Model Curriculum

QP Name: Pulses Cultivator

QP Code: AGR/Q0104

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

Table of Contents

Training Parameters

Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Field Crops Cultivation (Food Crops)
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/6111.0401
Minimum Educational Qualification and Experience	10th Class with 2 years' work experience OR 10th Class Pass and pursuing continuous regular schooling OR 8th Class with 4 Years of relevant experience OR Certificate-NSQF Level-4 (Trained on Certified on Paddy Farmer/Wheat cultivator/Maize Cultivator/Cereal Crop Grower) with 6 months experience OR Previous relevant qualification of NSQF Level 3 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:

- Demonstrate the process of selecting and preparing the site and sowing the pulse seed.
- Demonstrate the process of carrying out macro and micronutrient management of field crops.
- Describe the process of Process of managing the weed growth in crop field.
- Demonstrate the Process of performing integrated pest and disease management for pulses.
- Demonstrate the Process of performing irrigation management for field crops.
- Demonstrate the process of carrying out harvesting, post-harvest processing and marketing of pulses.
- 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
AGR/N0118: Select and prepare the site and sow the pulse seeds **NOS Version- 3.0** **NSQF Level- 4**	**15:00**	**15:00**	**0:00**	**0:00**	**30:00**
Module 1: Introduction to the role of a Pulses Cultivator	05:00	0:00	0:00	0:00	05:00
Module 2: Process of selecting and preparing the site and sow the pulse seeds	10:00	15:00	0:00	0:00	25:00
AGR/N0108: Carry out macro and micronutrient management of field crops **NOS Version-2.0** **NSQF Level- 4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 3: Process of carrying out macro and micronutrient management of field crops	10:00	20:00	0:00	0:00	30:00

AGR/N0109: Manage weed growth in crop fields **NOS Version- 3.0** **NSQF Level- 4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 4: Process of managing the weed growth in crop field	10:00	20:00	0:00	0:00	30:00
AGR/N0110: Perform integrated pest and disease management for pulses NOS Version- 2.0 **NSQF Level- 4**	**20:00**	**40:00**	**0:00**	**0:00**	**60:00**
Module 5: Process of performing integrated pest and disease management for pulses	20:00	40:00	0:00	0:00	60:00
AGR/N0111: Perform irrigation management for field crops **NOS Version- 3.0** **NSQF Level- 4**	**10:00**	**20:00**	**0:00**	**0:00**	**30:00**
Module 6: Process of performing Irrigation management for field crops	10:00	20:00	0:00	0:00	30:00
AGR/N0120: Carry out harvesting, post-harvest processing and marketing of pulses **NOS Version- 2.0** **NSQF Level- 4**	**20:00**	**40:00**	**0:00**	**0:00**	**60:00**
Module 7: Process of carrying out harvesting, post-harvest processing and marketing of pulses	20:00	40:00	0:00	0:00	60:00
AGR/N9922 Engage in collective farming/activity **NOS Version-2.0** **NSQF Level- 4**	**15:00**	**15:00**	**0:00**	**0:00**	**30:00**
Module 8 Engagement in collective/ farming activities	15:00	15:00	0:00	0:00	30:00
AGR/N9903 Maintain health and safety at the workplace **NOS Version-4.0** **NSQF Level-3**	**20:00**	**10:00**	**0:00**	**0:00**	**30:00**

Module 9: Hygiene and cleanliness	04:00	04:00	0:00	0:00	08:00
Module 10: Safety and emergency procedures	16:00	06:00	0:00	0:00	22:00
DGT/VSQ/N0102 Employability Skills NOS Version-1.0 NSQF Level-4	**60:00**	**00:00**	**0:00**	**0:00**	**60:00**
Module 11: Employability Skills	60:00	00:00	0:00	0:00	60:00
Module 12: On-the-job Training	**00:00**	**00:00**	**30:00**	**00:00**	**30:00**
Total Duration	**180:00**	**180:00**	**30:00**	**0:00**	**390:00**

Module Details

Module 1: Introduction to the role of a Pulses Cultivator

Bridge Module, Mapped to AGR/N0118 v3.0

Terminal Outcomes:

- Discuss the job role of a Pulses Cultivator.

