*, 27(2), 119–127. <https://doi.org/10.3329/pa.v27i2.29320>
6. Khatun, M., Begum, M., & **Hossain, M.M.** (2016). Effect of tillage method and weeding regime on soil weed seed bank status and yield performance of wheat. *Progressive Agriculture*, 27, 9–19. <https://doi.org/10.3329/pa.v27i1.27528>
7. Kabir, G., Begum, M., **Hossain, M.M.**, & Anwar, M. (2015). Effect of weeding regime on weed vegetation and yield performance of wheat in two locations of Mymensingh district. *Progressive Agriculture*, 25, 23–30. <https://doi.org/10.3329/pa.v25i0.24068>
8. Rashid, M., **Hossain, M. M.**, & Sarker, M. S. A. (2014). Economics of the growing rice seedlings in dry seed bed covered with ploythene sheet during boro season. *Journal of Agroforestry and Environment*, 8(1), 159–162. <https://doi.org/10.5281/zenodo.5003164>
9. Mohammad, N., Islam, N., Ziauddin, A., & **Hossain, M.M.** (2014). Effect of variety and method of USG placement on the yield performance of transplanted aman rice. *Journal of the Bangladesh Agricultural University*, 12(1), 7–12. <https://doi.org/10.3329/jbau.v12i1.21183>
10. Sarker, A., Mohammad, N., **Hossain, M.M.**, & Rokonujjaman, M. (2014). Effect of bio-slurry on pot planted tomato. *Journal of Agroforestry and Environment*, 8(1), 25–28. <https://doi.org/10.5281/zenodo.5003606>
11. Wakel, A., **Hossain, M.M.**, Mohammad, N., & Sarker, K. (2013). Effect of different levels of N and P on the yield of BINA dhan 7 in Old Brahmaputra Floodplain Soil. *Journal of Agroforestry and Environment*, 7(2), 205–210. <https://doi.org/10.5281/zenodo.5003308>
12. Rahman, M., **Hossain, M.M.**, Mohammad, N., & Sarker, K. (2013). Effect of hydro-priming and incubation method on seedling establishment of rice variety CV. BRRI dhan29. *Bangladesh Journal of Seed Science and Technology*, 17(1 & 2), 115–120. <https://doi.org/10.5281/zenodo.5003375>
13. Rokonujjaman, M., **Hossain, M.M.**, Mohammad, N., & Sarker, K. (2013). Effect Of Bio-Slurry on Tomato Production In Floodplain Soil. *Bangladesh Journal of Seed Science and Technology*, 17(1 & 2), 121–128. <https://doi.org/10.5281/zenodo.5003411>
14. Rahman, F., Rokonujjaman, M., **Hossain, M.M.**, Mohammad, N., & Sarker, A. (2013). Effect of reduced rates of recommended fertilizer on the cultivation of BINA Dhan 7. *Bangladesh Journal of Seed Science and Technology*, 16(1 & 2), 59–65. <https://doi.org/10.5281/zenodo.5003497>

15. Sarker, K., Samad, M., Kader, M.A., **Hossain, M.M.**, & Mohammad, N. (2013). Effect of osmo-priming on seedling establishment of dry bed direct seeded boro rice. *Bangladesh Journal of Crop Science*, 24, 25–31. <https://doi.org/10.5281/zenodo.5003784>
16. Sarker, M.S.A., Bhuiya, M., Kader, M.A., **Hossain, M.M.**, & Mohammad, N. (2013). Yield performance of hybrid rice varieties during boro season under different levels of USG application. *Bangladesh Journal of Crop Science*, 24, 193–199. <https://doi.org/10.5281/zenodo.5003691>
17. Akanda, M.M., Islam, N., Brook, R.M., Kader, M.A., & **Hossain, M.M.** (2012). Residual effect of municipal solid waste compost and fertilizer on the performance of transplanted aman rice cv. BRRI dhan31 after boro rice. *Bangladesh Journal of Crop Science*, 22(1), 49–55. <https://doi.org/10.5281/zenodo.3970073>
18. Roy, C., Hossain, M.S., M. Abdul, K., Razzak, M., Islam, N., & **Hossain, M.M.** (2012). Screening of salinity tolerant rice cultivars. *Bangladesh Journal of Crop Science*, 22–23, 159–166. <https://doi.org/10.5281/zenodo.5003824>

