

Curriculum Vitae

Mahfuz Rahman, PhD
Professor/Plant Pathology Extension Specialist
West Virginia University, Morgantown, WV 26506, USA.
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EDUCATION

PhD. Plant Pathology

SIMON FRASER UNIVERSITY, Burnaby, BC, CANADA.....2006

M. S. Plant Pathology

OREGON STATE UNIVERSITY, Corvallis, OR, USA.....2001

B. Sc. Agriculture (Hons)

BANGLADESH AGRICULTURAL UNIVERSITY, Mymensingh, Bangladesh.....1991

CAREER HISTORY

Professor West Virginia University, P.O. Box 6108, Morgantown, WV 26506.....5/2023-present

Associate Professor & Director of WVU Plant diagnostic clinic.....5/2017-4/2023

West Virginia University, P.O. Box 6108, Morgantown, WV 26506.

Assistant Professor.....6/2011-5/2017

West Virginia University, P.O. Box 6108, Morgantown, WV 26506.

Research Associate (Post doc).....4/2007-6/2011

North Carolina State University, Raleigh, NC 27607

Post Doctoral Fellow.....5/2006-4/2007

Department of Biology, Simon Fraser University, Burnaby, BC, Canada

Graduate Research Assistant (PhD).....9/2001 – 4/2006

Department of Biology, Simon Fraser University, Burnaby, BC, Canada

Research Assistant.....1/2001 – 8/2001

Department of Biology, Simon Fraser University, Burnaby, BC, Canada

Graduate Research Assistant (M.S.).....4/1998 – 12/2000

Oregon State University, Corvallis, OR

Research Scientist (Plant Pathology).....9/1991-3/1998

Bangladesh Rice Research Institute, Gazipur, Bangladesh

RESEARCH INTEREST & ONGOING RESEARCH

My applied and adaptive research program at West Virginia University is focused on finding multi-tactics based sustainable options for managing economically important diseases on fruits and vegetables. This integrated approach encompasses utilization of host resistance, cutting-edge technology such as PCR, qPCR, RTqPCR and next generation sequencing for early and accurate plant disease diagnosis, well-timed application of highly efficacious products as dictated by disease prediction model. Early and accurate diagnosis of plant problem remains the cornerstone of my research program that helps growers preventing major losses due to disease by avoiding the use of potentially infected transplant material or early application of remedial measures. For example, latently/quiescently infected tips and plug plants are major source of anthracnose disease in plug production system and fruiting field, respectively. Development of a reliable technique to quantify the extent of latent infection in transplant material complemented with a framework of disease-free transplant supply system is among a few ongoing research projects in my lab. Optimization and application of non-chemical based sustainable options such as use of beneficial microbes,

bio-fumigation, grafted plants on resistant root stocks and UV-C for plant disease management in protected culture are a few examples of research priorities. I published 45 peer reviewed journal articles, 9 peer reviewed book chapters, 80 extension and outreach articles, 35 abstracts and proceedings and 20 peer reviewed research reports.

PUBLICATIONS

Peer Reviewed Journal Article

- Razzaq, K., Mendoza, L.E.D., Babakhani, B. Azizi, A. Razzaq, H. **Rahman, M.** 2025. Integrated Management Strategies for Blackleg Disease of Canola Amidst Climate Change Challenges. *Journal of Fungi* 14: 3950.
- Das, S., Rahman, T., **Rahman, M.**, Porter, L. D., Rahman, Md. M., Dash, P. K., & Kamal, Md. M. 2024. Characterization of fall armyworm (*Spodoptera frugiperda* J. E. Smith) resistance in maize. *Archives of Phytopathology and Plant Protection*, 1–25.
<https://doi.org/10.1080/03235408.2024.2415150>
- Surovy MZ, Dutta S, Mahmud NU, Gupta DR, Farhana T, Paul SK, Win J, Dunlap C, Oliva R, **Rahman M**, Sharpe AG and Islam T. 2024. Biological control potential of worrisome wheat blast disease by the seed endophytic bacilli. *Front. Microbiol.* 15:1336515;
<https://doi.org/10.3389/fmicb.2024.1336515>
- **Mahfuz Rahman**, Tofazzal Islam, Lewis Jett and James Kotcon. 2023. Probiotic Bacteria, Anaerobic Soil Disinfestation and Mustard Cover Crop Biofumigation Suppress Soilborne Disease and Increase Yield of Strawberry in a Perennial Organic Production System. *Plant Disease* 107(8): 2490-2499
<https://doi.org/10.1094/PDIS-10-22-2402-RE>
- Aljawasim, B.D.; Samtani, J.B.; **Rahman, M.** 2023. New Insights in the Detection and Management of Anthracnose Diseases in Strawberries. *Plants* 12, 3704. <https://doi.org/10.3390/plants12213704>
- Rabby, S.M.F.; Chakraborty, M.; Gupta, D.R.; **Rahman, M.**; Paul, S.K.; Mahmud, N.U.; Rahat, A.A.M.; Jankuloski, L.; Islam, T. Bonactin and Feigrisolide C Inhibit *Magnaporthe oryzae* Triticum Fungus and Control Wheat Blast Disease. *Plants* 2022, 11, 2108. <https://www.mdpi.com/2223-7747/11/16/2108/pdf>
- Chakraborty, M.; Rabby, S.M.F.; Gupta, D.R.; **Rahman, M.**; Paul, S.K.; Mahmud, N.U.; Rahat, A.A.M.; Jankuloski, L.; Islam, T. 2022. Natural Protein Kinase Inhibitors, Staurosporine, and Chelerythrine Suppress Wheat Blast Disease Caused by *Magnaporthe oryzae Triticum*. *Microorganisms* 10, 1186. <https://doi.org/10.3390/microorganisms10061186>; <https://www.mdpi.com/2076-2607/10/6/1186/pdf>
- Paul, S.K.; Chakraborty, M.; **Rahman, M.**; Gupta, D.R.; Mahmud, N.U.; Rahat, A.A.M.; Sarker, A.; Hannan, M.A.; Rahman, M.M.; Akanda, A.M.; et al. 2022. Marine Natural Product Antimycin A Suppresses Wheat Blast Disease Caused by *Magnaporthe oryzae Triticum*. *J. Fungi* 8, 618.
<https://doi.org/10.3390/jof8060618> <https://www.mdpi.com/2309-608X/8/6/618/pdf>
- Dipali Rani Gupta, Sanjida Khanom, Md. Motiar Rohman, Mirza Hasanuzzaman, Musrat Zahan Surovy, Nur Uddin Mahmud, Md. Robyul Islam, Ashifur Rahman Shawon, **Mahfuzur Rahman**, Kamel A. Abd-Elsalam and Tofazzal Islam. 2021. Hydrogen peroxide detoxifying enzymes show different activity

