Technician-Coir Grow Media

QP Code: AGR/Q0508

Version: 2.0

NSQF Level: 4

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AGR/Q0508: Technician-Coir Grow Media

Brief Job Description

Technician-Coir Grow Media prepares grow media based on coir pith and coir fibre for agriculture and horticulture crops. The individual possesses skills to operate and maintain appropriate machineries in coir industrial units. The individual is responsible for setting up and standardising processing methods, monitoring daily production, quality control, storage and logistics of coir based grow-media.

Personal Attributes

The individual must be physically fit to work for extended durations both indoor and outdoor with the ability to make appropriate decisions independently. The person must have strong verbal and written communication skills to interact with various stakeholders. Analytical and problem-solving skills are the other important requirements in this job role.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. AGR/N0537: Prepare for and carry out coir fibre extraction

2. AGR/N0538: Carryout relevant operation and maintenance activity

3. AGR/N0539: Prepare the machineries for Coir Grow Media Production operation

4. AGR/N0540: Carry out Coir Pith Extraction, Processing and composting

5. AGR/N0541: Prepare Value Added Coir Pith and Coir Grow Media for diversified commercial use

6. AGR/N0542: Carry out documentation and record-keeping

7. AGR/N0544: Maintain health and general Industrial safety at the workplace

8. DGT/VSQ/N0102: Employability Skills (60 Hours)

Qualification Pack (QP) Parameters

Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Plantation Crops Cultivation

Country	India
NSQF Level	4
Credits	13
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL
Minimum Educational Qualification & Experience	12th grade Pass OR Completed 2nd year of the 3-year diploma after 10 (and pursuing regular diploma) OR 10th grade pass (plus 2-year NTC) OR 10th grade pass (plus 1-year NTC plus 1 year NAC) OR 8th grade pass with 2 year NTC plus 1 year NAC plus 1 year CITS OR 10th grade pass and pursuing continuous schooling OR 10th grade pass with 2 Years of experience relevant experience OR Previous relevant Qualification of NSQF Level (Level 3.0 with minimum education as 8th Grade pass) with 3 Years of experience relevant experience OR Previous relevant Qualification of NSQF Level (Level 3.5 with 1.5- year relevant experience)
Minimum Level of Education for Training in School	10th Class
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	25/08/2025
NSQC Approval Date	25/08/2022
Version	2.0
Reference code on NQR	QG-04-AG-00288-2023-V1.1-ASCI
NQR Version	1.1

AGR/N0537: Prepare for and carry out coir fibre extraction

Description

This OS unit is about the processes involved in the manufacture of coir fibre and separation of coir pith which is a by-product of coir fibre extraction

Scope

The scope covers the following :

- Carry out coir fibre extraction and raw coir pith separation
- Perform operations and logistics management function
- Ensure quality control of different grades of coir fibre

Elements and Performance Criteria

Carry out coir fibre extraction and raw coir pith separation

To be competent, the user/individual on the job must be able to:

PC1.   • Carry out machinery preparation for coir fibre extraction
- a. Busters
- b. Decorticators
- c. Husk Bunkers
- d. Continuous Auto-feeders
- e. Conveyors
- f. Defibring machines – With Drum Combers
- g. Different types of filters for fibre and raw pith separation

PC2.   • Carry out preparation of raw materials
- a. Retting
- b. Crushing

PC3.   • Carry out fibre extraction using different types of extraction processes
- a. Mixed White fibre
- b. Mixed Brown Fibre
- c. Retted Bristle Fibre

PC4.   Carry out separation of coir pith through different filters

Ensure quality control of coir and raw pith

To be competent, the user/individual on the job must be able to:

PC5.   check the quality of coconut husk

PC6.   categorize the coir fibers based on their source – dry and fresh husk fibre

PC7.   • categorise and separate fibre based on length through
- a. Combing method
- b. Turbo processing
- c. Use of filters

PC8.   understand turbo cleaning of coir fibre for quality improvement

PC9.   perform retting carefully so that environmental pollution and occupational health hazard can be minimized and for ensuring the quality

PC10. carry out Quality Improvement of Coir Fibre by a successful cleaner, faster, eco-friendly technology which is zero effluent and cost-effective process

Perform operations and logistics management functions

To be competent, the user/individual on the job must be able to:

PC11. aggregate coconut husks in accordance with local practices from farms

PC12. • measure, determine and confirm quantity of husks procured
- a. Counting coconut husks
- b. Volume estimation
- c. Weight based measuring techniques

PC13. carry out production planning and scheduling

PC14. carrying out manpower estimation for production

PC15. ensure safe and economical storage of inventory, information, etc., within a specified area for carrying out operations

PC16. check for availability of necessary inventory management system for carrying out necessary operation form extraction to final product preparations

PC17. keep operations costs to a minimum as per organizational requirements

PC18. follow industry best practices for receiving, quality assessment, stocking, stock measurement, inventory management, batch planning, stock replenishment, loading and shipping

PC19. find the best mode and rate for transportation of any type of shipment

PC20. be conversant with calculations for optimising space utilisation and loading practices on vehicles, pallets, shipping containers etc.

