



TRAINING COMPLETION REPORT

Training Course On 'Eco-Friendly Plant Protection Techniques'



19-28 September 2021



National Agriculture Training Academy
Gazipur-1701



Eco- Friendly Plant Protection Techniques

Course Management

- Course Adviser ➤ Md. Mahbub Alam
Director General (In-Charge)
National Agriculture Training Academy
Gazipur-1701
Phone : 02-49272104
E-mail: dgnata14@gmail.com
- Course Director ➤ Dr. Md. Mahmud Hasan
Director (Training)
National Agriculture Training Academy
Gazipur-1701
Cell : 01817066613
E-mail: natatrainingcell@gmail.com
- Course Coordinator ➤ Dr. Md. Jamal Uddin
Deputy Director (Plant Pathology)
National Agriculture Training Academy (NATA),
Gazipur-1701
Cell: 01712272859
E-mail: jamaldae@yahoo.com

Assistant Course Coordinator
Md. Shahinul Islam
Senior Assistant Director,
NATA, Gazipur.
Cell: 01745997741
E-mail: shahinul_bsmrau02@yahoo.com

Assistant Course Coordinator
Md. Saiful Islam
Senior Assistant Director,
NATA, Gazipur.
Cell: 01710511175
E-mail: saiful.dae@gmail.com

National Agriculture Training Academy
Gazipur-1701

Training Course On 'Eco-Friendly Plant Protection Techniques'

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▣ INTRODUCTION

Eco-friendly agriculture is just a comprehensive agricultural production system intensively engaged in accordance with the principles of ecology. The practices that are used in ecological agricultural are known as eco friendly agricultural practice. Eco- friendly agriculture is mainly organic, mechanical, physical and cultural practices of agriculture. (Joshi and Prabhakarasetty, 2005).Eco friendly agriculture also describes landscapes that support both agricultural production and biodiversity conservation, working in harmony together to improve the livelihoods of rural communities.

A recent investigation by the Food and Agriculture Organization (FAO) on the current status of land productivity in Bangladesh revealed that there is a general trend towards declining or stagnating crop yields. These adverse trends are considered to be the result of intensive cropping through indiscriminate use of fertilizers and pesticides, continuous use of irrigation water, total removal of biomass from the agricultural fields and some other activities. These have generated new sets of problems such as soil erosion, loss of soil fertility, deficiencies of sulphur and zinc, etc. (Anon,1991).

The crop land of Bangladesh has been losing its fertility by using anti- natural practices like chemical fertilizers and chemical pesticides. Murakami (1991) stated that the anti- natural agricultural practices degrade the soil and ecological balance in many ways resulting poor output. The anti-natural practices increase the cost of production in one hand and decrease the microbial activities of the soil on the other, which creates new hazardous situation in the entire crop production system including health hazards. Chemical fertilizers and chemical pesticides not only contaminate surface water, they also affect fish population and health as well.

Environmental pollution by chemical fertilizers and pesticides is posing a serious threat worldwide. Their continuous usage may destroy the beneficial soil micro flora. Intensive use of inorganic chemical fertilizers and pesticides resulted in the contamination of soil, surface and ground water with harmful chemicals and accumulation of heavy metals. Uptake of heavy metals like Cd, Cu, Mn and Zn by plants is proportionate to the increasing level of soil contamination. People who consume these plant products are at risk of adverse health effects. Cadmium and lead are the elements of major concern due to their accumulation potential and

toxic effects in the plants and animals. Crops such as spinach, lettuce, carrot, radish, and zucchini can accumulate heavy metals in their tissues.

To regain the ecological status it is high time for judicious use of agro-chemicals i.e. removal of agro-chemicals in crop production by giving the emphasis on eco-friendly practices mainly, organic, mechanical, physical and cultural practices. Government became very much concerned about the devastating impact of imbalanced use of agro-chemical and earnestly felt the need for developing the alternative strategies practices that is sustainable productive and environmentally friendly intervention. In the vision 2020, Department of Agricultural Extension introduced the New Agricultural Extension Policy (NAEP) which stated from 1996.

It consists of 11 components; among these one component is “The attention to environmental condition” in crop production. Removal of the use of agro-chemicals by encouraging eco-friendly agricultural farming is steadily gaining popularity through the world and there are strong organic movement everywhere in Europe and North America. (Joshi and Prabhakarasetty, 2005).

Gradually Bangladesh government is recognizing the removal of agro-chemicals by interventions with different eco-friendly agricultural practices in crop production. Eco-friendly practices can make major positive impact on environment (McRobie, 1990). Now a days’ government extension provider of Bangladesh, like DAE is working with projects all over the country. Every project has the major attention on environmental consideration in crop production by removal or reducing agro-chemicals. Some of the NGOs, private extension providers, provide various types of training on eco-friendly agricultural practice for their group members and ICM members, other than 140 days training for ICM farmers by ICM project both DAE and NGOs providing continuous training and other input facilities to the ICM members to increase their knowledge and to form a favorable attitude and adoption towards eco-friendly agricultural practices in crop production.

▣ COURSE OBJECTIVE

- Enhance environmental quality and natural resources.
- Satisfy human food and clothing (cotton, wool, leather) needs.
- Employ natural and biological controls for pests and disease.
- Enhance the quality of life of farmers and society as a whole.

