# Training Course on

# Soil Health Management

31 March - 04 April 2019

# **Course Completion Report**



National Agriculture Training Academy (NATA)
Ministry of Agriculture
www.nata.gov.bd

# Training Course on Soil Health Management

31 March-04 April' 2019

# **Course Management**

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Senior Assistant Director NATA, Gazipur

**Asst. Course Coordinator** 

Shamsun nahar Senior Assistant Director NATA, Gazipur Asst. Course Coordinator
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#### **Introduction:**

National Agriculture Training Academy (NATA) is the apex training academy under the Ministry of Agriculture (MoA). NATA organizes training programs on the basis of the needs of 16 organizations under the MoA. At present, Soil Health Management is essential mandate of a country. Soil fertility and increase productivities of crops NATA has designed this training course. From this training course, the participants will be able to involve and basic skills which will be useful for their working areas to achieve Soil Health management capably.

### **Course objectives:**

- 1. Increase understanding of soil biological processes that influence soil fertility in natural and managed ecosystems.
- 2. Provide a stimulating and collaborating environment for research on a wide range of soil organisms in diverse ecosystems.
- 3. Ensure strong links are maintained between research activities and teaching in the area of soil science, especially in relation to soil fertility and soil management.

**Duration of the Course:** 5 day on training course started from 30March-04April' 2019.

# **Course Content:** Planned sessions and Topics Module 1: Soil physical properties

Contents/Topics	Methods
Soil health: Indicator of soil Health and its relation to crop production.	L and D
Different types of soil in Bangladesh according to AEZs.	L and D
Dynamics of Soil environmental Pollution and degradation causes and remedies.	L and D
Soil environmental components-atmosphere, lithosphere and biosphere	L and D
Soil health and sustainability: managing the biotic component of soil quality	L and D
Conservation agriculture based mechanization for sustainable crop production	L and D
Fertility status of Bangladesh soil (OM, N, P, K, S, Zn, B, Mo, Mg and others status) and Soil fertility Evaluation	L and D
Tillage options and residue management for soil moisture retention and carbon sequestration	L and D
Nutrient demand of the crops and basis of fertilizer uses and the causes of soil fertility decline.	L and D

#### **Module 2: Soil Chemical properties**

Contents/Topics	Methods
Present condition of Bangladesh soils: Fertility & OM content and Integrated use	L and D
of organic manures and chemical fertilizers and principles	
Soil pH (Soil reaction), Importance of soil pH, Introduce the pH of different	L and D
areas of Bangladesh which influence the soil nutrient availability	
Management of Problem Soils (acid sulfate soil, peat soil, waterlogged soils)	L and D
Management of saline soil	L and D
Symptoms of essential plant nutrient deficiencies and their remedies	L and D
Soil health management in Bangladesh for sustainable Rice production/ Quality	L and D
Rice production	
Balanced fertilizer and their effect on soil fertility	L and D

#### **Module 3: Soil Biological properties**

Contents/Topics	Methods
Fertilizers nutrient elements and their management	L and D
Growth Promoting Microbes and Crop Production in Bangladesh	L and D
Mycorhiza and its use,	L and D
Microbial Association with other organisms	
Cycling and Biogeochemical Transformations of N, P, S, and K.	L and D
Role of Microbial Organisms for pesticides degradation in soil an environmental cleanup	L and D
IPNS for Rice, Wheat and Maize	L and D
IPNS for Vegetables, , Fruits, Root and Tuber crops	L and D

# \*\* L – Lecture, D – Discussion,

### **Training Methods & Materials:**

Lecture, Discussion, Exercise, Group Work Practical work

**Sports & Recreation:** There is a playground, a tennis court and a volley ball court in NATA campus. So the participants can avail the opportunity to play sports in that areas. There is also a recreation room with color T.V in the dormitory. The daily newspapers are also available in the recreation room for the participants.

