



Model Curriculum

QP Name: Lac Cultivator

QP Code: AGR/Q6105

Version: 2.0

NSQF Level: 3

Model Curriculum Version: 1.0

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

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Training Parameters

Sector	Agriculture
Sub-Sector	Forestry, Environment and Renewable Energy Management
Occupation	Agro- Forestry Management
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/6210.0500
Minimum Educational Qualification and Experience	<p>8th grade pass with 2 years of relevant experience</p> <p>OR</p> <p>Grade 8 pass and pursuing continuous schooling in regular school with vocational subject</p> <p>OR</p> <p>5th grade pass with 5 years of relevant experience</p> <p>OR</p> <p>Previous relevant qualification of NSQF Level 2 with 1 year of relevant experience</p> <p>OR</p> <p>Previous relevant qualification of NSQF Level 2.5 with 6 months of relevant experience</p>
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	29/03/2023
Next Review Date	29/03/2026
NSQC Approval Date	29/03/2023
QP Version	2.0
Model Curriculum Creation Date	29/03/2023
Model Curriculum Valid Up to Date	29/03/2026
Model Curriculum Version	1.0
Minimum Duration of the Course	270 Hours
Maximum Duration of the Course	270 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 growing host plants for lac cultivation.
- Describe the process of pruning the host trees for lac cultivation.
- Explain the process of inoculating the host trees with brood lac.
- Demonstrate the process of undertaking pest and disease management during lac cultivation.
- Describe the process of undertaking harvesting and post-harvest processing of lac.
- Demonstrate various practices to ensure health and safety at work.

Compulsory Modules

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

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Bridge Module	05:00	00:00	0:00	00:00	05:00
Module 1: Introduction to the role of a Lac Cultivator	05:00	00:00	0:00	00:00	05:00
AGR/N6122: Grow host plants for lac cultivation NOS Version- 2.0 NSQF Level- 3	10:00	15:00	0:00	00:00	25:00
Module 2: Process of growing host plants for lac cultivation	10:00	15:00	0:00	00:00	25:00
AGR/N6123: Prune the host trees for lac cultivation NOS Version- 2.0 NSQF Level- 3	10:00	20:00	0:00	00:00	30:00
Module 3: Process of Pruning the host trees for lac cultivation	10:00	20:00	0:00	00:00	30:00
AGR/N6124: Inoculate the host trees with brood lac NOS Version- 2.0 NSQF Level- 3	15:00	15:00	0:00	00:00	30:00

Module 4: Process of inoculating the host trees with brood lac	15:00	15:00	0:00	00:00	30:00
AGR/N6126: Undertake pest and disease management during lac cultivation NOS Version- 2.0 NSQF Level- 3	15:00	15:00	0:00	00:00	30:00
Module 5: Process of undertaking pest and disease management during lac cultivation	15:00	15:00	0:00	00:00	30:00
AGR/N6125: Undertake harvesting and post-harvest processing of lac NOS Version- 2.0 NSQF Level- 3	30:00	30:00	0:00	00:00	60:00
Module 6: Process of undertaking harvesting and post-harvest processing of lac	30:00	30:00	0:00	00:00	60:00
AGR/N9903 Maintain health and safety at the workplace NOS Version- 3.0 NSQF Level- 4	05:00	25:00	0:00	00:00	30:00
Module 7: Hygiene and cleanliness	02:00	10:00	0:00	00:00	12:00
Module 8: Safety and emergency procedures	03:00	15:00	0:00	00:00	18:00
DGT/VSQ/N0101: Employability Skills (30 Hours) NOS Version- 1.0 NSQF Level- 2	30:00	00:00	0:00	00:00	30:00
Module 9: Employability Skills	30:00	00:00	0:00	00:00	30:00
Total Duration	120:00	120:00	0:00	00:00	240:00
OJT: 30 Hours					

Module Details

Module 1: Introduction to the role of a Lac Cultivator

Bridge Module

Terminal Outcomes:

- Discuss the job role of a Lac Cultivator.

Duration: 05:00	Duration: 0:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the size and scope of the agriculture industry and its sub-sectors. • Discuss the role and responsibilities of a Lac Cultivator. • Identify various employment opportunities for a Lac Cultivator. 	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

Module 2: Process of growing host plants for lac cultivation

Mapped to AGR/N6122 v2.0

Terminal Outcomes:

- Describe the process of preparing for timber cultivation.
- Describe the process of raising saplings in the nursery.
- Elucidate the process of preparing the land for timber cultivation.