▣ COURSE CONTENT

| No. | TOPIC | METHOD |
|-----|---|--------|
| 1 | Eco-friendly Agriculture: Concepts, Challenges, and Opportunities | L & D |
| 2 | Important diseases of cucurbits, cabbage and cauliflower and its eco-friendly management systems | L & D |
| 3 | Major diseases of tomato, okra, and bean crops and its eco-friendly management specially virus | L & D |
| 4 | Major diseases of rice (Blast, Sheath blight, BLB and Sheath rot) and its eco-friendly management | L & D |
| 5 | Bio-ecology of rice stem borer, gall midge, ear cutting caterpillar & rice hispa, its nature of damage and eco-friendly management systems. | L & D |
| 6 | Important diseases of pulses and oil seed crops and its eco-friendly management | L & D |
| 7 | Introduction to Biological control, Beneficial insects and Microorganisms. | L & D |
| 8 | Major pests of store crops and its eco-friendly management systems | L & D |
| 9 | 4IR | L & D |
| 10 | Introduction to major insect pests of maize special Fall Armyworm, its bio-ecology, nature of damage and eco-friendly management systems. | L & D |
| 11 | Major insect pests of cucurbits, cabbage and cauliflower and its eco-friendly management. | L & D |
| 12 | Production techniques of bio-pesticides and their application | L & D |
| 13 | Major insect pests of mango, guava and litchi and its eco-friendly management. | L & D |
| 14 | Eco friendly weed management techniques. | L & D |
| 15 | Major insect pests of beans, pulses and oil seed crops and its eco-friendly management | L & D |
| 16 | Major insects pests of dragon fruit and date plant and its eco-friendly management systems. | L & D |
| 17 | Safe use and handling of pesticides in fruits and vegetables. | L & D |
| 18 | Climate change and its effects on biological control agents | L & D |
| 19 | Adverse effects and Residual effects of Pesticides and its Risk reduction. | L & D |

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| 20 | Use of Tricho-derma based products (trico compost, suspension & talc based formulation) for eco-friendly crop production. | L & D |
| 21 | Pesticide regulation and pesticide using pattern in Bangladesh. An impact analysis of pesticide use due to Eco-friendly practices. | L & D |
| 22 | Type of pesticides, their mode of action and common pesticides using in Bangladesh. | L & D |
| 23 | Important diseases of spices (Onion, Garlic, Ginger, Turmeric and Chili) and its eco-friendly management | L & D |
| 24 | Social safety net & Disaster Management | L & D |
| 25 | Sustainable Development Goals (SDG's): Bangladesh Perspective & Role in Agriculture Sector. | L & D |
| 26 | Major insect pests of jute, cotton and sugarcane and its eco-friendly management. | L & D |
| 27 | Important diseases of jute, cotton and sugarcane and its eco-friendly management | L & D |
| 28 | Major insect pests of brinjal, okra and tomato and its eco-friendly management systems | L & D |
| 29 | Introduction to Major insect pests of banana, coffee and chew nut and its eco-friendly management. | L & D |
| 30 | Visit of BARI toxicology lab. (Residual effect of pesticides on fruits and vegetables) | L & V |
| 31 | Visit of BARI IPM lab. (Rearing techniques of Bracon, Tricograma etc.) | L & V |
| 32 | Major diseases of potato and brinjal and its eco-friendly management systems | L & D |
| 33 | NIS | L & D |
| 34 | Bio-statistical based plant disease management: concept, principles & practice | L & D |
| 35 | Important diseases of guava, papaya, coconut and litchi and its eco-friendly management systems | L & D |
| 36 | Major diseases of mango, jackfruit and banana and its eco-friendly management systems. | L & D |
| 37 | Wheat Blast: Causes, nature of damage and eco-friendly management systems. | L & D |
| 38 | Introduction to major insect pests of wheat, its bio-ecology, nature of damage and eco-friendly management systems. | L & D |
| 39 | Major diseases of rice (Tungro, Ufra, Brown spot and False smut) and its eco-friendly management | L & D |
| 40 | Use of Nano-particle for eco-friendly pest management. | L & D |
| 41 | Bio-ecology of BPH, GLH, its nature of damage and eco-friendly management systems. | L & D |
| 42 | An orientation to NATA Plant Protection Museum. | L & V |

NB. L = Lecture, D = Discussion, V = Visit.

▣ TRAINING SCHEDULE

Date: 19/9/2021

Day-01: Sunday

| Time | Topic | Speaker |
|-------------|---|--|
| 8.30-9.30 | Breakfast | Aharjoo Cafeteria |
| 9.30-10.00 | Inaugural Ceremony | DG/Faculties / CC /ACC |
| 10.00-10.15 | Pre-Evaluation Test | CC/ACC |
| 10.20-11.20 | Eco-friendly Agriculture: Concepts, Challenges, and Opportunities | Dr. Md. Moin Us Salam International Consultant CIMMYT, Bangladesh |
| 11.30-12.00 | Tea Break | Aharjoo Cafeteria |
| 12.00 -1.00 | Important diseases of cucurbits, cabbage and cauliflower and its eco-friendly management systems | Dr. Abdul Mannan Akanda Ex-Vice Chancellor BSMRAU, Gazipur |
| 1.00- 2.00 | Major diseases of tomato, okra, and bean crops and its eco-friendly management specially virus | Dr. Abdul Mannan Akanda Ex-Vice Chancellor BSMRAU, Gazipur |
| 2.00-3.00 | Prayer & Lunch | Aharjoo Cafeteria |
| 3.00-4.00 | Major diseases of rice (Blast, Sheath blight, BLB and Sheath rot) and its eco-friendly management | Dr. Md. Ashik Iqbal Khan PSO, Training Division BRRI, Gazipur |
| 4.00-5.00 | Bio-ecology of rice stem borer, gall midge, ear cutting caterpillar & rice hispa, its nature of damage and eco-friendly management systems. | Dr. Md. Shamim Hossain Associate Professor Dept. Entomology BSMRAU, Gazipur |
| 5.00-5.30 | Evening Tea | Aharjoo Cafeteria |
| 9.00-10.00 | Dinner | Aharjoo Cafeteria |

Date: 20/9/2021

Day-02: Monday

| Time | Topic | Speaker |
|-------------|---|--|
| 8.30-9.20 | Breakfast | Aharjoo Cafeteria |
| 9.20-9.30 | Review of the previous day | Md. Shahinul Islam Sr. AD, (ACC) NATA, Gazipur. |
| 9.30-10.30 | Important diseases of pulses and oil seed crops and its eco-friendly management | Dr. Md. Lutfor Rahman Director, Oilseed Research Centre, BARI, Gazipur |
| 10.30-11.30 | Introduction to Biological control, Beneficial insects and Microorganisms. | Md. Ahsanul Haque Swapon, Professor, Entomology, BSMRAU, Gazipur. |
| 11.30-12.00 | Tea Break | Aharjoo Cafeteria |
| 12.00 -1.00 | Major pests of store crops and its eco-friendly management systems | Md. Ahsanul Haque Swapon |

