# Model Curriculum

**QP Name: Cereal Crop Grower**

**Electives: Wheat/ Rice/ Maize/ Millet**

**QP Code: AGR/Q0105**

**Version: 2.0**

**NSQF Level: 3**

**Model Curriculum Version: 2.0**

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

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|---|---|
| **Sector** | Agriculture |
| **Sub-Sector** | Agriculture Crop production |
| **Occupation** | Field Crops Cultivation (Food Crops) |
| **Country** | India |
| **NSQF Level** | 3 |
| **Aligned to NCO/ISCO/ISIC Code** | NCO-2015/6111.0101 |
| **Minimum Educational Qualification and Experience** | Minimum Educational Qualification:<br>Grade 10<br>OR<br>Grade 8 with two years of (NTC/ NAC) after 8th<br>OR<br>Grade 8 pass and pursuing continuous schooling in regular school with vocational subject<br>OR<br>8th grade pass with 2-year relevant experience<br>OR<br>5th grade pass with 5-year relevant experience<br>OR<br>Previous relevant Qualification of NSQF Level 2 with 1-year relevant experience<br>OR<br>Previous relevant Qualification of NSQF Level 2.5 with 6 months' relevant experience |
| **Pre-Requisite License or Training** | NA |
| **Minimum Job Entry Age** | 16 Years |
| **Last Reviewed On** | 27/01/2022 |
| **Next Review Date** | 27/01/2025 |
| **NSQC Approval Date** | 27/01/2022 |
| **QP Version** | 2.0 |
| **Model Curriculum Creation Date** | 27/01/2022 |
| **Model Curriculum Valid Up to Date** | 27/01/2025 |
| **Model Curriculum Version** | 2.0 |
| **Minimum Duration of the Course** | 300 Hours |

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| **Maximum Duration of the Course** | 390 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 selecting and preparing the site and sow the cereal seeds.
- Demonstrate the process of carrying out macro and micronutrient management of field crops.
- Describe the process of managing weed growth in crop fields.
- Demonstrate the process of performing integrated pest and disease management for the cereal crop.
- Demonstrate the process of performing irrigation management for the field crop.
- Demonstrate the process of carrying out harvesting, processing and marketing of cereals.
- 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 workplace.
- Demonstrate the process of carrying out the cultivation of wheat.
- Demonstrate the process of carrying out the cultivation of rice.
- Demonstrate the process of carrying out the cultivation of maize.
- Demonstrate the process of carrying out the cultivation of millet.

## 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 |
|---|---|---|---|---|---|
| **Bridge Module** | **05:00** | **00:00** | **0:00** | **0:00** | **05:00** |
| Module 1: Introduction to the role of a Cereal Crop Grower | 05:00 | 0:00 | 0:00 | 0:00 | 05:00 |
| **AGR/N0125 Select and prepare the site and sow the cereal seeds**<br>**NOS Version- 1.0**<br>**NSQF Level- 4** | **10:00** | **15:00** | **0:00** | **0:00** | **25:00** |
| Module 2: Process of selecting and preparing the site and sow the cereal seeds | 10:00 | 15:00 | 0:00 | 0:00 | 25:00 |
| **AGR/N0108 Carry out macro and micronutrient management of field crops** | **15:00** | **15:00** | **0:00** | **0:00** | **30:00** |

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|---|---|---|---|---|---|
| **NOS Version- 2.0**<br>**NSQF Level- 4** | | | | | |
| Module 3: Process of carrying out macro and micronutrient management of field crops | 15:00 | 15:00 | 0:00 | 0:00 | 30:00 |
| **AGR/N0109 Manage weed growth in crop fields**<br>**NOS Version-2.0**<br>**NSQF Level- 4** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |
| Module 4: Process of managing weed growth in crop fields | 10:00 | 20:00 | 0:00 | 0:00 | 30:00 |
| **AGR/N0126 Perform integrated pest and disease management for cereal crop**<br>**NOS Version-1.0**<br>**NSQF Level- 4** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |
| Module 5: Process of performing integrated pest and disease management for cereal crop | 10:00 | 20:00 | 0:00 | 0:00 | 30:00 |
| **AGR/N0111 Perform irrigation management for field crops**<br>**NOS Version- 2.0**<br>**NSQF Level-4** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |
| Module 6: Process of performing irrigation management for field crop | 10:00 | 20:00 | 0:00 | 0:00 | 30:00 |
| **AGR/N0127 Carry out harvesting, processing and marketing of cereals**<br>**NOS Version- 1.0**<br>**NSQF Level-4** | **15:00** | **15:00** | **0:00** | **0:00** | **30:00** |
| Module 7: Process of carrying out harvesting, processing and marketing of cereals | 15:00 | 15:00 | 0:00 | 0:00 | 30:00 |
| **AGR/N9922 Engage in collective farming/activity**<br>**NOS Version-1.0**<br>**NSQF Level- 4** | **20:00** | **10:00** | **0:00** | **0:00** | **30:00** |

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|---|---|---|---|---|---|
| Module 8: Engagement in collective/ farming activities | 20:00 | 10:00 | 0:00 | 0:00 | 30:00 |
| **AGR/N9903 Maintain health and safety at the workplace**<br>**NOS Version- 3.0**<br>**NSQF Level- 4** | **15:00** | **15:00** | **0:00** | **0:00** | **30:00** |
| Module 9: Hygiene and cleanliness | 3:00 | 3:00 | 0:00 | 0:00 | 6:00 |
| Module 10: Safety and emergency procedures | 12:00 | 12:00 | 0:00 | 0:00 | 24:00 |
| **DGT/VSQ/N0101 Employability Skills**<br>**NOS Version-1.0**<br>**NSQF Level-2** | 30:00 | 00:00 | 0:00 | 0:00 | 30:00 |
| Module 11: Employability Skills | 30:00 | 00:00 | 0:00 | 0:00 | 30:00 |
| **Total Duration** | **140:00** | **130:00** | **0:00** | **0:00** | **270:00** |