### **Concluding Session**

#### Feedback from the participants

The training was need based. It will definitely help them to achieve better Soil Health Managements. The topics were very up-to-date. The resource persons were topic relevant experts, and familiar. So resource speakers' selection was undoubtedly accurate to cope up with the time demand topics. There was an ample scope to get introduced and exchanged ideas between the officers of different organizations under the Ministry of Agriculture. The time management of that training was definitely excellent. Moreover, residential facilities were better. There was introduced a new concept in case of mess management. A 3 members' mess committee was built among the participants upon their choice. The training was carried out well with strong discipline. They got the Wi-Fi facilities in the dormitory. The internet connection in PC was interrupted sometimes due to the problems in submarine cables. They expected to extend the duration of that training. Besides, they requested to arrange a refresher's course for them. In fact, the cooperation of Course Coordinator, Assistant Course Coordinator and the NATA authority was admirable. In a nutshell, the training was really fruitful for them.

### **Speech by the Course Coordinator**

The training on Soil Health Management was selected on the basis of training need assessment from the officers of the different organizations under the Ministry of Agriculture. We tried our level best to make the training program successful. For that, we had selected the present time required course content and expert speakers. Moreover, we also looked upon the different discipline related issues for smooth running of that training program.

#### **Distribution of Certificate**

The certificates are distributed among the participants after successfully completion of the training.

# Training on "Soil Health Management" Duration: 05 Days (31 March - 04 April 2019) <u>List of Participant</u>

SL.	Name	Designation	Signature
1.	Bevash Chandra Saha	Additional Deputy Director (PP), Department	01914961186
		of Agricultural Extension, Kushtia	bevashsaha.1999@gmail.com
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3.	Md. Junaied Alam	Instructor, Agricultural Training Institute,	01787282040
		Begumganj, Noakhali	md.faisal1888@gmail.com
4.	Kanak Chandra Roy	Agriculture Extension Officer, Upazila	01722814446
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6.	Ashraful Alam	Agriculture Extension Officer, Upazila	01738614985
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9.	Md. Johny Khan	Agriculture Extension Officer, Upazila	01721219767
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12.	Dr. Md. Aminul	Senior Scientific Officer, BSRI, Ishwardi,	01717656436
	Haque	Pabna	bsriaminul@yahoo.com
13.	Dr. Ranjit Chandra	Senior Scientific Officer, BSRI, Ishurdi, Pabna	01715651096
	Kabiraj		rckabiraj.brsi@yahoo.com
14.	Mahmudul Hasan	Scientific Officer, Soil Resource Development	01775808020
	Chowdhury	Institute	lipuchowdhury@gmail.com
15.	Tanvin Sultana	Scientific Officer, Soil Resource Development	01768376654
		Institute	tanvin.tahil@gmail.com
16.	Md. Delowar Hossain	Scientific Officer, Soil Resource Development	01515218038
		Institute	delowardelu.du@gmail.com
17.	Debashish Das	Scientific Officer, Soil Resource Development	01711849186
10	261 1 11	Institute, Regional Laboratory, Dhaka	debashis221@gmail.com
18.	Mahmuda Akter	Scientific Officer, Soil Science Division,	01685267679
10	A.C., T. 1	BRRI, Gazipur	mahmudi.akter94@yahoo.com
19.	Afsana Jahan	Scientific Officer, Soil Science Division,	01717511304
20	MJ Challer IZ 11	BRRI, Gazipur	jahanrusau@gmail.com
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44.	ma. Tipu Sunan	Kalapara, Patuakhali	tipu11.bau@gmail.com
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	Domain Mostora	Center, Jagir, Manikganj	bornali.mostofa@yahoo.com
24.	Shamim Akram	Scientific Officer, BINA, Mymensingh	01725402837
	Zimiiii i iniwili		shamim2827@gmail.com
25.	Mohammed	Assistant Director, Seed Production Center,	01781710295
	Mamunur Rashid	BADC, Gazipur	badcgazipur@gmail.com
	1,1411141141 INDIIIA	, <u>, , , , , , , , , , , , , , , , , , </u>	0 1 0

