

Research Interest and Achievement of Dr. Md. Azizul Haque Chief Scientific Officer, Soil Science Division, BINA

1. Personal Information:

1.	Name	: MD. AZIZUL HAQUE
2.	Father's name	: Late Ahed Ali Sardar
3.	Mother's name	: Late Fatema Khatun
4.	Husband's name (if applicable)	: Not applicable
5.	Gender	: Male
6.	Designation	: Chief Scientific Officer
7.	Institution	: Soil Science Division, Bangladesh Institute of Nuclear Agriculture, BAU Campus, Mymensingh.
8.	Date of joining in the present position	: 02-12-2021
9.	Date of first joining in service	: 01-06-1994
10.	Date of birth	: 05-12-1966

2. Educational Qualification:

Degree/Diploma/Certificate	Class/Grade/Division	University/Institute/Board	Year
S. S. C.	First	Rajshahi Board	1982
H. S. C.	First	Rajshahi Board	1984
B. Sc. Ag. (Hons.)	Second	Bangladesh Agricultural University (BAU), Mymensingh	1988
M.Sc. (Ag.) in Soil Science	First	BAU, Mymensingh	1991
Ph. D. (Soil Science)	-	BAU, Mymensingh	2012

3. Experience:

Position	Period		
	From	To	Total Yr./Mo
Scientific Officer (SO)	01-06-1994	05-11-2006	12 Yrs 5 mon
Senior Scientific Officer (SSO)	06-11-2006	02-08-2015	8 Yrs 9 mon
Officer- in -Charge, BINA substation, Satkhira	08-06-2014	14-01-2016	01 yrs. 7 mon
Principal Scientific Officer (PSO)	03-08-2015	01-12-2021	6yrs.3 mon
Chief Scientific officer (Current charge)	03-02-2021	01-12-2021	09 month
Chief Scientific officer	02-12-2021	to date	

4. Training attended:

(a) In Country:

Organization	Year	Duration		Name of programme
		Mos.	Days	
1. Graduate Training Institute, Bangladesh Agril. Univ.(BAU) Mymensingh.	1995		Jan 23 to 26	Use of Thana land and soil resource utilization guide.
2. BINA, Mymensingh,	1995	1	Aug. 1 to 31	Nuclear Agriculture Advanced agricultural research and environment friendly improved crop production packages.
3. BINA, Mymensingh.	1997	Mos.	Oct.6 to 15	
4. Lentil, Blackgram & Mungbean Development Project, BARI, Gazipur.	1998		March 29 to 30	Biofertilizer and its use in pulse production.
5. Graduate Training Institute, BAU, Mymensingh.	1998		April 20 to May 4	Statistical methods for agricultural research.
6. Graduate Training Institute, BAU., Mymensingh.	1999		Oct. 23 to Nov. 4	Data management.
7. BARD, Comilla.	2000	3.5 mos	Feb. 6 to May 21	Foundation Training.
8. BARD, Comilla.	2000		April 8 to 29	Computer training.
9. Comilla Motor Driving	2000		April 4 to 29	Motor driving.

and Mechanics Training School, Comilla.				
10. Bangladesh Agricultural Research Council (BARC), Dhaka/Bangladesh Rice Research Institute, Gazipur.	2004		June 1to10	Training on use of manual for fertilizer analysis.
11. BARC, Dhaka	2005		June 6-9	Management of problem soil
12. Bangladesh Fisheries Research Institute, Mymensingh.	2005		July 12-13	Training course on rice-fish farming
13. Korea Internet Volunteers Venue: BINA, Mymensingh	2010		August	ICT Training
14. BINA, Mymensingh	2011		20-24 August	Technical report writing
15. Cereal System Initiative for South Asia in Bangladesh, Dhaka.	2012		17-21 June	Data Management and report writing
16. Krishi Gobeshona Foundation, BARC Complex, Farmgate, Dhaka	2013		09-13 Feb.	Research proposal preparation and scientific report writing
17. BARC, Dhaka	2016		21-23 March	Use of Fertilizer Recommendation Guide-2012
18. National Agriculture Training Institute (NATA), Gazipur	2016		04-08 Dec	Climate Smart Agriculture
19. NATA, Gazipur	2017		23-27 Jan2017	Training of Trainers
20. BARC, Dhaka	2017		16-17 May 2017	Climate change, Carbon Sequestration and Adaptation Strategies
21. NATA, Gazipur	2018		23 Jan -01Feb.	Public procurement procedure
22. BARC, Dhaka	2018		06-08 Feb.	Climate change, Carbon Sequestration and Adaptation Strategies
23. BINA, Mymensingh	2019		21-26 January	Application of the stable isotope analyses in water quality studies
24. BARC, Dhaka	2019		26-28 Feb	Awareness building on act and policies of Bangladesh Agriculture
25. BARC, Dhaka	2019		11-13 March	Climate change, Carbon Sequestration and Adaptation Strategies
26. বিনা, ময়মনসিংহ	2019		23 March	জাতীয় শুদ্ধাচার কৌশল ও তথ্য অধিকার আইন বিষয়ক প্রশিক্ষণ।
27. বিনা, ময়মনসিংহ	2019		24 Aug.	নাগরিক সেবায় ইনোভেশন প্রশিক্ষণ কর্মশালা
28. BINA, Mymensingh	2019		18 Sept.	Enhancing Efficiency in research planning through institutionalization of ARMIS.

29. BARD, Comilla	219		11-24 Nov.	Adminstrative and finacial Management
30. বিনা, ময়মনিংহ	2019		13 June	GRS, APA এবং SDGবিষয়ক প্রশিক্ষণ কর্মশালা
31. বিনা, ময়মনিংহ	2019		5Dec	জাতীয় শুদ্ধাচার কৌশল ও তথ্য অধিকার আইন শীর্ষক প্রশিক্ষণ।
32. বিনা, ময়মনিংহ	2020		26 Feb.	Development of Upzila Land Suitability Assessment and Crop Zoning System of Bangladesh শীর্ষক কর্মশালা
33. বিনা, ময়মনিংহ	2020		26-28 January	Implementation of sustainable Development Goals (SDGs) of NARS Institutes,
34. বিনা, ময়মনিংহ	2020		09 July	GRS, এবং SDGবিষয়ক প্রশিক্ষণ কর্মশালা
35. বিনা, ময়মনিংহ	2020		11 March	নাগরিক সেবায় ইনোভেশন প্রশিক্ষণ কর্মশালা

