



# Model Curriculum

**QP Name: Oilseed Crop Grower**

**Electives: Soybean/ Groundnut/ Mustard**

**QP Code: AGR/Q0201**

**Version: 2.0**

**NSQF Level: 4**

**Model Curriculum Version: 1.0**

Agriculture Skill Council of India || Agriculture Skill Council of India (ASCI), 6th Floor, GNG Tower, Plot  
No. 10, Sector - 44

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## Training Parameters

<b>Sector</b>	Agriculture
<b>Sub-Sector</b>	Agriculture Crop Production
<b>Occupation</b>	Field Crops Cultivation (Cash crops)
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/6111.0501
<b>Minimum Educational Qualification and Experience</b>	<p>10th Class+ ITI (2 years) in relevant field OR 10th class pass with 2 years' experience OR 8th Class with 4 Years of relevant experience OR Certificate-NSQF Level-4(Field Crop/Vegetable) with 6 months of relevant experience OR Certificate-NSQF Level-3(in Agriculture/Horticulture related Job Roles) with 2 Years of relevant experience</p>
<b>Pre-Requisite License or Training</b>	NA
<b>Minimum Job Entry Age</b>	17 Years
<b>Last Reviewed On</b>	24/02/2022
<b>Next Review Date</b>	24/02/2025
<b>NSQC Approval Date</b>	24/02/2022
<b>QP Version</b>	2.0
<b>Model Curriculum Creation Date</b>	24/02/2022
<b>Model Curriculum Valid Up to Date</b>	24/02/2025
<b>Model Curriculum Version</b>	1.0
<b>Minimum Duration of the Course</b>	360 Hours
<b>Maximum Duration of the Course</b>	448 Hours

## Program Overview

This section summarizes the end objectives of the program along with its duration.

### Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills to:

- Describe the process of preparing for oilseed crop cultivation.
- Demonstrate the process of carrying out macro and micronutrient management of field crops.
- Describe the process of managing the weed growth in crop field.
- Demonstrate the process of performing integrated pest and disease management in oilseed crops.
- Demonstrate the process of performing Irrigation management for field crops.
- Demonstrate the process of harvesting, processing and marketing the oilseed crop.
- Explain the basic entrepreneurial activities for small enterprise.
- Describe the process of undertaking employability and entrepreneurial practices.
- Describe the process of engaging in collective farming/activity.
- Demonstrate various practices to maintain personal hygiene, cleanliness, and safety at the work.
- Demonstrate the process of carrying out soybean cultivation.
- Demonstrate the process of carrying out groundnut cultivation.
- Demonstrate the process of carrying out mustard cultivation.

### Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>Bridge Module</b>	<b>04:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>04:00</b>
Module 1: Introduction to the role of an Oilseed Crop Grower	04:00	0:00	0:00	0:00	04:00
<b>AGR/N0217 Prepare for oilseed crop cultivation</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	<b>12:00</b>	<b>28:00</b>	<b>0:00</b>	<b>0:00</b>	<b>40:00</b>
Module 2: Process of preparing for oilseed crop cultivation	12:00	28:00	0:00	0:00	40:00
<b>AGR/N0108: Carry out macro and micronutrient management of field crops</b> <b>NOS Version-2.0</b> <b>NSQF Level- 4</b>	<b>04:00</b>	<b>16:00</b>	<b>0:00</b>	<b>0:00</b>	<b>20:00</b>

Module 3: Process of carrying out macro and micronutrient management of field crops	04:00	16:00	0:00	0:00	20:00
<b>AGR/N0109 Manage weed growth in crop fields</b> <b>NOS Version- 2.0</b> <b>NSQF Level- 4</b>	<b>04:00</b>	<b>12:00</b>	<b>0:00</b>	<b>0:00</b>	<b>16:00</b>
Module 4: Process of managing the weed growth in crop field	04:00	12:00	0:00	0:00	16:00
<b>AGR/N0219 Perform integrated pest and disease management in oilseed crops</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	<b>10:00</b>	<b>28:00</b>	<b>0:00</b>	<b>0:00</b>	<b>38:00</b>
Module 5: Process of performing integrated pest and disease management in oilseed crops	10:00	28:00	0:00	0:00	38:00
<b>AGR/N0111: Perform irrigation management for field crops</b> <b>NOS Version- 2.0</b> <b>NSQF Level- 4</b>	<b>08:00</b>	<b>28:00</b>	<b>0:00</b>	<b>0:00</b>	<b>36:00</b>
Module 6: Process of performing Irrigation management for field crops	08:00	28:00	0:00	0:00	36:00
<b>AGR/N0218 Harvest, process and market the oilseed crop</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	<b>12:00</b>	<b>26:00</b>	<b>0:00</b>	<b>0:00</b>	<b>38:00</b>
Module 7: Process of harvesting, processing and marketing the oilseed crop	12:00	26:00	0:00	0:00	38:00
<b>AGR/N9908 Undertake basic entrepreneurial activities for small Enterprise</b>	<b>12:00</b>	<b>28:00</b>	<b>0:00</b>	<b>0:00</b>	<b>40:00</b>

<b>NOS Version- 2.0</b> <b>NSQF Level- 4</b>					
Module 8: Basic entrepreneurial activities for small enterprise	12:00	28:00	0:00	0:00	40:00
<b>AGR/N9926 Follow the relevant employability and entrepreneurial practices</b> <b>NOS Version- 1.0</b> <b>NSQF Level- 4</b>	<b>18:00</b>	<b>22:00</b>	<b>0:00</b>	<b>0:00</b>	<b>40:00</b>
Module 9: Employability and entrepreneurial practices	18:00	22:00	0:00	0:00	40:00
<b>AGR/N9922 Engage in collective farming/activity</b> <b>NOS Version-1.0</b> <b>NSQF Level- 4</b>	<b>08:00</b>	<b>20:00</b>	<b>0:00</b>	<b>0:00</b>	<b>28:00</b>
Module 10: Engagement in collective/ farming activities	08:00	20:00	0:00	0:00	28:00
<b>AGR/N9903 Maintain health and safety at the workplace</b> <b>NOS Version-3.0</b> <b>NSQF Level-3</b>	<b>04:00</b>	<b>12:00</b>	<b>0:00</b>	<b>0:00</b>	<b>16:00</b>
Module 11: Hygiene and cleanliness	02:00	2:00	0:00	0:00	04:00
Module 12: Safety and emergency procedures	02:00	10:00	0:00	0:00	12:00
<b>Total Duration</b>	<b>96:00</b>	<b>220:00</b>	<b>0:00</b>	<b>0:00</b>	<b>316:00</b>

## Elective Modules

The table lists the modules and their duration corresponding to the Optional NOS of the QP.

### Elective 1: Soybean

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration

<b>AGR/N0216 Carry out Soybean cultivation NOS Version- 1.0 NSQF Level- 4</b>	<b>12:00</b>	<b>32:00</b>	<b>0:00</b>	<b>0:00</b>	<b>44:00</b>
Module 13: Process of carrying out soybean cultivation	12:00	32:00	0:00	0:00	44:00
<b>Total Duration</b>	<b>12:00</b>	<b>32:00</b>	<b>0:00</b>	<b>0:00</b>	<b>44:00</b>

### Elective 2: Groundnut

<b>NOS and Module Details</b>	<b>Theory Duration</b>	<b>Practical Duration</b>	<b>On-the-Job Training Duration (Mandatory)</b>	<b>On-the-Job Training Duration (Recommended)</b>	<b>Total Duration</b>
<b>AGR/N0215 Carry out groundnut cultivation NOS Version- 1.0 NSQF Level- 4</b>	<b>12:00</b>	<b>32:00</b>	<b>0:00</b>	<b>0:00</b>	<b>44:00</b>
Module 14: Process of carrying out groundnut cultivation	12:00	32:00	0:00	0:00	44:00
<b>Total Duration</b>	<b>12:00</b>	<b>32:00</b>	<b>0:00</b>	<b>0:00</b>	<b>44:00</b>

### Elective 3: Mustard

<b>NOS and Module Details</b>	<b>Theory Duration</b>	<b>Practical Duration</b>	<b>On-the-Job Training Duration (Mandatory)</b>	<b>On-the-Job Training Duration (Recommended)</b>	<b>Total Duration</b>
<b>AGR/N0214 Carry out mustard cultivation NOS Version- 1.0 NSQF Level- 4</b>	<b>12:00</b>	<b>32:00</b>	<b>0:00</b>	<b>0:00</b>	<b>44:00</b>
Module 15: Process of carrying out mustard cultivation	12:00	32:00	0:00	0:00	44:00
<b>Total Duration</b>	<b>12:00</b>	<b>32:00</b>	<b>0:00</b>	<b>0:00</b>	<b>44:00</b>

# Module Details

## Module 1: Introduction to the role of an Oilseed Crop Grower

### Bridge Module

#### Terminal Outcomes:

- Discuss the job role of an Oilseed Crop Grower.