# Annexure –II

# List of Resource Speaker

SL.No	Name of speaker	Organization	Mobile and Mail
1.	Dr. Md. Ataur Rahman Howlader Additional Director (Field Administration, Planning and Monitoring)	SCA, Gazipur	Phone:01814301360 ataurdae87@gmail.com
2.	Dr. Md. Abiar Rahman ,Professor	Depet. Of Agroforestry and Environment, BSMRAU	Phone: 01552495452 abiarbd@yahoo.com
3.	Dr. Umme Aminun Naher, PSO	Soil Science Division BRRI, Gazipur	Phone:01913151914 naher39@gmail.com
4.	Dr Israil Hossain, CSO (Agric Engineer	Regional Wheat Research Centre BARI, Gazipur	Phone: 01713363630
5.	Dr. M.M. Masud, SSO,	Soil Science Division, BARI, Gazipur	Phone: 01552334898 masudsoil@yahoo.com
6.	Dr. Sohela Akhter, PSO	Soil Science Division, BARI, Gazipur	Phone: 01922242737 sohela akhter@yahoo.com
7.	Dr. A.T.M. Sakhawat Hossain, PSO	Soil Science Division BRRI, Gazipur	Phone: 01718261858 sakhawatbrri@gmail.com
8.	Dr. GKM Mustafizur Rahman, Professor.	Department of Soil Science, BSMRAU	Phine: 01718 186642 mustafiz@bsmrau.edu.bd
9.	Dr. Rafiqual Islam, CSO and Head	Soil Science Division BRRI, Gazipur	Phone:01725395749 rafiqbrri@yahoo.com
10.	Dr. M Shahidul Islam, Former DG,	BARI	Phone:01713002180 dmsislam@agni.com
11.	Dr. Md. Habibur Rahman Associate prof.	Dept. of Entomology, BSMRAU	Phone: 01715296456

# Annexure –III

# Course Title: Soil Health Management TRAINING SCHEDULE

	Day-01(31/03/2019) Sunday	y	
Time	Topics	Methods	Speaker
08:30-09.00	Registration	-	Lucky
09.00-09.30	Inaugural session, Pre evaluation		DG/Directors/Faculties /CC/ ACC
09:30-10:30	Soil health: Indicator of soil Health and its relation to crop production.	L&D	Dr. Md. Ataur Rahman Howlader Additional Director (Field Administration, Planning and Monitoring)
10.30-11.30	Different types of soil in Bangladesh according to AEZs.	L&D	Dr. Md. Ataur Rahman Howlader Additional Director (Field Administration, Planning and Monitoring)
11:30- 12.00	Tea Break		
12:00-01:00	Different types of soil in Bangladesh according to AEZs.	L&D	Dr. Md. Ataur Rahman Howlader Additional Director (Field Administration, Planning and Monitoring)
01.00-02.00	Lunch and prayer		
02:00-03:00	Dynamics of Soil environmental Pollution and degradation: causes and remedies	L&D	Dr. Md. Abiar Rahman ,Professor, Depet. Of Agroforestry and Environment, BSMRAU
03:00-04:00	Soil environmental components-atmosphere, lithosphere and biosphere	L&D	Dr. Md. Abiar Rahman ,Professor, Depet. Of Agroforestry and Environment, BSMRAU
	Day - (01/04/2019) Monday	J	
Time	Topics	Methods	Speaker
09:30-10:30	Soil health and sustainability: managing the biotic component of soil quality	L&D	Dr. Umme Aminun Naher PSO, BRRI Phone:01913151914 naher39@gmail.com
10.30-11.30	Cycling and Biogeochemical Transformations of N, P, S, and K	L&D	Dr. M.M. Masud, SSO, BARI, Phone: 01552334898 masudsoil@yahoo.com
11:30- 12.00	Tea Break		
12:00-01:00	Fertility status of Bangladesh soil (OM, N, P, K, S, Zn, B, Mo, Mg and others status) and Soil	L&D	Dr. Md. Ataur Rahman Howlader

