

Dr. Sakina Khanam

A. PERSONAL

1. Name: Dr. Most Sakina Khanam
2. Date of birth: 07 June 1971
3. Nationality: Bangladeshi
4. Gender: Female
5. Marital status: Married
6. Permanent address: Village: Station road, Thana: Sadar, District: Gaibandha-2202. Bangladesh. Phone: 01731556232, E-mail: sakina.pbd@bina.gov.bd, sakina_khanam2003@yahoo.com

B. CURRENT EMPLOYMENT

1. Address: Principal Scientific Officer, Plant Breeding Division. Bangladesh Institute of Nuclear Agriculture (BINA). P.O. Box-4, Mymensing-2200. Bangladesh. Phone: 01731556232, E-mail: sakina.pbd@bina.gov.bd, sakina_khanam2003@yahoo.com

2. Contact telephone number: Phone: +880-173-155-6232. E-mail: sakina.pbd@bina.gov.bd, sakina_khanam2003@yahoo.com

3. Current employer: Director General, BINA, Mymensingh, Bangladesh

Post Doctoral research activity in UAEU, Abu Dhabi

Molecular marker – based characterization and genetic variation in date palm (Phoenix dactylifera L.)

Main features are-

- 1) To identify UAE date palm cultivars by DNA fingerprints
- 2) To analyze genetic diversity
- 3) To develop phylogenetic relationship

Post Doctoral research activity in SNU, Korea:

Elucidation of cytoplasmic effects on agronomically important characters in rice.

Main features are-

- 1) To compare the cytoplasmic genomes among varieties by using gene markers.
- 2) To analyze the interaction between cytoplasm and nuclear genes.
- 3) To isolate agronomically important cytoplasmic genes.

C. AREA OF EXPERTISE/INTEREST

Molecular Stress Breeding & Physiology

D. EDUCATION

i) Highest level: Ph D

Graduation: 2008.

Field of study: Molecular Genetics and physiology

Name of Institution: Kobe University

Location: Japan

My PhD research work was mainly focused on the following aspects:

1. Energy conserving capacity of the alternative pathway during wheat embryo germination and its enhancement under restriction of the main cytochrome pathway.
2. Transcriptome analysis of *Triticum aestivum* by different abiotic stresses like low temperature, NaCl and Mannitol treatments during germination and early seedling growth
3. Mitochondrial biogenesis as revealed by mitochondrial transcript profiles during germination and early seedling growth in wheat.

ii) Second highest level: Master's degree (MS) in Genetics & Plant Breeding

Graduation: 1997, **First class with distinction (A+)**

Field of study: Genetics & Plant Breeding

Name of Institution: Bangladesh Agricultural University

Location: Mymensingh, Bangladesh

iii) Third highest level: Bachelor of Science in Agriculture (B.Sc.Ag (Hons)

Graduation date: 15 July 1996, **First class**

Field of study: Agriculture

Name of institution: Bangladesh Agricultural University

Location: Mymensingh, Bangladesh

iv) Higher Secondary School Certificate (H.S.C)

Graduation year: 1988, **First Class**

Field of Study: Science

Name of College: Gaibandha Govt. Women College

v) Secondary School Certificate (S.S.C)

Graduation year: 1986, **First Class**

Field of Study: Science

Name of College: Gaibandha Govt. Girl's High School

E. WORK EXPERIENCE

Institute	Position	Period
United Arab Emirates University	Post doctoral fellow	25.10.2011 to 30.05.2013
Seoul National University	Post doctoral fellow	1.04.2009 to 30.04.2011
Bangladesh Institute of Nuclear Agriculture	Researcher	10.12.1997 to date

Kobe University, Japan	Doctoral student	1.10.2004 to 30.09.2007
Seoul National University, Korea	Research student	1.03.2003 to 30.09.2004
Ministry of Science and Technology	NST fellow	06.06.1996 to 31.12.1997