## Elective Module

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

**Elective 1: Wheat Grower**

| NOS and Module Details | Theory Duration | Practical Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|---|---|---|---|---|---|
| **AGR/NO124 Carry out cultivation of wheat**<br>**NOS Version- 1.0**<br>**NSQF Level- 4** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |
| Module 12: Process of carrying out cultivation of wheat | 10:00 | 20:00 | 0:00 | 0:00 | 30:00 |
| **Total Duration** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |

**Elective 2: Rice Grower**

| NOS and Module Details | Theory Duration | Practical Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|---|---|---|---|---|---|
| **AGR/NO123 Carry out cultivation of rice**<br>**NOS Version- 1.0** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |

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|---|---|---|---|---|---|
| **NSQF Level- 4** | | | | | |
| Module 13: Process of carrying out cultivation of Rice | 10:00 | 20:00 | 0:00 | 0:00 | 30:00 |
| **Total Duration** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |

**Elective 3: Maize Grower**

| NOS and Module Details | Theory Duration | Practical Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|---|---|---|---|---|---|
| **AGR/NO122 Carry out cultivation of maize**<br>**NOS Version- 1.0**<br>**NSQF Level- 4** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |
| Module 14: Process of carrying out cultivation of Maize | 10:00 | 20:00 | 0:00 | 0:00 | 30:00 |
| **Total Duration** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |

**Elective 4: Millet Grower**

| NOS and Module Details | Theory Duration | Practical Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|---|---|---|---|---|---|
| **AGR/NO121 Carry out cultivation of Millet**<br>**NOS Version- 1.0**<br>**NSQF Level- 4** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |
| Module 15: Process of carrying out cultivation of Millet | 10:00 | 20:00 | 0:00 | 0:00 | 30:00 |
| **Total Duration** | **10:00** | **20:00** | **0:00** | **0:00** | **30:00** |

# Module Details

## Module 1: Introduction to the role of a Cereal Crop Grower

### *Bridge Module*

**Terminal Outcomes:**

- Discuss the job role of a Cereal Crop grower.

| **Duration**: 0500 | **Duration**: 0:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Describe the size and scope of the agriculture industry and its sub-sectors.<br>• Discuss the role and responsibilities of a Cereal Crop Grower.<br>• Identify various employment opportunities for a Cereal Crop Grower. | |
| **Classroom Aids** | |
| Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films | |
| **Tools, Equipment and Other Requirements** | |
| NA | |

## Module 2: Process of selecting and preparing the site and sow the cereal seeds

***Mapped to AGR/N0125 v1.0***

**Terminal Outcomes:**

- Describe the process of selecting and preparing the site for the cultivation of cereals.
- Describe the process of procuring and preparing the planting material.
- Demonstrate the process of sowing the cereal seeds.
- Demonstrate various practices for effective resource optimisation.
- Demonstrate various waste management practices.
- Discuss ways to promote diversity and inclusion at the workplace.

| **Duration:** 10:00 | **Duration: 15:00** |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • State the major cereals and their common varieties, along with their cultivation period and yield<br>• State the vulnerability of different cereal varieties to various pests and diseases and resistance to various abiotic stresses.<br>• Explain the criteria for selecting a site for the cultivation of different types of cereals.<br>• State various agro-climatic zones in India suitable for the cultivation of varieties of cereals.<br>• State the site, climate, soil type, soil fertility, nature of subsoil and soil depth suited for growing cereals.<br>• Describe the process of getting the soil sample tested through an authorised lab to determine the soil's suitability for the cultivation of cereals.<br>• Explain the criteria of selecting the approved vendor for procuring the seeds.<br>• List various inputs required for the cultivation of cereals such as water, fertilisers, pesticides, labour, etc.<br>• Describe the process of preparing the field for sowing cereal seeds.<br>• Explain the criteria for selecting a | • Demonstrate the process of preparing the field for sowing the cereal seeds<br>• Show how to create drainage channels in the field for the effective drainage of water.<br>• Demonstrate the process of treating the seeds with the recommended pesticides and fungicides, using them in the recommended dose.<br>• Demonstrate the process of preparing the seed sowing equipment, setting the correct specifications for use according to the selected cereal crop.<br>• Demonstrate how to sow the cereal seeds using the relevant machinery and tools.<br>• Demonstrate various practices to optimise the usage of various resources such as water and electricity.<br>• Demonstrate the process of recycling and disposing different types of waste appropriately.<br>• Demonstrate appropriate verbal and non-verbal communication that is respectful of genders and disability. |

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| cereal variety to be cultivated, such as climate along with resistance to various pests and diseases.<br>• State the cultivation period, an appropriate time for sowing and yield of different varieties of cereals.<br>• Describe the process of procuring and treating cereal seeds.<br>• State the appropriate temperature and humidity for storing the treated cereal seeds.<br>• Describe different methods for sowing cereal seeds such as broadcasting and mechanised sowing.<br>• Explain the use of the relevant tools and equipment for sowing cereal seeds.<br>• State the recommended planting density to be maintained while sowing cereal seeds.<br>• Explain the benefits of resource optimisation.<br>• Explain the importance of recycling and disposing different types of waste as per the applicable regulations.<br>• Explain the importance of inclusion of all genders and People with Disability (PwD) at the workplace. | |
| **Classroom Aids** | |
| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| **Tools, Equipment and Other Requirements** | |
| Plough, Disc Harrow, Sub-Soiler, Tiller, Land Leveller, Cultivator | |