<b>Duration: 04:00</b>	<b>Duration: 0:00</b>
<b>Theory – Key Learning Outcome</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Describe the size and scope of the agriculture industry and its sub-sectors.</li> <li>• Discuss the role and responsibilities of a Friends of an Oilseed Crop Grower.</li> <li>• Identify various employment opportunities for a Friends of an Oilseed Crop Grower</li> </ul>	
<b>Classroom Aids</b>	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
<b>Tools, Equipment and Other Requirements</b>	
NA	



## Module 2: Process of preparing for oilseed crop cultivation

### Mapped to ARG/N0217 v1.0

#### Terminal Outcomes:

- Describe the process of selecting the site and oilseed variety for cultivation.
- Describe the process of arranging the required resources.
- Demonstrate the process of testing and treating the oilseeds.
- Describe the process of preparing the field for oilseed cultivation.
- Demonstrate the process of sowing the oilseeds.
- Demonstrate various practices for effective resource optimisation.

Duration: 12:00	Duration: 28:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Explain the criteria for selecting an oilseed variety to be cultivated such as agro-climatic zone, climate, soil type and required yield.</li> <li>• State the cultivation duration and yield of different oilseed varieties.</li> <li>• Describe the process of identifying oilseed vendors, procuring and storing oilseeds</li> <li>• State the appropriate treatment to be applied in the storage area to remove pests, rodents and insects.</li> <li>• State the recommended temperature and humidity for storing varieties of oilseed.</li> <li>• Describe the appropriate organic and inorganic seed treatment methods and the criteria for selecting one.</li> <li>• State the suitable time to plant varieties of oilseed based on temperature, humidity, etc.</li> <li>• Explain the use of lime and other recommended treatments to adjust the soil's pH.</li> <li>• Explain the importance of draining out excess water from the field.</li> <li>• State the recommended seed rate, depth and planting density for different varieties of oilseed.</li> <li>• Explain the importance of carrying out intercropping with appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of preparing the storage area by applying the recommended treatment to remove pests, rodents and insects.</li> <li>• Demonstrate the process of carrying out seed germination test and sort out the seeds lots that fail the test.</li> <li>• Demonstrate how to prepare the solution for treating the seeds.</li> <li>• Demonstrate the process of treat the oilseeds with the seed treatment solution.</li> <li>• Prepare a sample record of germination test and seed treatment.</li> <li>• Show how to plough the field to fine tilth and level it, using the relevant farm machineries and implements.</li> <li>• Demonstrate the process of applying the recommended organic and inorganic fertilisers in the field in the recommended quantity.</li> <li>• Demonstrate the process of applying lime, gypsum or other recommended treatment to adjust the soil's pH.</li> <li>• Demonstrate the process of sowing the seeds at the seed rate and depth recommended for the selected oilseed variety.</li> <li>• Demonstrate the use of appropriate mechanical seed sowing equipment</li> </ul>

<p>crop varieties to achieve higher yields and manage weeds.</p> <ul style="list-style-type: none"> <li>• Explain the benefits of resource optimisation.</li> </ul>	<p>such as seed drills, tractor-operated planters and precision planters.</p> <ul style="list-style-type: none"> <li>• Demonstrate various practices to optimise the usage of various resources such as water and electricity.</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Irrigation Equipment, Spade, Sickle, Wooden Log, Thresher, Winnowing, Sprayer, Fumigents, etc.</p>	

## Module 3: Process of carrying out macro and micronutrient management of field crops

*Mapped to ARG/N0108 v2.0*

### Terminal Outcomes:

- Explain how to determine the macro and micronutrients requirements.
- Demonstrate the process of applying fertilisers to the soil.
- Demonstrate the process of performing soil conservation.

<b>Duration: 04:00</b>	<b>Duration: 16:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the basic concepts of plant nutrition and soil fertility.</li> <li>• Explain different types of macro and micronutrients, their properties and their functions.</li> <li>• List common symptoms of nutrient deficiency in plants.</li> <li>• Explain different types of green manure and nitrogen-fixing crops.</li> <li>• Describe the process of soil sampling and testing.</li> <li>• Explain the importance of getting the soil tested through a government-approved lab.</li> <li>• Explain how to interpret the soil analysis report to determine the macro and micronutrient requirements of the soil.</li> <li>• Explain different soil types, their advantages and disadvantages with reference to the presence of various nutrients.</li> <li>• State the appropriate time and methods for the application of different types of fertilisers.</li> <li>• Explain the importance of regulating the dose of fertiliser according to the crop cycle.</li> <li>• State the recommended dosage and application time of fertiliser for different types of crops.</li> <li>• Explain the importance of soil</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of preparing organic fertilisers such as farmyard manure, vermicompost and inorganic fertiliser solutions.</li> <li>• Demonstrate the process of preparing the mixture of liquid fertilisers for application in the field, using them in the recommended quantity.</li> <li>• Show how to prepare the field for the application of fertilisers.</li> <li>• Demonstrate the process of applying organic and inorganic fertilisers containing the required macro and micronutrients to the soil in the recommended dose.</li> <li>• Show how to regulate the dose of fertiliser according to the crop cycle.</li> <li>• Prepare a sample record of fertilisers used in the field.</li> <li>• Prepare a sample soil nutrition supplementation calendar based on the stages of the crop's growth.</li> <li>• Demonstrate the process of applying mulch and organic fertilisers to conserve soil moisture.</li> </ul>

<p>conservation and various soil conservation practices.</p> <ul style="list-style-type: none"> <li>• Explain various varieties of organic and inorganic fertilisers to be applied to the soil to improve its fertility, and nutrient content.</li> <li>• Explain the harmful effects of the over-dosage of fertilizers.</li> <li>• Describe the process of preparing a soil nutrition supplementation calendar based on the stages of the crop's growth.</li> </ul>	
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Sprayer, Fertilisers, Bio Fertilisers, Cloth Bags for Soil Sample, Khurpa</p>	

## Module 4: Process of managing the weed growth in the crop field

### Mapped to AGR/N0109 v2.0

#### Terminal Outcomes:

- Describe the process of identifying weed growth.
- Demonstrate the process of performing weed management.