(b) Abroad

Organization	Year	Duration		Name of programme
		Mos.	Days	
1. International Atomic Energy Agency, Vienna, Austria	2001	6 mos.	March 6 to Sept. 5	Soil Science, Irrigation and Plant Nutrition: Guided research on ¹⁵ N and ¹³ C isotopes in soil and plant relationship studies.
2. Dept. of Microbiology, CCS Haryana Agricultural University, India.	2007-08	6 mos	16 Aug.2007 to 15 Feb.2008	Microbial solubilization of phosphates.
3. Institute of Environment and Sustainable Development in Agriculture, Chinese Academy of Agril. Sciences, Beijing, China.	2013	12 days	6 May to 17 May	Nuclear Techniques in Agricultural Research.
4. Nuclear Malaysia	2013	6mos	30 Sept. 2013 to 31 March 2014	Development of composting biofertilizer and investigating their contribution to nutrient recycling from organic residues on crop production using ¹⁵ N isotope technique
5. Yuan Longping High-tech Agriculture Co. Ltd., Changsha, China.	2015	01mo	06 Aug.to 02 Sept.	Seminar on hybrid rice for developing countries
6. Guangxi University, Nanning, China	2019	-	25-29 March	Regional Training Course on the Application of Stable Isotopes for Soil and Water Quality Investigations (IAEA/RAS/5084 project)

5. Field of Expertise : Soil Science (Soil Microbiology and Soil Fertility)

6. On going research programme:

- a) Evaluation of different organic wastes for the production of vermicompost and its effect on crop yields and soil fertility using nuclear techniques
- b) Training of farmers on production and use of vermicompost to create small entrepreneurs
- c) Improvement of soil fertility and crop yield through inter cropping system using organic manures with isotopic techniques
- d) Fertilizer management for relay cropping system

7. Research programme/Project Developed

Sl. No	Name of the research Programs	Output of the project	Status	Role as
1	Nuclear techniques for the promotion of Agroforestry system	Highly nitrogen fixing legume tree (rain tree) selected.	Completed (1994-2000)	Co-PI
2.	Evaluation of fertilizer use efficiency in elite mutants developed at BINA	Fertilizers were recommended for mustard, lentil, groundnut and chickpea mutants etc. developed at BINA .	Ongoing (1994-to date)	Co-PI and PI
3	Preparation of database for environmental pollution	NH ₄ and NO ₃ -N were estimated from different areas and data were reported.	Completed (1995- to 1997)	
4	Soil health card services to farmers for sustained crop production	Soil health cards served to 80 farmers of Fulpur, Mymensingh and Nakla, Sherpur on the basis of soil analysis from farmers' plots.	Completed (1997-99)	Co-PI
5	Biological nitrogen fixation studies in pulse and oil seed crop using ¹⁵ N technique	Nitrogen fixation were estimated in lentil.	Completed (1998-2001)	Co-PI
6	Establishment of soil museum	Soil monoliths were collected under different soil series and set in soil museum to demonstrate soil profile for giving idea to the visitors/students about the variability of soil to soil in Bangladesh.	Completed (2002-2005)	Co-PI
7	Dynamics of organic materials on soil physical fertility and sustainable crop production	Mulching of rice straw preserved the soil moisture and nutrients supplied to wheat crops. Applied crop residue contributed to a considerable extent on organic matter build-up.	Completed (2000-2003)	Co-PI
8	Decomposition of organic	Yields were increased in boro (7.27-	Completed	Co-PI

	materials and nutrient release pattern (SFFP/DANIDA funded)	23.84%) and T.aman (1.7-10%) rice due to incorporation of crop residues.	(2000-2004)	
9	Development of phosphatic biofertilizer for maximizing crop production	50% P fertilizer could be saved for cultivating of T. aman rice, boro rice, lentil, chickpea and wheat by the integrated use of PSB inoculants with inorganic or organic sources of P.	Completed (2008-13)	PI
10	Evaluation of kasalat rice mutants under phosphorus deficit condition	Mutant kas-80 showed P efficiency in some extent.	Completed (2016-17)	PI
11	Reduction of chemical fertilizer in crop production using organic manures	25-30% chemical fertilizer could be saved by using organic manures in rice-rice cropping sequence	On going (2015- to date)	PI
12	Studies on the performance of vermicompost and organic materials for improving soil fertility and crop productivity (PIU-BARC, NATP-2-CRG ID:802) -PI	About 15-25% chemical fertilizer (NPKS) could be saved either with the application of 75% NPKS with 4 t ha ⁻¹ vermicompost or 85% NPKS with 2 t ha ⁻¹ vermicompost for mustard.	Completed (2017-18)	PI
13	Determination of critical limit of nutrients for major soils and crops (PIU-BARC, NATP-2-PBRG ID134)	14.6 ppm P were determined as critical limits for mustard.	On –going (2019- to date)	Co-PI
14	Improvement of soil fertility and crop productivity using soil conservation practices.	Mimimum tillage + 75% NPKS with giant mimosa residue mulch @3 tha ⁻¹ gave almost equal yield to the conventional tillage with 100% NPKS.	On –going (2019- to date)	PI
15	Evaluation of different organic wastes for the production of vermicompost and its effect on crop yields and soil fertility.	Grain and straw yields of Boro rice was increased 14.5% and 12.8% with the application of Phospho-vermicompost resulted getting of higher return.	On –going (2019- to date)	PI
16	Fertilizer management for relay cropping system.	100% STB (N ₉₀ P ₂₇ K ₃₂ S ₁₅ Zn ₁ B ₁ kgha ⁻¹) fertilizer doses enhanced the growth of mustard resulted in higher seed yields under zero tillage.	On –going (2019- to date)	PI

8. Research programme/Project Supervised

Sl. No.	Name of the research Programmes/projects	Role as
1	Nuclear techniques for the promotion of Agroforestry Systems (IAEA/RAS 029-project)-	Co-PI
2	Evaluation of fertilizer use efficiency in elite mutants developed at BINA	Co-PI
3	Studies of crop response to mixed and straight fertilizers in different agro-ecological zones	Co-PI
4	Preparation of database for nitrate pollution	Co-PI
5	Biological nitrogen fixation studies in pulse and oil seed crop using ¹⁵ N technique	Co-PI
6	Development of biofertilizer for cereal crops	Co-PI
7	Establishment of soil museum	Co-PI
8	Decomposition of organic materials and their nutrient release pattern (SFFP/DANIDA funded)	Co-PI
9	Management of problem soils for increasing crop production.	Co-PI
10	Dynamics of organic materials on soil physical fertility and sustainable crop production.	Co-PI
11	Soil health card services to farmers for sustained crop production.	Co-PI
12	Establishment of Biofertilizer Resource Center at BINA (IDB funded project)	Co-PI
13	Establishment of soil museum at BINA.	Co-PI
14	Development of phosphatic biofertilizer for maximizing crop production.	Co-PI
15	Reduction of chemical fertilizer in crop production using organic manures.	PI
16	Studies on the performance of vermicompost and organic materials for improving soil fertility and crop productivity (PIU-BARC, NATP-2-CRG ID:802).	PI
17	Determination of critical limit of nutrients for major soils and crops (PIU-BARC, NATP-2-PBRG ID134)	Co-PI
18	Improvement of soil fertility and crop productivity using soil conservation practices and organic amendments	PI
19	Evaluation of kasalat rice mutants under phosphorus deficit condition	PI

