

**TRAINING COURSE**  
**ON**  
**SOIL HEALTH MANAGEMENT**

**COURSE GUIDELINE**

31 March -04 April' 2019



**GOVERNMENT OF THE REPUBLIC OF BANGLADESH**  
**NATIONAL AGRICULTURE TRAINING ACADEMY**  
**GAZIPUR-1701**  
**Website: [WWW.NATA.GOV.BD](http://WWW.NATA.GOV.BD)**

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# **Introduction to National Agriculture Training Academy (NATA)**

## **1.1 The Academy**

National Agriculture Training Academy (NATA) is the apex training institute for human resource development of officers (grade-9 and above) under the Ministry of Agriculture (MoA) for providing training on diversified fields of professional interest in agriculture sector. The Academy organizes various training programmes related to agriculture throughout the year. The academy is established in Gazipur as Central Extension Resources Development Institute (CERDI) on 14 March 1975 with the financial assistance of Japan International Cooperation Agency (JICA). Afterwards, on 27 June 1984, CERDI was undertaken to the Training Wing of Department of Agricultural Extension (DAE). On 03 April 2013, Government of the People's Republic of Bangladesh abolished CERDI and established NATA as an independent organization of MoA and on 07 June 2014, NATA has been started as a training academy.

Initially, the Academy started its functions with only 10 faculty members. Though Government approved strength is 184, at present NATA has 74 staff members including 29 faculty members.

## **1.2 Vision**

National Agriculture Training Academy becomes a center of excellence for developing competent human resources in agriculture sector.

## **1.3 Mission**

We are pledged to achieve the shared vision through:

- i. Develop human resource of all organizations under MoA by imparting quality training, research and development and publications;
- ii. Enhance linkage between education, research and extension to endow agriculture service delivery system;
- iii. Network with reputed institution of home and abroad for organizational capacity building; and
- iv. Foster a culture of continuous learning for development of knowledge-intensive agriculture service.

## **1.4 Functions**

The NATA has been entrusted to perform the following functions:

- i. Human resource development of the government, semi-government, autonomous organization under MoA through training of modern and sustainable agriculture technology;
- ii. Transfer modern and sustainable agriculture technology developed by the research organizations for the development of socio-economic conditions of farmers;
- iii. Conduct demonstration, adaptive research and research of proven technologies;
- iv. Impart all sorts of in-service training with special emphasis on induction, foundation and senior staff course;
- v. Exchange publications, participants and resource persons in seminars, workshops, conferences and training among the stakeholders;

- vi. Advice government and other organizations on training, achieving food and nutrition security, ICT, transfer of agriculture technology, agro-based industries and conservation environments etc.;
- vii. Help government and policy makers in framing and analyzing agricultural policies;
- viii. Conduct different training activities of academy in consonance with provision of the public administration training policy 2003; and
- ix. Perform all kinds of duties directed by the government.

## **1.5 Location**

The Academy is 25 km away from Dhaka city and 3 km away from *Joydevpur Chandana Chowrasta* towards Gazipur district head quarter. It is located adjacent to Bangladesh Rice Research Institute (BRRI) and occupied 49 acres of land. The academy provides the trainees an ample scope to have free access to the adjacent institutions like Bangladesh Agriculture Research Institute (BARI), Bangladesh Rice Research Institute (BRRI), Seed Certification Agency (SCA), Bangabondhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Telecommunication College, and other government offices in Gazipur.

## **1.6 Facilities**

### **1.6.1 Physical Facilities**

The Academy is well equipped with physical facilities in organizing training programs though it began its journey recently. Existing facilities of the academy are as follows.