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|------------|---|---|
| | | Professor, Entomology BSMRAU, Gazipur. |
| 1.00-2.30 | Prayer & Lunch* (Lunch Starts at 2.00 PM) | Aharjoo Cafeteria |
| 2.30-3.30 | 4IR | Dr. Md. Sayedur Rahman DD (Horticulture), NATA, Gazipur |
| 3.30-4.30 | Do | Do |
| 4.30-5.00 | Evening Tea | Aharjoo Cafeteria |
| 9.00-10.00 | Dinner | Aharjoo Cafeteria |

Date: 21/9/2021

Day-03: Tuesday

| Time | Topic | Speaker |
|-------------|---|--|
| 8.30-9.20 | Breakfast | Aharjoo Cafeteria |
| 9.20-9.30 | Review of the previous day | Md. Shahinul Islam Sr. AD, (ACC) NATA, Gazipur. |
| 9.30-10.30 | Introduction to major insect pests of maize special Fall Armyworm, its bio-ecology, nature of damage and eco-friendly management systems. | Dr. Syed Nurul Alam Ex Director, BARI & Consultant, Ispahni Biotech |
| 10.30-11.30 | Major insect pests of cucurbits, cabbage and cauliflower and its eco-friendly management. | Dr. Mohammad Tofazzal Hossain Howlader Professor, Dept. of Entomology, BAU, Mymensingh |
| 11.30-12.00 | Tea Break | Aharjoo Cafeteria |
| 12.00-1.00 | Production techniques of bio-pesticides and their application | Dr. Mohammad Tofazzal Hossain Howlader Professor, Dept. of Entomology, BAU, Mymensingh |
| 1.00-2.30 | Prayer & Lunch* (Lunch Starts at 2.00 PM) | Aharjoo Cafeteria |
| 2.30-3.30 | Major insect pests of mango, guava and litchi and its eco-friendly management. | Dr. Babul Chandra Sarker CSO, Fruit Division, HRC, BARI, Gazipur |
| 3.35-4.35 | Eco friendly weed management techniques. | Dr. Md. Shohidul Islam CSO & Head, Agronomy Division, BRRI, Gazipur |
| 4.35-5.00 | Evening Tea | Aharjoo Cafeteria |
| 9.00-10.00 | Dinner | Aharjoo Cafeteria |

Date: 22/9/2021

Day-04: Wednesday

| Time | Topic | Speaker |
|-------------|----------------------------|-------------------|
| 8.30-9.20 | Breakfast | Aharjoo Cafeteria |
| 9.20-9.30 | Review of the previous day | Md. Saiful Islam |

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| | | Sr. AD, (ACC) NATA, Gazipur |
| 9.30-10.30 | Major insect pests of beans, pulses and oil seed crops and its eco-friendly management | Dr. Md. Akhtaruzzaman Sarker, SSO, Entomology Div, BARI, Gazipur |
| 10.30-11.30 | Major insects pests of dragon fruit and date plant and its eco-friendly management systems. | Dr. Md. Akhtaruzzaman Sarker, SSO, Entomology Div, BARI, Gazipur |
| 11.30-12.00 | Tea Break | Aharjoo Cafeteria |
| 12.00-1.00 | Safe use and handling of pesticides in fruits and vegetables. | Dr. Mohammad Dalower Hossain Prophan SSO, BARI, Gazipur |
| 1.00-2.30 | Prayer & Lunch* (Lunch Starts at 2.00 PM) | Aharjoo Cafeteria |
| 2.30-3.30 | Climate change and its effects on biological control agents | Prof. Dr.Md. Ruhul Amin Dept. of Entomology, BSMRAU, Gazipur. |
| 3.35-4.35 | Adverse effects and Residual effects of Pesticides and its Risk reduction. | Prof. Dr.Md. Ruhul Amin Dept. of Entomology, BSMRAU, Gazipur. |
| 4.35-5.00 | Evening Tea | Aharjoo Cafeteria |
| 9.00-10.00 | Dinner | Aharjoo Cafeteria |

Date: 23/9/2021

Day-05: Thursday

| Time | Topic | Speaker |
|-------------|--|--|
| 8.30-9.20 | Breakfast | Aharjoo Cafeteria |
| 9.20-9.30 | Review of the previous day | Md. Shahinul Islam Sr. AD, (ACC) NATA, Gazipur. |
| 9.30-10.30 | Use of Tricho-derma based products (trico compost, suspension & talc based formulation) for eco-friendly crop production. | Dr. Mossammat Samsunnahar PSO, Plant Pathology Division, HRC, BARI, Gazipur |
| 10.30-11.30 | Pesticide regulation and pesticide using pattern in Bangladesh. An impact analysis of pesticide use due to Eco-friendly practices. | Dr. Abu Sayeed Miah Director (PPW), DAE, Khamarbari, Dhaka |
| 11.30-12.00 | Tea Break | Aharjoo Cafeteria |
| 12.00-1.00 | Type of pesticides, their mode of action and common pesticides using in Bangladesh. | Dr. Abu Sayeed Miah Director (PPW), DAE, Khamarbari, Dhaka |
| 1.00-2.30 | Prayer & Lunch* (Lunch Starts at 2.00 PM) | Aharjoo Cafeteria |
| 2.30-3.30 | Important diseases of spices (Onion, Garlic, Ginger, Turmeric and Chili) and its eco-friendly | Dr. K.M. Khalequzzaman PSO, SRC, BARI, Bogura |

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| | management | |
| 3.35-4.35 | Social safety net & Disaster Management | Dr. Md. Jamal Uddin DD (Plant Pathology), NATA, Gazipur |
| 4.35-5.00 | Evening Tea | Aharjoo Cafeteria |
| 9.00-10.00 | Dinner | Aharjoo Cafeteria |

