CURRICULUM VITAE

Dr. Soyema Khatun
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Personal details

Father's name : Md. Abdul Kader
Mother's name : Mrs. Marium Begum
Spouse name : Dr. Md. Mahi Imam Mollah
Date of birth : 28 January, 1990
Nationality : Bangladesh
Religion : Islam
Marital status : Married
National ID : 19907613973000339
Passport number : BG 0039426

Qualifications

2021: Doctor of Philosophy in Food Science and Biotechnology Lab,
Andong National University, Republic of Korea.
Result obtained: CGPA 4.21 (4.50 scale)
Duration: 3.0 years
Medium of Instruction: English

2012: Master of Science in Crop Botany, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur, Bangladesh.
Result obtained: CGPA: 3.70 (4.00 scale)
Duration: 2 years
Medium of Instruction: English

2010: Bachelor of Science in Agriculture, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur, Bangladesh
Result obtained: CGPA: 3.79 (4.00 scale)
Duration: 4 years (12 Term)
Medium of Instruction: English

2006: Higher Secondary Certificate (Science), Ishurdi Women College, Rajshahi board, Bangladesh.
Result: CGPA: 5.00 (5.00 scale) (Grade A+)

2004: Secondary School Certificate (Science), Ikkshu Gobeswana High School, Rajshahi board, Bangladesh.
Result: CGPA: 4.88 (5.00 scale) (Grade A)

Employment

2021-till date: Senior Scientific Officer and Officer In-charge BINA Sub- station Barishal.
2020-2021 : Senior Scientific Officer, BINA Sub- station Ishurdi
2014-2019 : Scientific Officer, Crop Physiology Division, BINA Sub-station Ishurdi

Training

Training Title	Duration			Organizer
	Date		Total day	
Use of Nuclear Energy in Agricultural Research Techniques and Office Management	18 October, 2014	29 October, 2014	12 Day	Bangladesh Institute of Nuclear Agriculture (BINA), Mymensing
Use of Fertilizer Recommendation Guide, 2012	25 May, 2015	27 May 2015	3 Day	Bangladesh Agricultural Research Council (BARC), Dhaka
Office Management, Financial-Administration and Research Management	16 September, 2015	21 September, 2015	6 Day	Bangladesh Institute of Nuclear Agriculture (BINA), Mymensing
Audit and Financial Management	02 November, 2021	04 November, 2021	3 Day	Bangladesh Institute of Nuclear Agriculture (BINA), Mymensing
E-nothey using system	30 December, 2021	31 December, 2021	2 Day	Bangladesh Institute of Nuclear Agriculture (BINA), Mymensing
Public Financial Management	09 January, 2022	13 January, 2021	05 Day	National Agriculture Training Institute (NATA), Gazipur
Breeder Seed Production	14 March, 2022		01 Day	Bangladesh Institute of Nuclear Agriculture (BINA), Mymensing

Research interest

Major research interest includes Grain or food quality, Nutritional component, Functional component (Isoflavone, anthocyanin, carotene etc. content) plant stress (Salinity, temperature and water) physiology, Changing nutritional component at different stress etc.

Knowledge, Skill and Abilities

Skilled and expert in using spectrophotometric analysis of Nutritional component (Protein, proline, amylose, sugar, polyphenol content, Isoflavone content and Antioxidant activity) and molecular biological techniques (DNA and RNA extraction, RT-qPCR, protein expression and purification, Coomassie and western blotting of animal cell etc.) as well as experience with designing and executing plant stress-based experiments in lab, greenhouse, and field conditions.

M. S. dissertation

CARBOHYDRATE ACCUMULATION AND SEED RESERVE UTILIZATION IN WHEAT UNDER VARIABLE TEMPERATURES

[Under heat stress condition, maximum grain starch and dry matter accumulation in Pavon 76 occurred at 25 days after anthesis (DAA) while in BARI Gom varieties appeared 5-day later (30 DAA). Results revealed that, in Pavon 76 shorter period in grain starch and dry matter accumulation was mainly due to early failure of conversion of soluble sugar to starch in spite of available soluble sugar in the grain under high temperature condition. Estimated reduction of 1000-grain weight was 2%, grain number 4% and also grain yield 4% per 1°C rise of mean air temperature in Pavon 76. This estimated reduction was lower in other genotypes compare to Pavon 76.

At high temperature (35°C) the higher seed reserved utilization efficiency (SRUE) and higher canopy temperature depression (CTD) were recorded in BARI Gom 26 (SRUE 1.17 mg/mg and CTD 5.36°C) compare to other genotypes in BARI Gom 25 (SRUE 1.07 mg/mg and CTD 4.66°C) and in Pavon 76 (SRUE 0.89 mg/mg and CTD 2.1°C). Higher seedling dry weight on the 5^{th} day after initiation of partial autotrophic seedling development at 35°C temperature relative to 25°C temperature was observed in BARI Gom 26 (98%) compare to other genotypes (88% in BARI Gom 25 and 79% in Pavon 76). It appeared from the result that under high temperature condition the better seed reserved utilization efficiency and subsequently larger canopy temperature depression collectively contributed a positive role for seedling development.]

PhD dissertation

IMPROVEMENT OF LEGUME SEED FUNCTIONALITY BY ELICITATION TECHNIQUE

Chemically elicited sprouted soybean and black bean samples were most potential to improve their anti-inflammatory activity and whitening effect whereas fermented sample was most effective to improve their anti-obese activity. Post sprouted soybean and pre sprouted black bean samples provide maximum anti-atopic activity. Isoflavone component, especially aglycone content increased by seed fermentation technique that was 32.70 and 14.96 times of untreated seed in soybean and black bean respectively that contribute to improve anti-obese activity. Among six Isoflavone pure compounds, daidzein and genistein are major active compounds for anti-inflammation and anti-obese activity. Daidzein and genistein concentration show strong positive correlation with inhibitory activity of NO production and fat accumulation.