- Office building-2
- Class room- 3
- Laboratory (Subject wise technical)
- Plant protection museum- 1
- Conference room- 1
- Auditorum-1
- Dormitory- 4
- Cafeteria- 1
- Greenhouse- 3
- Workshop-1
- Mosque-1

### **1.6.2 Digital Computer cum Language Lab. and IT facilities**

There is one Digital Computer cum Language Lab in the Academy. It is located on the 1<sup>st</sup> floor of the Administrative building. IT facilities include LAN and Wi-Fi and the whole campus under Wi-Fi coverage. To expedite foreign language learning, NATA set up a Digital Computer cum Language Lab. as part of the Academy's drive for capacity building of government officials. Participants can avail the opportunity of learning the foreign language while they stay in NATA.

### **1.6.3 Recreational Facilities**

The Academy has a recreation room with color T.V in the dormitory. The daily newspapers are available in recreation room for the participants.

#### **1.6.4 Linkage with other Training Organizations**

NATA maintains good relations with other training Academies in the country including BPATC, RPATC, BCS Administration Academy, BIAM and FIMA and so on. NATA has plan to collaborate with international training institutes for improvement its human resources. NATA also collaborate with national research organizations in research in agriculture sector.

#### **1.7 Evaluation:**

Course Director and other faculty members are given responsibility to evaluate the participants. The course is evaluated during pre and post training situation within 50-100 marks. On the other hand the participants are also given chance to evaluate the faculties and guest speakers by using a prescribed format.

#### **1.8 Sessions:**

Everyday the session is started at 9.30 am in the morning and ends at 4:00 pm in the afternoon. There are two breaks started at 11.30 am and 01.00 pm for tea and lunch with prayer respectively. Participants are advised to attain the class in time without fail for avoiding any kinds of disciplinary action.

#### **Daily Schedule**

| Activities              | Duration    |
|-------------------------|-------------|
| 1 <sup>st</sup> Session | 09:30-10:30 |
| 2 <sup>nd</sup> Session | 10:30-11:30 |
| Tea Break               | 11:30-12:00 |
| 3 <sup>rd</sup> Session | 12:00-01:00 |
| Lunch and Prayer        | 01:00-02:00 |
| 4 <sup>th</sup> Session | 02:00-03:00 |
| 5 <sup>th</sup> Session | 03:00-04:00 |

#### **1.9 Norms to be followed during the training:**

- No casual leave is allowed during training period.
- Participants living in the dormitory are advised to follow the norms of the dormitory.
- The campus area is a “Non-Smoking Zone”. Participants are advised to refrain from smoking inside the Academy.
- Participants are not allowed to enter the dormitory after 10:00pm at night.

# Course at a glance

## INTRODUCTION

Soil health management is an important topic for designing a training course of different organizations under the ministry of Agriculture. For providing food of raising populations the world additional production is must. To increase the production of crop, keeping our soil healthy and productive is an important parameter. By using soil health systems and principles which include no-tillage, cover cropping, rotations and diversification farmers increasing their soil's organic matter and improving microbial activities. As a result, farmers are sequestering more carbon, increasing water infiltration, improving wildlife and pollinator habitat as well as harvesting better profits and often better yields. Soil health constraints beyond nutrient deficiencies and excesses limit agro ecosystem sustainability, resilience to drought and extreme rainfall, as well as progress in soil and water conservation.

## 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

**Target population** : Officers (Grade 9 and above) of different organizations under Ministry of Agriculture.

**Duration of each session:** 60 minutes.

### Prerequisites of the course:

- To attend the training class in time;
- To be present at least 99% classes otherwise certificate may not be awarded;
- Maintain the norms in dormitory and cafeteria;
- Absent from any session is not allowed without prior permission from the course coordinator even in case of emergency.
- Enthusiastic to learn and share ideas in training session.