## 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.

| **Duration**: 15:00 | **Duration**: 15:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Explain the basic concepts of plant nutrition and soil fertility.<br>• Explain different types of macro and micronutrients, their properties and their functions.<br>• List common symptoms of nutrient deficiency in plants.<br>• Explain different types of green manure and nitrogen-fixing crops.<br>• Describe the process of soil sampling and testing.<br>• Explain the importance of getting the soil tested through a government-approved lab.<br>• Explain how to interpret the soil analysis report to determine the macro and micronutrient requirements of the soil.<br>• Explain different soil types, their advantages and disadvantages with reference to the presence of various nutrients.<br>• State the appropriate time and methods for the application of different types of fertilisers.<br>• Explain the importance of regulating the dose of fertiliser according to the crop cycle.<br>• State the recommended dosage and application time of fertiliser for different types of crops.<br>• Explain the importance of soil | • Demonstrate the process of preparing organic fertilisers such as farmyard manure, vermicompost and inorganic fertiliser solutions.<br>• Demonstrate the process of preparing the mixture of liquid fertilisers for application in the field, using them in the recommended quantity.<br>• Show how to prepare the field for the application of fertilisers.<br>• Demonstrate the process of applying organic and inorganic fertilisers containing the required macro and micronutrients to the soil in the recommended dose.<br>• Show how to regulate the dose of fertiliser according to the crop cycle.<br>• Prepare a sample record of fertilisers used in the field.<br>• Prepare a sample soil nutrition supplementation calendar based on the stages of the crop's growth.<br>• Demonstrate the process of applying mulch and organic fertilisers to conserve soil moisture. |

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| conservation and various soil conservation practices.<br>• Explain various varieties of organic and inorganic fertilisers to be applied to the soil to improve its fertility, and nutrient content.<br>• Explain the harmful effects of the over-dosage of fertilizers.<br>• Describe the process of preparing a soil nutrition supplementation calendar based on the stages of the crop's growth. | |
| **Classroom Aids** | |
| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| **Tools, Equipment and Other Requirements** | |
| Sprayer, Fertilisers, Bio Fertilisers, Cloth Bags for Soil Sample, Khurpa | |

## 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.

| **Duration:** 10:00 | **Duration:** 20:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • State the critical period for organic weed control, reducing the dependence on herbicides and weedicides.<br>• Explain the adverse effect of different types of weed such as grass, broad leaves, sedges on crop growth.<br>• Describe different weed control methods such as preventative, intercultural, mechanical, biological and chemicals.<br>• Explain the advantages and disadvantages of different weeding methods.<br>• State the critical period of crop-weed competition.<br>• Describe different manual weeding techniques.<br>• Explain the use of relevant weeding equipment such as hoe and spade.<br>• Explain the use of pre-emergent and post-emergent herbicides.<br>• Explain the difference between blanket and spot application of herbicides.<br>• Describe the process of soil solarisation and pasteurisation.<br>• Explain various environmental norms to be adhered to during herbicide application.<br>• Explain the effects of herbicide residue on the crop.<br>• Explain different ways to minimize pollution caused due to overuse of | • Demonstrate how to maintain the record of observations with respect to weed identification and their growth.<br>• Demonstrate the process of preparing the recommended herbicide/ bio-herbicide solution suitable to the crop.<br>• Show how to spray the herbicide/ bio-herbicide safely in the recommended dose.<br>• Demonstrate the process of removing weeds manually using the appropriate hand tools and implements, as required. |

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| herbicides.<br>• Explain the importance of inspecting the field regularly to identify weed growth.<br>• Explain the appropriate combination of different types of intercultural and mechanical methods for effective weed control such as solarisation and pasteurisation.<br>• Describe the process of selecting and preparing the recommended herbicide/ bio-herbicide solution suitable to the crop.<br>• Explain the importance of retaining the weeds during the weeding process.<br>• Explain the importance of maintaining the herbicides and herbicide application equipment separately to prevent cross-contamination with other chemicals. | |
| **Classroom Aids** | |
| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| **Tools, Equipment and Other Requirements** | |
| Chemicals, Sprayer, Weeder, Hoe, Sickle | |

## Module 5: Process of performing integrated pest and disease management for cereal crop

*Mapped to ARG/N0126 v1.0*

**Terminal Outcomes:**

- Explain the importance of following the relevant preventive measures to control pests and diseases.
- Describe the process of identifying pests and diseases in the cereal crop.
- Describe the process of identifying and applying the necessary treatment.

| **Duration:** 10:00 | **Duration:** 20:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Explain various types of diseases found in cereal and their symptoms.<br>• Explain different biotic and abiotic factors causing diseases and disorders in plants.<br>• Explain different modes of transmission of disease such as implements, vectors, rain, wind.<br>• Explain the importance of adopting safe production methods for safe produce.<br>• Explain the advantages of biological control of insects, pests & diseases, bio-pesticides and pheromones used in IPM (Integrated Pest Management).<br>• State the minimum residue levels and Protected Health Information (PHI) for different types of pesticides.<br>• Explain the use of the pesticide spraying tools and equipment.<br>• Explain the applicable national and international standards on pesticide residues.<br>• Explain the benefits of using pest and disease-resistant varieties of cereal.<br>• 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. | • Demonstrate the process of removing the diseased crop to prevent the spread of pests and disease to healthy crops.<br>• Demonstrate the use of light and pheromone traps to identify the presence and population of pests, insects and vectors.<br>• Demonstrate the process of applying the recommended treatment as per the prescription to remove pests and diseases.<br>• Demonstrate the use of relevant PPE.<br>• Prepare a sample record of the use of any pesticides, insecticides and any other treatment. |