F. ACHIEVMENT

- i) Project for the Year 2022-2023 entitled “Accelerating the Genetic Gains in Rice: (AGGRi): IRRI-NARES breeding networks using rapid-cycle genomic selection to deliver annual genetic gains of 2% in rice” Funded by International Rice Research Institute (IRRI)
- ii) Project for the Year 2020-2021 entitled “Development of Cold Tolerant Rice lines Suitable for Northern part and Haor Areas of Bangladesh” Under the Ministry of Science and Technology
- iii) UAE National Research Foundation (NRF) for post doctoral research, form 25.10.2011 to 30.05.2013
- ii) Korea Science and Engineering Fellowship (KOSEF) for post doctoral research, form 1.04.2009 to 31.03.2010
- iv) Functional Genomic Center of 21st Century Frontier fellowship” Ministry of Science & Technology, Korea for post doctoral research from 01.04.2010 – 30.04.2011
- v) Monbusho Scholarship from Ministry of education, Science and sports of Japanese Government for Doctoral study in Kobe University, Japan from 1.10.2004 to 30.09.2007
- vi) The Third World Organization for Women in Science (TWOWS) fellowship for molecular research in the department of Genomics and Molecular breeding lab, Seoul National University, Korea from 1.03.2003 to 30.09.2004
- vii) National Science and Technology (NST) Fellowship from the Ministry of Science and Technology of Bangladesh Government for Master’s research in Bangladesh Agricultural University
- viii) Board Scholarship from the Ministry education (1986 and 1988) and University scholarship for undergraduate study in Bangladesh Agricultural University, 1992-1996
- ix) Talent pool scholarship from Primary and Secondary education Board, Bangladesh for class five and class eight

G. PROFESSIONAL TRAINING

- i) Food safety hazards and its exposure in Bangladesh” learning session, February 17, 2022, BINA, Mymensingh, Bangladesh
- ii) চতুর্থ শিল্প বিপ্লব (4IR) এর চ্যালেঞ্জ মোবাবেলায় বিনা’র করণীয় বিষয়ক কর্মশালা, February 23, 2022, BINA, Mymensingh, Bangladesh
- iii) Hands on setup of RT-PCR machine and software operation, March 03, 2022, BINA, Mymensingh, Bangladesh
- iv) সেবা প্রদান প্রতিশ্রুতি (সিটিজেন চার্টার) শীর্ষক প্রশিক্ষণ, March 28, 2022, BINA, Mymensingh, Bangladesh

- v) অভিযোগ প্রতিকার ব্যবস্থাপনা এবং জিআরএস সফটওয়্যার ও ই-গভর্ন্যান্স বিষয়ক প্রশিক্ষণ, March 29, 2022, BINA, Mymensingh, Bangladesh
- vi) Training on Bangladesh Biosafety Clearing-House, January 24-26, 2021, DOE, Dhaka, Bangladesh
- vii) অফিস ব্যবস্থাপনা, আইন ও বিধিবিধান বিষয়ক প্রশিক্ষণ, February 7-8, 2021, BINA, Mymensingh, Bangladesh
- viii) APA শীর্ষক প্রশিক্ষণ, May 30, 2021, BINA, Mymensingh, Bangladesh
- ix) Biosafety in Biotechnology Research and Development in Bangladesh, June 10, 2021, BINA, Mymensingh, Bangladesh
- x) সেবা সহজিকরণ বিষয়ক প্রশিক্ষণ, June 23-24, 2021, BINA, Mymensingh, Bangladesh
- xi) উদ্ভাবনের সক্ষমতা বৃদ্ধি প্রশিক্ষণ, June 29-30, 2021, BINA, Mymensingh, Bangladesh
- xii) Awareness workshop on development of upazila land suitable assessment crop zoning system of Bangladesh, February 26, 2020, BINA, Mymensingh, Bangladesh
- xiii) ÓAwWU I wcwCavi welqK m#PZbZvÓ welqK Kg@kvjv, April 28, 2019, BINA, Mymensingh, Bangladesh
- xiv) Training workshop on Soil Fertility and Fertilizer Management, February 24, 2014, BINA, Mymensingh, Bangladesh
- xv) Training workshop on Research Proposal Preparation and Scientific Report Writing from August 24-29, 2013, BRAC-CDM, Bangladesh
- xvi) Training course on IT (Illustration and Photoshop), July 2-14, 2013, Bangladesh Institute of Nuclear Agriculture (BINA), Bangladesh
- xvii) Training course on Research Methodology for two weeks, November 1-13, 2008, GTI, Bangladesh
- xviii) Special course on Bioinformatics, Genomics and Proteomics: Genomics and Molecular breeding lab, Seoul National University, Korea, 2003-2004
- xix) Special training on Nuclear Technique for Crop Production. Bangladesh Institute of Nuclear Agriculture, Mymensingh, 2003
- xx) Foundation training for three and half months in Bangladesh Academy for Rural Development, 2001, Bangladesh