#### **(ii) Short Communication: 01**

1. **Hossain, M.M.**, Begum, M. and Rahman, M. (2022). Soil Weed Seed Bank Dynamics After Two-Year of On-Farm Trials Under Conservation Agriculture in Bangladesh. *Biomedical Journal of Science & Technology Research*, 44(3)–2022. <https://doi.org/10.26717/BJSTR.2022.44.007054>

#### **(b) Books/Monographs/Bulletins**

##### **(i) Books: 01**

1. Haque, M.E., Bell, R., Jahiruddin, M., Hossain, M.M., Rahman, M.M., Begum, M., Hossen, M. A., Salahin, N., Zahan, T., **Hossain, M.M.**, Hashem, A., Islam, M.A., Vance, W., Hossain, I., Esdaile R.J., & Kabir, M.E. (2018). *Manual for Smallholders' Conservation Agriculture in Rice-based Systems* (1<sup>st</sup> Ed.). Murdoch University Press. p.108.

#### **(c) Seminar/Workshop/Symposium Proceedings**

##### **(i) International/National: 17**

##### **Principal Author: 12**

1. **Hossain, M.**, Islam, R., Biswas, P., Syed, A., Anisuzzaman, M., Emam, M., & Biswas, J. (2023). Evaluation of Cold-Tolerant and Short-Duration Breeding Lines for the Flash Flood Prone Haor Areas of Bangladesh. 6th International Rice Congress, 54. <https://doi.org/10.5281/zenodo.10036034>
2. **Hossain, M.**, Islam, R., Biswas, P., Syed, A., Anisuzzaman, M., Emam, M., & Biswas, J. (2023). BR11894–R–R–R–169: A Cold-Tolerant Breeding Line For Dry Season To Mitigate The Early Flash Flood Damage In The Haor Areas Of Bangladesh. 6th International Rice Congress, 417. <https://doi.org/10.5281/zenodo.10036015>
3. **Hossain, M.M.**, Hossain, M.K., Karmaker, B., Iftakharuddaula, K., & Islam, R. (2020). Participatory varietal evaluation to replace old mega variety with newly developed superior varieties in rice. *11<sup>th</sup> Biennial Conference of Plant Breeding and Genetics Society of Bangladesh (PBGSB)*, 54. <https://doi.org/10.5281/zenodo.4892702>
4. **Hossain, M. M.**, Begum, M., Rahman, M., Hashem, A., Haque, E., & Bell, R. (2017). Weed seed bank dynamics in long term trials of conservation agriculture. *2<sup>nd</sup> Conference on Conservation Agriculture for Smallholders (CASH-II)*, 43–45. <https://doi.org/10.5281/zenodo.5005785>
5. **Hossain, M.M.**, Begum, M., Rahman, M.M., Hashem, A., Bell, R., & Haque, M.E. (2017). Effect of strip tillage, residue mulching and weeding regimes on yield performance of T. aman rice. *2<sup>nd</sup> Conference on Conservation Agriculture for Smallholders*. <https://doi.org/10.5281/zenodo.5005393>
6. **Hossain, M.M.**, Begum, M., Rahman, M.M., Hashem, A., Haque, M.E., & Bell, R. (2017). Performance of Boro rice to weeding regimes and crop residues under strip tillage system. *2<sup>nd</sup> Conference on Conservation Agriculture for Smallholders*, 146–147. <https://doi.org/10.5281/zenodo.5005430>
7. **Hossain, M.M.**, Begum, M., Rahman, M., Hashem, A., Haque, E., & Bell, R. (2016). Increasing the productivity of rice–rice and rice–wheat system adopting mustard and mung bean under conservation agriculture practices. *15<sup>th</sup> Conference of Bangladesh Society of Agronomy (BSA)*, 92. <https://doi.org/10.5281/zenodo.5005053>
8. **Hossain, M.M.**, Begum, M., Hashem, A., Bell, R., & Haque, M.E. (2016). Effect of minimum tillage unpuddled transplanting on yield performance of four aman rice varieties. *15<sup>th</sup> Conference of Bangladesh Society of Agronomy (BSA)*, 88. <https://doi.org/10.5281/zenodo.5004904>
9. **Hossain, M.M.**, Begum, M., Hashem, A., Rahman, M.M., Haque, M.E., & Bell, R. (2015). Yield response of transplanted aman rice as influenced by weed management practice under conservation agriculture system. *25<sup>th</sup> Asian-Pacific Weed Science Society Conference*, 594. <https://doi.org/10.5281/zenodo.5005255>