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| • Explain the practice of crop rotation with suitable crops.<br>• Explain the importance of identifying and removing the diseased crop to prevent the spread of pests and disease to the healthy crop.<br>• 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.<br>• Explain how to identify different types of pests in cereal crops such as stem borer, leaf folder, Fall Armyworm, Panicle mites etc.<br>• Explain the signs of plant disease vectors and major cereal crop diseases such as leaf spot, leaf blight, anthracnose, Powdery mildew, root rot, rust, yellow mosaic, etc.<br>• Describe the process of determining the stage of pest incidence along with the extent of damage and Economic Threshold Levels (ETL) of the pests.<br>• Explain the use of IPM methods such as light and pheromone traps to identify the presence and population of insects and vectors<br>• Describe the process of determining the causal organism for the disease and its treatment.<br>• List natural enemies of cereal pests and explain the benefits of adopting them.<br>• Explain the importance of applying the recommended treatment as per the prescription and maintaining the record of their use.<br>• Explain how to minimise pollution caused by the overuse of pesticides.<br>• List the banned pesticide formulations.<br>• Explain how to deal with chemical poisoning. | |
| **Classroom Aids** | |

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| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop |
| **Tools, Equipment and Other Requirements** |
| Chemicals, Sprayer, Face Mask, Rubber Gloves, Pheromone Traps, Light Traps, Bird Perches, Sticky Traps |

## 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.

| Duration: 10:00 | Duration: 20:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • State the timing and method of irrigation appropriate for a given soil type and climatic conditions.<br>• State the quantity of water required for the specific crop and its effect on the yield.<br>• Explain the importance of sampling irrigation water through an authorised lab to determine its quality.<br>• Explain various measures to be followed to improve the water quality.<br>• Describe the process of setting up different types of irrigation systems such as surface irrigation, drip irrigation, sub-surface irrigation system.<br>• Explain the advantages and disadvantages of different types of irrigation systems.<br>• Explain the importance of irrigating the field according to the recommended irrigation schedule for the crop and the factors to consider in scheduling irrigation.<br>• Explain the recommended practices to prevent over and under irrigation.<br>• Explain the recommended practices for effective drainage of excess water from the field.<br>• Explain the importance of maintaining the recommended level of water in the soil to prevent the | • 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.<br>• Demonstrate the process of irrigating the field according to the recommended irrigation schedule for the crop.<br>• Prepare a sample record of field irrigation to ensure irrigation as per the schedule.<br>• Demonstrate how to plug water spills and leakages to prevent its wastage. |

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| harmful effects of inappropriate levels of moisture in it.<br>• Explain various practices for optimised use of water and prevent its wastage. | |
| **Classroom Aids:** | |
| Training Kit (Trainer **G**uide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| **Tools, Equipment and Other Requirements** | |
| NA | |

## Module 7: Process of carrying out harvesting, processing and marketing of cereals

***Mapped to AGR/N0127 v1.0***

**Terminal Outcomes:**

- Demonstrate the process of harvesting the cereal crop.
- Demonstrate how to process and pack the cereals.
- Describe the process of managing the inventory and market the produce.

| **Duration: 15:00** | **Duration: 15:00** |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Explain the ideal climate and conditions for harvesting cereals.<br>• Explain how to assess the maturity of cereals to ensure their readiness for being harvested.<br>• Describe the manual and mechanical methods for harvesting cereals and the use of relevant tools and equipment.<br>• Explain the importance and ways of maintaining the recommended level of moisture in cereals.<br>• Explain the signs of biological infestation in cereals and the importance of segregating the infested and damaged cereals.<br>• Explain the relevant parameters to sort out the harvested cereals such as quality, colour, size, appearance, etc.<br>• Describe the process of threshing and winnowing different types of cereals.<br>• State the appropriate packing material for packing a variety of cereals, such as jute bags,<br>• Polypropylene (PP) pouches, High-Density Polyethylene (HDPE) packaging, etc.<br>• Explain the importance and ways of protecting the produce from damage and contamination.<br>• State the appropriate temperature and humidity for storing the cereals. | • Demonstrate the process of harvesting the crop using necessary tools, equipment and machinery.<br>• Demonstrate the process of sorting the harvested cereals on the applicable parameters such as quality, colour, size and appearance.<br>• Demonstrate the process of carrying out threshing or winnowing of the harvested cereal crop.<br>• Show how to pack the cereals following the relevant packaging standards and label the packs with the necessary information as per the applicable regulatory requirements.<br>• Show how to weigh the packed cereals to ensure correct weight in the packs and seal them.<br>• Demonstrate the process of applying the recommended treatment in the storage area to remove pests and rodents and store the packed cereals.<br>• Demonstrate how to process the payment using an e-payment method.<br>• Show how to calculate the benefit-cost (B:C) ratio.<br>• Prepare a sample manual and/ or electronic record of the sales and payments. |

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| • Explain the basic inventory management practices.<br>• Describe the process of identifying and negotiating with potential buyers.<br>• State the appropriate mode of transport for transporting a variety of cereals. | |
| **Classroom Aids** | |
| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| **Tools, Equipment and Other Requirements** | |
| Sickle, Harvester, Thresher, Sprayer, Fumigants, Storage Bags, Bag Sealing Machine/ Tools, Weighing Machine | |

## Module 8: 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: 20:00 | Duration: 10:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • 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.<br>• Explain how to obtain access to the relevant government development programmes and funds.<br>• Describe the process of commodity convergence with the relevant developmental programmes.<br>• Explain the importance of planning optimal production to meet the market and household food security needs.<br>• Explain the importance of setting the group objectives and deciding the group income-generating enterprises/ activities, methods of operation, benefits, etc.<br>• 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.<br>• Explain the benefits of various capacity building exercises such as skill development and training programmes.<br>• Explain the importance and process of conducting field trials to identify and resolve problems encountered | • 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.<br>• Roleplay to illustrate how to organise field trials to identify and resolve problems encountered by group members in the field operations. |