Therefore, daidzein and genistein content increased by different elicitation techniques that are responsable for improving functionality by different eliciteation thchnique. Seed fermentation, sprouting and chemical elicitation techniques are most effective among all elicitation techniques to improve functionality with increasing functional components (aglycone content of Isoflavone).

Research Publications

2021	**Khatun, S.,** Mollah, M. M. I. 2021. Effect of rice milling on their polyphenol content amd antioxidant activity. International Journal of Agricultural Sciences. 5 (2): 60-65.
	Khatun , S., Kim, T. 2021. Phenolic Compound, Antioxidant Activity and Nutritional Components of Five Legume Seed. Am J Biomed Sci & Res. 12 (4).
	Khatun, S., Khalil, M. I. and Roknuzzaman, M. 2021. Yield Performance of BINA developed lentil varieties. Bangladesh J. Nuclear Agric. 35: 183-187. (Short communication)
2020	**Khatun, S.**, Mondal, M. M. A., Khalil, M. I., Roknuzzaman, M. and Mollah, M. M. I. 2020. Growth and Yield Performance of Six Aman Rice Varieties of Bangladesh. Asian Research Journal of Agriculture. 12(2): 1-7.
	Nahar, K., Jahiruddin, M., Islam, M. R., **Khatun, S.,** Roknuzzaman, M. and Sultan, M.T. 2020. Biofortification of Rice Grain as Affected by Different Doses of Zinc Fertilization. Asian Soil Research Journal 3(1): 1-6.
2019	**Khatun, S.,** Mondal, M. M. A.,, Roknuzzaman, M., Mollah, M. M. I. and Rakib, A.. 2019. Contribution of main stem and different tillers on yield and yield attributes of rice. International Journal of Agriculture Innovations and Research. Volume 15, Issue 9, ISSN 1815-1272 (Online).
	Rakib, A., Khanom, M.S.R., Akter**,** K.T., **Khatun, S.,** Kamruzzaman , M.. 2019. Study of yield and yield attributing characters of some modern Aus varieties. International Journal of Applied Research. Vol- 5:141-144.
2018	**Khatun, S.,** Ahmed, J. U., Mollah, M. M. I., Kim T. Physiological Mechanism of Thermotolerance in Wheat (Triticum aestivum Lin.) Seedlings. American Journal of Plant Sciences, 2018, 9, 2719-2727. **(Scientific Research Publishing)**
2017	Mollah, M. M. I., Rahman, M. M., **Khatun, S.,** Mala, M. and Akon, M. R.2017. Toxicity of botanical and chemical insecticides on stink bug complex (Heteroptera: Pentatomidae) in lablab bean (Lablab purpureus Lin.) field. Journal of Entomology and Zoology Studies. **5(2):** 537-541.
	Mollah, M. M. I., Rahman, M. M, **Khatun, S.** and Mala, M.,. 2017. Insect Pest Complex of Year Round Country Bean (Lablab perpureus L.) During Summer Season. SCIREA Journal of Agriculture. Volume 1, Issue 2, pp 186-196.
	Khalil, M.I., **Khatun, S.,**. Roknuzzaman, Rahman, M.M.M. and Malek. A.2017. Evaluation of Mutants of Rapeseed-Mustard Against Alternaria blight. International Journal of Sustainable Agricultural Technology. Volume 13, Issue 2, pp 01-04 , February 2017.
2016	**Khatun, S.,** Ahmed, J.U. Hossain, T., Islam, M.R. and Mohi-Ud-Din, M. 2016. Variation of Wheat Cultivars in Their Response to Elevated Temperature on Starch and Dry Matter Accumulation in Grain. International Journal of Agronomy. Volume 2016, 6 pages. **(Hindawi Publishing Corporation, USA).**

	Khatun, S. Mondal, M. M. A.,, Khalil, M. I., Mollah, M.M.M. Kamruzzaman, M. 2016. Impact of Morpho-Physiological Traits on Seed Yield of Lentil (Lens culinaris Medik.). International Journal of Agriculture Innovations and Research. Volume 5, Issue 1, ISSN (Online) 2319-1473. September, 2016.
	Khatun, S., Roknuzzaman, M., Khalil, M.I., Mollah, M. M. I.. 2016. Yield Loss Assessment of Mustard growing to Parasitic Weed Orobanche. International Journal of Sustainable Agricultural Technology. 12 (4), 29-32.
2015	**Khatun, S.,** Ahmed, J. U,. and Mohi-Uddin, M. 2015. Variation of Wheat Cultivars in Their Relationship between Seed Reserve Utilization and Leaf Temperature under Elevated Temperature. Journal of Crop Science and Biotechnology. 18 (2): 97-101. **(Springer Publication)**
	Khatun, S. and Ahmed, J. U. 2015. Response of Elevated Temperature On Carbohydrate Accumulation and Grain Yield in Different Wheat Cultivars. Bangladesh Journal of Agricultural Research. 40 (2): 205-215.
	Kamruzzaman, M., **Khatun, S.,** Rakib, A., Haque, M. I. 2015. Temporal Variation in Seed Quality of Indian Spinach Preserved in Different Containers. International Journal of Agricultural Research Innovation and Technology. 5 (2). 51-57.

Professional membership

- Member, Bangladesh Agronomy Society
- Member, Krishibid Institute, Bangladesh

Name of referees

1. **Dr. Md. Ibrahim Khalil**
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2. **Professor Dr. Jalal Uddin Ahmed (Masters Supervisor)**
   Department of Crop Botany,
   Bangabandhu Sheikh Mujibur Rahman Agricultural University,
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