10. **Hossain, M.M.**, Begum, M., Rahman, M.M., Hashem, A., Bell, R., & Haque, M.E. (2015). Mulching and weed management effects on performance of minimum tillage unpuddled transplanted rice (*Oryza sativa* L.). *Workshop on Minimum Tillage Unpuddled Rice Transplanting (MTURT)*, 8. <https://doi.org/10.5281/zenodo.5005182>
11. **Hossain, M.M.**, Begum, M., Rahman, M.M., Hashem, A., Haque, M.E., & Bell, R. (2014). Weed management in wheat (*Triticum aestivum* L.) under minimum tillage and crop residues. *Regional Conference on Conservation Agriculture for Smallholders in Asia and Africa*, 33–35. <https://doi.org/10.5281/zenodo.5005599>
12. **Hossain, M.M.**, Begum, M., Hashem, A., Bell, R., & Haque, M.E. (2014). Weed management in mustard (*Brassica napus* L.) under minimum tillage and crop residues. *Regional Conference on Conservation Agriculture for Smallholders in Asia and Africa*, 112–113. <https://doi.org/10.5281/zenodo.5005479>

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**Co-Author: 05**

1. Haque M.E., Bell, R.W., **Hossain, M.M.**, & Menon, R.K. (2017). Transplanting rice seedling in dry strip-tilled soil: A strategy to minimize soil disturbance during non-puddled transplanting. *2<sup>nd</sup> Conference on Conservation Agriculture for Smallholders (CASH-II)*. 130–131.
2. Hasan, M.R., Begum, M., Salam, M.A., & **Hossain, M.M.** (2016). Effect of seed rate on the yield performance of wheat under strip tillage. *15<sup>th</sup> Conference of Bangladesh Society of Agronomy (BSA)*, 89.
3. Rahman, M.M., Begum, M., Zahan, T., & **Hossain, M.M.** (2015). Weed management in conservation agriculture in Bangladesh. *25<sup>th</sup> Asian–Pacific Weed Science Society Conference*, 2.
4. Biswas. M., **Hossain, M.M.**, Ali, M.A. & Rahman, M.M. (2015). Crop establishment method and weed management effects on the performance of boro rice (cv. BRRI dhan28). *5<sup>th</sup> Conference on Weed Science Society of Bangladesh (WSSB)*, 70.
5. Mony, S. A., Begum, M., Rahman, M.M., & **Hossain, M.M.** (2015). Soil weed seed bank status at research and farmers' field. *5<sup>th</sup> Conference on Weed Science Society of Bangladesh (WSSB)*, 55.

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**Posters: 04**

1. **Hossain, M.**, Islam, R., Biswas, P., Syed, A., Anisuzzaman, M., Emam, M., & Biswas, J. (2023). BR11894–R–R–R–169: A Cold-Tolerant Breeding Line for Dry Season To Mitigate The Early Flash Flood Damage In The Haor Areas of Bangladesh. 6th International Rice Congress, 417. <http://dx.doi.org/10.13140/RG.2.2.10714.72644>
2. **Hossain, M.M.**, Begum, M., Rahman, M.M., Hashem, A., Haque, M. E., & Bell, R. (2015, October 13). *Yield Response of transplanted aman rice to weed management practice under conservation agriculture system* [Poster]. 25th Asian–Pacific Weed Science Society Conference, Indian Society of Weed Science, Jabalpur, Hyderabad, India. <https://doi.org/10.13140/RG.2.2.28981.40167>
3. **Hossain, M.M.**, Begum, M., Rahman, M.M., Hashem, A., Haque, M.E., & Bell, R. (2014, December 7). *Weed management in wheat (Triticum aestivum L.) under minimum tillage and crop residues* [Poster]. Regional Conference on Conservation Agriculture for Smallholders in Asia and Africa, Bangladesh Agricultural University, Mymensingh. <https://doi.org/10.13140/RG.2.2.35692.28803>
4. Jewel, Z.; Islam, A., Salam, A., Hasan, M., Saiyed, I., Hossain, K., **Hossain, M.** Islam, R. (2018, October 15–17). *NSIC Rc222 (IRRI154): A 'low hanging fruit' for wet season in Bangladesh* [Poster]. 5th International Rice Congress, October 15 - 17, 2018, Marina Bay Sands, 10 Bayfront Avenue, Singapore. <https://doi.org/10.13140/RG.2.2.18915.07203>

