

**Training Course  
on  
Food Processing and Preservation Techniques**

**10-14 October, 2021**

**Course Completion Report**



**National Agriculture Training Academy (NATA)  
Ministry of Agriculture  
[www.nata.gov.bd](http://www.nata.gov.bd)**

# **Training Course on Food Processing and Preservation Techniques**

**10-14 October, 2021**

## **Course Management**

Course Adviser : Md. Mahbub Alam  
Director General (In-charge)  
NATA, Gazipur

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Director (Training)  
NATA, Gazipur

Course Coordinator : Dr. Md. Mayen Uddin  
Deputy Director (Food Technology)  
NATA, Gazipur  
Cell: 01711969688

Assistant Course Coordinator Lialatul Rokshana Lima Senior Assistant Director NATA, Gazipur. Cell: 01714612029	Assistant Course Coordinator Taufikun Nahar Senior Assistant Director, NATA, Gazipur. Cell: 01790828045
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# Course at a glance

## 1. Introduction

Food processing and preservation is a set of physical, chemical and biological processes that are performed to prolong the shelf life of foods and at the same time retain the features that determine their quality, like color, texture, flavor and especially nutritional value. Food preservation is achieved by destroying enzymes and microorganisms using heat (blanching, pasteurization), or preventing their action by: removal of water, or increasing acidity or using low temperatures.

## 2. Course objectives :

1. To improve participant's skills in designing and implementing food processing operations in their own jurisdiction.
2. To develop advanced knowledge and idea of participants to investigate various parameters involved in food processing and preservation with respect to their influence on final product quality and safety
3. To develop knowledge of personnel working in agriculture about processing steps involved in a range of contemporary and novel manufacturing operations

**Target population :** Officers of different organizations under Ministry of Agriculture.

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

## 3. Course Content

SL. No.	Topics
1	National Food Policy, Rules & Regulation
2	Food Processing & Preservation: Implications for assuring food security
3	Concept on Safe and Nutritious Foods
4	Principles and methods of Food Preservation
5	Packaging and Transportation of Fresh fruits and Vegetables
6	Food Processing and Preservation by Heat Treatments
7	Principles and Methods of Osmotic Dehydration
8	Overview on Minimal Processing of Fruits and Vegetables
9	Good Agriculture Practice (GAP) and Standard Operating Procedure (SOP) for preservation & Processing of Agricultural Products
10	Food Preservation by increasing solids
11	Causes of Food Spoilage and Remedies
12	Preparation of Jam/Jelly/Marmalade
13	Food Processing by Frying
14	Preparation of fried products (Practical)

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15	Overview on Washing and Cooling of fresh produces
16	Overview on Minimal Processing of Fruits and Vegetables (Practical)
17	Fermentation as the methods of food processing and preservation
18	Food Adulteration and Safety
19	Use of food additives and preservatives
20	Food Processing by Drying
21	Food Poisoning and its remedies
22	Pickling (Practical)
23	Sustainable Development Goals (SDG) & National Integrity Strategy (NIS)

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## Annexure-I

### “Food Processing and Preservation Techniques” শীর্ষক প্রশিক্ষণের প্রশিক্ষণার্থীগণের নামের তালিকা

সময়কাল: ১০-১৪ অক্টোবর, ২০২১ খ্রি.