PC21. use technology driven systems for real time location tracking

PC22. control the inbound and outbound of inventory to minimize losses and maximize profits

PC23. ensure proper and safe material handling and transportation by suitable transportation means

PC24. operate and maintain various material handling equipment used in coir pith manufacturing

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. agronomic practices and principle of coconut farming

KU2. coconut farming in India - basic statistics, production and marketing

KU3. practices in aggregation and processing of coconut husks

KU4. basic understanding of coconut and coconut husk properties, specifications and quality

KU5. many different coconut products

KU6. chemical composition of coconut husk and its ingredients - coir fibre and coir pith

KU7. Retting process

KU8. coir fibre extraction -Mixed White Fibre, Mixed Brown Fibre, Bristle Coir

KU9. differences in coir pith produced using different types of extraction processes

KU10. analyse and interpret basic statistics in production and marketing of coconut and coconut husk

KU11. types of loaders, use of hoes, tractors, tow trucks, tippers and their applications, tractor loaders, Back Hoe Loaders and Fork lifts and their uses

KU12. loadability calculations for coconut husk, different grades of fibre, loose pith, blocks, container loadability calculations

KU13. use of palettes

KU14. costing methods for transportation

KU15. best practices in documentation for domestic logistics

KU16. essential Areas for an Integrated Logistics System

KU17. features of a Transportation Management System like rating, booking and tracking

KU18. basics of Warehouse Management System, Transportation Management System, Real-time Location System, Inventory Management System, etc.

KU19. process of coir fibre extraction

KU20. process of quality improvements of coir fibre

KU21. method of categorization of coir fibre

KU22. operation and maintenance of different coir fibre machinery

KU23. process of Biochemical treatment for quality improvement

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. prepare work-related records and notes

GS2. listen attentively to understand the client/ customer requirements

GS3. plan and prioritise tasks for efficient time-management

GS4. take quick decisions to deal with workplace emergencies/ accidents

GS5. communicate politely and professionally with clients and colleagues

GS6. identify possible disruptions to work and take preventive measures

GS7. read the relevant literature to get latest updates about the field of work

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out coir fibre extraction and raw coir pith separation	5	5	-	5
PC1. • Carry out machinery preparation for coir fibre extraction • a. Busters • b. Decorticators • c. Husk Bunkers • d. Continuous Auto-feeders • e. Conveyors • f. Defibring machines – With Drum Combers • g. Different types of filters for fibre and raw pith separation	-	-	-	-
PC2. • Carry out preparation of raw materials • a. Retting • b. Crushing	-	-	-	-
PC3. • Carry out fibre extraction using different types of extraction processes • a. Mixed White fibre • b. Mixed Brown Fibre • c. Retted Bristle Fibre	-	-	-	-
PC4. Carry out separation of coir pith through different filters	-	-	-	-
Ensure quality control of coir and raw pith	5	5	-	10
PC5. check the quality of coconut husk	-	-	-	-
PC6. categorize the coir fibers based on their source – dry and fresh husk fibre	-	-	-	-
PC7. • categorise and separate fibre based on length through • a. Combing method • b. Turbo processing • c. Use of filters	-	-	-	-
PC8. understand turbo cleaning of coir fibre for quality improvement	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9. perform retting carefully so that environmental pollution and occupational health hazard can be minimized and for ensuring the quality	-	-	-	-
PC10. carry out Quality Improvement of Coir Fibre by a successful cleaner, faster, eco-friendly technology which is zero effluent and cost-effective process	-	-	-	-
Perform operations and logistics management functions	**5**	**10**	**-**	**10**
PC11. aggregate coconut husks in accordance with local practices from farms	-	-	-	-
PC12. • measure, determine and confirm quantity of husks procured • a. Counting coconut husks • b. Volume estimation • c. Weight based measuring techniques	-	-	-	-
PC13. carry out production planning and scheduling	-	-	-	-
PC14. carrying out manpower estimation for production	-	-	-	-
PC15. ensure safe and economical storage of inventory, information, etc., within a specified area for carrying out operations	-	-	-	-
PC16. check for availability of necessary inventory management system for carrying out necessary operation form extraction to final product preparations	-	-	-	-
PC17. keep operations costs to a minimum as per organizational requirements	-	-	-	-
PC18. follow industry best practices for receiving, quality assessment, stocking, stock measurement, inventory management, batch planning, stock replenishment, loading and shipping	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC19. find the best mode and rate for transportation of any type of shipment	-	-	-	-
PC20. be conversant with calculations for optimising space utilisation and loading practices on vehicles, pallets, shipping containers etc.	-	-	-	-
PC21. use technology driven systems for real time location tracking	-	-	-	-
PC22. control the inbound and outbound of inventory to minimize losses and maximize profits	-	-	-	-
PC23. ensure proper and safe material handling and transportation by suitable transportation means	-	-	-	-
PC24. operate and maintain various material handling equipment used in coir pith manufacturing	-	-	-	-
NOS Total	**15**	**20**	**-**	**25**