patterns in host and nonhost plant interactions with *Magnaporthe oryzae* Triticum pathotype. *Physiol Mol Biol Plants*. <https://doi.org/10.1007/s12298-021-01057-4>

- **Mahfuz Rahman**, Tofazzal Islam, Lewis Jett and James Kotcon. 2021. Biocontrol agent, biofumigation, and grafting with resistant rootstock suppress soil-borne disease and improve yield of tomato in West Virginia. *Crop Protection* 145(105630)
<https://www.sciencedirect.com/science/article/pii/S0261219421001009?via%3Dihub>
- Paul, S.K., Mahmud, N.U., Gupta, D.R., Surovy, M.Z., **Rahman, M.**, and Islam, M.T. 2021. Characterization of *Sclerotium rolfsii* Causing Root Rot of Sugar Beet in Bangladesh. *Sugar Tech* 23(2).
<https://doi.org/10.1007/s12355-021-00984-6>
- Zerihun T. Dame, **Mahfuz Rahman**, Tofazzal Islam. 2021. Bacilli as sources of agrobiotechnology: recent advances and future directions. *Green Chemistry Letters and Reviews* 14(2): 245-270.
<https://doi.org/10.1080/17518253.2021.1905080>
- Moutoshi Chakraborty, Nur Uddin Mahmud, Chhana Ullah, **Mahfuz Rahman** and Tofazzal Islam. 2021. Biological and biorational management of blast diseases in cereals caused by *Magnaporthe oryzae*. *Critical Reviews in Biotechnology*. Published online: 18 May 2021.
<https://www.tandfonline.com/doi/full/10.1080/07388551.2021.1898325?scroll=top&needAccess=true>
- Moutoshi Chakraborty, Mirza Hasanuzzaman, **Mahfuzur Rahman**, Md Arifur Rahman Khan, Pankaj Bhowmik, Nur Uddin Mahmud, Mohsin Tanveer and Tofazzal Islam. 2020. Mechanism of Plant Growth Promotion and Disease Suppression by Chitosan Biopolymer. *MDPI-Agriculture* 10(12):624
<https://www.mdpi.com/2077-0472/10/12/624>
- Gupta, D.R., Surovy, M.Z., Mahmud, N.U. **M. Rahman** et al. 2020. Suitable methods for isolation, culture, storage and identification of wheat blast fungus *Magnaporthe oryzae* Triticum pathotype. *Phytopathology Research* 2, 30. <https://phytopatholres.biomedcentral.com/articles/10.1186/s42483-020-00070-x>
- M. Tofazzal Islam, Dipali Rani Gupta, Akbar Hossain, Krishna K. Roy, Xinyao He, Muhammad R. Kabir, Pawan K. Singh, Md. Arifur Rahman Khan, **Mahfuzur Rahman** and Guo-Liang Wang. 2020. Wheat blast: a new threat to food security. *Phytopathology Research* 2(28):1-13;
<https://phytopatholres.biomedcentral.com/articles/10.1186/s42483-020-00067-6>
- Nur Uddin Mahmud, Moutoshi Chakraborty, Sanjoy Kumar Paul, Dipali Rani Gupta, Musrat Zahan Surovy, **Mahfuzur Rahman**, and Md. Tofazzal Islam. 2020. First report of basal rot of dragon fruit caused by *Fusarium oxysporum* in Bangladesh. *Plant Disease online*
<https://apsjournals.apsnet.org/doi/10.1094/PDIS-01-20-0005-PDN>
- Abhinav Aeron, Ekta Khare, Chaitanya Kumar Jha, Vijay Singh Meena, Shadia Mohammed Abdel Aziz, Mohammed Tofazzal Islam, Kangmin Kim, Sunita Kumari Meena, Arunava Pattanayak, Hosahatti Rajashekar, Ramesh Chandra Dubey, Bihari Ram Maurya, Dinesh Kumar Maheshwari, Meenu Saraf, Mahipal Choudhary, Rajhans Verma, H. N. Meena, A. R. N. S. Subbanna, Manoj Parihar, Shruti Shukla, Govarthan Muthusamy, Ram Swaroop Bana, Vivek K. Bajpai, Young-Kyu Han, **Mahfuzur Rahman**, Dileep Kumar, Norang Pal Singh & Rajesh Kumar Meena. 2019. Revisiting the plant growth-promoting rhizobacteria: lessons from the past and objectives for the future. *Archives of Microbiology* 202, 665–676. <https://doi.org/10.1007/s00203-019-01779-w>