ক্র.নং	নাম ও পদবী	কর্মস্থল	মোবাইল নম্বর	ই-মেইল
১.	মো: শরিফুল বিন একরাম বৈজ্ঞানিক কর্মকর্তা	বাংলাদেশ গম ও ভুট্টা গবেষণা ইনস্টিটিউট ,নশিপুর, দিনাজপুর	০১৭১৭৫৪৫৭৯৭	sariful.santo@gmail.com
২.	জনাব মো: শাহীদুল ইসলাম সহকারী পরিচালক	কৃষি বিপণন অধিদপ্তর , খামারবাড়ি, ফার্মগেট , ঢাকা।	০১৯১২২৮৩৮৬৭	shahid.bc.bd@gmail.com
৩.	বেগম সুলতানান নাসিরা সহকারী পরিচালক	কৃষি বিপণন অধিদপ্তর ,খামারবাড়ি, ফার্মগেট , ঢাকা।	০১৯১৪৩৯০২৬২	sultanannasira@gmail.com
৪.	মো: নূর-এ-নবী কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস, সদর,মাগুরা	০১৭২৩৯১৬৮৫০	
৫.	মো: এনামুল হক অতিরিক্ত উপপরিচালক (পিপি)	উপপরিচালকের কার্যালয়, কৃষি সম্প্রসারণ অধিদপ্তর,গাইবান্ধা	০১৭২৩১০১৫৪৮	madazaddae@gmail.com
৬.	মো: শরিফুল ইসলাম কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস,সদর, নাটোর	০১৭১৭২০৪১০১	
৭.	মো: খিজির হোসেন প্রাং অতিরিক্ত উপপরিচালক (উদ্যান)	উপপরিচালকের কার্যালয়, কৃষি সম্প্রসারণ অধিদপ্তর,নওগাঁ	০১৭১২৫৪২৯৯৬	kbdhossain@gmail.com
৮.	ড. মো: সোহাগ মাহফুজ অতিরিক্ত উপপরিচালক (পিপি)	উপপরিচালকের কার্যালয়, কৃষি সম্প্রসারণ অধিদপ্তর,লালমনিরহাট	০১৭১২৫৬১৯৮৩	shohag.agri013@gmail.com
৯.	চমন আরা আফরোজ অতিরিক্ত কৃষি কর্মকর্তা	উপজেলা কৃষি অফিস, শাজাহানপুর, বগুড়া	০১৬৭৪৭৬০৮১৮	chamon70@yahoo.com
১০.	রায়হানুল হক কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস, পূর্বধলা, নেত্রকোনা	০১৭৪৮৪০৮০৭৭	r h o q u e b a u 2 0 3 @ g m a i l . c o m
১১.	মো: আসাদুজ্জামান কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস, মনপুরা, ভোলা	০১৭৪৭০৫১১৪১	mdasadtspu@gmail.com
১২.	শেখ তৈয়েবুর রহমান কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস, ইন্দুরকানী,পিরোজপুর	০১৯১৬৮৮২৩৬৮	
১৩.	মো:কামরুল হাসান কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস, ভালুকা,ময়মনসিংহ	০১৭০১২৪২৬৯২	
১৪.	মো: রাকিব হাসান কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস, কাহালু , বগুড়া	০১৭১৫৭৮৮৭৫৪	rakib.hasan22@gmail.com
১৫.	মো: দেলোয়ার হোসেন কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস,লাকসাম , কুমিল্লা	০১৭৩৭২১২৯৭৪	daloarag@gmail.com
১৬.	রাকিবুল হাসান শরীফ কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস, হাইমচর , চাঁদপুর	০১৬২৪৯৪৭৭৭৫	rhsharif3025@gmail.com
১৭.	মো: রাসেল পারভেজ তমাল কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস,গোপালপুর, টাংগাইল	০১৭৩৭৫৩৮১৪৫	tmlprvj@gmail.com
১৮.	এ বি এম ওয়াহিদুর রহমান জেলা প্রশিক্ষণ কর্মকর্তা	কৃষি সম্প্রসারণ অধিদপ্তর, মুন্সীগঞ্জ	০১৭১৫৭৮৫৩৯০	
১৯.	এ.এস.এম.রশেদুজ্জামান বিন হাফিজ কৃষি সম্প্রসারণ কর্মকর্তা	উপজেলা কৃষি অফিস,বড়লেখা, মৌলভীবাজার	০১৬৪৪৯৩১০৯২	
২০.	মো: আব্দুল জব্বার উপজেলা কৃষি কর্মকর্তা	উপজেলা কৃষি অফিস,মহালছড়ি, খাগড়াছড়ি	০১৭২২৬৮৩২৯১	
২১.	ড.নাছরীন জাহান উর্ধ্বতন বৈজ্ঞানিক কর্মকর্তা	উদ্ভিদ কৌলিসম্পদ কেন্দ্র, বাংলাদেশ কৃষি গবেষণা ইনস্টিটিউট,	০১৭১৭৭৬৪৯২০	nasrin.jahan83@gmail.com