	fertility Evaluation		Additional Director (Field Admin, P&M) SCA,
01.00-02.00	Lunch and prayer		
02:00-03:00	Tillage options and residue management for soil moisture retention and carbon sequestration	L&D	Dr. M.M. Masud, SSO, BARI, Phone: 01552334898 masudsoil@yahoo.com
03:00-04:00	Nutrient demand of the crops and basis of fertilizer uses and the causes of soil fertility decline.	L&D	Dr. Sohela Akhter PSO, BARI Phone: 01922242737 sohela_akhter@yahoo. com
04:00-05:00	Present condition of Bangladesh soils: Fertility & OM content and Integrated use of organic manures and chemical fertilizers and principles	L & D	Dr. A.T.M. Sakhawat Hossain PSO BRRI, Gazipur Phone: 01718261858 sakhawatbrri@gmail.co m

	Day -03(02/04/2019) Tuesday						
Time	Topics	Methods	Speaker				
09:30-10:30	Soil pH (Soil reaction), Importance of soil pH, Introduce the pH of different areas of Bangladesh which influence the soil nutrient availability	L&D	Dr. GKM Mustafizur Rahman, Professor, Department of Soil Science, BSMRAU				
10.30-11.30	Management of Problem Soils (acid sulfate soil, peat soil, waterlogged soils)	L& D	Dr. GKM Mustafizur Rahman, Professor Department of Soil Science, BSMRAU,				
11:30- 12.00	Tea break						
12:00-01:00	Management of saline soil	L & D	Dr. GKM Mustafizur Rahman, Professor Department of Soil Science, BSMRAU,				
01.00-02.00	Lunch and prayer						
02:00-03:00	Symptoms of essential plant nutrient deficiencies and their remedies	L & D	Dr. Rafiqual Islam, CSO and Hea Soil Science Division BRRI, Gazipur				
03:00-04:00	Soil health management in Bangladesh for sustainable Rice production/ Quality Rice production	L & D	Dr. Rafiqual Islam, CSO and Hea Soil Science Division BRRI, Gazipur				

Day -04(03/04/2019)	Wednesday		
Time	Topics	Methods	Speaker
09:30-10:30	Balanced fertilizer and their effect on soil fertility	L&D	Dr. A.T.M. Sakhawat Hossain, PSO, Soil Science Division BRRI, Gazipur
10.30-11.30	Growth Promoting Microbes and Crop Production in Bangladesh	L& D	Dr. Umme Aminun Naher, PSO, Soil Science Division BRRI, Gazipur
11:30- 12.00	Tea break		
12:00-01:00	Mycorhiza and its use, Microbial Association with other organisms	L & D	Dr. Umme Aminun Naher, PSO, Soil Science Division BRRI, Gazipur
01.00-02.00	Lunch and prayer		
02:00-03:00	Fertilizers nutrient elements and their management	L & D	Dr. M Shahidul Islam, Former DG,BARI
03:00-04:00	DO		Dr. M Shahidul Islam, Former DG,BARI
04:00-05:00	Cycling and Biogeochemical Transformations of N, P, S, and K.	L & D	Dr. M.M. Masud, SSO, Soil Science Division, BARI, Gazipur

Day -05(04/04/2019) Thursday						
Time	Topics	Methods	Speaker			
09:30-10:30	Role of Microbial Organisms for pesticides degradation in soil and environmental cleanup	L & D	Dr. Md. Habibur Rahman Associate prof. Dept. of Entomology, BSMRAU			
10.30-11.30	IPNS for Rice, Wheat and Maize	L& D	Dr. Sohela Akhter, PSO, Soil Science Division, BARI, Gazipur			
11:30- 12.00	Tea break					
12:00-01:00	IPNS for Vegetables, , Fruits, Root and	L&D	Dr. Sohela Akhter, PSO, Soil Science Division, BARI, Gazipur			
01.00-02.00	Lunch and prayer					
02:00-03:00	Closing Ceremony		DG/Director			

