

PERSONAL INFORMATION

**Totan Kumar Ghosh**

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Date of Birth: 8 December, 1981, Nationality: Bangladeshi

POSITION Associate Professor and Head

Department of Crop Botany
Faculty of Agriculture,
Bangabandhu Sheikh Mujibur Rahman
Agricultural University (BSMRAU), Bangladesh

Research interest: Molecular Stress Physiology, Stress signalling in land plants

WORK EXPERIENCE

- (March 2007- February 2009) **Lecturer**, Department of Agricultural Botany
Faculty of Agriculture
Patuakhali Science and Technology University, Bangladesh
Affiliated subjects: Plant Ecology, physiology and anatomy
- (March 2009- March 2011) **Assistant Professor**, Department of Agricultural Botany
Faculty of Agriculture
Patuakhali Science and Technology University, Bangladesh
Affiliated subjects: Plant Ecology, Physiology, and Plant Biotechnology
- (April 2011- September 2012) **Assistant Professor**, Department of Crop Botany,
Faculty of Agriculture
Bangabandhu Sheikh Mujibur Rahman Agricultural
University, Bangladesh
Affiliated subjects: Plant Ecology, Physiology, Anatomy and Embryology
- (April 2012- September 2015) **Ph.D fellow**, MEXT scholarship, Graduate School of Science
and Engineering, Saitama University, Japan
Affiliated Subjects: Advanced Plant Adaptation Physiology, Plant Cell Structure and Function
Plant Cell Growth and Development
- (October 2015 - Present) **Assistant Professor**, Department of Crop Botany,
Faculty of Agriculture
Bangabandhu Sheikh Mujibur Rahman Agricultural
University, Bangladesh
Affiliated subjects: Plant Ecology, Physiology, and Anatomy and Embryology

EDUCATION

- (October 2012-September 2015) Ph.D. Graduate School of Science and Engineering
Saitam University, Japan
- (July 2004-December 2005) Master of Science (MS), Department of Crop Botany
Faculty of Agriculture, Bangladesh Agricultural University, Mymensingh
Result: First class first (A+), CGPA-4.00 out of 4.00
- (October 1999 - June 2004) Bachelor of Science in Agriculture , Faculty of Agriculture
Bangladesh Agricultural University, Mymensingh.
Result: First class (5th position)
- (July 1996- September 1998) Higher Secondary School Certificate (HSC)
Govt. M. M. ALi College, Tangail, Bangladesh,
Result: First Class
- (January 1991- June 1996) Secondary School Certificate (SSC)
Santosh Jahnvi High School, Tangail, Bangladesh,
Result: First Class

TRAINING

Computer training in Microsoft office
Office management program
Seed science technology

PERSONAL SKILLS**Mother tongue(s)**

Bengali
Understanding: Proficient user
Speaking: Proficient user
Writing: Proficient user

Other language

English
Understanding: Proficient user
Speaking: Proficient user
Writing: Proficient user

Other language

Japanese
Understanding: Basic user
Speaking: Basic user
Writing: Basic user

Communication skills

Excellent verbal and written communication skills in academics, office management and with scientific community throughout the world.
Excellent presentation skills in both national and international conferences.

Organisational skills

Very good organizational and professional skills in handling departmental tasks as the head of the department. Having experiences of the administrative affiliation like assistant provost of student residence house and assistant proctor of the university.

Computer skills

Proficient with Microsoft office program, Efficient in using biological research related software