Duration: 05:00	**Duration: 0:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the size and scope of the agriculture industry and its sub-sectors. • Discuss the role and responsibilities of a Pulses Cultivator. • Identify various employment opportunities for a Pulses Cultivator.	
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 sowing the pulse seeds

Mapped to AGR/N0118 v3.0

Terminal Outcomes:

- Describe the process of selecting and preparing the site for the cultivation of pulses.
- Describe the process of procuring and preparing the pulse seeds for sowing.
- Demonstrate the process of preparing the field and sowing the pulse 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**
• Explain various pulse varieties and hybrids such as green gram, red gram, Bengal gram, beans, peas, etc. • Explain the criteria for selecting a site for the cultivation of pulses. • List various agro-climatic zones in India suitable for the cultivation of pulses. • State the site, climate, soil type, soil fertility, nature of subsoil and soil depth suited for growing pulses. • Describe the process of getting the soil sample tested through an authorised lab to determine the soil's suitability for the cultivation of pulses. • List various inputs required for the cultivation of pulses such as water, fertilisers, pesticides, labour, etc. • Explain the use of various tools and implements for the preparation of the field for pulses cultivation such as chisel plough, disc plough, subsoiler, tiller, harrow, cultivator, etc. • Explain the importance of preparing the field according to the soil type. • State the appropriate tilth required for sowing pulse seeds. • Explain the importance of levelling the field for uniform and efficient irrigation.	• Demonstrate the process of treating the seeds using the recommended insecticide, pesticide or fungicide in the prescribed dose. • Show how to remove and dispose the damaged/ diseased seeds. • Show how to remove all the weeds and waste materials from the field. • Demonstrate the process of carrying out ploughing in the field to achieve the required tilt. • Demonstrate how to level the field appropriately to ensure a uniformly graded field. • Show how to create ridges and furrows in the field to avoid waterlogging. • Demonstrate the process of applying the recommended organic manure in the field in an appropriate quantity. • Demonstrate the process of using the pH meter to check the soil's pH levels and applying lime, gypsum or other relevant treatment in an appropriate quantity to adjust the pH. • Demonstrate the process of sowing the pulse seeds at the appropriate seed rate using the relevant tools and implements.

• Explain the benefits of creating ridges and furrows. • Explain the criteria for selecting pulses varieties to cultivate such as yield quantity and period, climate along with resistance to various pests, diseases and abiotic stress, etc. • State the appropriate time for sowing pulse seeds based on the moisture content in the soil, precipitation, humidity, etc. • Explain the importance of procuring seeds from a government-approved source and the prevalent market prices for different varieties. • State the appropriate temperature and humidity for storing the pulse seeds before and after treatment. • Explain how to recognise hard and diseased pulse seeds. • State the recommended seed rate for different varieties of the pulse. • Describe different methods for sowing pulse seeds such as broadcasting and mechanised sowing. • State the recommended planting density to maintain while sowing pulse seeds. • Explain the importance of carrying out intercropping to achieve a higher yield. • List different crops suitable for intercropping with pulses. • Explain the benefits of resource optimisation. • Explain the importance of recycling and disposing different types of waste as per the applicable regulations. • Explain the importance of inclusion of all genders and People with Disability (PwD) at the workplace.	• Demonstrate various practices to optimise the usage of various resources such as water and electricity. • Demonstrate the process of recycling and disposing different types of waste appropriately. • Demonstrate appropriate verbal and non-verbal communication that is respectful of genders and disability.
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: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the basic concepts of plant nutrition and soil fertility. • Explain different types of macro and micronutrients, their properties and their functions. • List common symptoms of nutrient deficiency in plants. • Explain different types of green manure and nitrogen-fixing crops. • Describe the process of soil sampling and testing. • Explain the importance of getting the soil tested through a government-approved lab. • Explain how to interpret the soil analysis report to determine the macro and micronutrient requirements of the soil. • Explain different soil types, their advantages and disadvantages with reference to the presence of various nutrients. • State the appropriate time and methods for the application of different types of fertilisers. • Explain the importance of regulating the dose of fertiliser according to the crop cycle. • State the recommended dosage and application time of fertiliser for different types of crops.	• Demonstrate the process of preparing organic fertilisers such as farmyard manure, vermicompost and inorganic fertiliser solutions. • Demonstrate the process of preparing the mixture of liquid fertilisers for application in the field, using them in the recommended quantity. • Show how to prepare the field for the application of fertilisers. • Demonstrate the process of applying organic and inorganic fertilisers containing the required macro and micronutrients to the soil in the recommended dose. • Show how to regulate the dose of fertiliser according to the crop cycle. • Prepare a sample record of fertilisers used in the field. • Prepare a sample soil nutrition supplementation calendar based on the stages of the crop's growth. • Demonstrate the process of applying mulch and organic fertilisers to conserve soil moisture.