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| by farmers in the field operations.<br>• Explain the concept of the group-owned bank to provide quality seeds, fertilisers, pesticides, tools and equipment to the member farmers.<br>• Describe the process of using the group's credit facility.<br>• Explain various core collective farming activities such as procuring inputs in bulk, large-scale farming, etc.<br>• Explain the concept and benefits of forming forward and backward linkages.<br>• State the relevant value addition practices such as processing, packing, upgrading the quality, etc.<br>• Explain the benefits of connecting with similar groups to address common problems on a large scale. | |
| **Classroom Aids** | |
| Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop | |
| **Tools, Equipment and Other Requirements** | |
| NA | |

## Module 9: 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.

| **Duration: 03:00** | **Duration: 03:00** |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Explain the requirements of personal health, hygiene and fitness at work.<br>• Describe common health-related guidelines laid down by the organizations/ Government at the workplace.<br>• Explain the importance of good housekeeping at the workplace.<br>• Explain the importance of informing the designated authority on personal health issues related to injuries and infectious diseases. | • Demonstrate personal hygiene practices to be followed at the workplace.<br>• Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs.<br>• Demonstrate the steps to follow to put on and take off a mask safely.<br>• Show how to sanitize and disinfect one's work area regularly.<br>• Demonstrate adherence to the workplace sanitization norms.<br>• Show how to ensure the cleanliness of the work area. |
| **Classroom Aids:** | |
| Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook. | |
| **Tools, Equipment and Other Requirements** | |
| Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask | |

## Module 10: 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.

| Duration: 12:00 | Duration: 12:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • List the Personal Protective Equipment (PPE) required at the workplace.<br>• Describe the commonly reported hazards at the workplace.<br>• Describe the hazards caused due to chemicals/ pesticides/ fumigants.<br>• Describe the basic safety checks to be done before the operation of any equipment/ machinery.<br>• Describe the common first aid procedures to be followed in case of emergencies.<br>• State measures that can be taken to prevent accidents and damage s at the workplace.<br>• Explain the importance of reporting details of first aid administered, to the reporting officer/ doctor, in accordance with workplace procedures.<br>• State common health and safety guidelines to be followed at the workplace. | • Check various areas of the workplace for leakages, water-logging, pests, fire, etc.<br>• Demonstrate how to safely use the PPE and implements it as applicable to the workplace.<br>• Display the correct way of donning, doffing and discarding PPE such as face masks, hand gloves, face shields, PPE suits, etc.<br>• Sanitize the tools, equipment and machinery properly.<br>• Demonstrate the safe disposal of waste.<br>• Demonstrate procedures for dealing with accidents, fires and emergencies.<br>• Demonstrate emergency procedures to the given workplace requirements.<br>• Demonstrate the use of emergency equipment in accordance with manufacturers' specifications and workplace requirements.<br>• Demonstrate the administration of first aid.<br>• Prepare a list of relevant hotline/ emergency numbers. |
| **Classroom Aids:** | |
| Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook. | |
| **Tools, Equipment and Other Requirements** | |
| Personal Protective Equipment, First Aid Kit, Equipment used in Medical Emergencies. | |

## Module 11: Employability Skills (30 hours)

*Mapped to NOS DGT/VSQ/N0101 v1.0*

**Duration: 30:00**

**Key Learning Outcomes**

**Introduction to Employability Skills Duration: 1 Hour**

After completing this programme, participants will be able to:

1. Discuss the importance of Employability Skills in meeting the job requirements

**Constitutional values - Citizenship Duration: 1 Hour**

2. Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen.
3. Show how to practice different environmentally sustainable practices

**Becoming a Professional in the 21st Century Duration: 1 Hours**

4. Discuss 21st century skills.
5. Display positive attitude, self -motivation, problem solving, time management skills and continuous learning mindset in different situations.

**Basic English Skills Duration: 2 Hours**

6. Use appropriate basic English sentences/phrases while speaking

**Communication Skills Duration: 4 Hour**

7. Demonstrate how to communicate in a well -mannered way with others.
8. Demonstrate working with others in a team

**Diversity & Inclusion Duration: 1 Hour**

9. Show how to conduct oneself appropriately with all genders and PwD
10. Discuss the significance of reporting sexual harassment issues in time

**Financial and Legal Literacy Duration: 4 Hours**

11. Discuss the significance of using financial products and services safely and securely.
12. Explain the importance of managing expenses, income, and savings.
13. Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws

**Essential Digital Skills Duration: 3 Hours**

14. Show how to operate digital devices and use the associated applications and features, safely and securely
15. Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely

**Entrepreneurship Duration: 7 Hours**

16. Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges

**Customer Service Duration: 4 Hours**

17. Differentiate between types of customers
18. Explain the significance of identifying customer needs and addressing them

19. Discuss the significance of maintaining hygiene and dressing appropriately

**Getting ready for apprenticeship & Jobs Duration: 2 Hours**

20. Create a biodata
21. Use various sources to search and apply for jobs
22. Discuss the significance of dressing up neatly and maintaining hygiene for an interview
23. Discuss how to search and register for apprenticeship opportunities

## Module 12: Process of carrying out cultivation of wheat

***Mapped to NOS AGR/N0124 v1.0***

**Terminal Outcomes:**

- Demonstrate the process of preparing for wheat cultivation and sowing the seeds.
- Describe the process of maintaining the wheat crop.
- Demonstrate the process of carrying out harvesting, post-harvest management and marketing of the wheat crop.