9. Research programme/Project executed

Sl. No.	Name of the research Programmes/projects	Role as
1	Nuclear techniques for the promotion of Agroforestry System (IAEA/RAS 029-project).	Co-PI
2	Evaluation of fertilizer use efficiency in elite mutants developed at BINA.	Co-PI
3	Studies of crop response to mixed and straight fertilizers in different agro-ecological zones.	Co-PI
4	Preparation of database for nitrate pollution.	Co-PI
5	Biological nitrogen fixation studies in pulse and oil seed crop using ¹⁵ N technique .	Co-PI
6	Development of biofertilizer for cereal crops.	Co-PI
7	Establishment of soil museum .	Co-PI
8	Decomposition of organic materials and their nutrient release pattern (SFFP/DANIDA funded).	Co-PI
9	Management of problem soils for increasing crop production.	Co-PI
10	Dynamics of organic materials on soil physical fertility and sustainable crop production.	Co-PI
11	Soil health card services to farmers for sustained crop production.	Co-PI
12	Establishment of Biofertilizer Resource Center at BINA (IDB funded project).	Co-PI
13	Establishment of soil museum at BINA.	Co-PI
14	Development of phosphatic biofertilizer for maximizing crop production.	Co-PI
15	Reduction of chemical fertilizer in crop production using organic manures.	PI
16	Studies on the performance of vermicompost and organic materials for improving soil fertility and crop productivity (PIU-BARC, NATP-2-CRG ID:802).	PI
17	Determination of critical limit of nutrients for major soils and crops (PIU-BARC, NATP-2-PBRG ID134).	PI
18	Improvement of soil fertility and crop productivity using soil conservation practices and organic amendments .	PI
19	Evaluation of kasalat rice mutants under phosphorus deficit condition.	PI

9. Achievements:

a) Technology Developed:

Sl. No.	Name of the technologies/information	Reference	Role as
1	Developed a method for determination of $^{13}\text{C}/^{12}\text{C}$ isotopes from plant and soil samples using FANci2 (Optical breath test analyzers) for the study of carbon sequestration and carbon management in soils.	Hood, R. C., Khan, M., Haque, A. , Khadir, M., Bonetto, J. P., Mayr, L. and Heiling, M. 2003. Development of preparation methods for Carbon ¹³ /Carbon ¹² analysis of soil and plant samples using optical breath test analyzers. Commun. Soil Sci. Plant Anal., 34 (15&16):2219-2227.(Online).	Co-PI and IAEA Fellow
2	Evaluation of fertilizer requirements of tomato mutant E-6 developed at BINA	BINA annual report 1994-95	CO-PI
3	Fertilizer recommendation of rapeseed mutants (MM-36-41-90, MM-43-66-90 and MM-19-33-90) developed at BINA. Among these mutants, MM-19-33-90 and MM-43-66-90 have been registered with the National Seed Board as high yielding varieties for cultivation in Bangladesh	BINA annual report 1994-95	CO-PI
4	Fertilizer recommendation of lentil mutants (ML-432 and ML-22) developed at BINA. Among the mutants ML-432 has been registered with the National Seed Board as high yielding variety for cultivation in Bangladesh.	BINA annual report 1995-96	CO-PI
5	Fertilizer recommendation of chickpea mutants (P-34 and L-84) developed at BINA. These two lines have been registered with the National Seed Board as varieties in the name of Binasola-3 and Binasola-4.	BINA annual report 1999-2000	CO-PI
6	Fertilizer recommendation of groundnut mutants (Mut. 3 and Mut.62-30) developed at BINA.	BINA annual report 1997-98	CO-PI
7	Both the mixed fertilizer of T. S. P complex LTD. and Chittagong urea fertilizer LTD gave similar yields of T. aman rice and wheat to the straight fertilizer. Mixed fertilizer could be used as alternate of straight fertilizer.	BINA annual report 1994-95	CO-PI
8	Evaluated of biological N_2 fixation ability of some legume trees such as Rain tree, Sissoo, Acacia, Babla, <i>Delonix regia</i> and Tamarind for agroforestry system in Bangladesh. Rain tree	Haque, M. A. , Khan, M. K., Ali, M. I. and Patwary, S. U. 1997. Evaluation of N_2 fixation ability and biomass production of some	CO-PI

	was selected as the best N ₂ fixer among the species.	legume trees in Bangladesh. Bangladesh J. Nuclear Agric. 13: 59-64.)	
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Sl. No.	Name of the technology/information	Reference	Role as
9	Application of leaf litter (tree prunings) of rain tree (<i>Samanea saman</i>) and sissoo (<i>Dalbergia sissoo</i>) equivalent to 80 kg N/ha produced higher rice. The N contribution of leaf litter ranged between 42-50%. Leaf litter of rain tree could be used as a source of organic nitrogen and other nutrients for crop production	Haque, M. A., Ali, M. I. and Khan M. K. 1999. Quantifying N availability from legume tree prunings for a rice and wheat rotation. Thai J. Agric. Sci. 32 (1) : 41-47.	CO-PI
10	Highest grain yield of T. aman rice was obtained with minimum tillage which received preceding crop residue. Minimum tillage with crop residue showed a promising approach in terms of similar crop yields with conventional tillage.	Supervised of MS Thesis (Alam, M. J., Roll 04AgSSJJ-12M, Reg. No. 24499, BAU, Mymensingh). `111 2005. Effect of crop residue and tillage practices on carbon dioxide emission, soil fertility and rice yield.	PI
11	The PSB isolate MR1 showed the highest P solubilization (45.1%) and acid phosphatase activity (31.1 µg pNP mL ⁻¹ h ⁻¹) from the Fe-P .	Haque, M. A., Sattar M. A., Islam, M.R., Hashem, M. A. and Khan, M.K.2013. Evaluation of phosphate solubilizing bacteria in relation to phosphorus solubilization and phosphatase activity. Bangladesh J. Nuclear Agric.29.73-84.	PI
12	Peat soil was found as the best carrier for the production of phosphatic biofertilizer followed by either its mixture with pond slurry or pressmud at the ratio of 1:1	Haque, M. A., Sattar M. A., Islam, M.R., Hashem, M. A. and Khan, M.K. 2012. Effect of carrier materials and temperature on shelf life of phosphate solubilizing bacterial inoculants. Bangladesh J. Nuclear Agric. 25&26:77-84.	PI
13	Application of PSB inoculants increased the PSB population and phosphatases activity in rhizosphere of crops. 50% P fertilizer could be saved for cultivating of lentil and T. aman rice, by the integrated use of PSB inoculants with inorganic or organic sources of P	Haque, M.A and Khan, M.K. 2012 J. Environ. Sci. & Natural Resources. 5(2): 225-230. Haque, M. A., Sattar, M. A. Hashem, M.A. and Islam, M.R. 2016 J. Bangladesh Soci. Agric. Sci. and Technol., 13(1-4):55-58.	PI
14	Mixtures of soil, cowdung, rice straw, poultry manure, giant mimosa residue at the ratio of 2:2:1.33:1.33:1.33 with the red wigglers earthworms found more suitable for the production of nutrient rich	Haque, M.A. and Ali, M.M. 2018. Studies on the performance of vermicompost and organic materials for improving soil fertility and crop productivity. Project completion report. Competitive Research Grant	PI