H. SKILLS

- i) Biotechnology: Genetic Polymorphisms Analysis (SSR, RFLP, dCAPS, Indels markers), RT-PCR, DNA Sequencing, Protein Expression, Purification and Characterization; 2D gel electrophoresis, Micro array, Northern blotting, western blotting, Cloning & other molecular biology techniques.
- ii) Bioinformatics-Join Map, Mapmaker, Q-gene, QTL- Cartographer, NTSYSpc, SAS
- iii) Language proficiency: English, Japanese, Korean, Hindi, Bangla (Native)

I. PARTICIPATION AND PAPER PRESENTATION IN INTERNATIONAL CONFERENCE/SYMPOSIUM

- i) 3rd International Rice Congress from 8-12 November, 2010, Hanoi, Vietnam
- ii) The Korean Society of Crop Science from 21-22 October, 2010, Busan, Korea
- iii) Korean Society of Breeding Science conference from 8-9, July, 2010, Dejon, Korea
- iv) Plant Breeding & Genomics workshop from 24-25, June, 2010, Seoul, Korea
- v) Crop Functional genomics from 14-16 April, 2010, Jeju, Korea
- vi) 6th International Rice Genetics Symposium 16-18 Nov, 2009, Manila, Philippine
- vii) Plant Breeding Society Conference on July 1-3, 2009, Dejon, Korea
- viii) Plant Genomics and Breeding Workshop on June 17-18, Korea
- ix) Plant Genomics and Breeding Workshop on September 11, 2009, SNU, Korea
- x) International Congress on Plant Mitochondrial Biology ICPMB2007, Nara, Japan, June 25 – 29, 2007
- xi) Crop Functional Genomics, 2006, June 21-23, Seoul, Korea
- xii) International Biotechnology Conference, 2008, BARC, Dhaka, Bangladesh, 7-8 June

I. REFERENCES

1. Chiharu Nakamura, Vice President, Professor
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LIST OF PUBLICATIONS

PhD Thesis Title: Mitochondrial Biogenesis and effect of abiotic stress on germination and early seedling growth of wheat (*Triticum aestivum* L.).

MS Thesis Title: Genetic architecture and its environmental interaction in lablab bean.

Scientific Articles:

1. **S. Khanam**, M. M. A Noor, and M. S. Haque. Developing high yielding, lodging tolerant Biroi type rice lines through mutation breeding technique. Bangladesh Journal of Nuclear Agriculture. Vol. 35: 53-61 (2021)
2. N. B. Atiq, **S. Khanam**, T. A. Mujahidi, N. Zeba, M. S. Islam. Comparative study of hybrid maize varieties in relation to yield based on morphology and genetic parameters. Bangladesh Journal of Nuclear Agriculture. Vol. 35: 41-52 (2021)
3. **Sakina Khanam**, M. S. Islam, M.S. Haque, T. Sarmin, M. I. Ali and M. A.Topu. Improving yield of salt tolerant rice varieties through silicon Application. Bangladesh Journal of Nuclear Agriculture. 33 & 34: 1-10. (2020)
4. Md. Ariful Islam, Md. Rasel, **Sakina Khanam** and Lutful Hasan. Screening of rice genotypes for cold tolerance at the seedling and reproductive stages based on morpho physiological markers and genetic diversity analysis. Indian Journal of Natural Sciences. 10(58): 17964-17985. (2020)
5. Md. Shahidul Islam, Md. Monjurul Islam, Md. Habibur Rahman, **Sakina Khanam**, Md. Shahidul Haque Bir, Le Thi Hien and Kee Woong Park. Investigation of different Herbicides on Weed Infestation and Yield Performance of Transplant Binadhan-14 (*Oryza sativa* L.) in Bangladesh. Weed & Turfgrass Science. 9(3). 259-265. (2020)
6. Md. Shahidul Islam, **Sakina Khanam**, Md. Shamiul Haque, Md. Tanjilur Rahman Mondol and Md. Al-Arafat Topu. Improvement of yield of salt tolerant rice genotypes / varieties through gypsum application. Asian Journal of Crop, Soil Science and Nutrition (Journal BiNET). 1(2): 22-27. (2019)