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0537
NOS Name	Prepare for and carry out coir fibre extraction
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Plantation Crops Cultivation
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	25/08/2025
NSQC Clearance Date	25/08/2022

AGR/N0538: Carryout relevant operation and maintenance activity

Description

This OS unit is about carrying out relevant operation and maintenance activity in coir pith manufacturing

Scope

The scope covers the following :

- Perform basic Operations Management
- Carryout Basic Mechanical Maintenance
- Carryout Basic Electrical Maintenance

Elements and Performance Criteria

Perform basic Operations Management

To be competent, the user/individual on the job must be able to:

PC1.   adhere to best practices in coir pith manufacturing

PC2.   carryout production planning and select appropriate planning techniques

PC3.   collect production performance reports

PC4.   manage inventory and follow best practices and techniques of inventory management

PC5.   implement lean manufacturing practices

Carryout Basic Mechanical Maintenance

To be competent, the user/individual on the job must be able to:

PC6.   follow relevant procedures for installation and commissioning of machinery

PC7.   create necessary engineering drawings and layouts

PC8.   carryout lubrication – oil grades, greases and general industrial lubricants as per requirements

PC9.   carry out dismantling of machinery and equipment parts, cleaning and inspection of various components as per the instruction given in the manuals

PC10.   carry out hand painting and spray painting of machine components

PC11.   carry out sanding and buffing of machine components

PC12.   carryout general maintenance of hand tools and power tools – Hand drills, angle grinders, polishers

PC13.   utilize Pneumatic tools while carrying out basic repairs and maintenance

PC14.   carryout Arc Welding as per requirements

PC15.   undertake different maintenance strategies appropriately and timely like – Run to Failure, Preventive, Predictive, Condition Based

PC16.   implement a preventive maintenance programme as per requirement in time

PC17.   carry out troubleshooting as and when required on a regular basis

Carryout basic electrical maintenance

To be competent, the user/individual on the job must be able to:

PC18. handle power supply issues at workplace carefully and safely in time

PC19. operate diesel generators as per requirements

PC20. ensure 3 phase power supply components are functional

PC21. ensure all the fuses are well connected

PC22. carryout operation and maintenance of switches and relays

PC23. use hand tools in electrical maintenance

PC24. use multi meter, clamp meter and other equipment as per requirement

PC25. carryout soldering as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. basic Arithmetic concepts like calculations, ratio, proportions, area and volume calculations for different shapes, trigonometry, BODMAS, basic algebra, practical work place applications

KU2. basic Physics concepts like Force, mass, volume, acceleration, density, temperature, boiling, evaporation, units of measurement, role of moisture, moisture measurement, physical properties of plant materials

KU3. basic Chemistry concepts like Acids, bases and salts, commonly used acids, commonly used bases, strength of acids and bases, pH scale and measurement, common salt, sodium hydroxide, washing soda, baking soda, hydrogen peroxide, acetic acid, soaps and detergents, electrical conductivity, types of mixtures and solutions, ions and ion exchange, physical and chemical changes, chemical properties of plant materials.

KU4. best practices in coir pith manufacturing

KU5. basics of production planning and planning techniques

KU6. basics of inventory management and inventory management techniques

KU7. concept of lean manufacturing and their applications

KU8. best practices in the maintenance and upkeep of commonly used electrical components in coir industry - 3 phase power, power consumption calculations, motors, power factor, starters, industrial switch gears and relays

KU9. general maintenance hand tools and power tools - Hand drills, angle grinders, polishers

KU10. use of pneumatic tools

KU11. arc Welding

KU12. dismantling and cleaning of tools and equipment

KU13. different maintenance strategies - Run to Failure, Preventive, Predictive, Condition Based

KU14. process to implement a preventive maintenance programme.