<b>Duration: 04:00</b>	<b>Duration: 12:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• State the critical period for organic weed control, reducing the dependence on herbicides and weedicides.</li> <li>• Explain the adverse effect of different types of weed such as grass, broad leaves, sedges on crop growth.</li> <li>• Describe different weed control methods such as preventative, inter-cultural, mechanical, biological and chemicals.</li> <li>• Explain the advantages and disadvantages of different weeding methods.</li> <li>• State the critical period of crop-weed competition.</li> <li>• Describe different manual weeding techniques.</li> <li>• Explain the use of relevant weeding equipment such as hoe and spade.</li> <li>• Explain the use of pre-emergent and post-emergent herbicides.</li> <li>• Explain the difference between blanket and spot application of herbicides.</li> <li>• Describe the process of soil solarisation and pasteurisation.</li> <li>• Explain various environmental norms to be adhered to during herbicide application.</li> <li>• Explain the effects of herbicide residue on the crop.</li> <li>• Explain different ways to minimize pollution caused due to overuse of</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to maintain the record of observations with respect to weed identification and their growth.</li> <li>• Demonstrate the process of preparing the recommended herbicide/ bio-herbicide solution suitable to the crop.</li> <li>• Show how to spray the herbicide/ bio-herbicide safely in the recommended dose.</li> <li>• Demonstrate the process of removing weeds manually using the appropriate hand tools and implements, as required.</li> </ul>

<p>herbicides.</p> <ul style="list-style-type: none"> <li>• Explain the importance of inspecting the field regularly to identify weed growth.</li> <li>• Explain the appropriate combination of different types of intercultural and mechanical methods for effective weed control such as solarisation and pasteurisation.</li> <li>• Describe the process of selecting and preparing the recommended herbicide/ bio-herbicide solution suitable to the crop.</li> <li>• Explain the importance of retaining the weeds during the weeding process.</li> <li>• Explain the importance of maintaining the herbicides and herbicide application equipment separately to prevent cross-contamination with other chemicals.</li> </ul>	
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Chemicals, Sprayer, Weeder, Hoe, Sickle</p>	

## Module 5: Process of performing integrated pest and disease management in oilseed crops

*Mapped to ARG/N0219 v1.0*

### Terminal Outcomes:

- Explain the importance of following preventive measures to control pests and diseases.
- Describe the process of identifying the pests and diseases in oilseed crops.
- Demonstrate the process of applying the necessary treatment.
- Explain the importance of ensuring protection of honey bees from pesticides.

<b>Duration: 10:00</b>	<b>Duration: 28:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain various types of diseases found in oilseed crops and their symptoms.</li> <li>• Explain different biotic and abiotic factors causing diseases and disorders in the oilseed crop.</li> <li>• Explain the different modes of transmission of disease such as implements, vectors, rain, wind.</li> <li>• Explain the importance of adopting safe production methods for safe produce.</li> <li>• Explain how to prepare various bio-pesticides such as neem seed kernel extract, cow dung urine solution, etc.</li> <li>• Explain the advantages of adopting biological control methods such as bio-pesticides and pheromones used in IPM (Integrated Pest Management) for oilseed pests and diseases.</li> <li>• State the recommended minimum residue levels and Protected Health Information (PHI) for different types of pesticides.</li> <li>• List major oilseed pests and their behaviour.</li> <li>• Explain the use of pesticide spraying tools and equipment.</li> <li>• Explain the applicable national and international standards on pesticide residues.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of carrying out crop rotation of oilseed crops with the recommended field crops.</li> <li>• Demonstrate the process of carrying out trash mulching and drain out excess water from the field.</li> <li>• Show how to remove the diseased oilseed crop to prevent the spread of pests and disease to the healthy crop.</li> <li>• Demonstrate the process of applying the recommended treatment to the oilseed crop as per the prescription.</li> <li>• Demonstrate the use of relevant PPE.</li> <li>• Prepare a sample record of the use of any pesticides, insecticides and any other treatment.</li> <li>• Demonstrate the process of performing cleaning of combs by soaking them in water, washing the pollen from cells.</li> </ul>

- Explain the benefits of using pest and disease-resistant varieties of crops.
- State the recommended practices to be followed to restrict the entry of pathogens into the field through planting material, irrigation water, workers, tools and equipment, and vectors such as whitefly.
- Explain the benefits and process of crop rotation of the oilseed crop with suitable crops.
- Explain the importance of identifying and removing the diseased crop to prevent the spread of pests and diseases to the healthy crop.
- Explain the use of the recommended combination of biological, mechanical and chemical control methods for effective pest and disease prevention such as traps, sticky plates etc.
- Explain how to identify different types of pests in oilseed crops such as stem borer, leaf folder, Fall Armyworm, Panicle mites etc.
- Explain how to identify plant disease vectors and major oilseed crop diseases such as leaf spot, leaf blight, anthracnose, Powdery mildew, root rot, rust, yellow mosaic, etc.
- Describe the process of determining the stage of pest incidence along with the extent of damage and Economic Threshold Levels (ETL) of the pests.
- Explain the use of IPM methods such as light and pheromone traps to detect the presence and the population of insects and vectors.
- Describe the process of determining the causal organism for oilseed diseases and their treatment.
- List the natural enemies of the oilseed pests and the benefits of adopting them for pest control.
- Explain the importance of applying the recommended treatment as per the prescription and maintaining the



record of their use.

- Explain the importance of using the recommended PPE while applying harmful chemicals
- Describe the appropriate methods to be adopted to minimise pollution caused by the overuse of pesticides.
- State the list of banned pesticide formulations.
- Explain how to deal with chemical poisoning.
- Explain the benefits of practising nature-based agriculture that reduces dependency on chemical inputs.
- Explain the importance of following ecological principles for sustainable agro-ecosystems to balance the ecology and economics.
- Explain the benefits of using sustainable agro-ecology to replace agrochemicals with natural capital and ecosystem functions.
- State the negative impact of pesticides on honey bees and the symptoms of honey bee pesticide kill, such as a large number of dead bees in front of beehives.
- Explain the effect of honey bee pesticide loss on a bee the colony, e.g. brood diseases and chilled brood.
- Explain the importance of undertaking crop production at appropriate locations and away at the recommended distance from apiaries to minimise the risk of pesticide poisoning in honey bees.
- Explain the importance of using less toxic pesticides that degrade rapidly and have a faster residual time
- Explain the importance of using pesticide formulations that does not leave residue, e.g. emulsifiable concentrates and granular formulations
- Explain the importance of selecting

<p>an appropriate time to apply pesticides to the crop to protect honey bees from harmful effects.</p> <ul style="list-style-type: none"> <li>• Describe the appropriate precision pesticide application methods and equipment to be used to confine the pesticide spray to the intended target and reduce the risk of pesticide drift.</li> <li>• List the appropriate remedial measures to be taken in case of honey bee colony poisoning.</li> </ul>	
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Irrigation Equipment, Spade, Sickle, Wooden Log, Thresher, Winnowing, Sprayer, Fumigents, Storage Bags, Pheromone Traps, Light Traps, Bird Perches, Sticky Traps, Weeder, Hoe etc.</p>	

## Module 6: Process of performing irrigation management for field crops

### Mapped to NOS AGR/N0111 v2.0

#### Terminal Outcomes:

- Describe the process of preparing for field irrigation.
- Demonstrate the process of irrigating the field.
- Describe the process of managing water usage.

<b>Duration: 08:00</b>	<b>Duration: 28:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• State the timing and method of irrigation appropriate for a given soil type and climatic conditions.</li> <li>• State the quantity of water required for the specific crop and its effect on the yield.</li> <li>• Explain the importance of sampling irrigation water through an authorised lab to determine its quality.</li> <li>• Explain various measures to be followed to improve the water quality.</li> <li>• Describe the process of setting up different types of irrigation systems such as surface irrigation, drip irrigation, sub-surface irrigation system.</li> <li>• Explain the advantages and disadvantages of different types of irrigation systems.</li> <li>• Explain the importance of irrigating the field according to the recommended irrigation schedule for the crop and the factors to consider in scheduling irrigation.</li> <li>• Explain the recommended practices to prevent over and under irrigation.</li> <li>• Explain the recommended practices for effective drainage of excess water from the field.</li> <li>• Explain the importance of maintaining the recommended level of water in the soil to prevent the</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of setting up the appropriate irrigation system such as surface irrigation, drip irrigation, sub-surface irrigation system based on the requirement of the specific field crop.</li> <li>• Demonstrate the process of irrigating the field according to the recommended irrigation schedule for the crop.</li> <li>• Prepare a sample record of field irrigation to ensure irrigation as per the schedule.</li> <li>• Demonstrate how to plug water spills and leakages to prevent its wastage.</li> </ul>

<p>harmful effects of inappropriate levels of moisture in it.</p> <ul style="list-style-type: none"> <li>• Explain various practices for optimised use of water and prevent its wastage.</li> </ul>	
<p><b>Classroom Aids:</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Irrigation Equipment such as Drip Irrigation, Sprinkler Irrigation, Pipe etc.</p>	

## Module 7: Process of harvesting, processing and marketing the oilseed crop

### Mapped to ARG/N0218 v2.0

#### Terminal Outcomes:

- Demonstrate the process of harvesting the oilseed crop.
- Describe the process of processing and storing the oilseed crop.
- Describe the process of marketing the oilseed crop.
- Demonstrate various waste management practices.
- Discuss ways to promote diversity and inclusion at the workplace.