# Training Schedule

## Day -01 (31/03/2019) Sunday

| Time         | Topics  | Methods | Speaker   |
|--------------|---|---------|---|
| 08:30-09:00  | Registration  | -       | Lucky   |
| 09:00-09:30  | Inaugural session, Pre evaluation   |         | DG/Directors/Faculties /CC/<br>ACC  |
| 09:30-10:30  | Soil health: Indicator of soil Health and its relation to crop production.    | L & D   | Dr. Md. Aatur Rahman Howlader   |
| 10.30-11.30  | Different types of soil in Bangladesh according to AEZs.                      | L & D   | Additional Director (Field Administration, Planning and Monitoring) SCA, Gazipur<br>Phone:01814301360<br><a href="mailto:ataurdae87@gmail.com">ataurdae87@gmail.com</a> |
| 11:30- 12.00 | Tea Break   |         |   |
| 12:00-01:00  | Different types of soil in Bangladesh according to AEZs.                      | L & D   | Depet. Of Agroforestry and Environment, BSMRAU<br>Phone: 01552495452 e-mail: <a href="mailto:abiarbd@yahoo.com">abiarbd@yahoo.com</a>                                   |
| 01.00-02.00  | Lunch and prayer  |         |   |
| 02:00-03:00  | Dynamics of Soil environmental Pollution and degradation: causes and remedies | L & D   | Professor Dr. Md. Abiar Rahman  |
| 03:00-04:00  | Soil environmental components-atmosphere, lithosphere and biosphere           | L & D   | Depet. Of Agroforestry and Environment, BSMRAU<br>Phone: 01552495452 e-mail: <a href="mailto:abiarbd@yahoo.com">abiarbd@yahoo.com</a>                                   |

## Day -02 (01/04/2019) Monday

| 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<br>PSO, BRRI<br>Phone:01913151914<br><a href="mailto:naher39@gmail.com">naher39@gmail.com</a>                             |
| 10.30-11.30  | Cycling and Biogeochemical Transformations of N, P, S, and K  | L & D   | Dr. M.M. Masud, SSO,<br>BARI, Phone: 01552334898<br><a href="mailto:masudsoil@yahoo.com">masudsoil@yahoo.com</a>                                |
| 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 fertility Evaluation                         | L & D   | Dr. Md. Aatur Rahman Howlader<br>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,<br>BARI, Phone: 01552334898<br><a href="mailto:masudsoil@yahoo.com">masudsoil@yahoo.com</a>                                |
| 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<br>PSO, BARI<br>Phone: 01922242737<br><a href="mailto:sohela_akhter@yahoo.com">sohela_akhter@yahoo.com</a>                    |
| 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<br>PSO<br>BRRI, Gazipur<br>Phone: 01718261858<br><a href="mailto:sakhawatbrri@gmail.com">sakhawatbrri@gmail.com</a> |



**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   | Prof. Dr. GKM Mustafizur Rahman<br>Department of Soil Science, BSMRAU<br>Phone: 01718 186642<br>mustafiz@bsmrau.edu.bd |
| 10.30-11.30  | Management of Problem Soils (acid sulfate soil, peat soil, waterlogged soils)  | L& D    |  |
| 11:30- 12.00 | Tea break  |         |  |
| 12:00-01:00  | Management of saline soil  | L & D   |  |
| 01.00-02.00  | Lunch and prayer   |         |  |
| 02:00-03:00  | Symptoms of essential plant nutrient deficiencies and their remedies   | L & D   | Dr. Rafiqul Islam<br>CSO and Head<br>Phone:01725395749<br><a href="mailto:rafiqbri@yahoo.com">rafiqbri@yahoo.com</a>   |
| 03:00-04:00  | Soil health management in Bangladesh for sustainable Rice production/ Quality Rice production  | L & D   |  |
| 04:00-05:00  | Balanced fertilizer and their effect on soil fertility   | L & D   | Dr. A.T.M. Sakhawat Hossain, PSO<br>BRRRI, Gazipur<br>Phone: 01718261858<br>sakhawatbri@gmail.com                      |