vermicompost	(CRG), NATP: Phase II, Project Project Implementation Unit., BARC, Farmgate, Dhaka and BINA Annual report 2018-19.
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Sl. No.	Name of the technology/information	Reference	Role as
15	About 15-25% chemical fertilizer (NPKS) could be saved either with the application of 75% NPKS with 4 t ha ⁻¹ vermicompost or 85% NPKS with 2 t ha ⁻¹ vermicompost for mustard at Mymensingh Ishurdi and Rangpur.	Haque, M. A. and Ali1, M.M .2020. Integrated effects of vermicompost with chemical fertilizers on the yield of mustard. Progressive Agriculture, 31 (2): 81-88.	PI
16	জৈব সার ব্যবহারের মাধ্যমে রাসায়নিক সার সাশ্রয়	হক, এম. এ. এবং আলী, এম. এম. ২০১৯. বার্ষিক কর্মসম্পাদন চুক্তির আওয়তায় লিফলেট, মৃত্তিকা বিজ্ঞান বিভাগ, বিনা, ময়মনসিংহ।	PI
17	ফসফো-ভার্মিকম্পোস্ট ব্যবহারের মাধ্যমে রাসায়নিক সার সাশ্রয়	হক. এম. এ. এবং আলী, এম. এম. ২০২০. বার্ষিক কর্মসম্পাদন চুক্তির আওয়তায় লিফলেট, মৃত্তিকা বিজ্ঞান বিভাগ, বিনা, ময়মনসিংহ।	PI
18	সরিষা চাষাবাদে ফসফরাসের ক্রান্তিমান নির্ধারণ,	রহমান, এম. এইচ., হক, এম. এ. , তোপদার, এম.এম.এ. এবং খান, এম.আর., ২০২০. বার্ষিক কর্মসম্পাদন চুক্তির আওয়তায় লিফলেট, মৃত্তিকা বিজ্ঞান বিভাগ, বিনা, ময়মনসিংহ।	Co-PI
19	শূন্য চাষে সার সুপারিশের ভিত্তিতে সরিষা উৎপাদনের কলাকৌশল	হক, এম. এ. , রোকনুজ্জামান, এম, আলী, খা. জা, রানা, এস. এবং কামরুন্নাহার ২০২১ বার্ষিক কর্মসম্পাদন চুক্তির আওয়তায় লিফলেট জমাদান, মৃত্তিকা বিজ্ঞান বিভাগ, বিনা, ময়মনসিংহ।	

b) Technology Transfer activities:

Tecnology Transfer activities	Importance:	Year and fund
1. Arranged a farmers' field day on Fertilizer recommendation of mustard cultivation under zero tillage at Aurokola, Ishurdi, Pabna, 20 Feb 2021.	1. Mustard production will increased.	GOB
2. Arranged a farmers' field day on Fertilizer recommendation of mustard cultivation under zero tillage at	2. Mustard production will increased.	

<p>Babugonj, Barisal, March 2021.</p> <p>3. ভাৰ্মিকম্পোষ্ট উৎপাদনে ৬০ জন ক্ষুদ্র উদ্যোক্তা তৈরি করা হয়েছে।</p>	<p>3. কৃষক নিজেই ক্ষুদ্র উদ্যোক্তা হিসেবে ভাৰ্মিকম্পোষ্ট উৎপাদন করবে।</p>	<p>2021-22 সালের বিনার ইনোভেশন খাতে বাস্তবায়ন।</p>
<p>4. ভাৰ্মিকম্পোষ্ট উৎপাদনের কলা – কৌশলের উপর ক্ষুদ্র উদ্যোক্তাসহ 150 জনকে প্রশিক্ষণ প্রদান করা হয়েছে।</p>	<p>4. কৃষকগণ নিজেই ভাৰ্মিকম্পোষ্ট উৎপাদন করতে পারবে।</p>	<p>2021-22 সালের বিনার ইনোভেশন খাতে বাস্তবায়ন।</p>

c) Outstanding achievement/ research relevant activities

1) Award received:

- Awarded a **Competitive Research Grant** on “Studies on the performance of vermicompost and organic materials for improving soil fertility and crop productivity (**BARC-NATP-2-CRG-802**)” during 2017-18.

2) Supervision of MS thesis and reviewed of Scientific articles:

Recognized as supervisor of MS student of BAU. **Supervised the research of 17 M.S. students of the Dept. of Soil Science and Agril. Chemistry, BAU, Mymensingh.**

Eevaluated different MS thesis as examiner and reviewed different scientific papers/reports

3) Participation as resource person in the different training programme:

- Use of chemicals, laboratory and analytical techniques involved in soil plant and water analysis : Sample preparation and measurement of ¹⁵N, held at BINA.
- Soil fertility and its effects on experimental plot and Role of organic matter on soil health” in the Modern cotton cultivation technology transfer training program for Scientific Assistant held at Cotton Research, Training and Seed Multiplication Farm, Gazipur, from 10-13 Feb.2012.
- Biofertilizer training program for the different level of the DAE personnel at BINA, Mymensingh, DD office, Jessore, DD office Satkhira, DD office, Faridpur, DD office Kustia and DD office Sylhet during 2006-07.
- Delivered lecture on ‘Cultivation method of salt tolerant rice varieties Binadhan 10 and Binadhan 8’ in the male and female farmers’ training programme of Satkhira held at BINA substation, Satkhira, March 2015.
- Lecture delivered on ‘Cultivation method of salt tolerant varieties Binadhan 10 and Binadhan 8 and other technologies developed at BINA’ in the training programme of Agriculture Officers of Satkhira district, held at BINA substation, Satkhira, March 2015.
- Lecture delivered in a farmers’ field day on “Cultivation of Binchinabadam 6 and Binamoog 8” at Badoghata, Shamnagar, Satkhira in March 2015.
- Lecture delivered in a farmers’ field day on cultivation of Bindhan 10 and Binadhan 8 at Pithali, Asasuni,, Satkhira, 17 April 2015.
- Lecture delivered in a farmers’ field day on cultivation of Bindhan 10 and Binadhan 8 at Kulia, Debhata, Satkhira, 18 April 2015,
- Lecture delivered in a farmers’ field day on cultivation of Bindhan 10 and Binadhan 8 at Dhulihor, sadar, Satkhira, 18 April 2015.
- Lecture delivered in a farmers’ field day on Participatory Variety Selection (PVS) with salt tolerant rice lines with better grain quality at Benarputa Satkhira sadar and Debipur, Shamnagar upzilla under Satkhira district on 7 May 2015