| Duration: 08:00 | Duration: 28:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Describe different methods of sowing such as broadcasting and seed drilling.<br>• Explain the agro-climatic conditions required for wheat farming<br>• Explain the appropriate soil conditions required for the cultivation of the wheat crop.<br>• Explain various field preparation requirements for wheat cultivation.<br>• Explain when and how to use pre- and post-emergent herbicides, and the recommended dose for topping up herbicides.<br>• Explain the disadvantages of stubble burning, and prevalent and new practices to remove wheat stubble from the field.<br>• State the recommended seed rate for different varieties of wheat.<br>• Explain the benefits of crop rotation and different types of crops suitable for rotation with wheat.<br>• State the nutritional requirements of a wheat crop and the process of applying manure and fertilisers in a wheat field.<br>• State major wheat weeds, pests and diseases and methods to protect the wheat crop from them.<br>• State the recommended planting density to be maintained while sowing wheat seeds. | • Demonstrate how to remove stubble from the field in an environment-friendly manner.<br>• Demonstrate the process of preparing the field for sowing and applying basal fertiliser in the recommended dose.<br>• Demonstrate the process of sowing wheat seeds maintaining the recommended seed rate and planting density.<br>• Show how to irrigate the wheat crop with the recommended quantity of water as per the irrigation schedule.<br>• Demonstrate the process of applying pre-emergent and post-emergent herbicides to the crop.<br>• Demonstrate the process of applying the recommended fertilisers in the prescribed dose during various stages of the crop's growth.<br>• Demonstrate the process of applying pre-emergent and post-emergent herbicides to the wheat crop.<br>• Demonstrate the process of harvesting and threshing the wheat to obtain grains.<br>• Show how to pack the wheat grains in jute bags.<br>• Demonstrate the use of husk to clear the stubble.<br>• Demonstrate the process of preparing the field for the next crop |

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|---|---|
| • State the water requirement of the wheat crop and the recommended irrigation schedule.<br>• Explain the need of applying pre-emergent and post-emergent herbicides to the wheat crop.<br>• Explain the importance of applying fertilisers to the wheat crop in the recommended dose during various stages of their growth.<br>• Explain various signs of pest and diseases infestation in the wheat crop and their appropriate treatment.<br>• Explain the indicators of maturity of the wheat crop.<br>• Describe the manual and mechanical methods of harvesting and threshing the wheat crop<br>• Explain how to use combine harvesters.<br>• State the appropriate packing material to be used for packing wheat grains<br>• Explain the appropriate conditions required for storing wheat grains, such as the recommended temperature and humidity<br>• State the transportation requirements for the wheat crop to prevent damage and spoilage.<br>• Explain the importance of selecting an appropriate time for marketing agricultural produce according to the market demand. | through solarisation.<br>• Demonstrate how to process the payments using the appropriate e-payment methods.<br>• Prepare a sample manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application. |
| **Classroom Aids:** | |
| Training Kit (Trainer **G**uide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| **Tools, Equipment and Other Requirements** | |
| Plough, Disc Harrow, Sub-Soiler, Tiller, Land Leveller, Cultivator, Sprayer, Fertilisers, Bio Fertilisers, Cloth Bags for Soil Sample, Khurpa, Chemicals, Sprayer, Weeder, Hoe, Sickle, Pheromone Traps, Light Traps, Bird Perches, Sticky Traps, etc. | |

## Module 13: Process of carrying out cultivation of Rice

***Mapped to NOS AGR/N0123 v1.0***

**Terminal Outcomes:**

- Demonstrate the process of raising rice seedlings in the nursery.
- Demonstrate the process of preparing the field and transplant the seedlings.
- Describe the process of maintaining the rice crop.
- Demonstrate the process of carrying out harvesting, post-harvest management and marketing of the rice crop.

| Duration: 08:00 | Duration: 28:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Explain the agro-climatic conditions required for rice farming.<br>• Describe different methods of growing rice such as transplantation, Direct Seeded Rice (DSR), System of Rice Intensification (SRI), etc.<br>• Explain how to prepare the nursery bed for raising rice seedlings.<br>• State the recommended seed rate for broadcasting seeds of different varieties of rice.<br>• State the recommended pesticides and fungicides to be used on rice crops and their recommended doses to be applied.<br>• Explain the basal fertiliser application technique for applying fertilisers to the field.<br>• Explain the use and benefits of paddy transplanter and paddy harvester.<br>• Explain the importance of maintaining the recommended space between the rows in the rice field for intercultural operations.<br>• State the water requirements of rice crop during various stages of its growth.<br>• Explain the need of applying pre-emergent and post-emergent herbicides.<br>• Explain the nutritional requirements | • Demonstrate the process of preparing the nursery bed and applying the recommended manure and fertilisers to it.<br>• Demonstrate the process of growing seedlings in trays as per recommended mechanised procedure, such as the use of paddy transplanter.<br>• Demonstrate the process of performing weed control in the nursery bed.<br>• Demonstrate the process of applying the recommended pesticides and fungicides as per the requirement in the nursery bed to protect the seedlings from pests and diseases.<br>• Demonstrate how to harvest the seedlings at the recommended stage for transplantation in the rice field.<br>• Demonstrate the process of carrying out ploughing, harrowing and levelling in the rice field to obtain the required tilth.<br>• Demonstrate the process of applying the recommended fertilisers to the field as per the basal fertiliser application technique.<br>• Show how to puddle the field to stop leeching and destroy weeds.<br>• Show how to level the field after puddling to use irrigation/ rainwater |