- **Rahman, M.** , Islam, T. , Schwegel, R. and Louws, F. 2019. Simultaneous Detection of *Colletotrichum acutatum* and *C. gloeosporioides* from Quiescently Infected Strawberry Foliage by Real-Time PCR Based on High Resolution Melt Curve Analysis. American Journal of Plant Sciences, 10, 382-401. <https://www.scirp.org/journal/paperinformation.aspx?paperid=91021>
- Annum Sattar, Muhammad Naveed, Mohsin Ali, Zahir A. Zahir, Sajid M. Nadeem, M. Yaseen, Vijay Singh Meena, Muhammad Farooq, Renu Singh, **Mahfuz Rahman**, Har Narayan Meena. 2018. Perspectives of potassium solubilizing microbes in sustainable food production system: A review. Applied Soil Ecology 133: 146-159. <https://www.sciencedirect.com/science/article/pii/S0929139318308096>
- D. R. Gupta, M. K. Kabir, O. Hassan, A. A. Sabir, N.U. Mahmud, M. Z. Surovy, **M.M. Rahman**, T. Chang, D. G. Panaccione, and M. T. Islam. 2018. First Report of Anthracnose Crown Rot of Strawberry Caused by *Colletotrichum siamense* in Rajshahi District of Bangladesh. Plant Disease open access. <https://apsjournals.apsnet.org/doi/pdf/10.1094/PDIS-08-18-1461-PDN>
- Musrat Zahan Surovy. Md. Khairul Kabir, Dipali Rani Gupta, Oliul Hassan, Nur Uddin Mahmud, Abdullah As Sabir, **Mahfuzur Rahman**, Taehyun Chang, Daniel Panaccione, Md. Tofazzal Islam. 2018. First report of Fusarium wilt caused by *Fusarium oxysporum* on strawberry in Bangladesh. Plant Disease open access. <https://apsjournals.apsnet.org/doi/abs/10.1094/PDIS-07-18-1121-PDN?mobileUi=0>
- Mosaddiqur Rahman, Julakha Akter Mukta, Abdullah As Sabir, Dipali Rani Gupta, Mohammed Mohi-Ud-Din, Mirza Hasanuzzaman, Md. Giashuddin Miah, **Mahfuzur Rahman**, Md Tofazzal Islam. 2018. Chitosan biopolymer promotes yield and stimulates accumulation of antioxidants in strawberry fruit. PLOS ONE Published online: September 7, 2018. <https://doi.org/10.1371/journal.pone.0203769>
- Effi Haque, Hiroaki Taniguchi, Md. Mahmudul Hassan, Pankaj Bhowmik, M. Rezaul Karim, Magdalena Śmiech, Kaijun Zhao, **Mahfuzur Rahman** and Tofazzal Islam. 2018. Application of CRISPR/Cas9 Genome Editing Technology for the Improvement of Crops Cultivated in Tropical Climates: Recent Progress, Prospects, and Challenges. Frontiers in Plant Science, 08 May 2018 <https://doi.org/10.3389/fpls.2018.00617>
- Most. Waheda Rahman Ansary, Md. Ferdous Rezwana Khan Prince, Effi Haque, Farzana Sultana, Helen M. West, Md. Mahbubur Rahman, Md. Abdul Mojid Mondol, Abdul Mannan Akanda, **M. Rahman** et al. 2018. Endophytic *Bacillus* spp. from medicinal plants inhibit mycelial growth of *Sclerotinia sclerotiorum* and promote plant growth. Zeitschrift Für Naturforschung C. Published Online: 2018-04-11 DOI: <https://doi.org/10.1515/znc-2018-0002>
- Mosaddiqur Rahman, Abdullah As Sabir, Julakha Akter Mukta, Md. Mohibul Alam Khan, Mohammed Mohi-Ud-Din, Md. Giashuddin Miah, **Mahfuzur Rahman** and M. Tofazzal Islam. 2018. Plant probiotic bacteria *Bacillus* and *Paraburkholderia* improve growth, yield and content of antioxidants in strawberry fruit. Scientific Reports 8: 2504. <https://www.nature.com/articles/s41598-018-20235-1.pdf>
- Amena Khatun, Tarin Farhana, Abdullah As Sabir, Shah Mohammad Naimul Islam, Helen M. West, **Mahfuzur Rahman** and M. Tofazzal Islam. 2018. *Pseudomonas* and *Burkholderia* inhibit growth and asexual development of *Phytophthora capsici*. Zeitschrift Für Naturforschung C. Published Online: 2018-02-03 DOI: <https://doi.org/10.1515/znc-2017-0065>