- Lecture delivered in a farmers' field day on Participatory Variety Selection (PVS) with salt tolerant rice lines with better grain quality at Kamta, Debhata, under Satkhira and Jhelardanga, Dumuria under Khulna district on 8 May 2015.
- Lecture delivered on 'Cultivation method of salt tolerant varieties Binadhan 10 and Binadhan 8 and Binamoog 8' in the training programme of Sub-assistant Agriculture Officers of Satkhira district, held at BINA substation, Satkhira, March 2015
- Lecture delivered on soil organic matter studies using ^{13}C isotope techniques, in the training course "Use of Nuclear Techniques on Advanced Agricultural Research". May 2016, BINA, Mymensingh
- Lecture delivered on Studies of soil- plant relationship using ^{15}N isotope, in the training course "Use of Nuclear Techniques on Advanced Agricultural Research" May 2016, BINA, Mymensingh.
- Lecture delivered on Use of ^{15}N and ^{13}C isotopes techniques in agriculture research at the training course "Research Management" held at BINA, Mymensingh, 14-18 Feb. 2018.

4) Arranged Field Days/training programme for transferring of technologies of BINA

- Cultivation of Binachinabadam- 6 and Binamoog -8 at Badoghata, Shamnagar, Satkhira in March 2015,
- Cultivation of Binadhan -10 and Binadhan- 8 at Pithali, Asasuni,, Satkhira, 17 April 2015.
- Cultivation of Binadhan 10 and Binadhan 8 at Kulia, Debhata, Satkhira, 18 April 2015.
- Cultivation of Binadhan 10 and Binadhan 8 at Dhulihor, sadar, Satkhira, 18 April 2015.
- Participatory Variety Selection (PVS) with salt tolerant rice lines with better grain quality at Benarputa, Satkhira sadar and Debipur, Shamnagar on 7 May 2015.
- Participatory Variety Selection (PVS) with salt tolerant rice lines with better grain quality at Kamta, Debhata, Satkhira and Jhelardanga, Dumuria, Khulna district on 8 May 2015.
- " Fertilizer recommendation of mustard under zero tillage cultivation at Aurongkola, Ishurdi and Babugonj, Barishal during 2021.

5) Conducted Field Demonstration, Seed Multiplication and Distribution, and evaluation of advance lines

- Conducted about 228 demonstrations in collaboration with the Adaptive Research and Extension Division, BINA and the Department of Agriculture Extension (DAE) in the different farmers' field of Satkhira and Khulna Districts as Officer -In -Charge, BINA substation, Satkhira during 2014-15.
- Seed multiplied of different crops like rice, mustard and sesame at the substation farm and farmers' field, Satkhira.
- Associated with on farm evaluation activities of BINA developed salt tolerant advance wheat mutants in Satkhira region.
- Associated with the Adaptive Research and Extension Division of BINA in the distribution of Binadhan-8 and Binadhan-10 among the farmers in 6 Upazilla of Satkhira District through DAE.
- Conducted on farm trial of rapeseed mutants in collaboration with the Plant Breeding Division of BINA.

- Conducted demonstration on “Management of saline soil for groundnut and mungbean cultivation” under the project of IAEA/RAS 5064 in Satkhira in collaboration with the Soil Science Division of BINA and DAE.

6) Supervision of Administrative works:

- Managed and supervised all official works as Officer –In- Charge of the BINA substation, Satkhira and supervised the works of scientific officers, officers and staffs in Satkhira substation during his duties. Supervised also scientists and scientific assistant in the Soil Science Division, BINA, Mymensingh.

7) Performed duties as rapporteur in the different workshop

- Annual Research Review Workshop of BINA in different years (2010-11, 2011-12)
- Research Review and Planning Workshop on Soils Program of NARS Institutes in different years (2012, 2014 and 2018) at the BARC, Dhaka.

8) Performed duties as member and chairman of different committee formed by the authority

- Chairman of Food Committee, BINA Annual Research Review workshop in different years (2009, 2010, 2011-12)
- Chairman of Food Committee, Celebration of Independent day and National day-2017 and 2018.
- Chairman/member of different investigation committee.
- Chairman and member, monitoring committee of construction activity at BINA substation, Noakhali and Chapainawabgonj.
- Worked as a member of monitoring committee of Research Programme Implementation (পুষ্টি নিরাপত্তার লক্ষ্যে----- ডাল, তেলবীজ এবং দানাজাতীয় ফসলের উচ্চ ফলনশীল এবং প্রতিকূলতা সহনশীল জাত উদ্ভাবন শীর্ষক গবেষণা কর্মসূচীর মনিটরিং টিমের সদস্য হিসেবে দায়িত্ব পালন।)
- Worked as chairman/member about 170 (hundred seventy) purchase committee of the institute.
- Participated in the Bangladesh Betar Programme and delivered a speech on “Management of Phosphate Fertilizers for Cultivating of Boro rice (in Bangla), Broadcast on 30 Dec.2012 at 7:05 pm from Bangladesh Betar, Sher-e-Banglanagar, Dhaka.

9) Participation in Radio Programme

Participated in radio talk at the Bangladesh Betar on-

- “Management of phosphatic fertilizer for BINA developed T. Aman rice” broadcasted on 11 Aug. 2014
- Management of phosphatic fertilizer for cultivating of Boro rice, Broadcasted on 30 Dec.2012.
- “Use of phosphate solubilising biofertilizer in crop production” broadcasted on 29 Aug. 2014.