Date: 25/9/2021

Day-07: Saturday

| Time | Topic | Speaker |
|-------------|---|---|
| 8.30-9.20 | Breakfast | Aharjoo Cafeteria |
| 9.20-9.30 | Review of the previous day | Md. Shahinul Islam Sr. AD, (ACC) NATA, Gazipur |
| 9.30-10.30 | Sustainable Development Goals (SDG's): Bangladesh Perspective & Role in Agriculture Sector. | Md. Monirul Islam Joint Secretary (SDG) PM's office, Dhaka |
| 10.30-11.30 | Do | Do |
| 11.30-12.00 | Tea Break | Aharjoo Cafeteria |
| 12.00-1.00 | Major insect pests of jute, cotton and sugarcane and its eco-friendly management. | Dr. Selina Akhter PSO & Head, BSRI, Gazipur. |
| 1.00-2.30 | Prayer & Lunch* (Lunch Starts at 2.00 PM) | Aharjoo Cafeteria |
| 2.30-3.30 | Important diseases of jute, cotton and sugarcane and its eco-friendly management | Dr. Md. Shamsur Rahman CSO, Pathology Division, BSRI, Ishwardi |
| 3.35-4.35 | Major insect pests of brinjal, okra and tomato and its eco-friendly management systems | Dr. Md. Mamunur Rahman Professor & Head Entomology BSMRAU, Gazipur |
| 4.35-5.00 | Evening Tea | Aharjoo Cafeteria |
| 9.00-10.00 | Dinner | Aharjoo Cafeteria |

Date: 26/9/2021

Day-08: Sunday

| Time | Topic | Speaker |
|-------------|--|--|
| 8.30-9.20 | Breakfast | Aharjoo Cafeteria |
| 9.20-9.30 | Review of the previous day | Md. Shahinul Islam Sr. AD, (ACC) NATA, Gazipur |
| 9.30-10.30 | Introduction to Major insect pests of banana, coffee and chew nut and its eco-friendly management. | Dr. Md. Akhtaruzzaman Sarker, SSO, Entomology Div, BARI, Gazipur |
| 10.30-11.30 | Tea Break | Aharjoo Cafeteria/BARI |

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|--------------|--|---|
| | | cafeteria |
| 11.30-12.30 | Visit of BARI toxicology lab. (Residual effect of pesticides on fruits and vegetables) | Dr. Mohammad Dalower Hossain Prodhan SSO, BARI, Gazipur |
| 12.30 -01.30 | Visit of BARI IPM lab. (Rearing techniques of Bracon, Tricograma etc.) | Dr. Kohinoor Begum PSO, BARI, Gazipur |
| 1.30-2.30 | Prayer & Lunch* (Lunch Starts at 2.00 PM) | Aharjoo Cafeteria |
| 2.30-3.30 | Major diseases of potato and brinjal and its eco-friendly management systems | Dr. Ashraf Uddin Ahmed CSO, Training & Communication, BARI, Gazipur |
| 3.35-4.35 | NIS | Abul Kalam Azad DD (Agril. Extn. & Rural Econ.), NATA, Gazipur |
| 4.35-5.00 | Evening Tea | Aharjoo Cafeteria |
| 9.00-10.00 | Dinner | Aharjoo Cafeteria |

Date: 27/9/2021

Day-09: Monday

| Time | Topic | Speaker |
|-------------|---|---|
| 8.30-9.20 | Breakfast | Aharjoo Cafeteria |
| 9.20-9.30 | Review of the previous day | Md. Shahinul Islam Sr. AD, (ACC) NATA, Gazipur |
| 9.30-10.30 | Bio-statistical based plant disease management: concept, principles & practice | Dr. Muhammad Shamsul Alom Director (C.C) Training & Comunication BARI, Gazipur |
| 10.30-11.30 | Important diseases of guava, papaya, coconut and litchi and its eco-friendly management systems | Dr. Md. Noman Farook Professor Dept. of Pathology, SAU, Dhaka |
| 11.30-12.00 | Tea Break | Aharjoo Cafeteria |
| 12.00-1.00 | Major diseases of mango, jackfruit and banana and its eco-friendly management systems. | Dr. Md. Noman Farook Professor Dept. of Pathology, SAU, Dhaka |
| 1.00-2.30 | Prayer & Lunch* (Lunch Starts at 2.00 PM) | Aharjoo Cafeteria |
| 2.30-3.30 | Wheat Blast: Causes, nature of damage and eco-friendly management systems. | Dr. Golam Faruqe CSO, RWRC, Gazipur |
| 3.35-4.35 | Introduction to major insect pests of wheat, its bio-ecology, nature of damage and eco-friendly management systems. | Dr. Golam Faruqe CSO, RWRC, Gazipur |
| 4.35-5.00 | Evening Tea | Aharjoo Cafeteria |
| 9.00-10.00 | Dinner | Aharjoo Cafeteria |

Date: 28/9/2021

Day-10: Tuesday

| Time | Topic | Speaker |
|--------------|--|--|
| 8.30-9.20 | Breakfast | Aharjoo Cafeteria |
| 9.20-9.30 | Review of the previous day | Md. Shahinul Islam Sr. AD, (ACC) NATA, Gazipur |
| 9.30-10.30 | Major diseases of rice (Tungro, Ufra, Brown spot and False smut) and its eco-friendly management | Dr. M.A. Latif CSO, & Head (Plant Pathology), BRRI, Gazipur. Cell: 01715034094 |
| 10.30.-11.30 | Use of Nano-particle for eco-friendly pest management. | Dr. M. Tofazzal Islam Professor, Dept. of Biotechnology, BSMRAU, Gazipur. |
| 11.30-12.00 | Tea Break | Aharjoo Cafeteria |
| 12.00-1.00 | Bio-ecology of BPH, GLH, its nature of damage and eco-friendly management systems. | Dr. Md. Mofazzel Hosen CSO (Entom.), BRRI, Gazipur. |
| 1.00-2.30 | Prayer & Lunch* (Lunch Starts at 2.00 PM) | Aharjoo Cafeteria |
| 2.30-3.30 | An orientation to NATA Plant Protection Museum. | DR. Md. Jamal Uddin DD (Plant Pathology), NATA, Gazipur |
| 3.30-4.00 | Post evaluation test | CC/ACC |
| 4.00-4.30 | Closing Ceremony with awarding certificate | DG/Faculties / CC /ACC |
| 4.30-5.00 | Evening Tea | Aharjoo Cafeteria |