ক্র.নং	নাম ও পদবী	কর্মস্থল	মোবাইল নম্বর	ই-মেইল
		গাজীপুর		
২২.	ড. মো: আরিফুর রহমান উর্ধ্বতন বৈজ্ঞানিক কর্মকর্তা	কৃষি গবেষণা কেন্দ্র, বাংলাদেশ কৃষি গবেষণা ইনস্টিটিউট, বিনেরপোতা, সাতক্ষীরা	০১৭১১১০৯৩৪৫	mohammad_ento@yahoo.com
২৩.	ড. মো: মাসুদ আলম উর্ধ্বতন বৈজ্ঞানিক কর্মকর্তা	মসলা গবেষণা কেন্দ্র, বাংলাদেশ কৃষি গবেষণা ইনস্টিটিউট, শিবগঞ্জ, বগুড়া	০১৭২৩০০৩৩৩০	mmalam2569@yahoo.com
২৪.	তাছলিমা জাহান উর্ধ্বতন বৈজ্ঞানিক কর্মকর্তা	কন্দাল ফসল গবেষণা কেন্দ্র, বাংলাদেশ কৃষি গবেষণা ইনস্টিটিউট, গাজীপুর	০১৭১৮৬৪৭৬৯৭	t a s l i m a w r c @ y a h o o . c o m
২৫.	সাওদা নাজনীন বৈজ্ঞানিক কর্মকর্তা	কন্দাল ফসল গবেষণা কেন্দ্র, বাংলাদেশ কৃষি গবেষণা ইনস্টিটিউট, গাজীপুর	০১৭১৫৪৯২৩৩৩	
২৬.	মো:সাজেদুর রহমান উপব্যবস্থাপক (বিপণন)	এগ্রো সার্ভিস বিভাগ, বিএডিসি, ঢাকা	০১৭১৫১৭৬৩৪৮	a s c h o b a d c @ g m a i l . c o m
২৭.	মাহমুদ তারেক আনোয়ার সিনিয়র সহকারী পরিচালক	সদস্য পরিচালক (বীজ ও উদ্যান) এর দপ্তর , বিএডিসি, ঢাকা	০১৭১৬১১৪৩৭৬	tarek_badc@yahoo.com
২৮.	তাছলিমা ইয়াছমিন সিনিয়র প্রশিক্ষণ কর্মকর্তা	বীজ প্রত্যয়ন এজেন্সী, গাজীপুর	০১৭১৭৩৬৩৬৭৩	
২৯.	সাফাত জামান পনির বীজ প্রত্যয়ন কর্মকর্তা	বীজ প্রত্যয়ন এজেন্সী, মুন্সীগঞ্জ	০১৭২১৩১৮০০৮	
৩০.	এ.কে, এম , সাদিকুল ইসলাম জেলা বীজ প্রত্যয়ন কর্মকর্তা	বীজ প্রত্যয়ন এজেন্সী, রাজবাড়ী	০১৭২১৯২৩৪১	
৩১.	সাদিয়া তাসমীন উর্ধ্বতন বৈজ্ঞানিক কর্মকর্তা	উদ্যানতত্ত্ব বিভাগ, বিনা, ময়মনসিংহ	০১৬৩১৪৯৪৭৮১	s t s h o r n a _ 5 @ y a h o o . c o m
৩২.	মো:তানজিলুর রহমান মন্ডল উর্ধ্বতন বৈজ্ঞানিক কর্মকর্তা	উদ্যানতত্ত্ব বিভাগ, বিনা, ময়মনসিংহ	০১৭২৫০৯১৭১৮	t a n j i l . b i n a @ g m a i l . c o m
৩৩.	কাজী তাহমিনা আক্তার বৈজ্ঞানিক কর্মকর্তা	উদ্যানতত্ত্ব বিভাগ, বিনা, ময়মনসিংহ	০১৭৩৬৯৭১৩৪৪	tahmina_akter@yahoo.com

## Annexure-II

### List of Resource Speakers

SL No.	Name	Designation	Organization	e-mail and mobile No.
1	Dr. Md. Burhan Uddin	Professor	Dept. of Food tech. & Rural Ind, BAU	01711-110509 burhan.ftri@bau.edu.bd/ burhan992003@yahoo.com
2	Dr.Md.Gulzarul Aziz	Professor	Dept. of Food tech. & Rural Ind, BAU	01631-748866 aziz_ftri@bau.edu.bd
3	Dr. Md. Abdullah Iqbal	Professor	Dept. of Food tech. & Rural Ind, BAU	iqbal21155@bau.edu.bd
4	Dr. Md. Monirul Islam	Director (Nutrition)	BARC, Dhaka	01777-686866 dmmislam@yahoo.com
5	Md. Hafizul Haque Khan	CSO	Post-Harvest Technology Division,BARI, Gazipur	01556-631691 hafiz_hkhan@yahoo.com
6	Dr. Golam Ferdous Ahmed Chowdhury	SSO	Post-Harvest Technology Division, BARI,Gazipur	ferdous613@gmail.com
7	Dr. Md. Mayeen Uddin	Deputy Director	NATA,Gazipur	01711-969688 mayen.dae85@yahoo.com
8	Dr. Md. Ayub Hossain	CSO	Farm Machinery Division, BARI,Gazipur	01716-979034 mahossain.fmpe@gamil.com