10) Activities of Professional societies

Involved with the different professional societies such as-

- Life member of Krishibid Institution of Bangladesh,
- Life member of Agricultural Education and Extension Societies, Member of Soil Science Society of Bangladesh
- Life Member of Bangladesh Association for the Advancement of Science
- Member of Bangladesh Association for Environmental Development
- Ex- treasurer of Bangladesh Institute of Nuclear Agriculture Scientists Association (BINASA)
- Ex-Vice President of BINASA and Ex-In charge President of BINASA.

d) Supervision of MS Thesis:

Name of students	Year	Title of Thesis	Department	Comment
1. Khalequzzaman Reg. No. 18858	June 2002	Comparative performances of various organic sources of nitrogen in wheat.	Dept. of Soil Science	M. S. Degree obtained
2. Md. Saidur Rahman, Reg. No. 23134	Nov. 2004	Yield and Nutrient uptake by wheat as influenced by tillage and crop residues.	Dept. of Agricultural Chemistry	Do
3. Md. Hafizur Rahman Reg. No. 23059	Dec. 2004	Integrated use of poultry manure and rain tree leaves with inorganic nitrogenous fertilizer in rice cultivation.	Dept. of Soil Science	Do
4. Md. Ziaur Rahman, Reg. No.22938	Dec. 2004	Integrated use of cowdung and acacia leaves with inorganic nitrogenous fertilizer in rice cultivation.	Dept. of Soil Science	Do
5. Md. Zamir Uddin, Reg. No. 24451	June 2005	Integrated Use of poultry manure and rice straw with inorganic nitrogenous fertilizer in rice cultivation.	Dept. of Soil Science	Do
6. Md. Joynal Abedin Reg. No. 240208	June 2005	Effect of acacia leaves and banana plant residue as supplement of N in rice cultivation.	Dept. of Soil Science	Do
7. Md. Jahangir Alam Reg. No. 24499	June 2005	Effect of crop residue and tillage practices on carbon dioxide emission, soil fertility and rice yield.	Dept. of Soil Science	Do
8. Md. Anwar Sadad Reg. No. 23585	Dec. 2005	Effect of different land use practices on CO ₂ fluctuation and nutrient availability in presence or absence of crop.	Dept. of Agricultural Chemistry	Do

9. Dewan Kamrul Hasan, Reg. No. 24827	Dec. 2005	Effect of rice straw on soil moisture conservation yield and nutrient uptake by wheat under different tillage system.	Dept. of Agricultural Chemistry	Do
10. Md. Ehsanul Haider Reg. No. 23609	Dec. 2005	Effect of biofertilizer and poultry manure with different level of urea-N on growth yield and quality of soybean.	Dept. of Agricultural Chemistry	Do
11. Md. Rowshon Ali Reg. No. 25398	Dec. 2005	Residual effects of banana plant residues and acacia leaves as supplement of potassium on rice yield (BRRI dhan 29) and soil fertility.	Dept. of Soil Science	Do
12. Md. Lutful Quder Al-Mamun	Dec. 2005	Response of soybean to integrated use of nitrogenous chemical fertilizer, organic manure and biofertilizer	Dept. of Soil Science	Do
13. Dipok Kumar Reg. No. 32782	Dec. 2007	Effect of Phosphate solubilizing bacteria with different organic manures and P levels on growth yield and nutrient content of wheat	Dept. of Agril. Chemistry	Do
14. Md. Rajib Ahsan Reg. 32781	Nov. 2007	Integrated use of phosphate solubilizing bacteria, <i>Bradyrhizobium</i> and P on nodulation and nutrient uptake by soybean	Dept. of Agril. Chemistry	Do
15. Md. Monirul Islam Reg. No. 27427	May 2007	Effect of phosphate solubilizing bacteria with various levels of phosphorus fertilizer on growth and yield of rice	Dept. of Soil Science	Do
16. Shamim Ara Sultana Shormy Reg. No. 32101	Dec. 2012	Organic nutrient management on yield, nutrient content and their uptake by T. aman rice	Dept. of Agril. Chemistry	Do
17. Fatema Jannat Masfe Reg. No.: 40170.	Dec 2020	Effect of nitrogen and potassium on the growth and yield of Binadhan-17	Dept. of Soil Science	Do
18. Alamin Hossen Rg No. 50400	June 2021	Effects of different residues based vermicompost on the growth and yield of T. aman rice	Dept. of Soil Science	Do

10) Publication list of Dr. Md. Azizul Haque, CSO, BINA, Mymensingh-2202

Scientific Articles:

International scientific paper: 05 Nos (24-28)

As Principal author : 02Nos (24-25)

1. **Haque, M. A.**, Ali, M. I. and Khan M. K. 1999. Quantifying N availability from legume tree prunings for a rice and wheat rotation. Thai J. Agric. Sci. 32 (1) : 41-47.
2. **Haque, M. A.**, Ali, M. I. and Khan, M. K. 2001. Effect of tree prunings on soil fertility and crop yield in alley cropping system. Pak. J. Biol. Sci. 4 (6) : 647-650.

As Co-author : 03Nos (26-28)

3. Hood, R. C., Khan, M., **Haque, A.**, Khadir, M., Bonetto, J. P., Mayr, L. and Heiling, M. 2003. Development of preparation methods for Carbon¹³/Carbon¹² analysis of soil and plant samples using optical breath test analyzers. *Commun. Soil Sci. Plant Anal.* 34 (15&16):2219-2227.
4. Hood, R. C., Khan, M., **Haque, A.**, Khadir, M., Bonetto, J. P., Syamsul, R., Mayr, L. and Heiling, M. 2004. Carbon Sequestration and estimated carbon credit values as measured using ¹³C labelling and analysis by means of an optical breath test analyzer. *Anal. Bioanal Chem.* 379:242-246.
5. Kamrun ,N., **Haque, M. A.**, Chowhan, S., Ali, M.K.J., Hossain, M.M. and Rahman, M. M. 2021. Combined effect of vermicompost and inorganic fertilizer on yield and yield contributing characters of tomato plant. *Asian J. Soil Sci.Plant Nutr.* 8(1):20-26

National scientific paper: 23 Nos**As Principal author: 16Nos (1-16)**

6. **Haque, M. A.**, Hashem, M. A., Islam, M. R. and Jahiruddin, M. 1997. Effects of N, P, K, S and Zn on indigenous cyanobacteria and yield of BR2 rice. *Prog. Agric.* 8 (1 & 2) : 43 – 47.
7. **Haque, M. A.**, Khan, M. K., Ali, M. I. and Patwary, S. U. 1997. Evaluation of N₂ fixation ability and biomass production of some legume trees in Bangladesh. *Bangladesh J. Nuclear Agric.* 13: 59-64.
8. **Haque, M. A.**, Ahsan, D. K. and Sattar, M. A. 2006. Effect of rice straw and tillage system on soil moisture conservation yield and nutrient uptake by wheat. *J. Bangladesh Soci. Agric. Sci. Technol.* 3(1&2):121-124.
9. **Haque, M. A.** and Sattar M. A. 2008. Reduction of P fertilizer by using phosphate solubilizing bacteria with different organic manures in wheat cultivation . *J. Environ. Sci. & Natural Resources.* 1 (2): 107-111.
10. **Haque, M.A.** and Khan, M. K. 2012. Effects of phosphatic biofertilizer with inorganic and organic sources of phosphorus on growth and yield of lentil. *J. Environ. Sci. & Natural Resources.* 5(2): 225-230.
11. **Haque, M. A.**, Sattar M. A., Islam, M.R., Hashem, M. A. and Khan, M.K. 2012. Isolation of phosphate solubilizing bacteria and their screening on phosphorus solubilizing ability from tricalcium phosphate. *Bangladesh Soci. Agric. Sci. and Technol.* 9 (3&4):31-34.
12. **Haque, M. A.**, Sattar M. A., Islam, M.R., Hashem, M. A. and Khan, M.K. 2012. Studies on boro rice response to phosphatic biofertilizer with inorganic and organic sources of phosphorus. *Bangladesh Soci. Agric. Sci. and Technol.* 9 (3&4): 19-22.
13. **Haque, M. A.**, Sattar M. A., Islam, M.R., Hashem, M. A. and Khan, M.K. 2012. Effect of carrier materials and temperature on shelf life of phosphate solubilizing bacterial inoculants. *Bangladesh J. Nuclear Agric.* 25&26:77-84.
14. **Haque, M. A.**, Sattar M. A., Islam, M.R., Hashem, M. A. and Khan, M.K. 2013. Performance of phosphate solubilizing bacteria with various phosphorus levels on wheat in pot culture. *J. Environ. Sci. & Natural Resources.* 6 (1): 221-226.