▣ LIST OF ALL TRAINEE'S

| Sl. No. | NAME OF THE TRAINEE'S | DESIGNATION | POSTING PLACE |
|----------------|------------------------------|---------------------------------|---|
| 1 | MOHAMMAD ENAYET-E-RABBI | DEPUTY DIRECTOR(QC) | SEED CERTIFICATION AGENCY, GAZIPUR |
| 2 | MD.HASAN WARISUL KABIR | DEPUTY DIRECTOR | DEPARTMENT OF AGRICULTURAL EXTENSION, KHULNA REGION, KHULNA |
| 3 | AMINUR RASHID | ADDITIONAL DEPUTY DIRECTOR(PP) | DEPARTMENT OF AGRICULTURAL EXTENSION, NARAYANGANJ |
| 4 | MOHAMMAD OMAR FARUK | ADDITIONAL DEPUTY DIRECTOR (PP) | DEPARTMENT OF AGRICULTURAL EXTENSION, NETROKONA |
| 5 | MD. MONJUR RAHMAN | ADDITIONAL DEPUTY DIRECTOR (PP) | DEPARTMENT OF AGRICULTURAL EXTENSION, NAOGAON |
| 6 | MST. MAHBUBA NARGIS NEELA | AGRICULTURE EXTENSION OFFICER | DEPARTMENT OF AGRICULTURAL EXTENSION, AGAILJHARA, BARISHAL |

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|----|--------------------------|-------------------------------------|---|
| 7 | SADIA TASMIN | AGRICULTURE EXTENSION OFFICER | DEPARTMENT OF AGRICULTURAL EXTENSION, BURICHANG, CUMILLA |
| 8 | MD. HELAL UDDIN | AGRICULTURE EXTENSION OFFICER | DEPARTMENT OF AGRICULTURAL EXTENSION, BALAGANJ, SYLHET |
| 9 | MD. MONIRUZZAMAN | AGRICULTURE EXTENSION OFFICER | DEPARTMENT OF AGRICULTURAL EXTENSION, CHIRIRBANDAR, DINAJPUR |
| 10 | MD. SHAHABUDDIN AHMED | AGRICULTURE EXTENSION OFFICER | DEPARTMENT OF AGRICULTURAL EXTENSION, ULLAPARA, SIRAJGANJ |
| 11 | MD. NURISLAM | AGRICULTURE EXTENSION OFFICER | DEPARTMENT OF AGRICULTURAL EXTENSION, ANOWARA, CHATTOGRAM |
| 12 | KALLOL KISHORE SARKAR | AGRICULTURE EXTENSION OFFICER | DEPARTMENT OF AGRICULTURAL EXTENSION, KAUNIA, RANGPUR |
| 13 | MUHAMMAD ZUNAID HABIB | AGRICULTURE EXTENSION OFFICER | DEPARTMENT OF AGRICULTURAL EXTENSION, SADAR, JHENAIDAH |
| 14 | SHAHADATH HOSSAIN | AGRICULTURE EXTENSION OFFICER | DEPARTMENT OF AGRICULTURAL EXTENSION, BARKAL, RANGAMATI |
| 15 | MD. SHARIFUL ISLAM | AGRICULTURE EXTENSION OFFICER | DEPARTMENT OF AGRICULTURAL EXTENSION, BOALMARI, FARIDPUR |
| 16 | LOTIFA YESMIN | SEED CERTIFICATION OFFICER | SEED CERTIFICATION AGENCY, NAOGAON |
| 17 | K. M. EADUN NABI | SENIOR SCIENTIFIC OFFICER | BANGLADESH INSTITUTE OF NUCLEAR AGRICULTURE (BINA), MYMENSINGH |
| 18 | MD. AL-ARAFAT TOPU | SCIENTIFIC OFFICER | BANGLADESH INSTITUTE OF NUCLEAR AGRICULTURE (BINA), MYMENSINGH |
| 19 | MD. JAHID HASAN | SCIENTIFIC OFFICER | BANGLADESH INSTITUTE OF NUCLEAR AGRICULTURE (BINA), MYMENSINGH |
| 20 | ASGAR AHMED | SENIOR SCIENTIFIC OFFICER | BANGLADESH WHEAT & MAIZE RESEARCH INSTITUTE, NASHIPUR, DINAJPUR |
| 21 | MD. ABDULLAH AL MALEK | SCIENTIFIC OFFICER | HILL AGRICULTURAL RESEARCH STATION, BARI, KHAGRACHARI |
| 22 | SHAHIN MAHMUD | SCIENTIFIC OFFICER | HILL AGRICULTURAL RESEARCH STATION, BARI, KHAGRACHARI |
| 23 | MD. ABDULLAH AL MUMIN | SCIENTIFIC OFFICER | PULSES RESEARCH CENTRE, BARI, ISHURDI, PABNA |
| 24 | DEBASHISH SARKAR | SCIENTIFIC OFFICER | PULSES RESEARCH CENTRE, BARI, ISHURDI, PABNA |
| 25 | MOHAMMAD NASIR UDDIN | SENIOR ASSISTANT DIRECTOR (FARM) | SEED PRODUCTION FARM, BADC, GABTOLI, MIRPUR, DHAKA |

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| 26 | MURSHIDA AKHTER | ASSISTANT DIRECTOR (SPC) | SEED PRODUCTION CENTRE, BADC, GAZIPUR |
| 27 | DR. MD. JAMAL UDDIN | SENIOR SCIENTIFIC OFFICER | BANGLADESH SUGARCROP RESEARCH INSTITUTE, SUB-STATION, CHUADANGA |
| 28 | MD. ELMUR REZA | SCIENTIFIC OFFICER | BANGLADESH SUGARCROP RESEARCH INSTITUTE, ISHURDI, PABNA |
| 29 | MD. MARUFUR RAHMAN | SCIENTIFIC OFFICER | BIRTAN REGIONAL STATION, RANGPUR |
| 30 | MD. SALAHUDDIN | COTTON DEVELOPMENT OFFICER | COTTON DEVELOPMENT BOARD, MYMENSINGH ZONE |
| 31 | A.T.M RAFIQUUL ISLAM | DEPUTY MANAGER (AGRICULTURE) | BARIND MULTIPURPOSE DEVELOPMENT AUTHORITY, RAJSHAHI |
| 32 | IREEN SULTANA | SENIOR SCIENTIFIC OFFICER | SOIL RESOURCE DEVELOPMENT INSTITUTE, REGIONAL LABORATORY, TANGAIL |
| 33 | MD. NAZIM UDDIN | SCIENTIFIC OFFICER | SOIL RESOURCE DEVELOPMENT INSTITUTE, DIVISIONAL LABORATORY, RAJSHAHI |
| 34 | MD. HASIBUR RAHAMAN HERA | SCIENTIFIC OFFICER | BANGLADESH RICE RESEARCH INSTITUTE, REGIONAL STATION, BARISHAL |

