



# Model Curriculum

**QP Name: Medicinal and Aromatic Plants Grower**

**QP Code: AGR/Q0901**

**Version: 3.0**

**NSQF Level: 4**

**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

Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Medicinal and Aromatic Plants Cultivation
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/6115
Minimum Educational Qualification and Experience	10th Class with 2 years of relevant experience OR 10th Class Pass and pursuing continuous regular schooling OR 8th Class pass with 4 years of relevant experience OR Previous relevant qualification of NSQF Level 3 with minimum education as 5th grade pass with 2 years of relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	17/11/2022
Next Review Date	27/01/2025
NSQC Approval Date	27/01/2022
QP Version	3.0
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	390 Hours
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 preparation for the cultivation of Medicinal and Aromatic Plants Grower (MAPs).
- Demonstrate the process of carrying out cultivation of MAPs.
- 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.

### 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>AGR/N0901 Prepare for the cultivation of MAPs</b> <b>NOS Version- 2.0</b> <b>NSQF Level- 4</b>	25:00	35:00	0:00	0:00	60:00
Module 1: Introduction to the role of a Medicinal and Aromatic Plants Grower	05:00	0:00	0:00	0:00	05:00
Module 2: Preparation for the cultivation of MAPs	20:00	35:00	0:00	0:00	55:00
<b>AGR/N0902 Carry out cultivation of MAPs</b> <b>NOS Version- 3.0</b> <b>NSQF Level- 4</b>	20:00	40:00	0:00	0:00	60:00
Module 3: Process of carrying out cultivation of MAPs	20:00	40:00	0:00	0:00	60:00
<b>AGR/N0903 Carry out harvesting, post-harvest processing and marketing of MAPs</b> <b>NOS Version- 2.0</b> <b>NSQF Level- 4</b>	30:00	60:00	0:00	0:00	90:00
Module 4: Process of carrying out harvesting, post-harvest	30:00	60:00	0:00	0:00	90:00

processing and marketing of MAPs					
<b>AGR/N9908 Undertake basic entrepreneurial activities for small Enterprise</b> <b>NOS Version- 3.0</b> <b>NSQF Level- 4</b>	<b>15:00</b>	<b>15:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 5: Basic entrepreneurial activities for small enterprise	15:00	15:00	0:00	0:00	30:00
<b>AGR/N9922 Engage in collective farming/activity</b> <b>NOS Version-2.0</b> <b>NSQF Level- 4</b>	<b>15:00</b>	<b>15:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 6: Engagement in collective/ farming activities	15:00	15:00	0:00	0:00	30:00
<b>AGR/N9903 Maintain health and safety at the workplace</b> <b>NOS Version-4.0</b> <b>NSQF Level- 4</b>	<b>15:00</b>	<b>15:00</b>	<b>0:00</b>	<b>0:00</b>	<b>30:00</b>
Module 7: Hygiene and cleanliness	05:00	05:00	0:00	0:00	10:00
Module 8: Safety and emergency procedures	10:00	10:00	0:00	0:00	20:00
<b>DGT/VSQ/N0102 Employability Skills</b> <b>NOS Version-1.0</b> <b>NSQF Level-4</b>	<b>60:00</b>	<b>00:00</b>	<b>0:00</b>	<b>0:00</b>	<b>60:00</b>
Module 9: Employability Skills	60:00	00:00	0:00	0:00	60:00
<b>Module 10: On-the-Job Training</b>	<b>00:00</b>	<b>00:00</b>	<b>30:00</b>	<b>00:00</b>	<b>30:00</b>
<b>Total Duration</b>	<b>180:00</b>	<b>180:00</b>	<b>30:00</b>	<b>0:00</b>	<b>390:00</b>

## Module Details

### Module 1: Introduction to the role of a Medicinal and Aromatic Plants Grower (MAPs)

*Bridge Module, Mapped to AGR/N0901 v2.0*

#### Terminal Outcomes:

- Discuss the job role of a Medicinal and Aromatic Plants Grower.