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|---|---|
| of the rice crop.<br>• State the recommended dose of fertilisers for the rice crop and the process of applying them to the soil.<br>• Explain the importance of water in weed management in a paddy field.<br>• Explain various signs of pest and diseases infestation in the rice crop such as leaf/ neck blast, sheath blight, spots, stem borer, leaf folder, etc.<br>• State the recommended pesticides and insecticides to be applied to the rice crop and their recommended dose to be applied.<br>• Explain the signs of the maturity of the rice crop.<br>• State the appropriate time for harvesting the rice crop and the criteria for selecting the manual or mechanical harvesting method.<br>• State the appropriate packing material for the rice crop such as jute bags.<br>• State the recommended temperature and humidity for storing the packed rice.<br>• Explain the applicable transportation requirements to prevent damage and spoilage of rice during transit.<br>• Describe the relevant stubble management methods for using stubble for improving soil fertility.<br>• Explain the importance of selecting an appropriate time for marketing agricultural produce according to the market demand.<br>• Describe the process of negotiating with buyers and marketing agricultural produce. | efficiently.<br>• Demonstrate the process of transplanting the rice seedlings in the field.<br>• Demonstrate how to irrigate the rice crop with the recommended quantity of water according to the stages of its growth.<br>• Demonstrate the process of applying pre-emergent and post-emergent herbicides.<br>• Demonstrate the process of applying the recommended fertilisers in the prescribed dose according to the stages of growth of the rice crop.<br>• Demonstrate the process of applying the recommended treatment such as pesticides and insecticides as per the prescription.<br>• Demonstrate the process of harvesting and threshing the paddy.<br>• Demonstrate how to process the payments using the appropriate e-payment methods.<br>• Prepare a sample manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application. |
| **Classroom Aids:** | |
| Training Kit (Trainer **G**uide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| **Tools, Equipment and Other Requirements** | |

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| Plough, Disc Harrow, Sub-Soiler, Tiller, Land Leveller, Cultivator, Sprayer, Fertilisers, Bio Fertilisers, Cloth Bags for Soil Sample, Khurpa, Chemicals, Sprayer, Weeder, Hoe, Sickle, Pheromone Traps, Light Traps, Bird Perches, Sticky Traps, etc. |

## Module 14: Process of carrying out cultivation of Maize

***Mapped to NOS AGR/N0122 v1.0***

**Terminal Outcomes:**

- Demonstrate the process of preparing for maize cultivation and sowing the seeds.
- Describe the process of maintaining the maize crop.
- Demonstrate the process of carrying out harvesting, post-harvest management and marketing of the maize crop.

| Duration: 08:00 | Duration: 28:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Explain various agro-climatic conditions required for maize cultivation.<br>• State the recommended seed rate of different varieties or hybrids of maize.<br>• Explain the importance of water management of corn crops.<br>• Explain the criteria for selecting a variety or hybrid of maize for cultivation.<br>• State the appropriate temperature and moisture levels required in the soil for sowing maize seeds.<br>• Describe various mechanical methods of sowing maize seeds such as mechanised seed drilling.<br>• State the water requirement of varieties of maize and their recommended irrigation schedule.<br>• Explain the need of applying pre-emergent and post-emergent herbicides.<br>• State the nutritional requirement and process of applying fertilisers and the recommended fertilisers for the maize crop.<br>• List the signs of various pests and diseases in the maize crop.<br>• Explain the maturity indicators for maize crop and the appropriate time for harvesting it. | • Demonstrate the process of preparing raised beds in the field with seed furrows, ensuring no-tilling.<br>• Demonstrate the process of applying fertilisers as per basal fertiliser application technique along with useful organisms such as Azospirillum spp.<br>• Demonstrate how to treat the maize seeds with appropriate insect and disease protection chemicals before sowing.<br>• Demonstrate the process of sowing the maize seeds.<br>• Show how to irrigate the maize crop with the recommended quantity of water.<br>• Demonstrate the process of applying pre-emergent and post-emergent herbicides.<br>• Demonstrate the process of applying the recommended fertiliser in the prescribed dose as per the stages of the crop's growth.<br>• Demonstrate the process of applying the recommended treatment such as pesticides and insecticides in the recommended dose.<br>• Show how to harvest and de-cobb the maize.<br>• Show how to remove sheaths using the appropriate equipment.<br>• Demonstrate how to use the stalks |

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| • Describe the manual and mechanical methods of harvesting maize crops.<br>• State the storage and transportation requirements for the harvested maize.<br>• Explain the use of maize stalks and dry cobs as a fibre supplement for domesticated animals.<br>• Explain the importance of selecting an appropriate time for marketing agricultural produce according to the market demand.<br>• Describe the process of negotiating with buyers and marketing agricultural produce. | and dry cobs as a fibre supplement for domesticated animals.<br>• Demonstrate the process of clearing stubble from the field and preparing it for solarisation.<br>• Demonstrate how to process the payments using the appropriate e-payment methods.<br>• Prepare a sample manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application. |
| **Classroom Aids:** | |
| Training Kit (Trainer **G**uide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| **Tools, Equipment and Other Requirements** | |
| Plough, Disc Harrow, Sub-Soiler, Tiller, Land Leveller, Cultivator, Sprayer, Fertilisers, Bio Fertilisers, Cloth Bags for Soil Sample, Khurpa, Chemicals, Sprayer, Weeder, Hoe, Sickle, Pheromone Traps, Light Traps, Bird Perches, Sticky Traps, etc. | |

## Module 15: Process of carrying out cultivation of Millet

***Mapped to NOS AGR/N0121 v2.0***

**Terminal Outcomes:**

- Demonstrate the process of preparing for millet cultivation and sowing the seeds.
- Describe the process of maintaining the millet crop.
- Demonstrate the process of carrying out harvesting, post-harvest management and marketing of the millet crop.