<b>SL No.</b>	<b>Name</b>	<b>Designation</b>	<b>Organization</b>	<b>e-mail and mobile No.</b>
<b>9</b>	<b>Md. Mahmud Hasan</b>	<b>Director (Training)</b>	<b>NATA,Gazipur</b>	<b>01817-066613 mahamudhassandae@gmail.com</b>
<b>10</b>	<b>Dr. Mohammad Mainuddin Molla</b>	<b>SSO</b>	<b>PHTD,BARI, Gazipur</b>	<b>mainuddinmolla@yahoo.com 01712-231121</b>
<b>11</b>	<b>Abul Kalam Azad</b>	<b>Deputy Director</b>	<b>NATA,Gazipur</b>	<b>01940-652412 azadipm@gmail.com</b>
<b>12</b>	<b>Dr. Shahjahan Ali</b>	<b>Professor</b>	<b>German University, Gazipur</b>	<b>shah_phd@yahoo.com 01716-174288</b>
<b>13</b>	<b>Md. Eskandar Hossain</b>	<b>Deputy Director</b>	<b>NATA,Gazipur</b>	<b>01938-615225 eskandarhossain@yahoo.com</b>

### **Annexure- III**

#### **Training schedule on Food Processing and Preservation Techniques**

**Duration: 10 -14 October, 2021**

**Ist Day : 10/10/2021 ( Sunday)**

<b>Time</b>	<b>Topics</b>	<b>Methods</b>	<b>Resource Person</b>
<b>08:30-09.00</b>	<b>Registration</b>	<b>-</b>	<b>Sadikun Nahar</b>
<b>09.00-09.30</b>	<b>Pre evaluation</b>	<b>-</b>	<b>CC/ ACC</b>
<b>09:30-10:15</b>	<b>Inaugural session</b>	<b>-</b>	<b>DG/Directors/Faculties</b>
<b>10:20-11:20</b>	<b>National Food Policy, Rules &amp; Regulation</b>	<b>L&amp;D</b>	<b>Prof. Dr. M. Burhan Uddin, Dept. of Food tech. &amp; Rural Ind, BAU</b>
<b>11:30-12.00</b>	<b>Tea Break</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>12.00-1.00</b>	<b>Food Processing &amp; Preservation: Implications for Assuring Food Security</b>	<b>L&amp;D</b>	<b>Prof. Dr. M. BurhanUddin, Dept. of Food tech. &amp; Rural Ind, BAU</b>
<b>1.00-2.00</b>	<b>Concept on Safe and Nutritious Foods</b>	<b>L &amp; D</b>	<b>Prof. Dr. Mohammad Gulzarul Aziz, Dept. of Food tech. &amp; Rural Ind, BAU</b>
<b>2.00-3.00</b>	<b>Prayer and Lunch Break</b>		<b>Aharjoo Cafeteria</b>
<b>3.00-4.00</b>	<b>Concept on Safe and Nutritious Foods</b>	<b>L &amp; D</b>	<b>Do</b>
<b>4.00-5.00</b>	<b>Principles and Methods of Food Preservation</b>	<b>L &amp; D</b>	<b>Do</b>
<b>5.00-5:30</b>	<b>Evening Tea</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>9.00-10.00</b>	<b>Dinner</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>