- Md Mohibul Alam Khan, Effi Haque, Narayan Chandra Paul , Md Abdul Khaleque , Saleh M. S. Al-Garni , **Mahfuzur Rahman** , Md Tofazzal Islam. 2017. Enhancement of Growth and Grain Yield of Rice in Nutrient Deficient Soils by Rice Probiotic Bacteria. *Rice Science* 24: 264–273.
- Julakha Akter Mukta, Mosaddiqur Rahman, Abdullah As Sabir, Dipali Rani Gupta , Musrat Zahan Surovy, **Mahfuzur Rahman**, M. Tofazzal Islam. 2017. Chitosan and plant probiotics application enhance growth and yield of strawberry. *Biocatalysis and Agricultural Biotechnology* 11:9–18. <http://www.sciencedirect.com/science/article/pii/S1878818117300269>
- **M. Rahman** and F.J. Louws. 2016. Epidemiological Significance of Crown Rot in the Fruiting Field in Relation to *Colletotrichum gloeosporioides* Infection of Strawberry Nursery Plants. *Plant Disease* 100 <http://apsjournals.apsnet.org/doi/abs/10.1094/PDIS-06-16-0802-RE?journalCode=pdis>
- Fatematuz Zohara, Md. Abdul Mannan Akanda, Narayan Chandra Paul, **Mahfuzur Rahman** and Md. Tofazzal Islam. 2016. Inhibitory effects of *Pseudomonas* spp. on plant pathogen *Phytophthora capsici* in vitro and in planta. *Biocatalysis and Agricultural Biotechnology* 5: 69-77. <http://www.sciencedirect.com/science/article/pii/S1878818115300293>
- Zamir Punja, **Mahfuzur Rahman**. 2105. Morphological and Biochemical Changes in Ginseng Seedling Roots Affected with Stripe Symptoms. *American Journal of Plant Sciences* 6: 2550-2560. <http://www.scirp.org/Journal/PaperInformation.aspx?PaperID=60369>
- **M. Rahman**, P.S. Ojiambo and F. Louws. 2015. Initial inoculum and spatial dispersal of *Colletotrichum gloeosporioides*, the causal agent of strawberry anthracnose crown rot. *Plant Disease* 99:80-86. <http://apsjournals.apsnet.org/doi/pdf/10.1094/PDIS-02-13-0144-RE>
- **Rahman, M.**, Ballington, J. R. and Louws, F. J. 2013. Role of foliar hemibiotrophic and fruit resistance in anthracnose-resistant strawberry genotypes for annual hill plasticulture systems. *Annals of Applied Biology* 163: 102-113. <https://onlinelibrary.wiley.com/doi/10.1111/aab.12038>
- Jayaraj, J., **Rahman, M.**, Wan, A., and Punja, Z.K. 2009. Enhanced resistance to foliar fungal pathogens in carrot by application of elicitors, *Annals of Applied Biology* 155:71-80.
- Punja, Z.K., Wan, A., **Rahman, M.**, Goswami, R.S., Barasubiye, T., Seifert, K.A., and Lévesque, C.A. 2008. Growth, population dynamics, and diversity of *Fusarium equiseti* in ginseng fields. *Eur. J. Plant Pathol.* 121: 173-184.
- Jayaraj, J., Wan, A., **Rahman, M.**, and Punja, Z.K. 2008 Seaweed extract reduces foliar fungal diseases on carrot. *Crop Protection* 27: 1360-1366.
- Punja, Z.K., Wan, A., Goswami, R.S., **Rahman, M.** Barasubiye, T., Seifert, K.A., and Lévesque, C.A. 2007. Role of *Fusarium* species in Rusty Root Symptom Development on Ginseng Roots. *Can J. Plant Pathol.* 29: 340-353.
- **Rahman, M.**, and Punja, Z. K. 2007. Biological control of ginseng seedling diseases by *Gliocladium catenulatum* *Can J. Plant Pathol.* 29: 203-207.
- **Rahman, M.**, and Punja, Z. K. 2006. Influence of Fe on *Cylindrocarpus* Root Rot Development on Ginseng. *Phytopathology* 96: 1179-1187.

- **Rahman, M.**, and Punja, Z. K. 2005. Biochemistry of rusty root on American ginseng (*Panax quinquefolius* L.). *Plant Physiology and Biochemistry* 43: 1103-1114.
- **Rahman, M.**, and Punja, Z. K. 2005. Factors affecting cylindrocarpon root rot development on American ginseng (*Panax quinquefolius* L.). *Phytopathology* 95: 1381-1390. <https://apsjournals.apsnet.org/doi/pdf/10.1094/PHTO-95-1381>
- **Rahman, M.**, Mundt, C. C., Wolpert, T. J., and Lizarazu, O. R. 2001. Sensitivity of wheat genotypes to a toxic fraction produced by *Cephalosporium gramineum* and correlation with disease susceptibility. *Phytopathology* 91:702-707
- M. A. T. Mia, **M. Rahman**, D. Pearce and M. Holderness. 2001. Effect of seed-borne *Bipolaris oryzae* on seed germination and disease development in the field. *Bangladesh Journal of Plant Pathology*. 17: 59-62.
- Ahmed, H. U., **M. Rahman**, and M. A. T. Mia. 2000. Evaluation of near-isogenic rice lines against blast pathogen population in Bangladesh. *Bangladesh Journal of Plant Pathology* 14: 1-3
- H. Khan, **M. Rahman**, N. Ahmed and M. A. T. Mia. 2000. Fungi associated with developing rice seeds. *Bangladesh Journal of Agricultural Sciences* 27:51-57.
- Ahmed, N., M. Eunos, **M. Rahman**, M. Begum, and M. A. Taleb. 1998. Effect of nitrogen on growth and yield of three photosensitive rice cultivars. *Bangladesh Journal of Agricultural Sciences* 25: 273-283.
- Latif, M. A., T. H. Ansari, **M. Rahman**, and M. A. Bakr. 1998. Mass culture of white tip nematode (*Aphelenchoides besseyi*) and effect of temperature on its survival. *Bangladesh Rice journal* 9: 7-10.
- **M. Rahman** and M. A. T. Mia. 1998. Studies on health status of farmers' stored seed of rice. *Bangladesh J. Plant Pathol* 14:37-40.
- Ahmed, N., M. Eunos, M. A. Latif, Z. U. Ahmed, and **M. Rahman**. 1998. Effect of nitrogen on yield, yield components and contribution from the pre-anthesis assimilates to grain yield of three photosensitive rice (*Oryza sativa* L.) cultivars. *Journal of the National Science Council of Srilanka* 26: 35-45.
- M. A.T. Mia, D. N. R. Paul, A. K. M. Shahjahan, **M. Rahman**, and M. Howlader. 1997. Assessment of Sheath blight disease of rice under natural field condition. *Progressive Agriculture* 8: 25-29.
- M. A. T. Mia, and **M. Rahman**. 1997. Incidence of mycoflora in rice seed as affected by fertilizer management. *Bangladesh Journal of Plant Pathology* 13: 21-24.