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**(d) Thesis: 02**

1. **PhD Thesis:** Crop Productivity and Weed Dynamics in Two Cropping Patterns as Influenced by Weed Management Under Conservation Agriculture (Submitted to the Department of Agronomy, Bangladesh Agricultural University in 2020)
  2. **MS Thesis:** Effect of Sowing Date and Variety on the Yield of Tropical Sugarbeet (*Beta vulgaris*) (Submitted to the Department of Agronomy, Bangladesh Agricultural University in 2011)
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## Outstanding Achievements

<b>(a) Achievements-06</b>		<b>Year</b>
1.	University Gold Medal Award	2016
2.	Award of Outstanding Contribution for Research on Weed Management for Conservation Agriculture	2017
3.	F H Khondaker Award for the Best Research Paper Presenter by the Bangladesh Society of Agronomy	2016
4.	Best Research Paper Presenter Award by the Weed Science Society of Bangladesh	2015
5.	Best Poster Presenter Award	2014
6.	National Science and Technology (NST) Fellowship from the Ministry of Science and Technology	2011

<b>(b) Other Achievements - 07</b>		
1.	Certificates of Excellence in Reviewing	2020-present

## Research Achievements

<b>(i). No. of Technology Developed - 04</b>		<b>Year</b>
1.	<b>RaBi Dhan-1:</b> It has developed from the IRRI rice breeding line, NSIC Rc222 (IRRI154). Yield potential of this variety 6.0 t ha <sup>-1</sup> with 1.5 and 0.5 t ha <sup>-1</sup> yield advantages over BRRI dhan39 and BR 11, respectively. However, the crop growth duration was very similar to BRRI dhan39 and 10 days earlier than BR 11. However, the grain quality of the line is equivalent to BRRI dhan39 and superior to BR 11.	2019
2.	<b>BauDhan-3:</b> The parental line of this variety is IRRI developed IR91820-25-BAY2-3-1. It is tolerant to blast disease and cold. BauDhan-3 was released to replace BRRI dhan28, the old mega rice variety in Bangladesh's Boro season.	2019
3.	Crop Productivity and Weed Dynamics in Two Cropping Patterns as Influenced by Weed Management Under Conservation Agriculture	2018
4.	Effect of Sowing Date and Variety on the Yield of Tropical Sugarbeet ( <i>Beta vulgaris</i> L.)	2011

<b>(ii). No. of Research Program Developed &amp; Executed - 12</b>		
1.	Climate-smart practices and varieties for intensive rice-based systems in Bangladesh and Cambodia	2017-18
2.	Popularization of BRRI dhan71 and BRRI dhan75 under AWD irrigation at Feni and Chattogram	2017-18
3.	On-farm evaluation of AWD irrigation to mitigate GHGs and increase farm income	2017-18
4.	Participatory variety testing to replace old mega rice varieties with newly developed superior varieties in Bangladesh	2017-18
5.	ACI-IRRI-PPP for rice breeding and seed in Bangladesh	2018-20
6.	NSIC Rc222 (IRRI154): A 'low hanging fruit' for wet season in Bangladesh	2018-20
7.	IR91820-25-BAY2-3-1: Blast and cold tolerant line for dry season in Bangladesh	2018-20
8.	Development of RaBi Dhan-1 and BauDhan-3 under ACI-IRRI-PPP project	2018-20
9.	Development of short-duration and cold-tolerant rice varieties for haor areas of Bangladesh	2020-present
10.	On-farm dissemination of BRRI dhan67 as cold tolerant rice variety in Bangladesh	2020-present
11.	BR11894-4R-169: A cold-tolerant rice breeding line	2020-present
12.	BR11894-4R-329: A short-duration rice breeding line	2020-present

<b>(iii). No. of Research Program Supervised - 12</b>		
1.	Improving farm productivity under T. Aman rice-Mustard-Boro rice cropping system at Feni an Chattogram	2017-18
2.	Field demonstration of BRRI dhan71 and BRRI dhan75 under AWD irrigation at Feni and Chattogram	2017-18
3.	On-farm evaluation of AWD irrigation to mitigate GHGs and increase water productivity	2017-18
4.	Participatory varietal evaluation to replace BRRI dhan28	2017-18
5.	Evaluation of breeding lines in the Regional Yield Trial (RYT) under cold stress at 18 sites of Haor regions at Habiganj, Nikli and Tahirpur	2020-present