**2nd Day : 11/10/2021 ( Monday)**

<b>Time</b>	<b>Topics</b>	<b>Method</b>	<b>Resource Person</b>
<b>8.30-9.20</b>	<b>Breakfast</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>9.30– 10.30</b>	<b>Food Processing by Drying</b>	<b>L &amp; D</b>	<b>Dr. Md. Ayub Hossain CSO, Farm Machinery Division, BARI</b>
<b>10.30-11.30</b>	<b>Do</b>	<b>L &amp; D</b>	<b>Do</b>
<b>11.30-12.00</b>	<b>Tea Break</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>12.00-1.00</b>	<b>Traditional Food Processing and Preservation Techniques</b>	<b>L &amp; D</b>	<b>Dr. Abdullah Iqbal, Professor Dept. of Food tech. &amp; Rural Ind, BAU</b>
<b>1.00-2.30</b>	<b>Prayer and Lunch Break ( Lunch Starts at 2.00 PM)</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>2.30-3.30</b>	<b>Food Processing and Preservation by Heat Treatment</b>	<b>L &amp; D</b>	<b>Dr. Abdullah Iqbal, Professor Dept. of Food tech. &amp; Rural Ind, BAU</b>
<b>3.30-4.30</b>	<b>Overview on Washing and Cooling of Fresh Produces</b>	<b>L &amp; D</b>	<b>Md. Hafizul Haque Khan CSO, Post-Harvest Technology Division, BARI,Gazipur</b>
<b>4.30-5.00</b>	<b>Principles and Methods of Osmotic Dehydration</b>	<b>L &amp; D</b>	<b>Dr. Golam Ferdous Ahmed Chowdhury SSO, Post-Harvest Technology Division, BARI,Gazipur</b>
<b>5.00-5.30</b>	<b>Evening Tea</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>9.00-10.00</b>	<b>Dinner</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>

**3rd Day : 12/10/2021 (Tuesday)**

<b>Time</b>	<b>Topics</b>	<b>Method</b>	<b>Resource Person</b>
<b>8.30-9.20</b>	<b>Breakfast</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>9.30-10.30</b>	<b>Food Adulteration and Safety</b>	<b>L &amp; D</b>	<b>Dr. Md. Monirul Islam Director (Nutrition), BARC, Dhaka</b>
<b>10.30 –11.30</b>	<b>Use of food Additives and Preservatives</b>	<b>L &amp; D</b>	<b>Do</b>
<b>11.30-12.00</b>	<b>Tea Break</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>12.00-1.00</b>	<b>Food Preservation by Increasing Solids</b>	<b>L &amp; D</b>	<b>Dr. Golam Ferdous Ahmed Chowdhury SSO, Post-Harvest Technology Division, BARI,Gazipur</b>
<b>1.00-2.30</b>	<b>Prayer and Lunch Break (Lunch Starts at 2.00 PM)</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>2.30-3.30</b>	<b>Good Agriculture Practice (GAP) and Standard Operating Procedure (SOP) for preservation &amp; Processing of Agricultural Products</b>	<b>L &amp; D</b>	<b>Md. Mahmud Hasan Director (Training), NATA, Gazipur</b>
<b>3.30-4.30</b>	<b>Packaging and Transportation of Fresh fruits and Vegetables</b>	<b>L &amp; D</b>	<b>Md. Eskandar Hossain DD, NATA, Gazipur</b>
<b>4.30-5.00</b>	<b>Evening Tea</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>9.00-10.00</b>	<b>Dinner</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>

**4th Day : 13/10/2021 (Wednesday)**

<b>Time</b>	<b>Topics</b>	<b>Method</b>	<b>Resource Person</b>
<b>8.30-9.20</b>	<b>Breakfast</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>9.30-10.30</b>	<b>Food Processing by Frying</b>	<b>L &amp; D</b>	<b>Dr. Golam Ferdous Ahmed Chowdhury</b> <b>SSO, Post-Harvest Technology Division, BARI,Gazipur</b>
<b>10.30 –11.30</b>	<b>Overview on Minimal Processing of Fruits and Vegetables</b>	<b>L &amp; D</b>	<b>Dr. Mohammad Mainuddin Molla</b> <b>SSO, PHTD, BARI, Gazipur</b>
<b>11.30-12.00</b>	<b>Tea Break</b>		
<b>11.30-12.00</b>	<b>Preparation of Jam/Jelly/Marmalade</b>	<b>Practical</b>	<b>Dr. Mohammad Mainuddin Molla</b> <b>SSO, PHTD, BARI, Gazipur</b>
<b>12.00-1.00</b>	<b>Overview on Minimal Processing of Fruits and Vegetables</b>	<b>Practical</b>	<b>Dr. Mohammad Mainuddin Molla</b> <b>SSO, PHTD, BARI, Gazipur</b>
<b>1.00-2.30</b>	<b>Lunch Break</b>		
<b>2.30-3.30</b>	<b>Preparation of Fried Products</b>	<b>Practical</b>	<b>Dr. Golam Ferdous Ahmed Chowdhury</b> <b>SSO, Post-Harvest Technology Division, BARI,Gazipur</b>
<b>4.30-5.00</b>	<b>Evening Tea</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>9.00-10.00</b>	<b>Dinner</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>