| Duration: 08:00 | Duration: 28:00 |
|---|---|
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| • Explain various agro-climatic conditions required for the cultivation of varieties of millets.<br>• State the recommended seed rate for varieties of millets.<br>• Explain the criteria for selecting a variety or hybrid of millet for cultivation.<br>• Describe the process of preparing the field for sowing millet seeds and the importance of ensuring effective drainage.<br>• State the appropriate temperature and moisture levels required in the soil for sowing millet seeds.<br>• State the water requirement of varieties of millets and their recommended irrigation schedule.<br>• Explain the need of applying pre-emergent and post-emergent herbicides.<br>• State the nutritional requirement and process of applying the recommended fertilisers in the prescribed dose as per the stages of the millet crop's growth.<br>• List the signs of various pests and diseases in the millet crop.<br>• Explain the importance of water management in millets.<br>• Explain the maturity indicators for the millet crop and the appropriate | • Demonstrate the process of preparing the field for sowing millets, ensuring effective drainage.<br>• Demonstrate the process of applying the recommended fertilisers to the field in the prescribed dose.<br>• Demonstrate how to treat the millet seeds with the appropriate insect and disease protection chemicals before sowing.<br>• Demonstrate the process of sowing the millet seeds.<br>• Show how to irrigate the millet crop with the recommended quantity of water.<br>• Show how to drain out excess water from the field.<br>• Demonstrate the process of applying pre-emergent and post-emergent herbicides.<br>• Demonstrate the process of applying the recommended fertilisers in the prescribed dose as per the stages of the crop's growth.<br>• Demonstrate the process of applying the recommended treatment such as pesticides and insecticides in the prescribed dose.<br>• Demonstrate the process of harvesting the millet crop.<br>• Demonstrate the process of clearing stubble from the field and preparing |

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| time for harvesting it.<br>• Describe the manual and mechanical methods of harvesting millet crops and the criteria for selecting one.<br>• State the storage and transportation requirements for the harvested millet crop.<br>• Explain the use of millet stalks and dry cobs as a fibre supplement for domesticated animals.<br>• Explain the importance of selecting an appropriate time for marketing agricultural produce according to the market demand.<br>• Describe the process of negotiating with buyers and marketing agricultural produce. | it for solarisation.<br>• Demonstrate how to process the payments using the appropriate e-payment methods.<br>• Show how to calculate the benefit-cost (B:C) ratio.<br>• Prepare a sample manual and/ or electronic record of sales and payments using the physical registers and/ or the relevant computer application. |
| **Classroom Aids:** | |
| Training Kit (Trainer **G**uide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| **Tools, Equipment and Other Requirements** | |
| Plough, Disc Harrow, Sub-Soiler, Tiller, Land Leveller, Cultivator, Sprayer, Fertilisers, Bio Fertilisers, Cloth Bags for Soil Sample, Khurpa, Chemicals, Sprayer, Weeder, Hoe, Sickle, Pheromone Traps, Light Traps, Bird Perches, Sticky Traps, etc. | |

# Annexure

## Trainer Requirements

| Trainer Prerequisites | | | | | | |
|---|---|---|---|---|---|---|
| **Minimum Educational Qualification** | **Specialization** | **Relevant Industry Experience** | | **Training Experience** | | **Remarks** |
| | | ***Years*** | ***Specialization*** | ***Years*** | ***Specialization*** | |
| 10th Class | | 7 | Agri Crop Production | 0 | | Cereal Crop Grower with 7 Years of experience with 10th Pass. Experience certificate issued by BDO/ Agriculture Officer/ Head of Gram panchayat/ Loan disbursing bank or financial institution on official letter Head |
| 12th Class | | 4 | Agri 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 | Agri Crop Production | 0 | | |
| Graduate | Graduate in any stream except Agriculture/ Horticulture/ Forestry | 2 | Agri Crop Production | 0 | | For the school Program minimum qualification of the Trainer should be Graduate (Agriculture / Horticulture / Botany/ Forestry) with minimum 3 years Teaching experience (will be considered industry experience) |
| Graduate | Agriculture/ Horticulture/ Forestry | 0.5 | Agri Crop Production | 0 | | |

| Trainer Certification | |
|---|---|
| **Domain Certification** | **Platform Certification** |
| Certified for Job Role "**Cereal Crop Grower**", mapped to QP: "AGR/Q0105, v2.0", Minimum accepted score is 80% | Recommended that the Trainer is certified for the Job Role: "Trainer (Vet and Skills)", mapped to the Qualification Pack: "MEP/Q2601, v2.0". 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 the respective job role |
| M.Sc. | Agriculture/ Botany/ Forestry/ Agronomy and related streams | 2 | Agriculture/ Forestry/ Agronomy and related streams | 0 | | Practical skills and knowledge required in the respective job role |
| PhD | Agriculture/ Botany/ Forestry/ Agronomy and related streams | 1 | Agriculture/ Forestry/ Agronomy and related streams | 0 | | Practical skills and knowledge required in the respective job role |

| Assessor Certification | |
|---|---|
| **Domain Certification** | **Platform Certification** |
| Certified for Job Role "**Cereal Crop Grower**", mapped to QP: "AGR/Q0105, v2.0", Minimum accepted score is 80% | Certified for the Job Role: "Assessor (Vet and Skills)", mapped to the Qualification Pack: "MEP/Q2701, V2.0", 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

| **Assessment** | | | |
|---|---|---|---|
| **Assessment Type** | **Formative or Summative** | **Strategies** | **Examples** |
| 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:

- Geo Tagging 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 |
|---|---|
| **Declarative Knowledge** | 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. |
| **Key Learning Outcome** | 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). |
| **OJT (M)** | On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on-site |
| **OJT (R)** | On-the-job training (Recommended); trainees are recommended the specified hours of training on-site |
| **Procedural Knowledge** | 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. |
| **Training Outcome** | Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training. |
| **Terminal Outcome** | 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 |
| DSR | Direct Seeded Rice |
| ETL | Economic Threshold Levels |
| HDPE | High-Density Polyethylene |
| IPM | Integrated Pest Management |
| NOS | National Occupational Standard (s) |
| NSQF | National Skills Qualifications Framework |
| OJT | On-the-job Training |
| PP | Polypropylene |
| PHI | Protected Health Information |
| PwD | People with Disability |
| PPE | Personal Protective Equipment |
| QP | Qualifications Pack |
| SRI | System of Rice Intensification |