#### **Annexure-IV**

# **Training Course Evaluation by the participants**

#### The Topics they liked:

#### **The Topics they disliked:**

- 1. Load shedding
- 2. Non-stop schedule
- 3. Same Speaker in all day

#### The Topics need to deleted

#### The Topics need to be added

- 1. Need more Practical class
- 2. Cultural Program
- 3. Outing/pleasure trip
- 4. Recreation
- 5. Exercise
- 6. Project management
- 7. Photo session
- 8. Group assignment/Work
- 9. Discussion and Group exercise
- 10. Need more time of Training
- 11. Need more video class to attention of the participant
- 12. Field visit to identify problematic soil
- 13. Harmful effect of insecticide in soil and its management
- 14 Add. Nanotechnology and IPNS /Biofertilizer practical class

# **Best Training Methods choose by the participants**

- 1. Discussion and group exercise
- 2. Resources Speaker
- 3. Time management
- 4. Practicing

# The issues that are disliked by the participants

- 1. Internet problem
- 2. Shortage of sport materials
- 3. Less time for Practice
- 4. Load shedding
- 5. Very tight schedule
- 6. Shortage of recreation facilities
- 7. Less Class practices
- 8. Broken glass and plate in cafeteria

## The others associated issues they liked

- 1. Topic wise expert resource persons were selected very prudently.
- 2. Got scope to introduce with other officers of different organizations.
- 3. Management of dining by mess committee
- 4. Time management
- 5. Discipline & management
- 6. Management of dormitory
- 7. Expert resource persons
- 8. Wi-Fi facilities
- 9. Cooperation of NATA Authority
- 10. Cooperation of Course Coordinator and Asst. Course Coordinator very Remarkable.

#### **Provided Service Quality**

- 1. Neat and cleanliness facilities-80%
- 2. Library facilities 80%
- 3. Audiovisual facilities 70%

# **Recommendations for the improvement of the course**

- 1. Uninterrupted internet and electricity supply should be provided
- 2. Practical class should be more
- 3. Internet access should be increased
- 4. Arrangement of Tour or recreation
- 5. Provide more time for discussion and exercise
- 6. Evert topic should be installed earlier in each desktop
- 7. Hard copy of manual of training course
- 8. Sub-Centre should be set up for incessant electricity supply
- 9. Refresher's course should be arranged
- 10. Increase of honorarium
- 11. Sports facilities should be available
- 12. Sports facilities in the morning
- 13. Single room for single officer
- 14. Need a saloon and stationary shop
- 15. Swimming pool

**Resource Speakers Evaluation by the participants** 

Annexure-V

Day-1 (31.03.2019)			Day-2 (01.04.2019)							
Partici	Soil	Different	Dynamics	Soil	Soil	Impor	Fertility	Tillage	Present	Nutrie
pants	health:	types of	of Soil	environm	health	tance	status	options	condition	nt
	Indicat	soil	environme	ental	and	of	of		of	dema
	or		ntal Pollution	compone	sustainab	conse rvatio	Bangla desh		Banglade sh soils	nd
			Pollution	IItS	ility	n	soil		SII SOIIS	
1.	3.2	3.2	4	6	5	4.4	5.9	4	5	4
2.	3.2	3	4	6	5	4	4	5.2	5	4.8
3.	4.4	5	6	6	4	4	4	5	5.8	5.9
4.	4	5	6	6	5	5	5.2	6	6	6
5.	3	4.8	5	5	4.4	3.8	5	5.4	6	5
6.	6	4.8	5	5	4.4	3	4	2.4	5	5
7.	5	4.8	5	5	4	3.2	3.6	4	5.4	5.4
8.	5	4	5	5	4	2	3.2	5.4	4.4	4.8
9.	5	3.8	3.8	4.8	5	5	5	3.8	5.6	3.6
10.	4	5	4.8	4.8	5	3	5	2	5.2	5.2
11.	3	5	4.8	4.8	5.2	2	1.2	3.6	4.6	5.4
12.	2	4	6	4.8	4.8	3	4	4.4	4.4	4.4
13.	2	4	6	4.8	6	4.4	4.4	5	4.4	5.4
14.	4	4	6	4.8	6	6	5	3	5.8	5.6
15.	5.2	4	6	6	5.2	5	6	5.2	5.2	5.6
16.	4	4	5.2	6	4	3.8	4.2	2	2	2
17.	4	4.8	5.2	5	5	3.8	4.6	3.2	4	3.2
18.	5	5	4.8	3.2	6	5	4.8	3	4	3
19.	5	5	4	4.8	6	4.6	6	4	4.2	4.2
20.	5	5	4	4.8	5	4	5.2	5	5.2	5
21.	6	6	4.8	5.4	5	5	6	4.6	5.2	5
22.	6	6	4.8	5.4	4.4	6	5	5	5	5.2
23.	6	6	5	5.8	4.4	6	6	4	4	4
24.	6	6	5	5.8	5	4.8	6	5	4	5
25.	6	4	5	6	5	3	5	6	6	6
Avg.	4.48	4.648	5.008	5.24	4.912	4.152	4.732	4.248	4.856	4.748