<b>Duration: 12:00</b>	<b>Duration: 26:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the maturity indicators of varieties of the oilseed crop.</li> <li>• State the level of moisture required in the oilseed pods for harvesting.</li> <li>• Explain the use of relevant tools and implements for harvesting varieties of oilseed.</li> <li>• Explain the recommended practices to be followed to protect the oilseed coating.</li> <li>• Describe the process of drying varieties of oilseed under the sun and mechanically.</li> <li>• State the appropriate packing material to be used for packing varieties of oilseed.</li> <li>• State the recommended temperature and humidity for storing the processed oilseeds.</li> <li>• State the appropriate time for selling oilseeds based on the periodical demand of the produce and profitability.</li> <li>• State the appropriate markets and buyers of oilseeds such as procurement agencies, local traders, co-operatives, exporters, etc.</li> <li>• Describe the process of negotiating with the buyer and accepting orders.</li> <li>• State the appropriate mode of transport to deliver varieties of the</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of harvest the oilseed crop, ensuring minimum loss during the process.</li> <li>• Show how to thresh the harvested oilseed crop using the threshing equipment.</li> <li>• Show how to dry the harvested oilseeds mechanically.</li> <li>• Demonstrate how to process the payments using the buyer-preferred e-payment method.</li> <li>• Show how to calculate the benefit-cost (B:C) ratio.</li> <li>• Prepare a sample record of sales and payments using the physical registers and/ or the relevant computer application.</li> <li>• Demonstrate the process of recycling and disposing different types of waste appropriately.</li> <li>• Demonstrate appropriate verbal and non-verbal communication that is respectful of genders and disability.</li> </ul>

<p>oilseed to the buyer.</p> <ul style="list-style-type: none"> <li>• Explain the importance of recycling and disposing different types of waste as per the applicable regulations.</li> <li>• Explain the procedure to report inappropriate behaviour e.g., harassment.</li> </ul>	
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Sprayer, Fertilisers, Bio Fertilisers, Cloth Bags, etc.</p>	

## Module 8: Basic entrepreneurial activities for small enterprise

### Mapped to AGR/N9908 v2.0

- Describe the process of planning the agricultural enterprise/ business.
- Describe the process of managing the agricultural production process.
- Describe the process of managing the post-production and marketing processes.

<b>Duration: 12:00</b>	<b>Duration: 28:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain how to analyse the demand and supply of the relevant agricultural produce in the market</li> <li>• Describe the process of identifying the target customers and assess their needs and expectations with respect to the quality and price of the produce.</li> <li>• Explain how to identify various types of agricultural entrepreneurship/ business opportunities.</li> <li>• Explain how to prepare a basic business plan for agricultural entrepreneurship/business activities.</li> <li>• State the appropriate sources of funding for the agricultural entrepreneurship/ businesses</li> <li>• State the relevant government schemes and programs</li> <li>• Explain the importance of ensuring compliance with the government structural reforms and</li> <li>• framework, along with the applicable rules and regulations.</li> <li>• List various resources required for agricultural production</li> <li>• Describe the process of planning agricultural production and the use of relevant technologies to enhance production</li> <li>• Explain the importance of ensuring no cause adverse impact on the environment and produce during production</li> <li>• State the recommended practices to be followed for efficient input</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to analyse the demand and supply of the relevant agricultural produce in the market.</li> <li>• Prepare a sample basic business plan for agricultural entrepreneurship/business activities.</li> <li>• Demonstrate how to calculate the costs incurred and determine the price of the product for profitability.</li> <li>• Prepare a sample marketing plan considering the 4Ps i.e., product, price, promotion, and place and 4As i.e., acceptability, affordability, accessibility, and awareness.</li> <li>• Demonstrate the process of using the relevant digital services such as e-commerce, e-payments, electronic recordkeeping, etc.</li> </ul>

resource management.

- Describe the process of optimising the production processes and output through the amalgamation of existing practices with smart technologies.
- Explain the recommended sustainability practices to be followed during agricultural production to prevent and deal with deforestation, loss of biodiversity, soil degradation, etc.
- Explain how to collect information related to the wholesale and retail price of agricultural produce.
- Explain how to calculate the economics of the produce viz. production cost, price of the produce, B:C Ratio etc.
- Explain the relevant government schemes with the provision of subsidies/funds for the promotion of agricultural produce.
- Describe the process of selecting appropriate marketing channels for marketing agricultural produce, and the applicable requirements and constraints.
- List the relevant buyers of different types of agricultural produce.
- Explain how to identify and manage various risks to production and post-production processes.
- Explain how to undertake outreach programs to promote agricultural products and services, and expand agri-business.
- Explain the 4Ps i.e., product, price, promotion, and place and 4As i.e., acceptability, affordability, accessibility, and awareness considered while preparing and executing a marketing plan.
- Explain the use of the relevant digital services such as e-commerce, e-payments, electronic recordkeeping, etc.



<ul style="list-style-type: none"> <li>• Explain the importance of using efficient post-production logistics.</li> <li>• Explain the importance of maintaining various records accurately.</li> </ul>	
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>NA</p>	

## Module 9: Employability and entrepreneurial practices

### Mapped to AGR/N9926 v1.0

- Explain the importance of following the employability practices.
- Demonstrate the process of using the computer and relevant electronic services
- Explain the importance of following entrepreneurial practices.

<b>Duration: 18:00</b>	<b>Duration: 22:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• State the recommended practices to be followed to prevent and deal with common health and safety issues at work.</li> <li>• Explain Maslow's Hierarchy of Needs theory and its application at work.</li> <li>• List various characteristics of entrepreneurs with the motivation for achievement</li> <li>• Explain the appropriate practices to be followed to maintain a positive attitude at work</li> <li>• Explain the role of attitude in self-analysis</li> <li>• Explain how to utilise personal strengths at work and overcome weaknesses</li> <li>• Explain the importance of conducting work/business with honesty</li> <li>• Explain the importance of maintaining the required quality standards in work.</li> <li>• State the characteristics of highly creative and innovative people</li> <li>• Explain how to find creative solutions to work-related problems</li> <li>• Explain the benefits of time management and the relevant practices to be followed for effective utilisation of time</li> <li>• Explain the relevant practices to be followed for anger and stress management at work</li> <li>• Explain the use of relevant computer software/ applications for various purposes.</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare a sample resume including all the relevant information.</li> <li>• Prepare sample answers to frequently asked interview questions.</li> <li>• Demonstrate how to set up a bank account and personal insurance policy.</li> <li>• Demonstrate the process of setting up a computer and relevant accessories/ peripherals for use according to the manufacturer's instructions.</li> <li>• Demonstrate the process of maintaining various work-related records electronically using the computer.</li> <li>• Demonstrate the process of carrying out commercial activities such as buying and selling commodities using the appropriate e-commerce platforms.</li> <li>• Demonstrate how to process payments using the relevant e-payment method.</li> <li>• Demonstrate the process of setting up a bank account with the required facilities to conduct business transactions.</li> </ul>

- Explain the benefits of maintaining electronic records using a computer
- Explain the Digital India campaign, and the modes and benefits of carrying out business transactions digitally
- Explain the benefits and use of email communication services
- Explain different types of bank accounts and their benefits.
- Explain the importance and methods of saving money.
- Explain the difference between fixed and variable business costs.
- Explain the importance of making investments and the different types of investment options available.
- Explain different types of insurance products and the importance of availing of personal and business insurance.
- Explain the use and benefits of online banking.
- List frequently asked interview questions and how to answer them appropriately. Explain basic workplace terminology.
- State the recommended practices to be followed to ensure effective team building at work.
- Explain the appropriate techniques for effective listening and speaking.
- Describe the process of identifying and implementing appropriate and cost-effective solutions to work-related problems.
- Describe the process of carrying out outreach programs to expand the business.
- Explain the Make in India campaign to promote products made in the country.
- State the relevant government programs and schemes for entrepreneurs.