6.	Evaluation of breeding lines in the RYT under non-stress at 18 sites of Haor regions at Habiganj, Nikli and Tahirpur	2020–present
7.	Evaluation of breeding lines in the Advanced Yield Trial (AYT) under cold stress at 11 sites of Haor regions at Habiganj, Nikli and Tahirpur	2020–present
8.	Evaluation of breeding lines in the AYT under non-stress at 11 sites of Haor regions at Habiganj, Nikli and Tahirpur	2020–present
9.	Evaluation of breeding lines in the Observational Yield Trial (OYT) under cold stress at BRRRI Habiganj	2020–present
10.	Evaluation of breeding lines in the OYT under non-stress at BRRRI Habiganj	2020–present
11.	Evaluation of IRRI 154 QTL deployed NILs in the AYT at BRRRI Habiganj	2020–present
12.	Identification of cold tolerant rice germplasm and parental selection using genomic prediction	2021–2022

## Trainings Participated

### (a) In Country:

Sl.	Organization	Year	Duration		Name of program
			Mos.	Days	
1.	International Rice Research Institute (IRRI) Bangladesh	2021	-	03	Modern rice breeding strategies for enhancing genetic gain and efficiency
2.	IRRI Bangladesh	2021	-	01	Experimental design, layout (trial setup) and data collection
3.	IRRI Bangladesh	2021	-	01	Rice hybridization techniques: Inbred and Hybrid
4.	IRRI Bangladesh	2021	-	01	RGA technology for shortening the breeding cycle
5.	IRRI Bangladesh	2021	-	01	Statistical analysis for plant breeding experiments
6.	IRRI Bangladesh	2021	-	01	Rice Seed System Network and Seed Market Potential of Bangladesh
7.	IRRI Bangladesh	2021	-	01	Gender: Concepts, Women Empowerment & Gender Responsive Rice Breeding
8.	Bangabandhu Sheikh Mujibur Rahman Agricultural University	2019	-	05	Training on Seed Science and Technology
9.	Bangladesh Rice Research Institute	2019	-	12	Rice Grain Quality Analysis
10.	Management Development Foundation	2018	-	03	Leadership and People Management
11.	IRRI, Bangladesh	2017	-	04	Rice Breeding for Product Development
12.	Bangladesh Agricultural University	2017	-	03	Hybrid Rice Technology for Building of Bangladeshi Professionals
13.	Bangladesh Agricultural University	2014	-	12	Data Analysis (MSTAT-C, SPSS)
14.	Bangladesh Agricultural University	2010	-	12	Basics of MS Office

### (b) Abroad:

Sl.	Country	Year	Duration		Name of program
			Mos.	Days	
1	Uganda	2021	-	10	Gender Responsive Plant Breeding
2	The Philippines	2020	-	14	Breeding for Results (B4R)
3	The Philippines	2019	-	05	Experimental Design and Data Analysis using the Statistical Tool for Agricultural Research (STAR)
4	The Philippines	2019	-	12	Rice Breeding Course



## Graduation

### Bachelor of Science

Agriculture (Honors) | Bangladesh Agricultural University | 2010

Cumulative GPA: 3.778 / 4.00

### Higher Secondary Certificate

Science

Dhaka Board | 2005

Cumulative GPA: 4.00 / 5.00

### Secondary School Certificate

Science

Dhaka Board | 2003

Cumulative GPA: 4.25 / 5.00

## Membership

1. Life member of Krishibid Institution, Bangladesh
2. Life member of Bangladesh Society of Agronomy
3. Life member of Weed Science Society of Bangladesh
4. Life member of Asian-Pacific Weed Science Society
5. Member of Plant Breeding and Genetics Society of Bangladesh

## SOFTWARES

### Data Analysis

- R Program
- Statistical Tool for Agricultural Research (STAR)
- Plant Breeding Tools (PBTools)
- Crop-STAT | Statistix | MSTAT-C
- SPSS | Survey Be



### Signature with Seal

**Dr. Mohammad Mobarak Hossain**  
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