Duration: 05:00	Duration: 0:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<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 Medicinal and Aromatic Plants Grower.</li> <li>• Identify various employment opportunities for a Medicinal and Aromatic Plants Grower.</li> </ul>	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	



## Module 2: Preparation for the cultivation of MAPs

### Mapped to AGR/N0901 v2.0

#### Terminal Outcomes:

- Describe the process of selecting the site for cultivation.
- Demonstrate the process of preparing the field for cultivation.
- Describe the activities required to plan nursery propagation.
- Describe the process of procuring and preparing the plant propagation material.

Duration: 20:00	Duration: 35:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>● Explain various practices related to conservation and sustainable use of MAPs.</li> <li>● Explain the bio-geographical distribution of different types of MAPs.</li> <li>● Explain the applicable environmental and human health perspectives.</li> <li>● Explain the importance and benefits of cultivating MAPs.</li> <li>● State the relevant issues encountered at various stages of production of MAPs.</li> <li>● Explain the factors related to the species rarity of medicinal plants.</li> <li>● Explain the applicable conservation strategies for varieties of MAPs.</li> <li>● Explain the criteria for selecting a site for the cultivation of medicinal and aromatic plants such as recommended sunlight exposure, effective drainage, etc.</li> <li>● Explain the importance and process of carrying out soil profiling and soil analysis to determine the physicochemical properties and texture of the soil.</li> <li>● Explain how to check the suitability of the soil for a crop and its water holding capacity.</li> <li>● State the recommended treatment(s) to be applied to the soil to improve its fertility.</li> <li>● Explain the importance of tilling the soil to the recommended tilth to facilitate a favourable environment for growing seeds and seedlings.</li> <li>● Explain the safe use of the relevant field</li> </ul>	<ul style="list-style-type: none"> <li>● Demonstrate the process of applying the lab-recommended treatment(s) in the prescribed quantity to improve the soil fertility and adjust the pH levels.</li> <li>● Demonstrate how to remove rocks, stumps, debris, and shrubs from the field.</li> <li>● Show how to till the soil to the recommended tilth to remove weeds.</li> <li>● Demonstrate the process of preparing the field and/ or mother bed using the appropriate tools and implements.</li> <li>● Demonstrate how to erect fences of the recommended height around the field to protect it from external threats such as stray animals.</li> <li>● Show how to plant appropriate windbreaks in the field to protect the crop from strong winds and prevent soil erosion.</li> <li>● Demonstrate the process of preparing the appropriate nursery structure for the hygienic propagation of commercially important MAPs.</li> <li>● Demonstrate the process of carrying out the prescribed seed treatment according to the target species and planting season.</li> <li>● Demonstrate the process of carrying out seedling production.</li> <li>● Show how to collect stem cuttings from authentic sources for root induction</li> </ul>

<p>preparation tools, implements, and PPE.</p> <ul style="list-style-type: none"> <li>• State the recommended practices to provide better soil structure, texture and rhizospheric environment.</li> <li>• Explain the importance of erecting fences to protect the field from external threats.</li> <li>• Explain the importance of procuring seeds and propagation material from an authorised seller.</li> <li>• Explain the importance of ensuring the ready-to-transplant saplings or root cuttings are uniform in size and maturity.</li> <li>• Explain the principles of raising and managing seedlings in a nursery.</li> <li>• State the precautions to be taken while collecting the planting material from the wild.</li> <li>• Explain the importance of ensuring that seeds and planting material are free from pests, infection, diseases and any foreign or inert matter.</li> <li>• Explain how to check the seeds chosen for cultivation meet the botanical and varietal purity, and are mature.</li> <li>• Explain the recommended agronomic practices to be followed for seedling production according to the target species.</li> <li>• Explain the importance of ensuring seedling production is carried according to the field transplantation schedule.</li> <li>• Explain the importance of collecting stem cuttings from authentic sources for root induction and ensuring the stem cuttings have a uniform length and diameter.</li> </ul>	<p>under nursery conditions and subsequent transplantation into the field.</p>
<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>Plastic Sheet, Spades</p>	



## Module 3: Process of carrying out cultivation of MAPs

### Mapped to ARG/N0902 v3.0

#### Terminal Outcomes:

- Demonstrate the process of planting and transplanting the seeds and seedlings.
- Demonstrate the process of carrying out irrigation and water management.
- Demonstrate the process of carrying out planting nutrition management.
- Demonstrate the process of carrying out weed, pest and disease management.
- Demonstrate various practices for effective resource optimisation.
- Demonstrate various waste management practices.