<ul style="list-style-type: none"> <li>• State the recommended practices to be followed for a stable enterprise.</li> <li>• Explain the importance and process of reviewing the business account regularly to ensure the profitability of the business.</li> <li>• Explain the concept and significance of entrepreneurship.</li> <li>• Explain the entrepreneurship ecosystem.</li> <li>• Explain different types of entrepreneurs and their characteristics.</li> <li>• List the qualities of an effective leader and the benefits of effective leadership.</li> <li>• State appropriate practices to be followed to build a strong team of professionals working towards a common goal.</li> <li>• Explain how to identify new business opportunities within a business.</li> <li>• Explain the relationship between entrepreneurship, risk appetite, and resilience.</li> <li>• Explain different techniques to deal with failure effectively.</li> </ul>	
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>NA</p>	

## Module 10: Engagement in collective farming/activities

### Mapped to NOS AGR/N9922 v1.0

#### Terminal Outcomes:

- Describe the process of creating PGs/ FIGs/ SHGs and preparing for its operations.
- Demonstrate the process of conducting group meetings and training sessions.
- Demonstrate the process of carrying out collective farming/activities.

Duration: 08:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>• Describe the process of preparing for the Producer Groups (PGs)/Farmers Interest Groups (FIGs)/ Self-Help Groups (SHGs) operations such as fundraising, induction of Subject Matter Experts (SMEs), investing in Information and Communication Technology (ICT) products, etc.</li> <li>• Explain how to obtain access to the relevant government development programmes and funds.</li> <li>• Describe the process of commodity convergence with the relevant developmental programmes.</li> <li>• Explain the importance of planning optimal production to meet the market and household food security needs.</li> <li>• Explain the importance of setting the group objectives and deciding the group income-generating enterprises/ activities, methods of operation, benefits, etc.</li> <li>• Explain the importance of organising the PG/FIG/ SHG meetings and training sessions to resolve common concerns and get information about the latest developments in the field of work.</li> <li>• Explain the benefits of various capacity building exercises such as skill development and training programmes.</li> <li>• Explain the importance and process of conducting field trials to identify and resolve problems encountered</li> </ul>	<ul style="list-style-type: none"> <li>• Roleplay to illustrate how to conduct the initial group meetings to introduce the members, discuss the group objectives, group income-generating enterprises/ activities, methods of operation, etc.</li> <li>• Roleplay to illustrate how to organise field trials to identify and resolve problems encountered by group members in the field operations.</li> </ul>

<p>by farmers in the field operations.</p> <ul style="list-style-type: none"> <li>• Explain the concept of the group-owned bank to provide quality seeds, fertilisers, pesticides, tools and equipment to the member farmers.</li> <li>• Describe the process of using the group's credit facility.</li> <li>• Explain various core collective farming activities such as procuring inputs in bulk, large-scale farming, etc.</li> <li>• Explain the concept and benefits of forming forward and backward linkages.</li> <li>• State the relevant value addition practices such as processing, packing, upgrading the quality, etc.</li> <li>• Explain the benefits of connecting with similar groups to address common problems on a large scale.</li> </ul>	
<p><b>Classroom Aids</b></p>	
<p>Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>NA</p>	

## Module 11: Hygiene and cleanliness

*Mapped to NOS AGR/N9903 v3.0*

### Terminal Outcomes:

- Discuss how to adhere to personal hygiene practices.
- Demonstrate ways to ensure cleanliness around the workplace.

<b>Duration: 02:00</b>	<b>Duration: 02:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the requirements of personal health, hygiene and fitness at work.</li> <li>• Describe common health-related guidelines laid down by the organizations/ Government at the workplace.</li> <li>• Explain the importance of good housekeeping at the workplace.</li> <li>• Explain the importance of informing the designated authority on personal health issues related to injuries and infectious diseases.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate personal hygiene practices to be followed at the workplace.</li> <li>• Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs.</li> <li>• Demonstrate the steps to follow to put on and take off a mask safely.</li> <li>• Show how to sanitize and disinfect one's work area regularly.</li> <li>• Demonstrate adherence to the workplace sanitization norms.</li> <li>• Show how to ensure the cleanliness of the work area.</li> </ul>
<b>Classroom Aids:</b>	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
<b>Tools, Equipment and Other Requirements</b>	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask	

## Module 12: Safety and emergency procedures

### Mapped to NOS AGR/N9903 v3.0

#### Terminal Outcomes:

- Describe how to adhere to safety guidelines.
- Show how to administer appropriate emergency procedures.

<b>Duration: 02:00</b>	<b>Duration: 10:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• List the Personal Protective Equipment (PPE) required at the workplace.</li> <li>• Describe the commonly reported hazards at the workplace.</li> <li>• Describe the hazards caused due to chemicals/pesticides/fumigants.</li> <li>• Describe the basic safety checks to be done before the operation of any equipment/machinery.</li> <li>• Describe the common first aid procedures to be followed in case of emergencies.</li> <li>• State measures that can be taken to prevent accidents and damage s at the workplace.</li> <li>• Explain the importance of reporting details of first aid administered, to the reporting officer/doctor, in accordance with workplace procedures.</li> <li>• State common health and safety guidelines to be followed at the workplace.</li> </ul>	<ul style="list-style-type: none"> <li>• Check various areas of the workplace for leakages, water-logging, pests, fire, etc.</li> <li>• Demonstrate how to safely use the PPE and implements it as applicable to the workplace.</li> <li>• Display the correct way of donning, doffing and discarding PPE such as face masks, hand gloves, face shields, PPE suits, etc.</li> <li>• Sanitize the tools, equipment and machinery properly.</li> <li>• Demonstrate the safe disposal of waste.</li> <li>• Demonstrate procedures for dealing with accidents, fires and emergencies.</li> <li>• Demonstrate emergency procedures to the given workplace requirements.</li> <li>• Demonstrate the use of emergency equipment in accordance with manufacturers' specifications and workplace requirements.</li> <li>• Demonstrate the administration of first aid.</li> <li>• Prepare a list of relevant hotline/ emergency numbers.</li> </ul>
<b>Classroom Aids:</b>	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
<b>Tools, Equipment and Other Requirements</b>	
Personal Protective Equipment, First Aid Kit, Equipment used in Medical Emergencies.	



## Module 13: Process of carrying out soybean cultivation

### Mapped to ARG/N0216 v2.0

#### Terminal Outcomes:

- Describe the process of selecting the site and soybean variety.
- Describe the process of procuring, storing and treating the soybean seeds.
- Describe the process of preparing the field for soybean cultivation.
- Demonstrate the process of sowing the soybean seeds and maintaining the crop.
- Demonstrate the process of performing integrated pest and disease management.
- Demonstrate the process of carrying out weed control.
- Demonstrate the process of harvesting the soybean crop.
- Describe the process of process and storing soybean.
- Demonstrate the process of marketing the processed soybean.

<b>Duration: 12:00</b>	<b>Duration: 32:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the criteria for selecting a soybean variety to be cultivated such as agro-climatic zone, climate, soil type and required yield.</li> <li>• State the cultivation duration and yield of different soybean varieties.</li> <li>• Describe the process of identifying soybean vendors, procuring and storing soybean seeds.</li> <li>• State the appropriate treatment to be applied in the storage area to remove pests, rodents and insects.</li> <li>• State the recommended temperature and humidity for storing soybean.</li> <li>• Describe the appropriate organic and inorganic seed treatment methods to be adopted for soybean seed treatment and the criteria for selecting one.</li> <li>• Explain how to prepare the solution for treating the seeds, and the recommended ratio of various chemicals to be maintained.</li> <li>• State the suitable time to plant soybean seeds based on the temperature, humidity, etc.</li> <li>• State the recommended organic and</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of carrying out seed germination test and sorting out the seeds lots that fail the test.</li> <li>• Demonstrate how to prepare the seed treatment solution using the appropriate fungicide, pesticide or insecticide in the recommended quantity and treat the seeds appropriately.</li> <li>• Prepare a sample record of germination test and seed treatment.</li> <li>• Demonstrate the process of carrying out deep ploughing in the field using the relevant farm machineries and implements to remove residues of previous crop and weeds.</li> <li>• Demonstrate the process of applying the recommended organic and inorganic fertilisers in the field in the recommended quantity.</li> <li>• Demonstrate the use of a pH meter and how to apply lime or other recommended treatment to adjust the pH.</li> <li>• Show how to create drains in the field for effective drainage and ensuring no waterlogging.</li> </ul>

inorganic fertilisers to be applied in the soybean field to prepare the soil for sowing the seeds.