# **Resource Speaker Evaluation by the Participants**

Day-3 (02.04.2019)					Day-4 (03.04.2019)					
Partic pants	Soil pH	Manag ement of Proble m Soils	Mana geme nt of saline soil	Symptom s of essential plant nutrient deficienci	Soil health mana geme nt	Balance d fertilizer	Growth Promoting Microbes	Mycorh iza and its use	Role of microo rganis ms	Conserv ation Agricult ure based Mechan ization
1.	5	5	5	5	4.8	5	5	5	5	6
2.	5	5	5	5	5	5	6	6	6	6
3.	5.8	5	5	5	5	6	6	6	6	5.8
4.	6	6	6	6	6	5.8	5	5	4	5.5
5.	3.3	3.3	4.8	4.8	4.2	4.4	6	6	6	6
6.	5	5	4.8	4	5	5	5	5	5.8	6
7.	5.6	5.6	6	6	6	3.2	5	5	5.2	6
8.	5.8	5.2	5	5.4	5.2	3.2	5	5	5.4	6
9.	6	6	6	4.2	4.2	6	4	4	5.4	6
10.	5.4	5.4	5.2	5	5	4.6	6	5.8	5.4	5.4
11.	6	6	6	5.6	5.6	5.6	6	6	5.4	5.4
12.	5	5.4	5.4	5.6	5.6	5.6	5.4	4.8	5.6	5
13.	5.2	4.6	4.6	4.6	4.6	4.6	5	4.8	5.8	5
14.	5	5	5	5	5	5	4.6	4.6	4.8	5
15.	4	4	3.6	4	3.2	3.2	5.8	5.8	5.8	5
16.	6	6	6	6	6	6	4	4	6	6
17.	5	5	5	5	5	5	4.8	4.2	6	6
18.	6	6	6	6	6	5.8	5	5	5	5
19.	6	6	6	6	6	6	5.2	4.8	4.8	5.2
20.	6	6	6	6	6	5	6	6	6	5
21.	6	6	6	5.6	5.6	5.6	6	6	6	5
22.	6	6	6	5.4	5.4	6	6	6	6	4
23.	4.8	5	5	4.4	4.4	4	6	6	6	6
24.	6	6	6	6	6	6	6	6	6	6
25.	5	5	4	6	5	5	5 202	6	6	6
Avg.	5.39	5.34	5.336	5.264	5.192	5.064	5.392	5.312	5.576	5.532