• Explain the importance of soil conservation and various soil conservation practices. • Explain various varieties of organic and inorganic fertilisers to be applied to the soil to improve its fertility, and nutrient content. • Explain the harmful effects of the over-dosage of fertilizers. • 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 v3.0

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. • Explain the adverse effect of different types of weed such as grass, broad leaves, sedges on crop growth. • Describe different weed control methods such as preventative, intercultural, mechanical, biological and chemicals. • Explain the advantages and disadvantages of different weeding methods. • State the critical period of crop-weed competition. • Describe different manual weeding techniques. • Explain the use of relevant weeding equipment such as hoe and spade. • Explain the use of pre-emergent and post-emergent herbicides. • Explain the difference between blanket and spot application of herbicides. • Describe the process of soil solarisation and pasteurisation. • Explain various environmental norms to be adhered to during herbicide application. • Explain the effects of herbicide residue on the crop. • 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. • Demonstrate the process of preparing the recommended herbicide/ bio-herbicide solution suitable to the crop. • Show how to spray the herbicide/ bio-herbicide safely in the recommended dose. • Demonstrate the process of removing weeds manually using the appropriate hand tools and implements, as required.

herbicides. ● Explain the importance of inspecting the field regularly to identify weed growth. ● Explain the appropriate combination of different types of intercultural and mechanical methods for effective weed control such as solarisation and pasteurisation. ● Describe the process of selecting and preparing the recommended herbicide/ bio-herbicide solution suitable to the crop. ● Explain the importance of retaining the weeds during the weeding process. ● 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 pulses

Mapped to NOS AGR/N0110 v2.0

Terminal Outcomes:

- Explain the importance of following the relevant preventive measures.
- Describe the process of identifying pests and diseases in pulses.
- Demonstrate the process of identifying and applying the necessary treatment.

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain various types of diseases found in pulses and their symptoms. • Explain different biotic and abiotic factors causing diseases and disorders in plants. • Explain different modes of transmission of disease such as implements, vectors, rain, wind. • Explain the importance of adopting safe production methods for safe produce. • Explain the advantages of biological control of insects, pests & diseases, bio-pesticides and pheromones used in IPM (Integrated Pest Management). • State the minimum residue levels and Protected Health Information (PHI) for different types of pesticides. • Explain the use of the pesticide spraying tools and equipment. • Describe various national and international standards on pesticide residues. • Explain the benefits of using pest and disease-resistant varieties of pulses. • State the recommended practices to restrict the entry of pathogens into the field through planting material, irrigation water, workers, tools and equipment, and vectors such as	• Demonstrate the process of removing the diseased crop to prevent the spread of pests and disease to healthy crops. • Demonstrate the use of light and pheromone traps to identify the presence and population of pests, insects and vectors. • Demonstrate the process of applying the recommended treatment as per the prescription to remove pests and diseases. • Demonstrate the use of relevant PPE. • Prepare a sample record of the use of any pesticides, insecticides and any other treatment.