- Explain the use of lime and other recommended treatments to adjust the soil's pH.
- Explain the importance of ensuring the drainage of excess water from the field.
- State the recommended seed rate and depth to be maintained for different varieties of soybean.
- State the recommended planting density to be maintained while sowing soybean seeds.
- Explain the importance of carrying out intercropping with appropriate crop varieties to achieve higher yields and manage weeds.
- Explain the maturity indicators of the soybean crop.
- State the level of moisture required in soybean pods for harvesting.
- Explain the recommended practices to be followed to protect the soybean seed coating.
- Describe the process of drying soybean under the sun and mechanically.
- State the appropriate packing material for packing processed soybean.
- State the recommended temperature and humidity for storing the processed soybean.
- State the appropriate time for selling soybean based on the periodical demand of the produce and profitability.
- State the appropriate markets and buyers of soybean such as procurement agencies, local traders, co-operatives, exporters, etc.
- Describe the process of negotiating with the buyer and accepting orders.

- Demonstrate the process of installing an appropriate irrigation or fertigation system in the field.
- Demonstrate the process of sowing the soybean seeds in the field using the relevant equipment.
- Show how to irrigate the soybean crop with the recommended quantity of water as per the irrigation schedule.
- Demonstrate the process of applying the recommended organic and inorganic fertilisers to the soil in an appropriate quantity.
- Demonstrate the process of applying the recommended pesticides, insecticides or fungicides in the prescribed dose to control pests and diseases.
- Prepare a sample record of pesticides, insecticides or fungicides used on the crop.
- Demonstrate the process of applying mulch in the soybean field to prevent the growth of weeds.
- Show how to remove weeds from the field using the appropriate tools and implements.
- Demonstrate the process of disposing the eliminated weeds away from the field.
- Demonstrate the process of harvesting the soybean crop using the relevant tools and implements, ensuring minimum loss during the process.
- Show how to thresh the harvested soybean using the threshing equipment.
- Show how to dry the soybean mechanically.
- Demonstrate the process of packing soybean in the appropriate packing material, ensuring it is air-tight to prevent the absorption of moisture.
- Demonstrate how to process the

<ul style="list-style-type: none"> <li>State the appropriate mode of transport to deliver soybean to the buyer.</li> </ul>	<p>payment using an e-payment method.</p> <ul style="list-style-type: none"> <li>Show how to calculate the benefit-cost (B:C) ratio.</li> <li>Prepare a sample manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application.</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Irrigation Equipment, Spade, Sickle, Wooden Log, Thresher, Winnowing, Sprayer, Fumigents, Storage Bags, Pheromone Traps, Light Traps, Bird Perches, Sticky Traps</p>	

## Module 14: Process of carrying out groundnut cultivation

### Mapped to ARG/N0215 v2.0

#### Terminal Outcomes:

- Describe the process of selecting the site and groundnut variety.
- Describe the process of procuring, storing and treating the groundnut seeds.
- Describe the process of preparing the field for groundnut cultivation.
- Demonstrate the process of sowing the groundnut seeds and maintaining the crop.
- Demonstrate the process of performing integrated pest and disease management.
- Demonstrate the process of carrying out weed control.
- Demonstrate the process of harvesting the groundnut crop.
- Demonstrate the process of processing and storing groundnuts.
- Describe the process of marketing the processed groundnuts.

<b>Duration: 12:00</b>	<b>Duration: 32:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the criteria for selecting a groundnut variety to be cultivated such as agro-climatic zone, climate, soil type and required yield.</li> <li>• State the cultivation duration and yield of different groundnut varieties.</li> <li>• Describe the process of identifying groundnut seed vendors, procuring and storing groundnut seeds.</li> <li>• State the appropriate treatment to be applied in the storage area to remove pests, rodents and insects.</li> <li>• State the recommended temperature and humidity for storing groundnut.</li> <li>• State the appropriate organic and inorganic seed treatment methods to be followed for treating groundnut seeds and the criteria for selecting one.</li> <li>• Explain how to prepare the solution for treating the seeds, and the recommended ratio of various chemicals to be maintained.</li> <li>• State the suitable time for sowing groundnut seeds based on temperature, humidity, etc.</li> <li>• State the recommended organic and</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of carrying out seed germination test and sorting out the seeds lots that fail the test.</li> <li>• Demonstrate how to prepare the seed treatment solution using the appropriate fungicide, pesticide or insecticide in the recommended quantity and treat the seeds appropriately.</li> <li>• Prepare a sample record of germination test and seed treatment. remove any weeds and waste materials from the field.</li> <li>• Show how to remove any weeds and waste materials from the field.</li> <li>• Demonstrate the process of carrying out deep ploughing in the field using the relevant farm machineries and implements.</li> <li>• Show how to create the seedbed in the field with ridges and furrows.</li> <li>• Demonstrate the process of applying the recommended organic and inorganic fertilisers in the field in the recommended quantity.</li> <li>• Demonstrate the use of pH and how to apply lime or other recommended</li> </ul>

inorganic fertilisers to be applied in the field to prepare the soil for sowing the seeds.

- Explain the importance of ensuring the drainage of excess water from the field.
- State the recommended seed rate and depth to be maintained for different varieties of groundnut.
- State the recommended planting density to be maintained while sowing groundnut seeds.
- Explain the maturity indicators of the groundnut crop.
- Describe the process of splitting off groundnut pods safely from plants.
- Describe the process of drying groundnut under the sun and mechanically.
- State the appropriate packing material for groundnut.
- State the recommended temperature and humidity for storing dry groundnuts.
- State the appropriate markets and buyers of groundnuts such as eMandi, procurement agencies, traders, co-operatives, exporters, etc.
- Describe the process of negotiating with buyers and processing orders.
- State the appropriate mode of transport to be used to deliver groundnuts to the buyer.

treatment in an appropriate quantity to adjust the pH.

- Show how to create drains in the field for effective drainage and ensuring no waterlogging.
- Demonstrate the process of installing an appropriate irrigation or fertigation system in the field.
- Demonstrate the process of sowing the groundnut seeds in the field using the relevant equipment such as seed drill or precision planter.
- Show how to water the seeds and apply appropriate fertiliser to the soil immediately after sowing.
- Show how to irrigate the groundnut crop with the recommended quantity of water.
- Demonstrate the process of applying the recommended organic and inorganic fertilisers to the soil uniformly in an appropriate quantity.
- Demonstrate the process of applying the recommended pesticides, insecticides or fungicides in the prescribed dose to control pests and disease.
- Prepare a sample record of pesticides, insecticides or fungicides used on the crop.
- Demonstrate the process of applying mulch in the field to prevent the growth of weeds.
- Show how to remove weeds from the field using the appropriate tools and implements and dispose the eliminated weeds away from the field.
- Demonstrate how to irrigate the groundnut plants as per the requirement before harvesting to loosen the soil.
- Demonstrate the process of harvesting the groundnut crop using the relevant tools and implements.
- Show how to dry the groundnut pods

	<p>mechanically.</p> <ul style="list-style-type: none"> <li>• Demonstrate the process of packing the dry groundnuts in the appropriate packing material.</li> <li>• Demonstrate how to process the payment using an e-payment method.</li> <li>• Show how to calculate the benefit-cost (B:C) ratio.</li> <li>• Prepare a sample manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application.</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Irrigation Equipment, Spade, Sickle, Wooden Log, Thresher, Winnowing, Sprayer, Fumigents, Storage Bags, Pheromone Traps, Light Traps, Bird Perches, Sticky Traps</p>	

## Module 15: Process of carrying out mustard cultivation

### Mapped to ARG/N0214 v2.0

#### Terminal Outcomes:

- Describe the process of selecting the mustard variety and site.
- Describe the process of procuring, storing and treating the mustard cultivation.
- Describe the process of preparing the field for mustard cultivation.
- Demonstrate the process of sowing the mustard seeds and maintaining the crop.
- Demonstrate the process of performing integrated pest and disease management.
- Demonstrate the process of carrying out weed control.
- Demonstrate the process of harvesting the mustard crop.
- Describe the process of processing and storing mustard.
- Market the processed mustard.