**Day - 04 (03/04/2019) Wednesday**

| Time         | Topics  | Methods | Speaker  |
|--------------|---|---------|--|
| 09:30-10:30  | Growth Promoting Microbes and Crop Production in Bangladesh   |         | Dr. Umme Aminun Naher<br>PSO, BRRRI<br>Phone:01913151914<br><a href="mailto:nahe39@gmail.com">nahe39@gmail.com</a> |
| 10.30-11.30  | Mycorhiza and its use, Microbial Association with other organisms   | L& D    | Do   |
| 11:30- 12.00 | Tea break   |         |  |
| 12:00-01:00  | Importance of conservation agriculture for sustainable soil fertility management; Soil erosion and conservation in the hilly region | L & D   | Munshi Mohammad Hedayet Ullah<br>Ex. DG, NATA<br>Mobile: 01711193834<br>hedayetullah_59@yajoo.com                  |
| 01.00-02.00  | Lunch and prayer  | L & D   |  |
| 02:00-03:00  | Fertilizers nutrient elements and their management  | L & D   | M Shahidul Islam<br>Former DG, BARI  |
| 03:00-04:00  | Fertilizers nutrient elements and their management  | L & D   | Do   |

**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<br>Associate prof. Dept. of Entomology, BSMRAU<br>Phone: 01715296456 |
| 10.30-11.30  | . IPNS for Rice, Wheat and Maize   | L& D    | Dr. Sohela Akhter<br>PSO, BARI<br>Phone: 01922242737  |
| 11:30- 12.00 | Tea break  |         |   |
| 12:00-01:00  | IPNS for Vegetables, , Fruits, Root and Tuber crops                                      | L & D   |   |
| 01.00-02.00  | Lunch and prayer   |         |   |
| 02:00-03:00  | Closing Ceremony   |         | DG/Director/  |

## RESOURCE SPEAKERS

| SL.No | Name of speaker  | Organization  | Mobile and Mail   |
|-------|--|---|---|
| 1.    | Dr. M Shahidul Islam,<br>Former DG,  | BARI  | Phone:01713002180<br>dmsislam@agni.com  |
| 2.    | Munshi Mohammad Hedayet Ullah<br>Ex. DG,   | NATA, Gazipur   | Mobile: 01711193834<br>hedayetullah_59@yajoo.com                                    |
| 3.    | Dr. Md. Ataur Rahman Howlader<br>Additional Director (Field<br>Administration, Planning and<br>Monitoring) | SCA, Gazipur  | Phone:01814301360<br><a href="mailto:ataurdae87@gmail.com">ataurdae87@gmail.com</a> |
| 4.    | Dr. Md. Abiar Rahman ,Professor  | Depet. Of<br>Agroforestry and<br>Environment,<br>BSMRAU | Phone: 01552495452<br>e-mail:abiarbd@yahoo.com                                      |
| 5.    | Dr. Umme Aminun Naher, PSO   | Soil Science Division<br>BRRI, Gazipur                  | Phone:01913151914<br><a href="mailto:naher39@gmail.com">naher39@gmail.com</a>       |
| 6.    | Dr. M.M. Masud, SSO,   | Soil Science Division,<br>BARI, Gazipur                 | Phone: 01552334898<br>masudsoil@yahoo.com   |
| 7.    | Dr. Sohela Akhter, PSO   | Soil Science Division,<br>BARI, Gazipur                 | Phone: 01922242737<br>sohela_akhter@yahoo.com                                       |
| 8.    | Dr. A.T.M. Sakhawat Hossain, PSO   | Soil Science Division<br>BRRI, Gazipur                  | Phone: 01718261858<br>sakhawatbri@gmail.com   |
| 9.    | Dr. GKM Mustafizur Rahman, Professor.  | Department of Soil<br>Science, BSMRAU                   | Phine: 01718 186642<br>mustafiz@bsmrau.edu.bd                                       |
| 10.   | Dr. Rafiqul Islam, CSO and Head  | Soil Science Division<br>BRRI, Gazipur                  | Phone:01725395749<br><a href="mailto:rafiqbri@yahoo.com">rafiqbri@yahoo.com</a>     |
| 11.   | Dr. Md. Habibur Rahman<br>Associate prof.  | Dept. of Entomology,<br>BSMRAU                          | Phone: 01715296456  |

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