<b>Duration: 20:00</b>	<b>Duration: 40:00</b>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the use of the relevant weather forecasting mobile application or website.</li> <li>• State the appropriate stage of growth of seedlings to be transplanted in the field from the nursery bed.</li> <li>• Explain the importance of transplanting seedlings within the recommended time duration.</li> <li>• State the appropriate depth, spacing and moisture to be maintained while planting seedlings.</li> <li>• Explain how to determine the water requirement of a variety of medicinal and aromatic plants.</li> <li>• Describe the process of planning and implementing an irrigation cycle to ensure the optimal growth of plants.</li> <li>• Explain various water harvesting and conservation practices.</li> <li>• State the applicable Good Agricultural Practices (GAPs) for MAPs.</li> <li>• Explain the importance of ensuring the quality of water used for irrigating medicinal and aromatic plants.</li> <li>• Explain how to determine the micro and macronutrient needs of medicinal and aromatic plants.</li> <li>• Explain the use of mineral supplements specialised nutritional care for distinct</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate how to plant seeds and seedlings in rows as per the layout, maintaining the recommended depth, spacing and moisture.</li> <li>• Demonstrate the use of an efficient irrigation or fertigation system to optimise the usage of water.</li> <li>• Show how to drain out the excess water from the field.</li> <li>• Demonstrate the process of applying the appropriate organic and inorganic fertilisers such as manure and compost to plants.</li> <li>• Demonstrate the process of carrying out weeding and hoeing following the recommended cycles to maintain a weed-free Field.</li> <li>• Demonstrate the process of carrying out the recommended inter-cultural operations such as topping, nipping of buds, pruning, shading, earthing up, etc.</li> <li>• Demonstrate the process of applying the appropriate herbicides and weedicides in the recommended quantity and following the relevant GAPs to control the growth of weeds.</li> <li>• Demonstrate the process of applying the recommended pesticides and insecticides in the recommended dose.</li> <li>• Demonstrate various practices to</li> </ul>

<p>purposes such as root production or enhancement of leafy biomass in the target species.</p> <ul style="list-style-type: none"> <li>● Explain various weed management practices and inter-cultural practices such as topping, nipping of buds, pruning, shading, earthing up, etc.</li> <li>● Explain the safe use of herbicides, weedicides, insecticides and pesticides.</li> <li>● State the recommended Integrated Pest Management (IPM) practices to be followed to control pests and disease in medicinal and aromatic plants.</li> <li>● Explain the signs of pest and disease infestation in medicinal and aromatic plants</li> <li>● Explain the use of the appropriate Personal Protection Equipment (PPE) for applying using herbicides, weedicides, insecticides and pesticides.</li> <li>● State the recommended practices to be followed to prevent transmission of pests and disease from diseased to healthy plants.</li> <li>● Explain the benefits of resource optimisation.</li> <li>● Explain the importance of recycling and disposing different types of waste as per the applicable regulations.</li> </ul>	<p>optimise the usage of various resources such as water and electricity.</p> <ul style="list-style-type: none"> <li>● Demonstrate the process of recycling and disposing different types of waste appropriately.</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>Axes, Crow Bar, Wheel Barrow, Boxes, Plastic Buckets, Watering Cans, Wire Cutters, Digging Forks, Hammers, Nails, Hoes, hand Pruning Knives, Respiratory Masks, Sprayers, Saws Etc.</p>	

## Module 4: Process of carrying out harvesting, post-harvest processing and marketing of MAPs

*Mapped to AGR/N0903 v2.0*

### Terminal Outcomes:

- Demonstrate the process of harvesting and processing the MAPs.
- Demonstrate the process of packing and storing the processed MAPs.
- Describe the process of marketing the MAPs.