▣ LIST OF ALL RESOURCE PERSONNEL

| SL. No. | NAME OF THE RESOURCE PERSONNEL | DESIGNATION | POSTING PLACE |
|---------|--------------------------------|---------------------------------------|---|
| 1 | Dr. Syed Nurul Alam | Ex Director, BARI & Consultant | Ispahni Biotech. Cell: 01711907886 |
| 2 | Dr. Abdul Mannan Akanda | Ex-Vice Chancellor | BSMRAU, Gazipur Cell: 01755593159 |
| 3 | Dr. Md. Abu Sayeed Miah | Director (PPW) | DAE, Khamarbari, Dhaka Cell: 01712024623 |
| 4 | Dr. Babul Chandra Sarker | CSO, Fruit Division, HRC | BARI, Gazipur Cell:01716009319 |
| 5 | Md. Monirul Islam | Joint Secretary (SDG) | PM'S Office, Dhaka Cell: 01711464513 |
| 6 | Dr.Md. Ruhul Amin, | Professor Dept. of Entomology | BSMRAU ,Gazipur. Cell: 01711548416 |
| 7 | Dr. Md. Lutfur Rahman | Director, Oilseed Research Centre, | BARI, Gazipur Cell: 01716063808 |
| 8 | Dr. M.A. Latif | CSO & Head (Plant Pathology Division) | BRRI.Gazipur. Cell: 01715034094 |
| 9 | Dr. Mossammat Samsunnahar | CSO, PGRC | BARI, Gazipur Cell: 01674876252 |

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|----|--|---|--|
| 10 | Dr. Mohammad Tofazzal Hossain Howlader | Professor Dept. of Entomology | BAU, Mymensingh Cell: 01742220007 |
| 11 | Dr. K.M. Khalequzzaman | PSO, SRC | BARI, Bogura Cell: 01558313632 |
| 12 | Dr. Mohammad Dalower Hossain Prodhan | SSO | BARI, Gazipur Cell: 01819849657 |
| 13 | Dr. Md. Moin Us Salam | International Consultant | CIMMYT, Bangladesh Cell: 01855871938 |
| 14 | Dr. Md. Mofazzel Hosen | CSO (Entom.) | BRRI, Gazipur. Cell: 01552310446 |
| 15 | Dr. Md. Tofazzal Islam | Professor, Dept. of Biotechnology, | BSMRAU. Cell: 01714-001414 |
| 16 | Dr. Md. Shohidul Islam | CSO & Head, Agronomy Division | BRRI, Gazipur Cell: 01719868333 |
| 17 | Dr. Selina Akhter | PSO & Head | BSRI, Gazipur. Cell: 01716089694 |
| 18 | Dr. Md. Mamunur Rahman | Professor & Head Entomology | BSMRAU, Gazipur Cell: 01710900594 |
| 19 | Md. Ahsanul Haque Swapon | Professor, Entomology | BSMRAU, Gazipur. Cell: 01711972521 |
| 20 | Dr. Md. Shamim Hossain | Associate Professor Dept. Entomology | BSMRAU, Gazipur Cell: 01716427379 |
| 21 | Dr. Md. Jamal Uddin | DD (P. Pathology) | NATA, Gazipur Cell: 01712272859 |
| 22 | Dr. Ashraf Uddin Ahmed | CSO, Training & Communication, | BARI, Gazipur Cell: 01711117724 |
| 23 | Dr. Md. Ashik Iqbal Khan | PSO, Training Division | BRRI, Gazipur Cell:01711146324 |
| 24 | Dr. Md. Sayedur Rahman | Deputy Director (Horticulture) | NATA, Gazipur. Cell: 01552495564 |
| 25 | Dr. Md. Akhtaruzzaman Sarker | SSO, Entomology Div | BARI, Gazipur Cell: 01556300588 |
| 26 | Abul Kalam Azad | Deputy Director (Agril. Extn & Rural Econ.) | NATA, Gazipur Cell: 01940652412 |
| 27 | Dr. Md. Shamsur Rahman | CSO, Pathology Division | BSRI, Ishwardi Cell: 01716165669 |
| 28 | Dr. Muhammad Shamsul Alom | Director (C.C) Training & Comunication | BARI, Gazipur Cell: 01316173275 |
| 29 | Dr. Md. Noman Farook | Professor Dept. of Pathology | SAU, Dhaka Cell: 01819823030 |
| 30 | Dr. Golam Faruqe | CSO | RWRC, Gazipur Cell: 01725444555 |

▣ SOME PHOTOGRAPHS



**AWARDING
CERTIFICATE
BY DG, NATA**

**CLOSING SPEECH BY
THE PARTICIPANT**





**TRAINEE'S
WITH D (T),
CC & ACC'S**

**LAB VISIT SESSION
AT BARI**





PERFORMANCE EVALUATION

▣ COURSE EVALUATION

- ▶ The course contents are sufficient.
- ▶ Duration of the course is satisfactory.
- ▶ Management of the training course is satisfactory.
- ▶ Selection of the resource speaker is good.
- ▶ Management team was very cordial and helpful.

▣ TOPICS THEY LIKED MOST...

- An overview of Eco-friendly Plant Protection Technology in Bangladesh.
- NATA pest museum visit.
- Attractive slide & video of different pest and their eco-friendly management techniques.
- BARI toxicology & IPM lab visit.
- Climate change and its effects on insect pest populations.
- BRRI lab & field visit.
- Nano technology in agriculture
- Trico derma session.

▣ **THEY DISLIKED ...**

- Budget Insufficiency.
- Very tight schedule.
- Load shedding.
- Interruption of mobile network at NATA campus area.
- Mosquito biting at NATA dormitory.
- Cooking & Cafeteria Management poor.