# **Resource Speaker Evaluation by the Participants**

		Day-05(28.02.2019)	
Particip ants	Role of Microbial Organisms for Pesticides Degradation	IPNS for Rice, Wheat and Maize	IPNS for Vegetables, , Fruits, Root and Tuber crops
1.	6	6	5
2.	4.4	4.6	4.6
3.	5	4	4
4.	6	3	3
5.	6	4.4	4.4
6.	5.2	4.4	4.4
7.	6	6	6
8.	5	5	5
9.	5.6	4	5
10.	4	5	5
11.	4.2	4.2	4.2
12.	5.6	5.2	5.2
13.	4	4	4
14.	5	5	5
15.	4	4.8	4.8
16.	6	4	4
17.	5	5	5
18.	5.6	5.8	5.6
19.	5.2	5.4	5.4
20.	5.2	4.2	4.2
21.	6	5	5.2
22.	6	2.4	3 5
23.	5	5	
24.	5	5	5
25.	5	5	5
Avg.	5.2	4.656	4.68

# Annexure-VI

# 'Soil Health Management' Participants Evaluation Sheet

Duration: 31 March – 04 April 2019

Total Marks: 50

				otai Marks. 5
SL.	Name	Designation & Posting Place	Pre	Post
-	D 1 C 1 C 1		evaluation	evaluation
1.	Bevash Chandra Saha	Additional Deputy Director (Pp), Department Of Agricultural Extension, Kushtia	19	48
2.	A K M Hasibul Hasan	Additional Deputy Director (Pp), Department Of Agricultural Extension, Meherpur	22	44
3.	Md. Junaied Alam	Instructor, Agricultural Training Institute, Begumganj, Noakhali	12	42
4.	Kanak Chandra Roy	Agriculture Extension Officer, Upazila Agriculture Office, Dimla, Nilphamari	20	42
5.	Md. Masum Kabir	Agriculture Extension Officer, Upazila Agriculture Office, Shajahanpur, Bogura	30	40
6.	Ashraful Alam	Agriculture Extension Officer, Upazila Agriculture Office, Barlekha, Moulvibazar	15	43
7.	Md. Eakub Ali	Agriculture Extension Officer, Upazila Agriculture Office, Ulipur, Kurigram	12	46
8.	Md. Emdadul Haque	Agriculture Extension Officer, Upazila Agriculture Office, Karimganj, Kishoreganj	22	41
9.	Md. Johny Khan	Agriculture Extension Officer, Upazila Agriculture Office, Kamarkand, Sirajganj	13	43
10.	Dr. MOST. ROKEYA KHATUN	Senior Scientific Officer, Soil Science Division, BARI, Gazipur	20	35
11.	Mominur Rahman	Scientific Officer, Bari, Gazipur	17	39
12.	Dr. Md. Aminul Haque	Senior Scientific Officer, Bsri, Ishwardi, Pabna	16	25
13.	Dr. Ranjit Chandra Kabiraj	Senior Scientific Officer, Bsri, Ishurdi, Pabna	18	44
14.	Mahmudul Hasan Chowdhury	Scientific Officer, Soil Resource Development Institute	14	47
15.	Tanvin Sultana	Scientific Officer, Soil Resource Development Institute	20	40
16.	Md. Delowar Hossain	Scientific Officer, Soil Resource Development Institute	21	44
17.	Debashish Das	Scientific Officer, Soil Resource Development Institute, Regional Laboratory, Dhaka	20	36
18.	Mahmuda Akter	Scientific Officer, Soil Science Division, Brri, Gazipur	19	49
19.	Afsana Jahan	Scientific Officer, Soil Science Division, Brri, Gazipur	12	41
20.	Md. Shalim Kabir	Assistant Manager (Agriculture), Amanura Zone, Bmda	11	40
21.	Khalequzzaman	Senior Scientific Officer, Cotton Research Center, Sreepur, Gazipur	13	42
22.	Md. Tipu Sultan	Scientific Officer, Jute Research Sub-Station, Kalapara, Patuakhali	15	44
23.	Bornali Mostofa	Scientific Officer, Jute Agricultural Testing Center, Jagir, Manikganj	11	45
24.	Shamim Akram	Scientific Officer, Bina, Mymensingh	26	31
25.	Mohammed Mamunur Rashid	Assistant Director, Seed Production Center, Badc, Gazipur	24	48