Duration: 30:00	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> <li>● Explain the practice of determining an appropriate time of harvesting based on the required quality parameters set for the end product.</li> <li>● Describe the process of checking medicinal and aromatic plants to ensure they have the appropriate quality characteristics required for harvesting.</li> <li>● Explain the use of the appropriate harvesting tools and equipment.</li> <li>● Explain how to harvest plants protecting them from soil contamination, avoiding incidental and concurrent harvesting of weeds.</li> <li>● List the infrastructure required for post-harvest management of MAPs.</li> <li>● Explain the importance and relevant practices to avoid cross-contamination by other species and other extraneous matters during the harvesting.</li> <li>● State the relevant practices to be followed to isolate and dispose toxic weeds.</li> <li>● Describe different methods of cleaning the harvested medicinal and aromatic plants such as dry cleaning, wet cleaning or a combination of both.</li> <li>● Describe the process of drying medicinal and aromatic plants using appropriate accessories such as trays to prevent contamination during the process.</li> <li>● Explain the importance of storing the dry</li> </ul>	<ul style="list-style-type: none"> <li>● Demonstrate how to harvest the plants protecting them from soil contamination and avoiding incidental and concurrent harvesting of weeds.</li> <li>● Show how to collect the plants in clean containers taking necessary precautions to avoid cross-contamination by other species.</li> <li>● Demonstrate the process of disposing the toxic weeds following the recommended practices.</li> <li>● Demonstrate the process of cleaning the harvested plants following the recommended method such as dry cleaning, wet cleaning or a combination of both.</li> <li>● Demonstrate the process of drying the plants.</li> <li>● Demonstrate the process of carrying out sorting and grading of the produce on relevant parameters.</li> <li>● Demonstrate how to pack the dried plants taking necessary precautions to avoid undue compacting of the dried plant material.</li> <li>● Demonstrate the process of applying labels on the packed plants with the necessary information in compliance with the regulatory requirements.</li> <li>● Demonstrate the process of applying the necessary treatment in the storage area to protect the packed</li> </ul>

plants under the recommended temperature, humidity and hygienic conditions.

- Explain the importance of ensuring clean and well-ventilated processing and storage areas and protecting them from direct sunlight, dust, rain, rodents, insects and livestock.
- State the relevant parameters for sorting and grading medicinal and aromatic plants.
- List the appropriate packaging material to be used for processed medicinal and aromatic plants.
- State the recommended practices to be followed to protect the packing material from damage and keep it clean and dry.
- Explain the necessary precautions to be taken to prevent undue compacting of dried plants during packing.
- State the necessary treatment to be applied in the storage area to protect the packed plants from pests, insects and rodents.
- Explain the importance of maintaining the recommended temperature, humidity and hygiene in the storage area.
- Explain the importance of storing the organic herbs, non-organic products and produce with strong aromatic compounds separately in batches.
- State the applicable GAPs and sustainable practices to be followed during post-harvest processing of MAPs.
- Describe the process of identifying market demand and appropriate buyers for MAPs.
- Explain how to negotiate with buyers.
- State the appropriate mode of transport for delivering MAPs.

plants from pests, insects and rodents.

- Show how to process the payments using the buyer-preferred e-payment method.
- Prepare a sample record of sales and payments.

#### Classroom Aids

Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop

#### Tools, Equipment and Other Requirements

Knife, Wire, Pruning, Scissors, Polythene Bags, Seed Trays, Plant Labels, Wheel Barrow

## Module 5: Basic entrepreneurial activities for small enterprise

### Mapped to AGR/N9908 v3.0

- 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: 15:00</b>	<b>Duration: 15:00</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</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>



followed for efficient input 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,

<p>etc.</p> <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>	
<b>Classroom Aids</b>	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
<b>Tools, Equipment and Other Requirements</b>	
NA	

## Module 6: Engagement in collective farming/activities

### Mapped to NOS AGR/N9922 v2.0

#### 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: 15:00	Duration: 15:00
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 by farmers in the field operations.</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>

- Explain the concept of the group-owned bank to provide quality seeds, fertilisers, pesticides, tools and equipment to the member farmers.
- Describe the process of using the group's credit facility.
- Explain various core collective farming activities such as procuring inputs in bulk, large-scale farming, etc.
- Explain the concept and benefits of forming forward and backward linkages.
- State the relevant value addition practices such as processing, packing, upgrading the quality, etc.
- 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 7: Hygiene and cleanliness