**5th Day: 14/10/2021 (Thursday)**

<b>Time</b>	<b>Topics</b>	<b>Method</b>	<b>Resource Person</b>
<b>8.30-9.20</b>	<b>Breakfast</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>9.30-10.30</b>	<b>Fermentation as the Methods of Food processing and preservation</b>	<b>L &amp; D</b>	<b>Dr. Md. Shahjahan Professor , Zarman University, Gazipur</b>
<b>10.30-11.30</b>	<b>Pickling (Practical)</b>	<b>Practical</b>	<b>Do</b>
<b>11.30-12.00</b>	<b>Tea Break</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>12.00-1.00</b>	<b>Pickling (Practical)</b>	<b>Practical</b>	<b>Dr. Md. Shahjahan Professor , Zarman University, Gazipur</b>
<b>1.00-2.00</b>	<b>Prayer and Lunch Break( Lunch Starts at 2.00 PM)</b>	<b>-</b>	<b>Aharjoo Cafeteria</b>
<b>2.00-3.00</b>	<b>Sustainable Development Goals (SDG) And NIS</b>	<b>L &amp; D</b>	<b>Abul Kalam Azad DD (Agriculture Extension), NATA, Gazipur</b>
<b>3.00-4.00</b>	<b>Causes of Food Spoilage and Remedies</b>	<b>L &amp; D</b>	<b>Dr. Md. Mayen Uddin DD( Food Technology), NATA, Gazipur</b>
<b>4.00-4.30</b>	<b>Post Evaluation &amp; Course Evaluation</b>		<b>CC/ACC/Participants</b>
<b>4.00-5.00</b>	<b>Awarding of Certificate &amp; Closing Session</b>		<b>DG/Directors/Faculties/CC</b>

## **Annexure IV**

### **Training Course Evaluation by the Participants**

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

1. National Food Policy, Rules & Regulation
2. Concept on Safe and Nutritious Foods
3. Food Adulteration and Safety
4. Use of food Additives and Preservatives
5. Food Processing & Preservation: Implications for Assuring Food Security
6. Preparation of Jam/Jelly/Marmalade
7. Preparation of fried Products
8. Good Agriculture Practice (GAP)
9. Sustainable Development Goals (SDG)
10. Packaging and Transportation of fresh fruits and vegetables
11. Overview on Minimal Processing of Fruits and Vegetables
12. Pickling (Practical)

#### **The issues that are disliked by the participants**

1. More theory class
2. Low quality of food
3. Less Practical class
4. Minimum honorarium
5. Shortage of field trip food manufacturing company
6. To continue class in the time of prayer

#### **The others associated issues they liked**

1. Topic wise expert resource persons were selected very prudently.
  2. Visit BARI (Bangladesh Agricultural Research Institute)
  3. Time management
  4. Discipline & management
  5. Expert resource persons
  6. Practical class
  7. Cooperation of NATA Authority
  8. Cooperation of Course Coordinator and Asst. Course Coordinators .
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## **Conclusion and recommendation by the Course Management Team:**

1. Uninterrupted internet and electricity supply should be provided
  2. Training duration should be increased.
  3. Arrangement of food manufacturing company visit.eg PRAN or Square food processing company.
  4. Provide more time for practical class
  5. Refresher's course should be arranged
  6. Selection resource speaker on the basis of speaker evaluation score by the participants
  7. Sports facilities should be available.
  8. Incorporate quality food export related class in training schedule
  9. Incorporate Govt. policy & BSTI standard and BSTI representative class in training schedule
  10. Food Technology & Rural Industries faculty of BAU Visit should be arranged
  11. Incorporate postharvest disease & insects pests management class in training schedule.
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## Annexure - V

### Resource Speakers Evaluation by the participants

Grade range: 1-6 (Higher marks represent the higher grade)

Speaker name and Address	Subject	Criteria	Obtained grade (Average)	Comments
Prof. Dr. Md. Burhan Uddin, Dept. of Food tech. & Rural Ind, BAU	National Food Policy, Rules & Regulation	Knowledge Over subject	4.3	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
	Food Processing & Preservation: Implications for assuring food security	Knowledge Over subject	4.5	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
Prof. Dr. Mohammad Gulzarul Aziz, Dept. of Food tech. & Rural Ind, BAU	Concept on Safe and Nutritious Foods	Knowledge Over subject	5.3	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
	Principles and methods of Food Preservation	Knowledge Over subject	5.1	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
Md. Mahmud Hasan Director (Training), NATA, Gazipur	Good Agriculture Practice (GAP) and Standard Operating Procedure (SOP) for preservation & Processing of Agricultural Products	Knowledge Over subject	5.2	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
MD. Eskandar Hossain DD, NATA,	Packaging and Transportation of Fresh fruits and	Knowledge Over subject	4.9	
		Ability to present ideas clearly/relevantly		
		Ability to make the		