<b>Duration: 12:00</b>	<b>Duration: 32:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the criteria for selecting a mustard variety to be cultivated such as agro-climatic zone, climate, soil type and required yield.</li> <li>• State the cultivation duration and yield of different mustard varieties.</li> <li>• Describe the process of identifying mustard seed vendors, procuring and storing mustard seeds.</li> <li>• State the appropriate treatment to be applied in the storage area to remove pests, rodents and insects.</li> <li>• State the recommended temperature and humidity for storing mustard.</li> <li>• State the appropriate organic and inorganic seed treatment methods to be followed for treating mustard seeds and the criteria for selecting one.</li> <li>• State the suitable time to sow mustard seeds based on the temperature, humidity, etc.</li> <li>• State the recommended organic and inorganic fertilisers to be applied in the field to prepare the soil for sowing the seeds.</li> <li>• Explain the importance of ensuring</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate the process of carrying out seed germination test and sorting out the mustard seed lots that fail the test.</li> <li>• Show how to prepare the seed treatment solution using the appropriate fungicide, pesticide or insecticide in the recommended quantity and treat the seeds.</li> <li>• Prepare a sample record of germination test and seed treatment.</li> <li>• Show how to remove any weeds and waste materials from the field.</li> <li>• Demonstrate the process of carrying out ploughing in the field to the required tilth followed by harrowing and planking, using the relevant farm machineries and implements.</li> <li>• Show how to create the seedbed in the field with ridges and furrows at the recommended spacing, depending on the slope of the land and type of soil.</li> <li>• Demonstrate the process of applying the recommended organic and inorganic fertilisers in the field in the prescribed quantity.</li> </ul>



the drainage of excess water from the field.

- State the recommended seed rate and depth to be maintained for different varieties of mustard.
- Explain the use of mechanical seed sowing equipment such as seed drills, tractor-operated planters and precision planters.
- State the recommended planting density to be maintained while sowing mustard seeds.
- Explain the maturity indicators of the mustard crop.
- State the appropriate time of the day for harvesting the mustard crop to prevent the shattering of seeds.
- Describe the process of drying mustard under the sun and mechanically.
- State the appropriate packing material for mustard seeds.
- State the recommended temperature and humidity for storing packed mustard seeds.
- State the appropriate markets and buyers of mustard such as eMandi, procurement agencies, local traders, co-operatives, exporters, etc.
- Describe the process of negotiating with the buyer and processing orders.
- State the appropriate mode of transport to deliver mustard to the buyer.

- Demonstrate the use of a pH meter and how to apply lime or other recommended treatment in an appropriate quantity to adjust the pH.
- Show how to create drains in the field for effective drainage and ensuring no waterlogging.
- Demonstrate the process of installing an appropriate irrigation or fertigation system in the field.
- Show how to water the seeds with the recommended quantity and apply appropriate fertiliser to the soil immediately after sowing.
- Demonstrate how to irrigate the mustard crop with the recommended quantity of water as per the irrigation schedule.
- Demonstrate the process of applying the recommended pesticides, insecticides or fungicides in the prescribed dose to control pests and disease.
- Prepare a sample record of pesticides, insecticides or fungicides used on the crop.
- Demonstrate the process of applying mulch in the field to prevent the growth of weeds.
- Demonstrate the process of carrying out hoeing in the field to eliminate a large number of weeds or remove weeds manually using the appropriate tools and implements.
- Demonstrate the process of disposing the eliminated weeds away from the field.
- Demonstrate the process of harvesting the mustard crop using the appropriate tools and implements.
- Show how to bundle and stack the harvested mustard plants, and dry them mechanically.
- Demonstrate the process of carrying



	<p>out threshing to extract mustard seeds from the dry plants.</p> <ul style="list-style-type: none"> <li>• Demonstrate how to clean the mustard seeds and dry them as per the requirement.</li> <li>• Show how to pack the dry mustard seeds in the appropriate packing material such as gunny bags or bins.</li> <li>• Demonstrate how to process the payment using an e-payment method.</li> <li>• Show how to calculate the benefit-cost (B:C) ratio.</li> <li>• Prepare a sample manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application.</li> </ul>
<p><b>Classroom Aids</b></p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Irrigation Equipment, Spade, Sickle, Wooden Log, Thresher, Winnowing, Sprayer, Fumigents, Storage Bags, Pheromone Traps, Light Traps, Bird Perches, Sticky Traps</p>	

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
10th Class		5	Agriculture Crop Production	0		Oilseed Crop Grower with 5 Years of experience after 10th pass. Experience certificate issued by Government Department of Agriculture/ Coconut Board/ Head of Gram Panchayat/ Loan disbursing bank or financial institution/ Corporates/ NGO/ Registered Associations on official letter Head
12th Class		4	Agriculture Crop Production	0		Ex-Service-Man including Ex-Paramilitary personnel: Minimum Qualification is 10+2 with an Honourable Discharge/ Pension. SSC would consider a relaxation/waiver of sector-specific experience on a case-to-case basis.
Diploma	Agriculture	3	Agriculture Crop Production	0		
Graduate	Graduate in any stream except Agriculture / Horticulture / Forestry	2	Agriculture Crop Production	0		For the school Program minimum qualification of the Trainer should be Graduate in Botany / Agriculture/ Horticulture/ Forestry with Teaching experience of minimum 2 years. (will be considered industry experience)
Graduate	Agriculture/ Horticulture/ Forestry	0.5	Agriculture Crop Production	0		
Trainer Certification						
Domain Certification			Platform Certification			
Certified for Job Role “ <b>Oilseed Crop Grower</b> ”, mapped to QP: “AGR/Q0201, v2.0”, Minimum accepted score is 80%			Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q2601, v1.0”. The minimum accepted score as per MEPSC guidelines is 80%.			

## Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
B.Sc.	Agriculture/ Botany/ Forestry/ Agronomy and related streams	5	Agriculture/ Forestry/ Agronomy and related streams	0		Practical skills and knowledge required in Oilseed Crop Production
M.Sc.	Agriculture/ Botany/ Forestry/ Agronomy and related streams)	2	Agriculture/ Forestry/ Agronomy and related streams	0		Practical skills and knowledge required in Oilseed Crop Production
PhD	Agriculture/ Botany/ Forestry/ Agronomy and related streams	1	Agriculture/ Forestry/ Agronomy and related streams	0		Practical skills and knowledge required in Oilseed Crop Production

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role “ <b>Oilseed Crop Grower</b> ”, mapped to QP: “AGR/Q0201, v2.0”, Minimum accepted score is 80%	Certified for the Job Role: “Assessor”, mapped to the Qualification Pack: “MEP/Q2701, v1.0”, with a minimum score of 80%.

## Assessment Strategy

### Assessment System Overview

In Agriculture Sector it is of ultimate importance that individuals dealing with crop production or livestock have the requisite knowledge and competencies to undertake the task. Based on the Assessment Criteria, SSC in association with empaneled AAs, define the test structure for the given job roles to cover the required skills and competencies. Assessment strategy consists of the following:

1. Multiple Choice Questions: To assess basic knowledge (Objective/Subjective)
2. Viva: To assess awareness on processes (Oral and/or written questioning)
3. Practical: To evaluate skills and identify competencies. (Observation)

Assessments for knowledge and awareness on processes may be conducted through 'real-time' internet-based evaluation or by conducting the same 'offline' through TABs. Skills and competencies are to be assessed by conducting 'practical' on the ground through qualified and ToA certified assessors.