Duration: 10:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • State suitable host tree species for lac cultivation and their life cycle. • State the agro-climatic conditions appropriate for raising host trees and producing lac. • Explain the importance of procuring planting material from government-approved vendors. • List various inputs required for growing host trees for lac cultivation. • Elucidate different types of nursery beds, i.e. flat, raised or sunken nursery beds for raising host tree saplings. • List different types of tools, implements and equipment required for nursery bed/field preparation. • Describe the field preparation process for growing host trees for lac production. • Discuss the nutrient, and pest and disease management of host trees used in lac cultivation. 	<ul style="list-style-type: none"> • Demonstrate the process of preparing an appropriate type of nursery bed to grow saplings of those tree species that cannot withstand field conditions during their early stages of growth. • Demonstrate the process of applying the recommended organic and inorganic fertilizers to saplings according to their nutrient requirements at different stages of growth. • Show how to remove any debris, weeds and any waste material from the selected land for growing the host trees. • Demonstrate the process of applying the necessary treatment(s) to the soil to improve its fertility, e.g. application of manure to increase the organic matter content or lime to adjust the soil's pH. • Demonstrate the process of carrying out the appropriate type of ploughing in the field to achieve the recommended tillage according to the selected host tree species. • Show how to create pits of the recommended width and depth for planting the host tree saplings. • Demonstrate the use of farm machinery and other mechanical tools and equipment as per the manufacturer's instructions, ensuring own and others' safety. • Demonstrate how to sow the host

	<p>tree seeds following an appropriate sowing method, such as broadcasting, dibbling, drilling, etc.</p> <ul style="list-style-type: none"> • Demonstrate how to transplant host tree saplings in the prepared pits at the recommended depth, ensuring no damage to them. • Demonstrate the process of applying the recommended organic and inorganic fertilizers to the host trees to ensure their healthy growth. • Demonstrate the process of applying the recommended pesticides to host trees to cure the pest and disease infestation, ensuring no adverse effects on lac production.
<p>Classroom Aids</p>	
<p>Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>Respiratory Masks, Pruning knife, Pruning Saw, Paddy straw, Synthetic net/pouch, Rope, Pump, Rocking sprayer, Fire Extinguisher, Scraping knife or pedal-operated lac scraper, Roll cut or French Secateurs, Long-handled tree pruners, Pruning shear, Plastic sheet, 60 mesh nylon net, Bucket, Safety Shoes, First aid box, Rubber gloves, Installed Video camera with high resolution and recording facility, Helmet</p>	

Module 3: Process of pruning the host trees for lac cultivation

Mapped to ARG/N6123 v2.0

Terminal Outcomes:

- Describe the process of pruning the host trees.
- Explain the importance of ensuring safety during pruning activities.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the requirement of pruning host trees before inoculating them with brood lac. • State the appropriate pruning schedule for different species of host trees used in lac cultivation. • Describe different pruning methods, e.g. apical/light pruning or basal/heavy pruning. • Explain the use of appropriate pruning tools and implements. • Describe the process of pruning host trees and the appropriate measures to be taken to ensure their health and suitability for lac cultivation. • Explain the use of relevant PPE while carrying out pruning and relevant safety practices to be followed. 	<ul style="list-style-type: none"> • Demonstrate the process of carrying out pruning to the recommended extent, avoiding excessive pruning to maintain the health and strength of host trees. • Show how to remove dead and diseased branches without damaging the healthy ones. • Demonstrate how to use the appropriate Personal Protective Equipment (PPE) and accessories during pruning activities, e.g. use of safety gloves, goggles and ladders.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Respiratory Masks, Pruning knife, Pruning Saw, Paddy straw, Synthetic net/pouch, Rope, Pump, Rocking sprayer, Fire Extinguisher, Scraping knife or pedal-operated lac scraper, Roll cut or French Secateurs, Long-handled tree pruners, Pruning shear, Plastic sheet, 60 mesh nylon net, Bucket, Safety Shoes, First aid box, Rubber gloves, Installed Video camera with high resolution and recording facility, Helmet	

Module 4: Process of Inoculating the host trees with brood lac

Mapped to AGR/N6124 v2.0

Terminal Outcomes:

- Explain the process of selecting brood lac twigs.
- Describe the process of inoculating the host trees with brood lac.
- Elucidate ways to maintain the brood lac on host trees.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss different species and strains of brood lac. • State the recommended inoculation schedule for different brood lac species. • Explain how to estimate the quantity of brood required for inoculating a host tree based on the applicable criteria, e.g. type of tree and the number and length of suitable branches. • Describe the process of inoculating the host trees with brood lac. • Elucidate the appropriate precautions to be taken during the inoculation process. • State the inoculation period for different brood lac species. • Describe the process of monitoring and maintaining the brood lac on host trees to ensure quality lac production. • Explain the benefits of alternating brood and host to achieve good quality brood lac production. 	<ul style="list-style-type: none"> • Demonstrate how to remove the unsuitable brood. • Demonstrate how to cut the brood lac twigs to the recommended length using the appropriate cutting tool, e.g. secateurs. • Show how to bundle the brood lac twigs in appropriate nylon bags for inoculation. • Show how to tie the brood twigs on the upper surface of new and tender twigs of host trees for the migration of nymphs from brood lac twigs to host twigs. • Demonstrate the process of using the harvested brood lac for inoculation within the recommended duration. • Show how to collect all used-up brood lac sticks from the host plant to prevent wastage and attack from enemy insects.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Respiratory Masks, Pruning knife, Pruning Saw, Paddy straw, Synthetic net/pouch, Rope, Pump, Rocking sprayer, Fire Extinguisher, Scraping knife or pedal-operated lac scraper, Roll cut or French Secateurs, Long-handled tree pruners, Pruning shear, Plastic sheet, 60 mesh nylon net, Bucket, Safety Shoes, First aid box, Rubber gloves, Installed Video camera with high resolution and recording facility, Helmet	