Speaker name and Address	Subject	Criteria	Obtained grade (Average)	Comments
Gazipur	Vegetables	class/session participatory		
		Control over class		
		Time management		
Dr. Abdullah Iqbal, Professor Dept. of Food tech. & Rural Ind, BAU	Traditional Food Processing and Preservation Techniques	Knowledge Over subject	5.2	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
	Food Processing and Preservation by Heat Treatment	Knowledge Over subject	5.2	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
Dr. Mohammad Mainuddin Molla SSO, PHTD, BARI, Gazipur	Preparation of Jam/Jelly/Marmalade	Knowledge Over subject	5.2	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
	Overview on Minimal Processing of Fruits and Vegetables	Knowledge Over subject	5.1	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
	Overview on Minimal Processing of Fruits and Vegetables (Practical)	Knowledge Over subject	5.2	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
Dr. Golam Ferdous Ahmed Chowdhury, SSO, Post-Harvest Technology Division, BARI	Food Preservation by increasing solids	Knowledge Over subject	4.9	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		

Speaker name and Address	Subject	Criteria	Obtained grade (Average)	Comments
	Food Processing by Frying	Knowledge Over subject	5.1	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
	Principles and Methods of Osmotic Dehydration	Knowledge Over subject	5.0	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
Md.Hafizul Haque Khan CSO,Post-Harvest Technology Division, BARI,Gazipur	Overview on Washing and Cooling of fresh produces	Knowledge Over subject	5.4	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
Dr. Md. Shahjahan professor, German University, Gazipur	Fermentation as the methods of food processing and preservation	Knowledge Over subject	5.4	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
	Pickling	Knowledge Over subject	5.4	
		Ability to present ideas clearly/relevantly		
		Ability to Handle Q/A		
		Control over class		
		Time management		
Dr. Md. Ayub Hossain CSO, Farm Machinery Division, BARI	Food Processing by Drying	Knowledge Over subject	5.3	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
Abul Kalam Azad DD (Agriculture Extension), NATA,	Sustainable Development Goals (SDG) And	Knowledge Over subject	5.2	
		Ability to present ideas clearly/relevantly		
		Ability to make the		

<b>Speaker name and Address</b>	<b>Subject</b>	<b>Criteria</b>	<b>Obtained grade (Average)</b>	<b>Comments</b>
Gazipur	NIS	class/session participatory		
		Control over class		
		Time management		
Dr. Md. Mayen Uddin DD( Food Technology), NATA, Gazipur	Causes of Food Spoilage and its remedies	Knowledge Over subject	5.2	
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
Dr Md. Monirul Islam, Director (Nutrition)BARC, Dhaka	Food Adulteration and Safety	Knowledge Over subject	5.7	Best Speaker
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
		Time management		
	Use of food additives and preservatives	Knowledge Over subject	5.7	Best Speaker
		Ability to present ideas clearly/relevantly		
		Ability to make the class/session participatory		
		Control over class		
Time management				

## Annexure – VI

### Pre and Post Evaluation Test of the Participants

Full Marks: 50

SL. No.	Name of the Participants	Designation & Posting place	Pre Evaluation	Post Evaluation
1.	MD. SARIFUL BIN EGRAM	SO (Scientific Officer ),BWMRI , Nashipur, Dinajpur	14	
2.	MD. NUR-E-NABI	AEO (Agriculture Extension Officer), Magura Sadar, Magura	15	39
3.	MD. SARIFUL ISLAM	AEO (Agriculture Extension Officer), Natore Sadar, Natore	14	45
4.	SADIA TASMIN	SSO(Senior Scientific Officer), BINA,Mymensingh	12	47
5.	KAZI TAHMINA AKTER	SO( Scientific Officer), BINA,Mymensingh	13	48
6.	MAHAMMAD TAREK ANWER	SAD(Senior Assistant Director), BADC, Dhaka	12	47
7.	MD. RASEL PERVAJ TOMAL	AEO (Agriculture Extension Officer), Gopalpur, Tangail	19	44
8.	MD. TANJILUR RAHMAN MONDAL	SSO(Senior Scientific Officer), BINA,Mymensingh	09	42
9.	RAIHANUL HOQUE	AEO (Agriculture Extension Officer), Purbadhala, Netrakona	12	41
10.	MD. ASADUJJAMAN	AEO (Agriculture Extension Officer), Monpura, Bhola		39
11.	MD. DALOAR HOSSAIN	AEO (Agriculture Extension Officer), Laksam, Cumilla	14	45
12.	SK. TAYEABUR RAHMAN	AEO (Agriculture Extension Officer) , Indurkani, Pirojpur	13	43
13.	DR. MD. MASUD ALAM	SSO (Senior Scientific officer) , SRC, BARI, Bogura	23	46
14.	MD. ABDUL JABBAR	UAO (Upazilla Agriculture officer) ,		45