ADDITIONAL INFORMATION

- Publication**
- Ghosh TK**, Kaneko M, Akter K, Murai S, Komatsu K, Ishizaki K, Yamato KT, Kohchi T, Takezawa D. 2015. Abscisic acid-induced gene expression in the liverwort *Marchantia polymorpha* is mediated by evolutionarily conserved promoter elements. **Physiol Plant**. doi: 10.1111/ppl.12385.
- Saruhashi M, **Ghosh TK**, Arai K, Ishizaki Y, Hagiwara K, Komatsu K, Shiwa Y, Izumikawa K, Yoshikawa H, Umezawa T, Sakata Y, Takezawa D. 2015. Plant Raf-like kinase integrates abscisic acid and hyperosmotic stress signaling upstream of SNF1-related protein kinase2. **PNAS**. 17;112(46):E6388-96. doi: 10.1073/pnas.
- Takezawa D., Watanabe N, **Ghosh T. K**, Saruhashi M, Suzuki A, Ishiyama K, Somemiya S, Kobayashi M. and Sakata Y. 2014. Epoxycarotenoid-mediated Synthesis of Abscisic acid in *Physcomitrella patens* Implicating Conserved Mechanisms for acclimation to hyperosmosis in Embryophytes. **New Phytologist**. 206: 209-219.
- Hasan MM, **Ghosh TK**, Howlader J, and Hasan ML. 2010. In vitro regeneration potentiality of cauliflower genotypes as influenced by growth regulators. J. Patuakhali Sci. and Tech. Univ. 2(1):105-117.
- Sutradhar GC, Howlader J, **Ghosh TK**, Goswami C and Hasan MK. Effect of modified atmosphere packaging and coating materials on biochemical changes in litchi during storage. 2010. Bangladesh J. Prog. Sci. & Tech. 8(2):177-180.
- Saha G, Sarker UK, **Ghosh TK**, Hasan MZ and Miah MA. 2010. Effect of integrated nitrogen nutrition on the yield of Boro rice. J Bangladesh Soc. Agric. Sci. Technol. 7(3&4):39-44.
- Hasan MM, Haque MZ, **Ghosh TK**, Howlader MHK and Azam AKMF. 2008. Stability of yield attributes in some selected wheat (*Triticum aestivum*) genotypes under late sown high temperature condition. 2008. J. Agric. educ. technol. 11(1&2):139-144.
- Ghosh TK**, Karim MA, Kayum, MA and Rahman MS. 2007. Micropropagation of bamboo through nodal cutting explants. 2007. Bangladesh J. crop. sci. 18(1):27-32.
- Karim MA, **Ghosh TK** and Rahman MS. 2007. Somatic embryogenesis of bamboo from root tip explants. J. Bangladesh Agric. Univ. 5(1):75-79.
- Kayum MA, Karim MA and **Ghosh TK**. 2007. In-vitro callus proliferation in tomato. J. Bangladesh Soc. Agric. Sci. Technol. 4(1&2):77-80.
- Islam MS, Sattar MA, Chatterjee DD, **Ghosh TK** and Howlader MHK. 2007. Biodiversity of surrounding areas of jamuna bridge. Bangladesh J. Prog. Sci. & Tech. 5(1):81-84.
- Scientific Reports**
- Ghosh TK**, Kaneko M and Takezawa D. 2016. Transient assay of gemmalings of the liverwort *Marchantia polymorpha* for studies of abscisic acid-induced gene expression. Cryobiology and Cryotechnology. 62(1):57-60.
- Kadowaki Y, Sato Y, **Ghosh TK** and Takezawa D. 2015. Inhibition by abscisic acid of cold-induced relocation of chloroplast in the liverwort *Marchantia polymorpha*. Cryobiology and Cryotechnology. 61(2):145-150.

Projects	<p>Principle investigator (PI): Ex-situ conservation of medicinal plants- funded by Research Management Committee, BSMRAU</p> <p>Co-PI: Higher Education Quality Enhancement Project (HEQEP), funded by University Grands Commission, Bangladesh</p>
Conference presentation	<p>Ghosh TK and Takezawa D. Desiccation stress signaling in liverworts mediated by conserved promoter elements (May, 2015, JSCC, Tokyo, Japan).</p> <p>Ghosh TK, Murai S, Kato K, Ishizaki K, Kohchi T, Sakata Y and Takezawa D. Both positive and negative regulatory mechanisms of ABA signaling are crucial for growth and stress responses in liverworts (March, 2015, JSPP, Tokyo, Japan).</p> <p>Ghosh TK, Takezawa D and Arai K. Functional analysis of <i>Marchantia polymorpha</i> gene explore the conserved positive ABA signaling in liverworts Marchantia Workshop 2014. (December 2014, Kobe, Japan).</p> <p>Ghosh TK, Takezawa D, Watanabe N, Saruhashi M, Suzuki A, Ishiyama K, Somemiya S, Kobayashi M and Sakata Y. Analysis of ABA deficient mutant of <i>Physcomitrella patens</i> reveals the conserved mechanisms for hyperosmotic acclimation in embryophytes. MOSS2014 (September 2014, Beijing, China).</p> <p>Takezawa D, Saruhashi M, Ghosh TK and Sakata Y. Characterization of UV-induced mutant lines of <i>Physcomitrella patens</i> with reduced sensitivity to cold and abscisic acid. MOSS 2014 (September 2014, Beijing, China).</p>
Membership	Japanese Society of Plant Physiology (JSPP), Bangladesh Academy of Science (BAAS), Seed Science Society of Bangladesh, Weed Science society of Bangladesh
Award	University Gold Medal Award for outstanding result in Master of Science (MS) Japanese government scholarship (MEXT) award
Student Supervision	Md. Jubair Al-Meraj (MS), Chairman and head of the advisory committee Anika Najran (MS), Member of Advisory Committee
References	<p>Takezawa Daisuke Associate Professor Department of Regulatory Biology Graduate School of Science and Engineering Institute for Environmental Science and Technology Saitama University, Japan Email: takezawa@mail.saitama-u.ac.jp</p> <p>Moriyasu Yuji Professor Department of Regulatory Biology Graduate School of Science and Engineering Saitama University, Japan Email: moriyasu@mail.saitama-u.ac.jp</p> <p>Dr. Abdul Baset Mia Professor, Department of Crop Botany Faculty of Agriculture Bangabandhu Sheikh Mujibur Rahman International consultant Food and Agricultural Organization (FAO) Agricultural University, Bangladesh Email: miabaset@yahoo.com</p>