15. **Haque, M. A.**, Sattar M. A., Islam, M.R., Hashem, M. A. and Khan, M.K.2013. Evaluation of phosphate solubilizing bacteria in relation to phosphorus solubilization and phosphatase activity. Bangladesh J. Nuclear Agric. 29:73-84.
16. **Haque, M. A.**, Sattar M. A., Islam, M.R. and Hashem, M. A. 2016. Effects of PSB inoculants on rice with inorganic or organic sources of P in Madhupur Tract soil of Bangladesh. J. Bangladesh Soci. Agric. Sci. and Technol.,13(1-4):55-58.
17. **Haque, M.A.** and Ali, M.M., 2019. Reduction in use of chemical fertilizer by integrating manures in rice-rice cropping pattern. J. Bangladesh Soc. Agric. Sci. Technol., 16 (1- 2):33-38.
18. **M. A. Haque**, M. M. Ali, M. Roknuzzaman, M. A. A. Topu and M.T. R. Mondal. 2019. Abundance, isolation and relation of earthworms to soil properties from different agro-ecological zones of Bangladesh. J. Bangladesh Soc. Agric. Sci. Technol., 16(1- 2):45-50.
19. **Haque, M. A.** and Ali1, M.M .2020. Integrated effects of vermicompost with chemical fertilizers on the yield of mustard. Progressive Agriculture, 31 (2): 81-88.
20. **Haque, M.A.** and Ali, M.M., 2020. Production of phospho-vermicompost by earthworms mediated bio-conversion of organic residues and rock phosphate . Progressive Agriculture 31(3):195-204.
21. **Haque, M.A.** , Hossen, A. and Hashem, M.A.2021. Integrated effects of different residues based vermicompost with chemical fertilizer on the growth and yield of T. aman rice. Progressive Agriculture,32(2):96-106.

As Co-author :07 Nos (17-23)

22. Ullah, M. A., Abedin Mian, M. J., **Haque, M. A.**, Khan, S. T. and Brhama, S. 1998. Effect of land use practices on P and K sorption and desorption behaviour in soils of Madhupur Tract. Bangladesh J. Environ. Sci. 4:87-95.
23. Hashem, M. A., Islam, M. R. and **Haque, M. A.** 2000. Effects of cyanobacteria on grain yield of rice in different types of soils. Bangladesh J. Seed Sci. &Tech.4 (1&2): 47-51.
24. Khalequzzaman, **Haque, M. A.**, Hashem, M. A. and Sattar, M. A. 2005. Integrated use of various organic sources of nitrogen and urea on growth, yield and nutrient uptake by wheat. J. Bangladesh Soci. Agric. Sci. and Technol. 2(3&4): 157-160.
25. Khan, M. R., **Haque, M. A.**, Tarafder, M. A. and Nain, J. 2011. Response of soybean to integrated use of urea, manure and biofertilizer. J. Bangladesh Soci. Agric. Sci. Technol. 8(3&4):87-91.
26. Rahman, M. H., Hashem, M. A. and **Haque, M. A.** 2006. Reduction of urea fertilizer by using poultry manure and rain tree leaf litter in rice production. J. Bangladesh Agril. Univ., 4(1):57-60.
27. Shormy, S.A.S., Chowdhury, M.A.H., Saha, B.K. and **Haque, M. A.** 2013. Effects of different sources of organic materials on nutrient contents and their uptake by T. aman rice. J. Agro for. Environ. 7(1):37-40.
28. Ali1, M.M, Tarafder, M.M.A, Mohsin, N and Haque, M.A.2020. Soil characterization and fertility assessment of *char* lands for increased cropping intensity and crop productivity. Progressive Agriculture 31 (1): 56-67.

Bulletin/ newsletter/ annual report:

Bulletin: 4 Nos.

As principal author: 3 nos. (29-31)

29. হক, এম, এ. এবং আলী, এম. এম. ২০১৭ জায়ান্ট লজ্জাবতীর চাষাবাদ ব্যবহার উপযোগীতা। কৃষি বিপ্লব ((A fortnightly Agricultural National News Paper), ৩০ মে-১৪ জুন ২০১৭, সংখ্যা ১৭: পৃ: ৪ এবং ২৩।
30. হক, এম, এ. এবং আলী, এম. এম. ২০১৭ জায়ান্ট লজ্জাবতীর চাষাবাদ ব্যবহার উপযোগীতা। কৃষি বিপ্লব ((A fortnightly Agricultural National News Paper), ১৫ জুন-১৫ জুলাই ২০১৭ সংখ্যা ১৮-১৯ পৃ: ৪ এবং ২৯।
31. হক, এম, এ. ২০১৭. ফসল উৎপাদনে ফসফরাস সারের ব্যবস্থাপনা ও দক্ষতা বৃদ্ধির উপায়। কৃষি প্রযুক্তি, মে ২য় পক্ষ ২০১৭, সংখ্যা ১৪ তম, পৃ: ৭।

As co- author: 1 No. (32)

32. এম. এ. মালেক এবং এম.এ. হক. ২০২০. মুজিব বর্ষে সরিষার উৎপাদন বৃদ্ধির নতুন সম্ভাবনা: শূন্য চাষ পদ্ধতি। কৃষি কথা, কৃষি বিষয়ক ম্যাগাজিন, কৃষি তথ্য সার্ভিস, কৃষি মন্ত্রণালয় বিশেষ সংখ্যা, কার্তিক ১৪২৭,

Newsletter: 3 Nos.**As principal author: 1 No. (33)**

33. **Haque, M. A.**, Khadir, M. E. and Hood, R.C. 2001. Dual labelling of cowpeas and nitrogen fixing tree species using simple chamber technologies. Soils News Letter, 24(2): 26-27. Seibersdorf Laboratories, International Atomic Energy Agency, Vienna, Austria.