Module 5: Process of undertaking pest and disease management during lac cultivation

Mapped to AGR/N6126 v2.0

Terminal Outcomes:

- Elucidate ways to monitor the lac crop.
- Describe the process of undertaking protective measures for the lac crop.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Elucidate different types of natural enemies of lac insects, such as squirrels, monkeys and rats, insect predators and parasites, microbial flora, etc. • State the appropriate preventive measures to be taken to protect the lac crop from pest and disease infestation. • Discuss the relevant mechanical, chemical, and biological control measures to remove pest and disease infestation from the lac crop and host trees. • Explain the use of relevant plant protection equipment and the appropriate precautions to be taken while applying pesticides and other harmful chemicals. • State pests and diseases specific to different agro-climatic regions, their life cycle, and various sources of infection for lac crop. 	<ul style="list-style-type: none"> • Demonstrate how to cover the bundle of brood lac in a synthetic net bag/pouch to prevent enemy insect infestation during the inoculation stage of lac cultivation. • Demonstrate the process of applying the recommended pesticides at the recommended intervals after inoculation to protect the lac crop from fungal infestation and insect attacks.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Respiratory Masks, Pruning knife, Pruning Saw, Paddy straw, Synthetic net/pouch, Rope, Pump, Rocking sprayer, Fire Extinguisher, Scraping knife or pedal-operated lac scraper, Roll cut or French Secateurs, Long-handled tree pruners, Pruning shear, Plastic sheet, 60 mesh nylon net, Bucket, Safety Shoes, First aid box, Rubber gloves, Installed Video camera with high resolution and recording facility, Helmet	

Module 6: Process of undertaking harvesting and post-harvest processing of lac

Mapped to AGR/N6125 v2.0

Terminal Outcomes:

- Describe the process of harvesting the lac.
- Describe the process of undertaking post-harvest processing of lac.

Duration: 30:00	Duration: 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the difference between active and inactive brood lac. • Explain the basic components of stick lac, i.e. lac resin, lac wax, and lac dye. • Elucidate the basic nature of lac, i.e. soluble, resistive and adhesive. • State the indicators to determine if lac is ready for harvesting. • Describe the process of harvesting lac and the use of relevant harvesting tools and implements. • Elucidate the appropriate precautions to be taken during harvesting to maintain the quality of harvested lac. • Discuss the appropriate safe working practices for harvesting lac. • Explain different quality parameters of lac, i.e. colour, density, etc. • Describe different post-harvest processing methods for lac. • State the appropriate conditions required to process lac. • State the appropriate packing material to be used to pack the processed lac. • Explain the uses of lac in different industries, e.g. paints, electricals, automobiles, cosmetics, adhesives, leather, varnishing and polishing, food processing, pharmaceutical, printing, manufacturing, textiles, etc. 	<ul style="list-style-type: none"> • Demonstrate how to remove brood lac twigs used for inoculation and the used brood lac after the complete emergence of lac nymphs from female cells. • Show how to collect mature lac from the host twigs. • Demonstrate the process of carrying out partial harvesting when surplus brood lac is on the host tree, and the appropriate number of branches is available on the tree for the next generation. • Show how to scrap lac resin encrustation from the harvested brood lac twigs using a scraping knife and protect it from sunlight. • Demonstrate how to grind the scraped lac in the hard stone mill. • Show how to wash lac with cold water to remove the fine dirt particles and colour. • Demonstrate the process of carrying out melting of lac under the recommended temperature, mixing appropriate colours as per the requirement. • Demonstrate the process of sieving the melted lac through cloth and carrying out moulding to give it an appropriate shape as per the requirement.
Classroom Aids	

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

Tools, Equipment and Other Requirements

Respiratory Masks, Pruning knife, Pruning Saw, Paddy straw, Synthetic net/pouch, Rope, Pump, Rocking sprayer, Fire Extinguisher, Scraping knife or pedal-operated lac scraper, Roll cut or French Secateurs, Long-handled tree pruners, Pruning shear, Plastic sheet, 60 mesh nylon net, Bucket, Safety Shoes, First aid box, Rubber gloves, Installed Video camera with high resolution and recording facility, Helmet