whitefly. • Explain the practice of crop rotation with suitable crops. • Explain the importance of identifying and removing the diseased crop to prevent the spread of pests and disease to the healthy crop. • Explain the use of the recommended combination of biological, mechanical and chemical control methods for effective pest and disease prevention such as traps, sticky plates etc. • Explain how to identify different types of pests in pulses pod borers, hairy caterpillar, aphids, stem fly, whitefly, thrips, beetles, nematodes, etc. • Explain how to identify plant disease vectors and major pulses diseases such as leaf spot, leaf blight, anthracnose, Powdery mildew, root rot, rust, yellow mosaic, etc. • Describe the process of determining the stage of pest incidence along with the extent of damage and Economic Threshold Levels (ETL) of the pests. • Describe the process of determining the causal organism for the disease and its treatment. • List various natural enemies of the pest and explain the benefits of adopting them for pest control. • Explain the importance of applying the recommended treatment as per the prescription and maintaining the record of their use. • Explain the importance of using the recommended PPE while applying harmful chemicals. • State different ways to minimise pollution caused due to overuse of pesticides. • State the applicable record-keeping practices for effective pest and	

disease management such as the preparation of pest calendar. ● Describe the process of preparing various bio-pesticides. ● Explain the use of appropriate tools and equipment for pest and disease management.	
Classroom Aids:	
Training Kit (Trainer **G**uide, 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 v3.0

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. • State the quantity of water required for the specific crop and its effect on the yield. • Explain the importance of sampling irrigation water through an authorised lab to determine its quality. • Explain various measures to be followed to improve the water quality. • Describe the process of setting up different types of irrigation systems such as surface irrigation, drip irrigation, sub-surface irrigation system. • Explain the advantages and disadvantages of different types of irrigation systems. • Explain the importance of irrigating the field according to the recommended irrigation schedule for the crop and the factors to consider in scheduling irrigation. • Explain the recommended practices to prevent over and under irrigation. • Explain the recommended practices for effective drainage of excess water from the field. • Explain the importance of	• 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. • Demonstrate the process of irrigating the field according to the recommended irrigation schedule for the crop. • Prepare a sample record of field irrigation to ensure irrigation as per the schedule. • Demonstrate how to plug water spills and leakages to prevent its wastage.

maintaining the recommended level of water in the soil to prevent the harmful effects of inappropriate levels of moisture in it. ● Explain various practices for optimized 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, post-harvest processing and marketing of pulses

Mapped to NOS AGR/N0120 v2.0

Terminal Outcomes:

- Demonstrate the process of harvesting the pulses.
- Demonstrate the process of threshing and packing the pulses.
- Describe the process of marketing the pulses.

Duration: 20:00	Duration: 40:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• State the ideal climate and conditions for harvesting pulses. • Explain how to assess the maturity of pulses to ensure their readiness for being harvested. • Describe the manual and mechanical methods of harvesting pulses and the use of relevant tools and equipment. • Explain the importance and ways of protecting the harvested pulses from catching moisture. • Explain different crop cleaning and threshing techniques. • Describe the process of threshing harvested pulses to obtain the seeds. • State the appropriate temperature and humidity to store the harvested pulses. • Explain the criteria for sorting and grading pulses. • Describe the relevant methods to avoid crop loss due to moisture. • Describe various methods of storage, their cost dynamics and their influence on the quality of pulses. • Describe chemicals and other relevant methods to prevent losses from pests and rodents in the storage. • State the appropriate packing material to pack the pulses such as	• Demonstrate the process of preparing the necessary tools, equipment and machinery for harvesting pulses. • Demonstrate how to treat the crop with the appropriate chemicals such as defoliants before harvesting. • Demonstrate the process of harvesting the pulses crop at the appropriate stage and time. • Show how to thresh the harvested pulses to obtain the seeds and ensure pulses don't catch moisture. • Demonstrate the process of carrying out pre-cleaning of the harvested pulses using appropriate methods and drying them mechanically. • Demonstrate the process of sorting and grading the cleaned pulses on the basis of applicable parameters. • Demonstrate the process of preparing the storage area, ensuring it is hygienic, pest and rodent-free. • Show how to pack pulses following the recommended measures to prevent the absorption of moisture. • Demonstrate how to process the payment using an e-payment method. • Show how to calculate the benefit-cost (B:C) ratio.