### Mapped to NOS AGR/N9903 v4.0

#### Terminal Outcomes:

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

<b>Duration: 05:00</b>	<b>Duration: 05:00</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 8: Safety and emergency procedures

### Mapped to NOS AGR/N9903 v4.0

#### Terminal Outcomes:

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

<b>Duration: 10:00</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 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 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 9: Employability Skills (60 hours)

Mapped to NOS DGT/VSQ/N0102 v1.0

**Duration: 60:00**

### Key Learning Outcomes

#### Introduction to Employability Skills Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

#### Constitutional values - Citizenship Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

#### Becoming a Professional in the 21st Century Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

#### Basic English Skills Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e-mail using basic English

#### Career Development & Goal Setting Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

#### Communication Skills Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

#### Diversity & Inclusion Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

#### Financial and Legal Literacy Duration: 5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

#### **Essential Digital Skills Duration: 10 Hours**

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

#### **Entrepreneurship Duration: 7 Hours**

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

#### **Customer Service Duration: 5 Hours**

30. Describe the significance of analyzing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

#### **Getting Ready for apprenticeship & Jobs Duration: 8 Hours**

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

## Module 10: On-the-Job Training Duration (Mandatory)

### Mapped to AGR/Q0901 v3.0

Mandatory Duration: 30:00	Recommended Duration: 0:00
Location: On-Site	
<p>Terminal Outcomes</p> <ol style="list-style-type: none"> <li>1. prepare the field and/ or mother bed using the appropriate tools and implements.</li> <li>2. carryout out seedling production.</li> <li>3. prepare the field and/ or mother bed using the appropriate tools and implements.</li> <li>4. collect stem cuttings from authentic sources for root induction under nursery conditions and subsequent transplantation into the field.</li> <li>5. use of an efficient irrigation or fertigation system to optimise the usage of water</li> <li>6. apply the appropriate herbicides and weedicides in the recommended quantity and following the relevant GAPs to control the growth of weeds.</li> <li>7. apply the recommended pesticides and insecticides in the recommended dose</li> <li>8. collect the plants in clean containers taking necessary precautions to avoid cross-contamination by other species</li> <li>9. clean the harvested plants following the recommended method such as dry cleaning, wet cleaning or a combination of both.</li> <li>10. carry out sorting and grading of the produce on relevant parameters.</li> <li>11. Prepare a sample record of sales and payments</li> </ol>	

## Annexure

### Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
10 <sup>th</sup> Class		7	Medicinal Plants Growing	0		Medicinal Plants 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
Diploma	Agriculture/ Horticulture/	5	Medicinal Plants Growing	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
Graduate	Agriculture/ Horticulture/ Botany/ Forestry	2	Medicinal Plants Growing	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)
Post- Graduate	Medicinal Plant/ Agriculture/ Horticulture/ Botany/ Forestry	1	Medicinal Plants Growing	0		

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role “ <b>Medicinal and Aromatic Plants Grower</b> ”, mapped to QP: “AGR/Q0901, v3.0”, 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/ Horticulture and related streams	5	Forestry/ Horticulture and related experience	0		Practical skills and knowledge required in Medicinal and Aromatic Plants Growing
M.Sc.	Agriculture/ Botany/ Forestry/ Horticulture and related streams	2	Forestry/ Horticulture and related experience	0		Practical skills and knowledge required in Medicinal and Aromatic Plants Growing
PhD	Agriculture/ Botany/ Forestry/ Horticulture and related streams	1	Forestry/ Horticulture and related experience	0		Practical skills and knowledge required in Medicinal and Aromatic Plants Growing

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role “ <b>Medicinal and Aromatic Plants Grower</b> ”, mapped to QP: “AGR/Q0901, v3.0”, 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:

- 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>	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
GAP	Good Agricultural Practices
IPM	Integrated Pest Management
MAPs	Medicinal and Aromatic Plants
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
PwD	People with Disability
PPE	Personal Protective Equipment
QP	Qualifications Pack