An individual must have adequate knowledge and skills to perform a specific task, weightage for different aspects of the assessment is given as follows:

- Multiple Choice Questions: 20%-30%, depending on the specific QP
- Viva: 20%
- Practical: 50% - 60% (Involves demonstrations of applications and presentations of procedures/tasks and other components)
- Assessment will be carried out by certified assessors through empaneled assessment partners. Based on the results of the assessment; ASCI will certify the learners/candidates

### Testing Environment

Assessments are conducted on laptops, Mobiles and android tablets via both offline and online mode depending on the internet connectivity at the assessment location.

In remote locations/villages, assessments get delivered through tablets without the requirement of the Internet.

- Multilingual assessments (ASCI is conducting the assessments in 13 + languages pan India)
- Rubric driven assessments in Practical/Viva sections and responses recorded accordingly
- All responses, data, records and feedback are stored digitally on the cloud
- Advanced auto-proctoring features – photographs, time-stamp, geographic-tagging, toggle- screen/copy-paste disabled, etc.
- Android-based monitoring system
- End to end process from allocation of a batch to final result upload, there is no manual intervention

- Assessment will normally be fixed for a day after the end date of the training / within 7 days of completion of training.
- Assessment will be conducted at the training venue
- The room where assessment is conducted will be set with proper seating arrangements with enough space to curb copying or other unethical activities
- Question bank of theory and practice will be prepared by ASCI /assessment agency and approved ASCI. Only from approved Question Bank assessment agency will prepare the question paper. Theory testing will include multiple-choice questions, pictorial questions, etc. which will test the trainee on his theoretical knowledge of the subject.
- The theory, practical and viva assessments will be carried out on the same day. In case of a greater number of candidates, the number of assessors and venue facilitation be increased and facilitated

<b>Assessment</b>			
<b>Assessment Type</b>	<b>Formative or Summative</b>	<b>Strategies</b>	<b>Examples</b>
Theory	Summative	MCQ/Written exam	Knowledge of facts related to the job role and functions. Understanding of principles and concepts related to the job role and functions
Practical	Summative	Structured tasks/Demonstration	Practical application /Demonstration /Application tasks
Viva	Summative	Questioning and Probing	Mock interviews on the usability of job roles/advantages /importance of adherence to procedures. Viva will be used to gauge trainee's confidence and correct knowledge in handling the job situation

The question paper is pre-loaded in the computer /Tablet and it will be in the language as requested by the training partner.

## Assessment Quality Assurance framework

### Assessment Framework and Design:

Based on the Assessment Criteria, SSC in association with AAs will define the test structure for the given roles to cover the required skills and competencies. ASCI offer a bouquet of tools for multi-dimensional evaluation of candidates covering language, cognitive skills, behavioural traits and domain knowledge.

**Theoretical Knowledge** - Item constructs and types are determined by a theoretical understanding of the testing objectives and published research about the item types and constructs that have shown statistical validity towards measuring the construct. Test item types that have been reported to be coachable are not included. Based on these, items are developed by domain experts. They are provided with comprehensive guidelines of the testing objectives of each question and other quality measures.

**Type** – Questions based on Knowledge Required, Case-based practical scenario questions and automated simulation-based questions.

**Practical Skills** - The practical assessments are developed taking into consideration two aspects: what practical tasks is the candidate expected to perform on the job and what aspects of the job cannot be judged through theoretical assessments. The candidates shall be asked to perform either an entire task or a set of subtasks depending on the nature of the job role

**Type** – Standardized rubrics for evaluation against a set of tasks in a demo/practical task

**Viva Voce** - Those practical tasks which cannot be performed due to time or resource constraints are evaluated through the viva mode. Practical tasks are backed up with Viva for thorough assessment and complete evaluation

**Type** – Procedural questions, dos and don'ts, subjective questions to check the understanding of practical tasks.

The assessor has to go through an orientation program organized by the Assessment Agency. The training would give an overview to the assessors on the overall framework of QP evaluation. The assessor shall be given a NOS and PC level overview of each QP as applicable. The overall structure of assessment and objectivity of the marking scheme will be explained to them. The giving of marks will be driven by an objective framework that will maintain the standardization of the marking scheme.

### Type of Evidence and Evidence Gathering Protocol:

During the assessment the evidence collected by AAs and ASCI are:

- GeoTagging to track ongoing assessment
- AA's coordinator emails the list of documents and evidence (photos and videos) to the assessor one day before the assessment. The list is mentioned below:
  - Signed Attendance sheet
  - Assessor feedback sheet
  - Candidate feedback sheet

- Assessment checklist for assessor
  - Candidate Aadhar/ID card verification
  - Pictures of the classroom, labs to check the availability of adequate equipment's and tools to conduct the training and assessment
  - Pictures and videos of Assessment, training feedback and infrastructure.
- Apart from the Assessor, a Technical assistant is popularly known as Proctor also ensures the proper documentation and they verify each other's tasks.
  - To validate their work on the day of the assessment, regular calls and video calls are done.
  - On-boarding and training of the assessor and proctor are done on a timely basis to ensure that the quality of the assessment should be maintained.
  - Training covers the understanding of QP, NSQF level, NOS and assessment structure

### **Methods of Validation**

- Morning Check (Pre-Assessment): Backend team of AA calls and confirms assessor/technical SPOC event status. Assessor/Technical SPOC are instructed to reach the centre on time by 9:30 AM / as decided with TC and delay should be highlighted to the Training Partner in advance.
- Video Calls: Random video calls are made to the technical SPOC/assessor so as to keep a check on assessment quality and ensure assessment is carried out in a fair and transparent manner
- Aadhar verification of candidates
- Evening Check (Post Assessment): Calls are made to the ground team to ensure the event is over by what time and the documentation is done properly or not.
- TP Calling: To keep a check on malpractices, an independent audit team calls the TP on a recorded line to take confirmation if there was any malpractice activity observed in the assessment on part of the AA/SSC team. If calls are not connected, an email is sent to TP SPOC for taking their confirmation
- Video and Picture Evidence: Backend team collects video and pictures for assessment on a real-time basis and highlights any issue such as students sitting idle/ trainer helping the candidates during the assessment.
- Surprise Visit: Time to time SSC/AA Audit team can visit the assessment location and conduct a surprise audit for the assessment carried out by the ground team.
- Geo Tagging: On the day of the assessment, each technical SPOC is required to login into our internal app which is Geotagged. Any deviation with the centre address needs to be highlighted to the assessment team on a real-time basis.

### **Method for assessment documentation, archiving, and Access:**

- ASCI have a fully automated result generation process in association with multiple AAs
- Theory, Practical and Viva marks form the basis of the results and encrypted files generated to avoid data manipulation. All responses were captured and stored in the System with Time-Stamps at the end of AAs and SSC. NOS-wise and PC-wise scores can

be generated.

- Maker Checker concept: One person prepares the results and another audit result which is internally approved by AA at first and then gets vetted at the end of SSC
- All softcopies of documents are received from the on-ground tech team over email. The same is downloaded by our internal backend team and saved in Repository. The repository consists of scheme-wise folders. These scheme-wise folders have two job role-specific folders. These specific folders have Year wise and Month wise folders where all documents are saved in Batch specific folders. All Hard copies are filed and stored in the storeroom.

#### ***Result Review & Recheck Mechanism –***

- Time-stamped assessment logs
- Answer/Endorsement sheets for each candidate
- Attendance Sheet
- Feedback Forms: Assessor feedback form, Candidate feedback form, TP feedback form
- The results for each of the candidates shall be stored and available for review (retained for 5 years/ till the conclusion of the project or scheme)



# References

## Glossary

Term	Description
<b>Declarative Knowledge</b>	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
<b>Key Learning Outcome</b>	The Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on-site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on-site
<b>Procedural Knowledge</b>	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work or produce a tangible work output by applying cognitive, affective or psychomotor skills.
<b>Training Outcome</b>	The Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
<b>Terminal Outcome</b>	The Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

## Acronyms and Abbreviations

Term	Description
AGR	Agriculture
ETL	Economic Threshold Levels
IPM	Integrated Pest Management
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
PHI	Protected Health Information
PwD	People with Disability
PPE	Personal Protective Equipment
QP	Qualifications Pack