▣ **SUGGESTION NEED TO BE ADDED...**

- More practical session should be added.
- Session for conservation agriculture.
- Nutrient deficiency in plant- session should be added.
- Session with human nutritionist should be added.
- Perform a cultural night .
- Physical exercise & sports may be included.
- Prayer room for lady officer's.
- Eco-friendly agricultural plot visit.
- Provide more time for discussion & exercise.
- Refresher's course should be arranged.

▣ **GRAPHICAL VIEW OF TRAINEE'S PRE & POST EVALUATION**

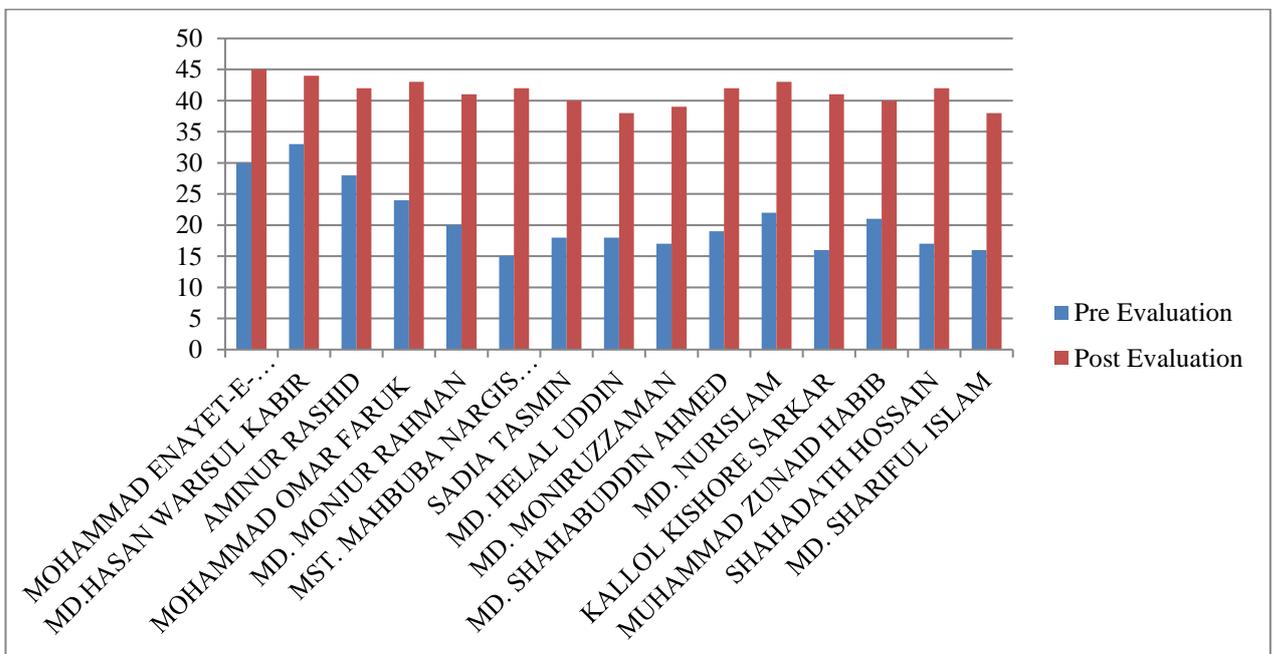


Figure 1: Trainee's (1-15) pre & post evaluation by the course management.

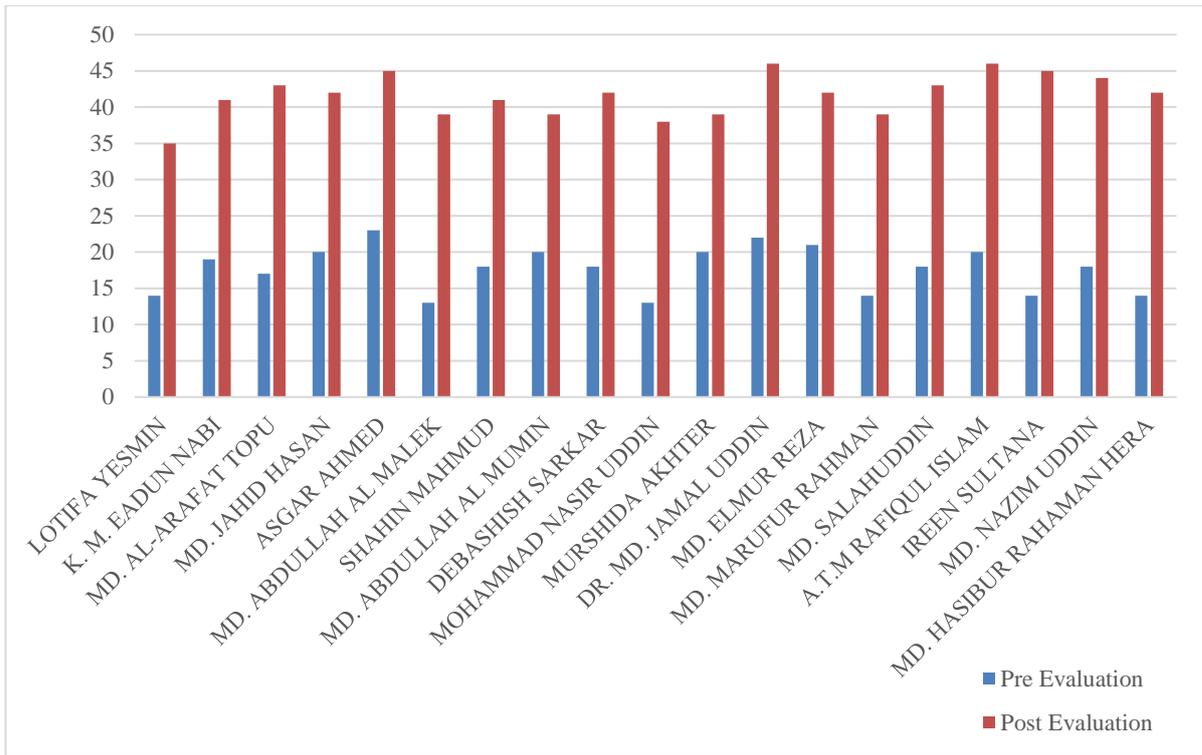


Figure 2: Trainee's (16-34) pre & post evaluation by the course management.