Peer Reviewed Book Chapter

- Shaheb, M.R., Islam, M.T., Sarker, A., **Rahman, M.** 2024. Biofertilizers: Catalysts for Enhancing Soil and Plant Health in Pursuit of Sustainable Agriculture. In: Dheeman, S., Islam, M.T., Egamberdieva, D., Siddiqui, M.N. (eds) *Soil Bacteria*. Springer, Singapore. https://doi.org/10.1007/978-981-97-3473-3_1
- Islam, T., Ansari, W, **Rahman, M.** 2022. Magnaporthe oryzae and its pathotypes: a potential plant pandemic threat to global food security. In B. Scott and C. Mesarich (Eds) *Mycota V (Plant*

Relationships: Fungal-Plant Interactions): 425-471.<https://link.springer.com/book/10.1007/978-3-031-16503-0?page=2#toc>

- **Mahfuz Rahman**, Md Nur Alam Miah and Whitney Dudding. 2022. Mechanisms involved with Bacilli mediated abiotic and biotic stress tolerance in plants. Pp169-196, Islam, M.T., Rahman, M. and Pandey, P. (eds) Bacilli in Agrobiotechnology: Plant Stress Tolerance, Bioremediation and Bioprospecting, Springer AG, Basel, Switzerland. <https://link.springer.com/book/10.1007/978-3-030-85465-2#editorsandaffiliations>
- **Rahman M.M.**, Moccaldi L.A. 2019. Application Method and Efficacy of Bacillus spp. in Mitigating Abiotic and Biotic Stresses and Enhancing Plant Performance. Pp267-289, In: Islam M., Rahman M., Pandey P., Boehme M., Haesaert G. (eds) Bacilli and Agrobiotechnology: Phytostimulation and Biocontrol. Bacilli in Climate Resilient Agriculture and Bioprospecting. Springer Nature https://link.springer.com/chapter/10.1007/978-3-030-15175-1_14
- **Mahfuz Rahman**, Mosaddiqur Rahman and Tofazzal Islam. 2019. Improving Yield and Antioxidant Properties of Strawberries by Utilizing Microbes and Natural Products. In Strawberry: Pre- and Post-Harvest Management Techniques for Higher Fruit Quality, Toshiki Aasao (ed) Intech open, London, SE1 9SG, U.K. <https://www.intechopen.com/online-first/improving-yield-and-antioxidant-properties-of-strawberries-by-utilizing-microbes-and-natural-product>
- Bhowmik, P., Hassan, M.M., Molla, K., **Rahman, M.** and Islam, T. 2019. Application of CRISPR-Cas Genome Editing Tools for the Improvement of Plant Abiotic Stress. Pp459-472 In, Hasanuzzaman-Nahar-Fujita-Oku-Islam (eds) Approaches for Enhancing Abiotic Stress Tolerance in Plants. CRC Press-Taylor and Francis Group. Boca Raton, Florida, USA. https://www.crcpress.com/Approaches-for-Enhancing-Abiotic-Stress-Tolerance-in-Plants/Hasanuzzaman-Nahar-Fujita-Oku-Islam/p/book/9780815346425?fbclid=IwAR3AKtYt7I5E4UtvPYtCnHOHcfrVlsg-Oru04_oVflcQKVlw56VdzBpMZgs
- **M. Rahman.** 2016. *Bacillus* spp., a promising biocontrol agent of root, foliar and postharvest diseases of plants. Pp 113-141, In: Islam, T., **Rahman, M.**, Chaitonya, J., Pandey, P and Aeron, A. (eds) “Bacilli and Agrobiotechnology”. Springer, Netherlands. <http://www.springer.com/us/book/9783319444086>
- Islam, M.T., Hossain, M.M. and **Rahman, M.** 2015. Bioactive natural products for managing *peronosporomycetes* *phytopathogens*. In “Sustainable Crop Disease Management using Natural Products” pp 307-344, Kurucheve, V., Sangeetha, G. and Jayaraman, J. (eds), CABI, Wallingford, UK. <http://www.cabi.org/bookshop/book/9781780643236>
- **Rahman, M.**, and Punja, Z. K. 2007. Calcium and Plant Disease. In, Datnoff, I. E., Huber D. and Elmer, W. (eds) Mineral nutrition and Plant Disease pp 79-93. APS Press. St. Paul. MN. <https://www.cabdirect.org/cabdirect/abstract/20083015989>

Extension Publications

- Rahman, M. 2024. Identification and Management of Rose Rosette Disease. IPM chronicle Vol 12. Issue 2 (Pp6-7): WVU Extension Communications.
- Rahman, M. 2024. Management of Cercospora leaf spot of Swiss chard, beet and spinach. IPM chronicle Vol 12. Issue 1 (P3): WVU Extension Communications. https://extension.wvu.edu/files/d/9c4c9358-6d9d-41ddbe75-1b3c5764ac74/ipm-layout-winter-spring-2024_digital.pdf

- Rahman, M. 2023. Identification and management of boxwood blight. In Chandran, R. (ed) IPM Chronicle Vol 11. Issue 2 (Pp 2-3) (Fall 2023) <https://extension.wvu.edu/files/d/04264bb5-1f3c-488c-9e49-f127078c34b1/ipm-chronicle-fall-2023-digital.pdf>
- Boxwood Blight: An Emerging Plant Health Problem in West Virginia Landscapes. WVU Extension ANR fact sheet, September 2023. <https://extension.wvu.edu/lawn-gardening-pests/plant-disease/landscape-tree-disease/boxwood-blight>
- Rahman, M. and Basden, T. 2023. Beware of compost you will be using for your upcoming growing season. <https://extension.wvu.edu/lawn-gardening-pests/news/2023/04/18/agalert-contaminated-compost>
- Rahman, M. 2023. Biologicals and Anaerobic Soil Disinfestation for Managing Soil-borne Plant Diseases. WVU Extension ANR fact sheet, January 2023. <https://extension.wvu.edu/lawn-gardening-pests/plant-disease/biological-controls/managing-soilborne-diseases>
- Rahman, M. 2022. Management of pine needle blight. In Chandran, R. (ed) IPM Chronicle Vol 10. Issue 3 (Pp 4-6) (Fall 2022).
- Rahman, M. 2022. Late Summer/Fall Leaf Spots. WVU Extension ANR fact sheet, September 2022. <https://extension.wvu.edu/lawn-gardening-pests/plant-disease/landscape-tree-disease/late-summer-fall-leaf-spots-on-landscape-trees-shrubs>
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- **Rahman, M.**, and Punja, Z. K. 2003. Growth of *Cylindrocarpon destructans* and interactions with ginseng roots to cause root rot. In, Follett, J. M. and Templeton, A. M. (eds) *The globalisation of ginseng: Proceedings International Ginseng conf.*, Melbourne, Australia.