Module 7: Hygiene and cleanliness

Mapped to NOS AGR/N9903 v3.0

Terminal Outcomes:

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

Duration: 02:00	Duration: 10:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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 8: 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: 03:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Check various areas of the workplace for leakages, water-logging, pests, fire, etc. • Demonstrate how to safely use the PPE and implement 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 9: Employability Skills

Mapped to NOS DGT/VSQ/N0101 v1.0

Duration: 30:00

Key Learning Outcomes

Introduction to Employability Skills Duration: 1 Hour

After completing this programme, participants will be able to:

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

Constitutional values - Citizenship Duration: 1 Hour

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

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

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

Basic English Skills Duration: 2 Hours

6. Use appropriate basic English sentences/phrases while speaking

Communication Skills Duration: 4 Hour

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

Diversity & Inclusion Duration: 1 Hour

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

Financial and Legal Literacy Duration: 4 Hours

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

Essential Digital Skills Duration: 3 Hours

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

Entrepreneurship Duration: 7 Hours

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

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Customer Service Duration: 4 Hours

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

19. Discuss the significance of maintaining hygiene and dressing appropriately

Getting ready for apprenticeship & Jobs Duration: 2 Hours

20. Create a biodata

21. Use various sources to search and apply for jobs

22. Discuss the significance of dressing up neatly and maintaining hygiene for an interview

23. Discuss how to search and register for apprenticeship opportunities

Module 10: On-the-Job Training

Mapped to Lac Cultivator

Mandatory Duration: 30:00	Recommended Duration: 00:00
Location: On-Site	
<p>Terminal Outcomes</p> <ul style="list-style-type: none"> • Explain the agro-climatic conditions appropriate for raising host trees and producing lac. • Sow the host tree seeds following an appropriate sowing method, such as broadcasting, dibbling, drilling, etc. • Host tree saplings in the prepared pits at the recommended depth, ensuring no damage to them. • Carry out pruning to the recommended extent, avoiding excessive pruning to maintain the health and strength of host trees. • Use the harvested brood lac for inoculation within the recommended duration. • Apply the recommended pesticides at the recommended intervals after inoculation to protect the lac crop from fungal infestation and insect attacks. • Carry out partial harvesting when surplus brood lac is on the host tree, and the appropriate number of branches is available on the tree for the next generation. • Carry out melting of lac under the recommended temperature, mixing appropriate colours as per the requirement. 	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
12th Class	Class 12th with Science Stream (With any Government Certificate Program in Lac Cultivation)	6	Lac Cultivation	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	Diploma in Agriculture	3	Lac Cultivation	0		
Graduate	Graduate	3	Lac Cultivation	0		For the school Program minimum qualification of the Trainer should be Graduate. Their Teaching experience will be considered industry experience
Graduate	Graduate (Agriculture / Horticulture / Botany/ Forestry)	0.5	Lac Cultivation	0		
Certificate	NSQF (Level-3) In the relevant field	2	Lac Cultivation	0		

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role “ Lac Cultivator ”, mapped to QP: “AGR/Q6105, v2.0”, Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: “Trainer (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, v2.0”. The minimum accepted score as per MEPSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduation	B.Sc. (Agriculture/ Botany/ Zoology/ Forestry/ Horticulture and related streams)	5	Lac cultivation practices and other related experience	0		Practical skills and knowledge required in Lac cultivation practices
Post-Graduation	M.Sc. (Botany/ Forestry/ Zoology / Botany/ Horticulture/ Agroforestry and related streams)	2	Lac cultivation practices and other related experience	0		Practical skills and knowledge required in Lac cultivation practices
PhD	PhD (Botany/ Forestry/ Zoology/ Horticulture/ Agroforestry and related streams)	1	Lac cultivation practices and other related experience	0		Practical skills and knowledge required in Lac cultivation practices

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role “ Lac Cultivator ”, mapped to QP: “AGR/Q6105, v2.0”, Minimum accepted score is 80%	Certified for the Job Role: “Assessor (Vet and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0”, with a minimum score of 80%.

Assessment Strategy

Assessment System Overview

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

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

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

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

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

Testing Environment

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

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

- Multilingual assessments (ASCI is conducting the assessments in 13 + languages pan India)
- Rubric driven assessments in Practical/Viva sections and responses recorded accordingly
- All responses, data, records and feedback 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 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 tool 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 assessor and proctor is 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 candidate 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	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	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
NOS	National Occupational Standard (s)
NSQF	National Skills Qualifications Framework
OJT	On-the-job Training
QP	Qualifications Pack
PwD	People with Disability
PPE	Personal Protective Equipment