7. **Sakina Khanam**, Md Tanjilur Rahman Mondal, Md. Shahidul Islam. Variation in morpho-physiological characters of four lentil genotypes of Bangladesh. *Fundamental and Applied Agriculture*. 3(3): 609-616 (2018)
8. R Mondal, M. T. Islam, B. S. Nahar and **S. Khanam**. Photosynthesis, dry matter production and yield of soybean genotypes under different salinity levels. *International Journal of Experimental Agriculture*. 8(1): 15-18 (2018)
9. M. S. Islam, M. M. Islam, M. H. Rahman, M. F. Islam, **S. Khanam**, M. Ali, M. A. Hye. Lodging resistance, growth and yield of selected aromatic rice varieties in relation to application of silicon. *American Journal of Research Communication*. 5(9): 25-32 (2017)
10. M. T. Islam, M.M.A. Mondal, M.S. Rahman, **S. Khanam**, M.B. Akter, M.A. Haque and N.C. Dafadar. Effect of foliar application of chitosan on growth and yield in tomato, mungbean, maize and rice. *International Journal of Sustainable Crop Production*. 11(2): 7-17(May 2016)
11. M. M. Hossain, K. M. M. Rahman, P. P. Das, M. S. Islam, M. H. Rahman and **S. Khanam**. Effect of defoliation on the source-sink relationship of summer mungbean. *Journal of the Bangladesh Society for Agricultural Science and Technology*. 13 (1-4):89-92 (2016)
12. Md. Shahidul Islam, Prof. Md. Abdur Rahman Sarkar, Mohammad Asad Ullah, & **Sakina Khanam**. Effect of transplanting date on the growth and yield of aromatic rice in irrigated ecosystem. *Journal of Agriculture and Veterinary Science*. 8(1): 59-65(2015)
13. Srinivasa R. Chaluvadi, **Sakina Khanam**, Mohammed A. M. Aly and Jeffrey L. Bennetzen. Genetic diversity and population structure of native and introduced Date Palm (*Phoenix dactylifera*) germplasm in the United Arab Emirates. *Tropical Plant Biology*. 7: 30-41 (2014)
14. **Sakina Khanam**, Arjun Sham, Jeffrey L. Bennetzen and Mohammed A. M. Aly. Analysis of molecular marker – based characterization and genetic variation in date palm (*Phoenix dactylifera* L.) A review. *Australian Journal of Crop Science*. 6 (8): 1236-1244 (2012)
15. Lutfur Rahman, **Sakina Khanam**, Jae-Hwan Roh and Hee-Jong Koh. Mapping of QTLs involved in resistance to rice blast (*Magnaporthe grisea*) using *Oryza minuta* introgression lines. *Czech Journal of Genetics and Plant Breeding*. 44 (3): 93-104 (2011)
16. Rahman M. L., **Sakina Khanam** and Ghosh AK. 2010. Impact of brown plant hopper(*Nilaparvata lugens*) resistance with different important agronomic traits