Peer Reviewed Research Reports

- **M. Rahman** and E.P. Tauger. 2024. Evaluation of fungicides for controlling early blight on tomato in West Virginia, 2023. <https://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2024/V067.pdf>

- **M. Rahman** and W. L. Dudding. 2023. Chemical control of downy mildew in cucumber cultivar Silver Slicer in West Virginia, 2022. Plant Disease Management Reports 17:V163.
<https://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2023/V163.pdf>
- **M. Rahman** and W. L. Dudding. 2023. Evaluation of fungicides for controlling Septoria leaf spot on tomato in WV, 2022. Plant Disease Management Reports 17:V164.
<https://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2023/V164.pdf>
- **M. Rahman** and W. L. Dudding. 2022. Chemical control of downy mildew in cucumber cultivar Silver Slicer in West Virginia, 2021. Plant Disease Management Reports 16:V089.
<https://www.plantmanagementnetwork.org/pub/trial/PDMR/reports/2022/V089.pdf>
- **M. Rahman** and W. L. Dudding. 2022. Chemical control of anthracnose fruit rot in strawberry cultivar Chandler in West Virginia, 2021. Plant Disease Management Reports 16:PF008.
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- **M. Rahman**. 2017 Evaluation of fungicides for controlling powdery mildew on cucumber, 2016. Plant Disease Management Reports 11:V148.
<https://www.plantmanagementnetwork.org/pub/trial/PDMR/reports/2017/V148.pdf>
- **M. Rahman**. 2017. Evaluation of fungicides for controlling Septoria leaf spot on tomato, 2016. Plant Disease Management Reports 11:V166
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- **M. Rahman** and L. Jett. 2016. Evaluation of bio-fumigants and biological control agents for managing Verticillium wilt on tomato, 2015. Plant Disease Management Reports 10 V056.
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- **M. Rahman** 2016. Evaluation of fungicides for managing cane blight on blackberry, 2014. PDMR 10:SMF022 <https://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2016/SMF022.pdf>
- **M. Rahman**. 2016. Evaluation of fungicides for managing powdery mildew on butternut squash, 2014. PDMR 10: v044.
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- **M. Rahman**. 2015. Evaluation of fungicides for the control of tomato foliar diseases, 2014. Plant Disease Management Reports 9: <https://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2015/V009.pdf>
- **Rahman, M.**, Carnes, M. E., Driver, J. G., and Louws, F. J. 2012. Fungicidal control of anthracnose fruit rot in strawberry cultivar Chandler in North Carolina, 2011. Plant Disease Management Reports 6: SMF-013:1-2. <http://www.plantmanagementnetwork.org/pub/trial/PDMR/reports/2012/SMF013.pdf>
- **Rahman, M.**, Carnes, M. E., Driver, J. G., and Louws, F. J. 2012. Evaluation of foliar fungicide spray applications for control of gray mold in strawberry cultivar Chandler, 2011. Plant Disease Management Reports 6: SMF-033.
<http://www.plantmanagementnetwork.org/pub/trial/PDMR/reports/2012/SMF033.pdf>
- **Rahman, M.**, Carnes, M. E., Driver, J. G., and Louws, F. J. 2011. Fungicidal control of anthracnose fruit rot in strawberry cultivar Chandler in North Carolina, 2010. Plant Disease Management Reports 5: SMF-042. <http://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2011/SMF042.pdf>

- **Rahman, M.**, Carnes, M. E., Driver, J. G., and Louws, F. J. 2011. Evaluation of fungicides to control gray mold on strawberry cultivar Chandler, 2010. Plant Disease Management Reports 5: SMF-043. <http://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2011/SMF043.pdf>
- **Rahman, M.**, and Louws, F. J. 2011. Quantification of *Colletotrichum acutatum* quiescent infection on strawberry foliage by real time PCR to predict field anthracnose incidence. California Strawberry Commission Production Research Report: 215-226. http://www.calstrawberry.com/Portals/2/Reports/Research%20Reports/Annual%20Production%20Research%20Reports/Annual%20Production%20Research%20Reports%202009/2009-10_Chapter18_FrankLouws_Cacutatum.pdf?ver=2018-03-02-141720-273
- **Rahman, M.**, Carnes, M. E., Driver, J., and Louws, F. J. 2010. Fungicidal control of anthracnose fruit rot in strawberry cultivar Chandler in North Carolina, 2009. Plant Disease Management Reports 4:SMF-032 <http://www.plantmanagementnetwork.org/pub/trial/pdmr/volume4/abstracts/smf32.asp>
- **Rahman, M.** Carnes, M. E., Driver, J., and Louws, F. J. 2010. Fungicidal control of gray mold in strawberry cultivar Chandler in North Carolina, 2009. Plant Disease Management Reports 4:SMF-033. <http://www.plantmanagementnetwork.org/pub/trial/pdmr/volume4/abstracts/smf33.asp>
- **Rahman, M.**, Driver, J., and Louws, F. J. 2009. Evaluation of fungicides to control anthracnose fruit rot on strawberry cultivar Chandler, 2008. Plant Disease Management Reports 3:SMF-019 <http://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2009/SMF019.pdf>
- **Rahman, M.**, Driver, J., and Louws, F. J. 2009. Evaluation of fungicides to control gray mold on strawberry cultivar Chandler, 2008. Plant Disease Management Reports 3:SMF-018. <http://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2009/SMF018.pdf>
- **Rahman, M.**, Driver, J. and Louws, F. J. 2008. Chemical control of phomopsis blight of strawberry. Plant Disease Management Reports 2: STF030. <https://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2008/SMF030.pdf>
- **Rahman, M.**, Driver, J. and Louws, F. J. 2008. Evaluation of standard cultivars and breeding lines for field incidence of Anthracnose fruit rot. Plant Disease Management Reports 2: STF028. <https://www.plantmanagementnetwork.org/pub/trial/pdmr/reports/2008/SMF028.pdf>