SL. No.	Name of the Participants	Designation & Posting place	Pre Evaluation	Post Evaluation
		Mohalchari, Khagrachari		
15.	DR. MD. SHOHAG MAHFUZ	ADD (Additional Deputy Director)(PP), DAE,Lalmonirhat	23	45
16.	A.K.M. SADIQUL ISLAM	DSCO(District Seed Certification Officer) SCA,Rajbari	14	45
17.	MD. ENAMUL HOQUE	ADD (Additional Deputy Director )(PP) DAE, Gaibandha	29	47
18.	DR. MOHAMMAD ARIFUR RAHMAN	SSO (Senior Scientific Officer) , Station In-Charge, ARS, BARI, Satkhira	18	45
19.	DR. NASRIN JAHAN	SSO(Senior Scientific Officer), PGRC, BARI Gazipur	10	47
20.	SULTANAN NASIRA	AD (Assistant Director) , DAM, Khamarbari, Dhaka	01	42
21.	MD. SHAZEDUR RAHMAN	Deputy Manager , BADC, Dhaka	11	42
22.	MD. SHAHIDUL ISLAM	AD (Assistant Director) , DAM, Khamarbari, Dhaka		38
23.	TASLIMA JAHAN	SSO(Senior Scientific Officer) , TCRC, BARI, Gazipur	10	48
24.	SAUDA NAZNIN	SO (Scientific Officer), TCRC, BARI, Gazipur	18	47
25.	TASLIMA YEASMIN	STO (Senior Training Officer), SCA, Gazipur	05	46
26.	A.S.M. RASHEDUZZAMAN BIN HAFIZ	AEO (Agriculture Extension Officer) , Barlekha, Moulvibazar	21	46
27.	RAKIBUL HASAN SHARIF	AEO (Agriculture Extension Officer), Haimchar, Chandpur	20	41
28.	MD. KAMRUL HASAN	AEO (Agriculture Extension Officer) , Bhaluka, Mymensingh		39

<b>SL. No.</b>	<b>Name of the Participants</b>	<b>Designation &amp; Posting place</b>	<b>Pre Evaluation</b>	<b>Post Evaluation</b>
29.	CHAMON-ARA-AFROZ	AAO (Additonal Argriculture Officer ), Shajahanpur, Bogura		48
30.	ABM WAHIDUR RAHMAN	DTO (District Training Officer ), DAE, Munshigonj		40
31.	MD. RAQIB HASAN	AEO (Agriculture Extension Officer), Kahaloo, Bogura	04	40
32.	MD. SAFAT ZAMAN PANIR	SCO (Seed Certification Officer), SCA, Munshiganj	11	46
33.	MD. KHIJIR HOSSAIN PK.	ADD (Additional Deputy Director) (Horticulture). DAE, Naogaon		46

Government of the People's Republic of Bangladesh  
National Agriculture Training Academy  
Gazipur-1701  
Test on  
**“Food Processing and Preservation Techniques”**  
Pre & Post Evaluation  
Date:

Total Marks: 50

Duration: 30 Minute

Name:







Designation:

Value of each questions are equal

1. Define food and food processing.
  2. What is food preservation ?
  3. State objectives food processing .Write common methods of food processing ?
  4. Write down the causes of food spoilage .
  5. What are the factors which affects food technology ?
  6. Explain opportunities and challenges of food processing in Bangladesh?
  7. Write down the function of food.
  8. Method of food processing
  9. Define pasteurization.
  10. Define jam, jelly and marmalade.
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## NATA FACULTY MEMBERS

Photo	Name & Designation	Phone/Cell/ E-mail
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	Mahmudul Hasan Deputy Director ( Admin & Support Service)	01715-101818 hasandae@yahoo.com
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