As Co-author: 02 Nos. (34-35)

34. Khadir, M. E., **Haque M. A.**, Heiling, M. and Hood, R. 2001. Plant residue quality characteristics and crop N uptake from tropical tree residues under non N limiting conditions. Soils News Letter, 24(2): 24-25. Seibersdorf Laboratories, International Atomic Energy Agency, Vienna, Austria.
35. Hood-Nowtny, R., Khan, M., **Haque, A.**, Khadir, M. Bonetto, J.P., Syamsul, R., Mayr, L. and Heiling, M. 2003. ¹³C labelling and analysis by an optical breath test analyser. Soils News Letter, 26(1): 26-28. Seibersdorf Laboratories, International Atomic Energy Agency, Vienna, Austria.

Annual report: 65 Nos. (36-100)**As principal author: 60 Nos. (36-95)**

36. **Haque et. al.** 1995. Yield response of some elite mutants developed at BINA to various fertilizer treatments. BINA Annual Report 1994-1995. pp.119-124.
37. **Haque et. al.** 1995. Efficiency of mixed fertilizer produced by T. S. P. complex LTD. and Chittagong Urea fertilizer LTD. BINA Annual report 1994-1995. 125-131.
38. **Haque et al.** 1996. Nuclear techniques for the promotion of agroforestry systems (RAS/5/029). BINA Annual Report 1995-1996. pp.130-137.

39. **Haque, et al.** 1996. Fertilizer requirements for some elite mutants developed at BINA. BINA Annual Report,1995-96, pp.138-143.
40. **Haque, et. al.** 1997. Fertilizer requirements of an elite mutant of mustard developed at BINA. BINA Annual Report,1996-97, pp.177-179.
41. **Haque, et. al.** 1997. Nuclear techniques for the promotion of agroforestry systems BINA Annual Report,1996-97, pp.180-182.
42. **Haque, et. al.** 1997. Preparation of database for nitrate pollution. BINA Annual Report,1996-97, pp. 182-183.
43. **Haque, et. al.** 1998. Fertilizer requirements of some elite mutants of groundnut developed at BINA. BINA Annual Report 1997—98, pp. 160-162.
44. **Haque, et. al.** 1998. Effect of tree biomass on the improvement of soil fertility and yield of transplanted aus rice (var.BR-24). BINA Annual Report 1997-1998. pp. 167-169.
45. **Haque, et. al.** 1998. Residual effect of leaf litter and fertilizer on wheat yield (var. kanchan). BINA Annual Report 1997-1998. pp. 170-172.
46. **Haque, et. al.** 1999. Response of groundnut mutants to different doses of fertilizer. BINA Annual Report 1998—99, pp. 192-193.
47. **Haque, et. al.** 1999. Nitrate and heavy metal content in soil, plant and water bodies. BINA Annual Report 1998—99, pp. 194-197.
48. **Haque, et. al.** 1999. Effect of tree prunings on the improvement of soil fertility and yield of grain crops. BINA Annual Report 1998—99, pp. 197-200.
49. **Haque, et. al.** 2000. Effect of legume tree prunings on the improvement of soil fertility and yield of grain crops. BINA Annual Report 1999-2000. pp. 175-178.
50. **Haque, et. al.** 2000. Sustaining soil fertility and crop yield using legume tree prunings. BINA Annual Report 1999-2000. pp.178-180.
51. **Haque, et. al.** 2000. Response of chickpea mutants to different doses of fertilizer. BINA Annual Report 1999-2000. pp.180-181.
52. **Haque, et al.** 2001. Quantification of nitrogen and crop yield using legume tree prunings in alley cropping system. BINA Annual Report 2000-2001. pp. 201-207.
53. **Haque, M. A.,** Khalil, M. I., Sattar, M. A. and Haque, M. Q. 2004. Carbon discrimination and recovery of N in soils amended with crop residues in a rice based cropping system. Decomposition of organic materials and their nutrient release pattern (SFFP/DANIDA project: BINA Component-III). Paper presented at the regional research-extension review workshop 2004, held during 29-31 May, 2004, RARS, BARI, Jamalpur.
54. **Haque, M. A.,** and Khalil, M. I. 2005. Carbon discrimination and recovery of N in soils amended with crop-residues in a rice-based cropping system. Report presented at the BINA Annual Review Workshop 2004-05.
55. **Haque, M. A.,** Khalil, M. I., Sattar, M. A. and Haque, M. Q. 2005. Carbon discrimination and recovery of N in soils amended with crop residues in a rice based cropping system. Decomposition of organic materials and their nutrient release pattern (SFFP/DANIDA project: BINA Component-III). Paper presented at the regional research-extension review workshop held during 28-30 May 2005, RARS, BARI, Jamalpur.

56. **Haque, M. A.**, and Khalil, M. I. 2005. Impact of tillage and organic matter amendments on some soil physical properties and crop yields in a rice-based cropping sequence. Report presented at the BINA Annual Review Workshop 2004-05.
57. **Haque, M. A.** and Khalil, M. I. 2005. Suitability assessment of moisture conservation measures for increasing cropping intensity in drought-prone areas. Report presented at the BINA Annual Review Workshop 2004-05.
58. **Haque, M. A.**, Khalil, M. I., Sattar, M. A. and Haque, M. Q. 2005. Carbon discrimination and recovery of N in soils amended with crop residues in a rice based cropping system. Decomposition of organic materials and their nutrient release pattern(SFFP/DANIDA project: BINA Component-III). Paper presented at the regional research-extension review workshop held during 28-30 May 2005, RARS, BARI, Jamalpur.
59. **Haque et al.** 2007. Effects of organic manures and phosphate solubilizing bacteria with different levels of P on growth and yield of wheat. BINA Annual Report 2006-07.
60. **Haque et al.** 2007. Effect of phosphate solubilizing bacteria with various levels of phosphorus fertilizer on growth and yield of T. aman rice (Binadhan 4). BINA Annual Report 2006-07.
61. **Haque, M. A. and Sattar, M. A.** 2007. Effects of organic manures and phosphate solubilizing bacteria with different levels of phosphorus on growth and yield of wheat. Paper presented in Annual Research Review Workshop of BINA.
62. **Haque, M. A. and Sattar, M. A.** 2007. Effect of phosphate solubilizing bacteria with various levels of phosphorus fertilizer on growth and yield of T. aman rice (Binadhan 4). Paper presented in Annual Research Review Workshop of BINA.
63. **Haque et al.** 2008. Effect of phosphate solubilizing bacterial inoculants with different levels of phosphorus fertilizer on T. aman rice (Binadhan 4) with three diverse soils. BINA Annual Report 2007-08
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