PEER REVIEW PANEL MEMBER

- Northeast SARE 2018 Graduate Student Research Grant review panel
- Northeast SARE 2017 Research and Extension grant review panel
- Northeast SARE 2015 Graduate Student Research Grant review panel
- NC IPM Program Advisory Committee Mini Grants Review 2009

AWARDS AND HONORS

- WVU Extension's Individual Creativity and Innovation Excellence award for 2021. WVU Extension annual meeting, Sep 30, 2021.

- Distinguished Service Award - Potomac Division of American Phytopathological Society -2021
- WVU Extension Service communication award for Ag and Natural Resources team-2020
- National champion-NACAA Communications Award for Team Newsletter-2017
- State Champion-NACAA Communications Award for team poster presentation-2017
- Team Program Excellence Award-diagnostic team, West Virginia University Extension-2013
- Outstanding research and service award, North Carolina Strawberry Association-2009
- Health Product and Functional Food Award, BC Innovation Council, British Columbia, Canada-2006
- Graduate Engineering and Technology (GREAT) Award, Science Council of British Columbia, Canada-2004
- Bangladesh Agriculture Research Council Graduate Study Abroad Fellowship (sponsor: World Bank)-1998

- **ONGOING RESEARCH PROJECTS**
- Optimization of preventative biorational strawberry fruit and root disease management techniques: linking university research to growers' education; Northeast SARE. Funded amount \$244,349 (2020-2023)
- Management of powdery mildew in greenhouse and high tunnel tomatoes by using UV-C light; Northeast SARE partnership. Funded amount \$29, 171 (2020-2023)
- Regional approach to cucurbit downy mildew prevention, monitoring and management; Multi state SCRI. Funded amount (\$0.85 million), WVU \$21,500 (2018-2022)
- Improved Bitter Pit Management on Honeycrisp Apple in WV Orchards to Facilitate Better Marketing. WV-specialty crop block grant (USDA-NIFA); Funded amount \$25,000 (2020-2023)
- Performance of several bio-rational compounds (Pest Problem Without Solution-Integrated Solutions) on eggplant for the management of Verticillium Wilt caused by *Verticillium dahliae*. USDA-National Institute of Food & Agriculture. Funded amount \$24,000 (2019-2021)
- Plant and Pest Identification in WV. Cornell University. Funded amount \$49,600 (2019-2021)
- WV Extension Implementation Program. USDA-National Institute of Food & Agriculture. Funded amount \$389,000 (2017-2021)

- **COMPLETED RESEARCH PROJECTS**
- Improving strawberry transplant vigor with bio-rational treatments for managing black root rot complex. Northeast IPM center (Cornell University). Funded amount 59, 890 (2018-2020)

- Incorporation of disease resistance in tomato variety ‘WV 63’ to better manage foliar diseases. Principal investigator Mahfuz Rahman, Co-investigator Mannon Gallegly. Specialty crop block grant, funding amount \$15,534 (2016-2018)
- Management of soilborne diseases in small farms with eco-friendly treatment options; Principal investigator Mahfuz Rahman, Co-investigator Lewis Jett. Funding amount \$14,614 NE-SARE grant (2015-2017)
- Integrated Pest Information Platform for Extension and Education (iPIPE). Multi state USDA-CAP (food security) grant (\$3.7 million); Principal investigator Scott Isard; WV: Mid-Atlantic tree fruit iPIPE-CPP coordinator Mahfuz Rahman \$82,000 (2015-2017)
- WV Extension IPM Implementation Program: research and demonstration of appropriate technologies to minimize pest damage on crop commodities. Principal investigator R. Chandran, M. Rahman, D. Frank, M. Danilovich, Funding amount \$253,500 (2105-2017)
- Detection and discrimination of closely related fungal species through utilization of high-resolution melt curve analysis in real time PCR to aid in quick and precise plant diagnostics. Principal investigator Mahfuz Rahman. Funding amount 21,500 (7/2016-6/2017)
- Strategies for minimizing losses of landscape trees from diseases with emphasis on Rhizosphaera needle cast on Colorado blue spruce. Principal investigator M. Rahman, D. M. McGill, K. C. Cox and S. Jarvis. \$4,500 Public Service grant.
- **INVITED SPEAKER/TRAINER**
- Mid-Atlantic Strawberry School 2021. Epidemiology and Management of Strawberry Anthracnose. Virginia Beach. February 20201 (virtual)
- WV State master gardeners conference 2019. Beneficial microbes for plant disease management. Lakeview Resort, Morgantown, WV. March 17-19, 2019.
- WVUES Small Farm Conference 2018. Integrated management of tomato diseases. Charleston civic center, WV. Feb 28, 2018.
- WVUES-ANR unit spring meeting. Diagnostic workshop for county agents. Cabins, WV. 15 May 2018.
- 2016 WV nursery and landscape association annual meeting. Fungicidal and cultural management of landscape tree diseases. Waterfront place hotel. Morgantown, WV. July 17, 2016.
- 2016 WV small farm conference, Charleston civic center. Organic tomato disease management. February 27-29, 2016.
- 2015 Mid-Atlantic Fruit and Vegetable Convention, Hershey lodge, Hershey, PA. Management of anthracnose on strawberry. January 29, 2015
- 2015 State master gardeners’ association conference. Eco friendly plant disease management options. Pipestem resort, WV. March 28-29, 2015.