ANNEX

Subjects studied

PhD

Advanced Plant Adaptation Physiology, Plant Cell Structure and Function, Plant Cell growth and Development,

Thesis: **Abscisic Acid Responses in Basal Land Plants Reveal Molecular Mechanisms Crucial for Stress Adaptation in Embryophytes**

Master of Science (MS)

Plant Morphology and Phylogeny, Plant Physiology, Plant Ecology, Environmental Pollution and Agriculture, Plant Tissue Culture and Plant Nutrition . Plant Anatomy, Plant Metabolism, Agro-climatology, Stress Physiology, Seed Biology, Developmental Plant Anatomy and Crop Biotechnology. July-December Semester /05(Thesis Semester)

Thesis Title: **Micropropagation of Bamboo through Nodal cuttings and Root tip Explants**

BSc.Ag(Hons.)

First year •

Agronomy-1 (Fundamentals of Agronomy), Soil Science-1 (Introductory soil Science), Horticulture-1 (Floriculture & Plantation Crops), Agricultural Chemistry-1 (Fertilizer & Pesticide Chemistry), Biochemistry-1 (Food Biochemistry & Nutrition, Chemistry), Farm Mechanics, Animal Husbandry, Agricultural Economics and Rural Sociology.

2nd year •

Agronomy -2 (Seed Technology & Weed Science), Soil Science-2 (Soil Classification Survey & Conservation), Entomology-1 (Taxonomy, Anatomy & Physiology), Plant Pathology-1 (Fundamentals of Plant Pathology), Agril. Ext. Edu. -1 (Communication & Teaching Method), Crop Botany-1 (Anatomy, Embryology, Systematic & Economic Botany), Genetics & Plant Breeding-1 (Cytology), Biochemistry -2 (Plant Biochemistry) and Statistics.

3rd year •

Agronomy -3 (Crop Husbandry), Soil Science-3 (Soil Physics & Chemistry), Horticulture-2 (Vegetables & Spices), Entomology-2 (Systematics Entomology, Insect Physiology & Pest Management), Plant Pathology-2 (Principles of Plant Pathology Diseases of Field Crops), Agril. Ext. Edu.-2 (Outreach Extension Programme), Crop Botany-2 (Crop Climatology), Genetics & Plant Breeding-2 (Cytogenetics & Genetics), Agricultural Chemistry-2 (Agro-Industrial Chemistry) and Agroforestry

4th year (final year) •

Agronomy-4 (Crop Management & Farm Management), Soil Science-4 (Soil fertility & Management), Horticulture-3 (Pomology), Entomology-3 (Insect Ecology, Economic Entomology & Pest Management), Plant Pathology-3 (Diseases of Horticultural & cash Crops & Seed Pathology), Agril. Ext. Edu.-3 (Programme development & Technology Transfer), Crop Botany-3 (Plant Physiology & Ecology) and Genetics & Plant Breeding-3 (Plant Breeding & Biotechnology)