jute bags, Polypropylene (PP) pouches High-Density Polyethylene (HDPE) packaging, etc. ● Describe the process of identifying and negotiating with potential buyers. ● State the appropriate mode of transport for transporting pulses.	● Prepare a sample manual and/ or electronic record of the sales and payments.
Classroom Aids:	
Training Kit (Trainer **G**uide, 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 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**
• 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. • Explain how to obtain access to the relevant government development programmes and funds. • Describe the process of commodity convergence with the relevant developmental programmes. • Explain the importance of planning optimal production to meet the market and household food security needs. • Explain the importance of setting the group objectives and deciding the group income-generating enterprises/ activities, methods of operation, benefits, etc. • 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. • Explain the benefits of various capacity building exercises such as skill development and training programmes. • Explain the importance and process of conducting field trials to identify and resolve problems encountered by	• 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. • Roleplay to illustrate how to organise field trials to identify and resolve problems encountered by group members in the field operations.

farmers in the field operations. ● 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 9: 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.

Duration: 04:00	**Duration: 04:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the requirements of personal health, hygiene and fitness at work. • Describe common health-related guidelines laid down by the organizations/ Government at the workplace. • Explain the importance of good housekeeping at the workplace. • 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. • Demonstrate the correct way of washing hands using soap and water, and alcohol-based hand rubs. • Demonstrate the steps to follow to put on and take off a mask safely. • Show how to sanitize and disinfect one's work area regularly. • Demonstrate adherence to the workplace sanitization norms. • 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: 16:00	Duration: 06:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the Personal Protective Equipment (PPE) required at the workplace. • Describe the commonly reported hazards at the workplace. • Describe the hazards caused due to chemicals/ pesticides/ fumigants. • Describe the basic safety checks to be done before the operation of any equipment/ machinery. • Describe the common first aid procedures to be followed in case of emergencies. • State measures that can be taken to prevent accidents and damage s at the workplace. • Explain the importance of reporting details of first aid administered, to the reporting officer/ doctor, in accordance with workplace procedures. • 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. • Demonstrate how to safely use the PPE and implements it as applicable to the workplace. • Display the correct way of donning, doffing and discarding PPE such as face masks, hand gloves, face shields, PPE suits, etc. • Sanitize the tools, equipment and machinery properly. • Demonstrate the safe disposal of waste. • Demonstrate procedures for dealing with accidents, fires and emergencies. • Demonstrate emergency procedures to the given workplace requirements. • Demonstrate the use of emergency equipment in accordance with manufacturers' specifications and workplace requirements. • Demonstrate the administration of first aid. • 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 (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 analysing 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 12: On-the-Job Training Duration (Mandatory)

Mapped to AGR/Q0104 v3.0

Mandatory Duration: 30:00	Recommended Duration: 0:00
Location: On-Site	

Terminal Outcomes

1. treat the seeds using the recommended insecticide, pesticide or fungicide in the prescribed dose.
2. remove all the weeds and waste materials from the field
3. apply the recommended organic manure in the field in an appropriate quantity.
4. Sow the pulse seeds at the appropriate seed rate using the relevant tools and implements
5. apply organic and inorganic fertilisers containing the required macro and micronutrients to the soil in the recommended dose.
6. remove weeds manually using the appropriate hand tools and implements, as required.
7. use the light and pheromone traps to identify the presence and population of pests, insects and vectors.
8. apply the recommended treatment as per the prescription to remove pests and diseases
9. irrigate the field according to the recommended irrigation schedule for the crop.
10. harvest the pulses crop at the appropriate stage and time
11. thresh the harvested pulses to obtain the seeds and ensure pulses don’t catch moisture
12. pack pulses following the recommended measures to prevent the absorption of moisture

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		Pulses Cultivator 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 "**Pulses Cultivator**", mapped to QP: "AGR/Q0104, 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/ Agronomy and related streams	5	Agriculture crops production / Agronomy and related experience	0		Practical skills and knowledge required in Pulse Cultivation
M.Sc.	Agriculture/ Botany/ Agronomy and related streams	2	Agriculture crops production / Agronomy and related experience	0		Practical skills and knowledge required in Pulse Cultivation
PhD	Agriculture/ Botany/ Forestry/ Agronomy and related streams	1	Agriculture crops production / Agronomy and related experience	0		Practical skills and knowledge required in Pulse Cultivation

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "**Pulses Cultivator**", mapped to QP: "AGR/Q0104, 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, behavioral 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
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
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