- 2014 Southern region strawberry expo, Pinehurst, NC. Panel member for plant supply forum, November 23-25, 2014.
- University of MD Mid-Atlantic Crop Management School. Fundamental of plant disease management. Ocean City, MD November 19-20, 2013.
- 2013 Mid-Atlantic Fruit and Vegetable Convention, Hershey lodge, Hershey, PA. Management of anthracnose on strawberry. January 29, 2013.
- Sothern Region Small Fruit Center sponsored agent training program "Pest and Disease Identification and Management for Small Fruit Crops-Diseases of strawberry". Savannah International Trade and Conference Center, Savannah, GA, January 6, 2011.
- New recommendations for strawberry disease management. Southeast Strawberry Expo, Wyndham Virginia Beach front, Virginia Beach, VA. November 9, 2010
- Disease free planting stock for strawberry production. Southeast Strawberry Expo, Wyndham Virginia Beach front, Virginia Beach, VA. November 9, 2010.
- Rockingham county pre-plant meeting. Preventing disease in strawberry nurseries and fruiting field. August 11, 2009
- Strawberry disease management with no or very little chemicals. Southeast Strawberry Expo 2009. November 9, 2009. Sheraton Imperial Hotel, Durham, NC.
- Strawberry diseases in an organic system under high tunnel and their management. NCSU Center for Environmental Farming Systems (CEFS), Goldsboro, NC. November 23, 2009.
- Growing strawberry plants in a disease-free environment. Piedmont Research Station, Salisbury, NC. December 22, 2009.
- Strawberry preplant meeting: Pre-plant disease alert for 2008-2009 strawberry seasons. Davidson County, NC. August 6, 2008.
- Southeast Strawberry Expo, Strawberry disease management for growers. Charlotte, NC, November 6 2008.
- Trainer-County agents' training on strawberry disease diagnosis and management from 5 southern states (NC, VA, SC, TN, AR), Charlotte, NC, November 5, 2008.
- 2008 Strawberry Field day, Central Crops Research Station, Clayton. Update on major strawberry diseases. May 7, 2008.
- Strawberry preplant meeting. Preventive measures against Colletotrichum crown rot. Nash County, NC. August 9, 2007.
- Annual General Meeting of Associated Ginseng Growers of BC (TAGGBC) held in Kamloops, BC on February 20, 2006.
- Annual General Meeting of Associated Ginseng Growers of BC (TAGGBC) held in Vernon, BC on February 21, 2005.

➤ **JOURNAL REVIEWER**

- Frontier in Microbiology (Review editor)
- PLOS ONE
- Archives of Microbiology
- Phytopathology, Plant Disease, Crop Protection
- Canadian Journal of Plant Pathology, Plant Pathology (UK)
- Plant Health Progress (USA), Hort Science
- Australian Plant Pathology Journal, Plant Health Progress
- European Journal of Plant Pathology
- Journal of the Science of Food and Agriculture

➤ **WORKSHOP/CONFERENCE ATTENDED**

- Field day. Organized by USDA-ARS Pendleton, Oregon, USA. July 8-9, 2000.
- International Ginseng Workshop, Simon Fraser University harbour centre campus, downtown Vancouver, BC, Canada. November 26-29, 2000.
- Canadian Phytopathological Society, British Columbia regional meeting, Summerland, BC, Canada. October 24-25, 2002
- Annual meeting of the Canadian Phytopathological Society, Montreal, QC Canada. June 20-25, 2003
- Canadian Phytopathological Society, British Columbia regional meeting, Burnaby, BC, Canada. October 24-25, 2003
- Canadian Phytopathological Society, British Columbia regional meeting, Victoria, BC, Canada. October 24-25, 2004
- Plant Canada 2005, a joint meeting of the Plant societies of Canada, Edmonton, AB Canada. June 15-19, 2005
- APS/CPS/MSA joint meeting held in Quebec City, Canada from 29 July-02 August 2006.
- APS/SON joint meeting held in San Diego, California from July 28-Aug 1, 2007.
- Southeast strawberry expo held at Sheraton Imperial, Durham, NC from November 6-8, 2007
- APS centennial meeting held in Minneapolis, MN from July 26-30, 2008.
- Southeast strawberry expo held at Charlotte Hilton, NC from November 6-8, 2008
- APS annual meeting held in Portland, OR from August 1-4, 2009.

- Southeast strawberry expo held at Sheraton Imperial, Durham, NC from November 6-8, 2009
- Southeast strawberry expo held at Wyndham Virginia Beach front, Virginia Beach, VA from November 8-10, 2010.
- Integrated pest information platform for extension and education (iPiPE) annual meeting; Raleigh, NC. February 9-10, 2016.
- 4th National meeting of the national plant diagnostic network, Arlington, VA. March 6-10, 2016.
- American Phytopathological Society – Potomac Division annual meeting. Richmond, VA. March 22-24, 2016.
- American Phytopathological Society – central annual meeting; Tampa, FL. August 30-September 03, 2016.
- American Phytopathological Society – Potomac Division annual meeting. Ocean City, MD. March 21-23, 2018.
- 5th National meeting of the national plant diagnostic network, Crowne-Plaza-Downtown Union Station, Indianapolis, IN. April 15-18th, 2019.
- **PROFESSIONAL SOCIETY AFFILIATION**
- American Phytopathological Society-National
- American Phytopathological Society-Potomac Division
- National Plant Diagnostic Network (NPDN)
- Canadian phytopathological society (CPS)
- WVU Davis College Graduate Faculty Association
- National Association of County Agricultural Agents (NACAA)
- Association of Applied Biologist (AAB)
- Epsilon Sigma Phi (The Extension Professional's Organization)