GRAPHICAL VIEW OF RESOURCE PERSON EVALUATION

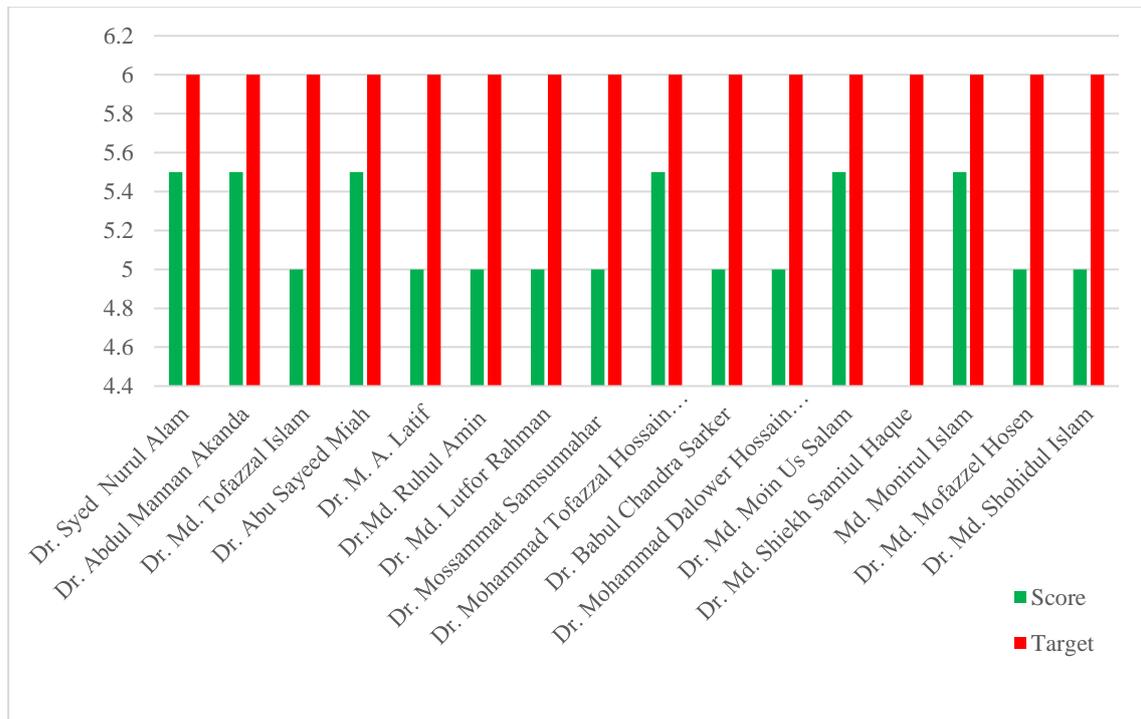


Figure 3: Resource person evaluation by the trainee's.

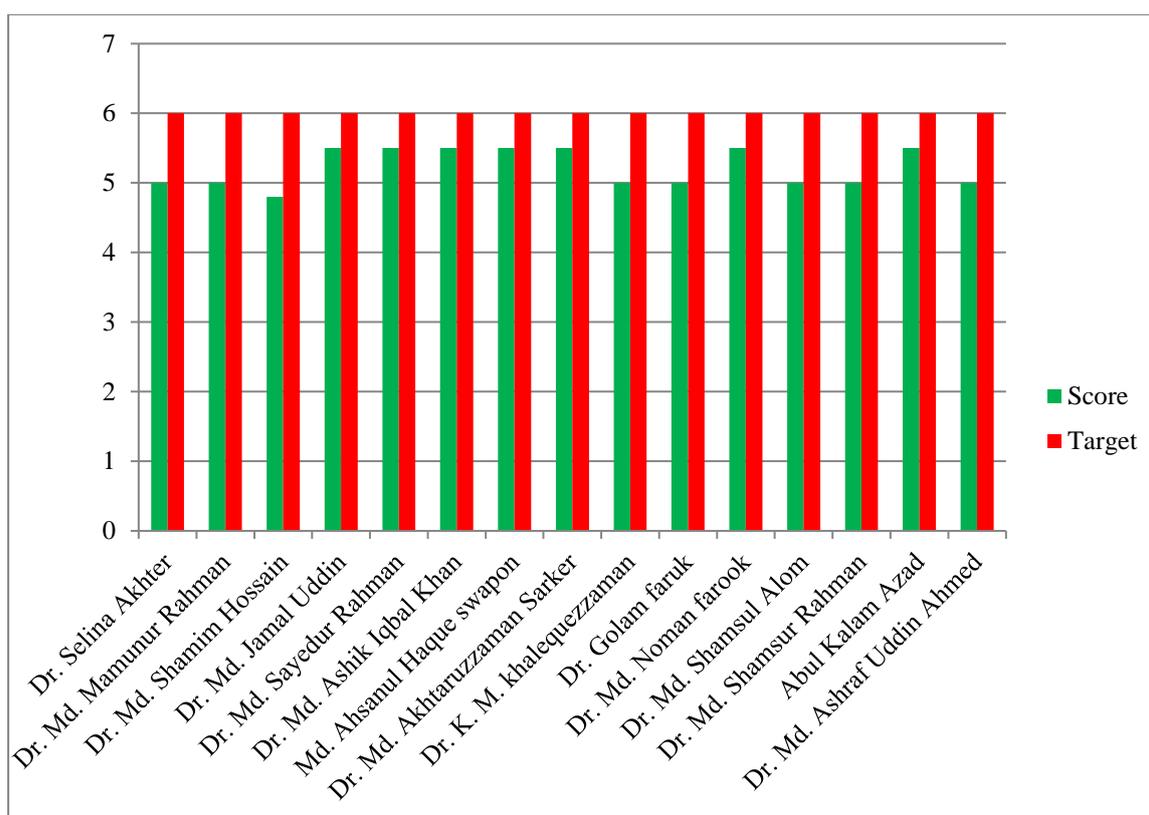


Figure 4: Resource person evaluation by the trainee's.

▣ CONCLUSION

Eco-friendly agriculture is a government mended and also performs best in climate change condition. Some topic's have to include for new eco invention techniques on agriculture & make module always time based. The training was fruitful which can play a good impact on eco-friendly agriculture.