- of rice derived from a wild rice. Bangladesh Journal of Seed Science & Technology. 14 (1 & 2): 63-70 (2010)
17. **Sakina Khanam***, Naydenov NG*, Siniauskaya M, Nakamura C, Profiling of mitochondrial transcriptome in germinating wheat embryos and seedlings subjected to cold, salinity and osmotic stresses. Genes and Genetic System. 85(1): 31-42 (2010) (*equal contribution)
 18. Rahman ML, Jiang W, Chou S-H, Qiao Y, Ham T-H, Woo M-O, Lee J, **Sakina Khanam**, Chin J-H, Jeung J-U, Brar D, Jena K, Koh H-J, High-resolution mapping of two rice brown plant hopper resistance genes, *Bph20(t)* and *Bph21(t)*, originating from *Oryza minuta*. Theoretical and Applied Genetics. 119 (7): 1237-1246 (2009)
 19. Naydenov NG, **Sakina Khanam**, Atanassov A, Nakamura C, Expression profiles of respiratory components associated with mitochondrial biogenesis during germination and seedling growth under normal and restricted conditions in wheat. Genes and Genetic System. 83(1): 31- 41 (2008)
 20. Rahman ML, **Sakina Khanam**, Koh H-J, QTL analysis for yield related traits using populations derived from an *indica-japonica* hybrid in Rice (*Oryza sativa*). Czech Journal of Genetics and Plant Breeding. 44 (3): 93-104 (2008)
 21. **Sakina Khanam**, Naydenov NG, Kadowaki K, Nakamura C, Mitochondrial biogenesis as revealed by mitochondrial transcript profiles during germination and early seedling growth in wheat. Genes and Genetic System. 82 (5): 409-420 (2007)
 22. Rahman ML, Chu S-H, Choi MS, Qiao YL, Jiang W, Piao R, **Sakina Khanam**, Cho YI, Jeung JU, Jena KK, Koh H-J, Identification of QTLs for some agronomic traits in rice using an introgression line from *Oryza minuta*. Molecules and Cells. 24 (1): 16-26 (2007)
 23. Rahman ML, Jena KK, **Sakina Khanam**, Koh H-J, Identification of introgression in a back cross progeny derived from the cross between *Oryza sativa* x *O. minuta*. Bangladesh Journal of Progressive Science and Technology. 4 (2): 147-150 (2006)
 24. Chatterjee DD, Chowdhury MAK, Howlader MHK, Rahman MM and **Sakina Khanam**. Effect of zinc and yield nutrient contents of BR 1 rice in various soils of Bangladesh. Bangladesh journal of Progressive Science and Technology. 4 (1): 181-185 (2006)
 25. **Sakina Khanam**, Newaz MA, Genotype x environment interaction in relation to diallel crosses for flower character in Bean (*Lablab Purpureus*). Pakistan Journal of Scientific and Industrial Research. 46 (4): 277-282 (2003)

26. Dutta RK, Rahman MS, **Sakina Khanam**, Nitrate reduction activity of white jute (*Corchorus capsularis* L) in relation to fiber yield. Bangladesh Journal of Botany. 32 (1): 11-15 (2003)
27. R. K. Dutta, M. Siddiqure. Rahman and **S. Khanam**. 2003. Evaluation of assimilate partitioning and yielding potentials of bold seeded peanut (*Arachis hypogaea*). J. Sci. & Tec.(1): 119-122. (Short communication)
28. R. K. Dutta, **S. Khanam** and M. Siddiquir Rahman. 2003. Physiological evaluation of advanced lentil mutants in relation to nitrogen and yield potential. Bangladesh J. Agril. Res. 28(3): 385-392.
29. Dutta RK, Baset Mia MA, **Sakina Khanam**, Plant architecture and growth characteristics of fine grain and aromatic rice and their relation with grain yield. International Rice Commission Newsletter. 51: 51-55 (2002)
30. **Sakina Khanam**, Newaz MA, Genetic architecture of yield trait in bean (*Lablab Purpureus*). Bangladesh Journal of Plant Breeding and Genetics. 14 (1): 29-35 (2001)
31. **Sakina Khanam**, Newaz MA, Rahman ML, Combining ability and its interaction with environments in Lablab bean (*Lablab Purpureus*). Bangladesh Journal of Agricultural Research. 27 (2): 243-249 (2000)
32. Islam MS, Salam MA, Chanda MC, **Sakina Khanam**, Hossain SMA, Nessa J, Agronomic performance of some selected varieties of boro rice in Haor area. Bangladesh Journal of Environmental Science. 6 (2): 486-488 (2000)
33. Islam MS, Sarker G, Islam MM, Salam MA, **Sakina Khanam**. Agronomic performance of some selected varieties of boro rice in saline prone area. Bangladesh Journal of Environmental Science. 6: 306-309 (2000)
34. Rahman ML, **Sakina Khanam**, Comparative efficiency of urmoi, neem and turmeric extracts on feeding deterrent and toxicity against rice weevil and grain weevil. Journal of Agricultural Research. 37 (4): 321-322 (1999)
35. Dutta RK, Lahiri BP, **Sakina Khanam**, Rahman S, Aroma synthesis in Basmati rice in relation to temperature and nitrogen. Indian Journal of Plant Physiology, 4 (3): 215-218 (1999) (Short communication)
36. **Sakina Khanam**, Genetic regulation of character expression and its interaction with environments in *Lablab Purpureus*. Pakistan Journal of Biological Science, 2 (3): 647-650 (1999)