KU15. procedures for installation and commissioning of machinery

KU16. engineering drawings and layouts

KU17. lubrication - oil grades - transmission oil, greases, and general industrial lubricants

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. prepare work-related records and notes

GS2. listen attentively to understand the client/ customer requirements

GS3. plan and prioritise tasks for efficient time-management

GS4. take quick decisions to deal with workplace emergencies/ accidents

GS5. communicate politely and professionally with clients and colleagues

GS6. identify possible disruptions to work and take preventive measures

GS7. read the relevant literature to get latest updates about the field of work

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Perform basic Operations Management	**5**	**5**	**-**	**5**
PC1. adhere to best practices in coir pith manufacturing	-	-	-	-
PC2. carryout production planning and select appropriate planning techniques	-	-	-	-
PC3. collect production performance reports	-	-	-	-
PC4. manage inventory and follow best practices and techniques of inventory management	-	-	-	-
PC5. implement lean manufacturing practices	-	-	-	-
Carryout Basic Mechanical Maintenance	**5**	**5**	**-**	**5**
PC6. follow relevant procedures for installation and commissioning of machinery	-	-	-	-
PC7. create necessary engineering drawings and layouts	-	-	-	-
PC8. carryout lubrication – oil grades, greases and general industrial lubricants as per requirements	-	-	-	-
PC9. carry out dismantling of machinery and equipment parts, cleaning and inspection of various components as per the instruction given in the manuals	-	-	-	-
PC10. carry out hand painting and spray painting of machine components	-	-	-	-
PC11. carry out sanding and buffing of machine components	-	-	-	-
PC12. carryout general maintenance of hand tools and power tools – Hand drills, angle grinders, polishers	-	-	-	-
PC13. utilize Pneumatic tools while carrying out basic repairs and maintenance	-	-	-	-
PC14. carryout Arc Welding as per requirements	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC15. undertake different maintenance strategies appropriately and timely like – Run to Failure, Preventive, Predictive, Condition Based	-	-	-	-
PC16. implement a preventive maintenance programme as per requirement in time	-	-	-	-
PC17. carry out troubleshooting as and when required on a regular basis	-	-	-	-
Carryout basic electrical maintenance	**5**	**5**	**-**	**5**
PC18. handle power supply issues at workplace carefully and safely in time	-	-	-	-
PC19. operate diesel generators as per requirements	-	-	-	-
PC20. ensure 3 phase power supply components are functional	-	-	-	-
PC21. ensure all the fuses are well connected	-	-	-	-
PC22. carryout operation and maintenance of switches and relays	-	-	-	-
PC23. use hand tools in electrical maintenance	-	-	-	-
PC24. use multi meter, clamp meter and other equipment as per requirement	-	-	-	-
PC25. carryout soldering as per requirement	-	-	-	-
NOS Total	**15**	**15**	**-**	**15**

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0538
NOS Name	Carryout relevant operation and maintenance activity
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Plantation Crops Cultivation
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	25/08/2025
NSQC Clearance Date	25/08/2022

AGR/N0539: Prepare the machineries for Coir Grow Media Production operation

Description

This OS unit is about carrying out preparations for the operation of various machinery involved in coir grow-media production

Scope

The scope covers the following :

- Prepare to carry out repair and maintenance
- Oversee repair and maintenance activities

Elements and Performance Criteria

Prepare to carry out repair and maintenance

To be competent, the user/individual on the job must be able to:

PC1. identify the repair and maintenance needs of the machineries such as broken nut, bolts etc.

PC2. organise manufacturer-approved spare parts, tools and equipment to carry out repair and maintenance

PC3. follow the instructions given in the operator's manual to carry out repair and maintenance

Oversee repair and maintenance activities

To be competent, the user/individual on the job must be able to:

PC4. ensure that all the machineries required for carrying out operations while Coir Grow Media Production is functioning properly

PC5. ensure that machineries are cleaned or replaced as per the maintenance schedule

PC6. ensure refilling of the engine, transmission and, hydraulic, oil of the correct grade if these are below the recommended level

PC7. ensure all machine components are well lubricated

PC8. ensure that maintenance of coir grow-media machinery, Coir Pith Block Machine Fibre cutting machines, Coir Grow Slab Machine, Coir Pot extruders, Stone removers, Husk chips machine etc. have been carried out as per schedule

PC9. maintain the record of repair and maintenance

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. principles and operation of Coir Pith Block Machine

KU2. usage of filters for pith sorting and grading

KU3. usage of stone conveyors

KU4. usage of conveyors

KU5. usages of Hydraulic and pneumatic presses

KU6. science of hydraulic and pneumatic systems, necessary calculations

KU7. understanding of instrumentation in hydraulic and pneumatic systems

KU8. operations, functions and maintenance of Fibre cutting machines, Coir Grow Slab Machine, Coir Pot extruders, Stone removers, Husk chips machine etc.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. prepare work-related records and notes

GS2. listen attentively to understand the client/ customer requirements

GS3. plan and prioritise tasks for efficient time-management

GS4. take quick decisions to deal with workplace emergencies/ accidents

GS5. communicate politely and professionally with clients and colleagues

GS6. identify possible disruptions to work and take preventive measures

GS7. read the relevant literature to get latest updates about the field of work

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare to carry out repair and maintenance	**5**	**5**	**-**	**5**
PC1. identify the repair and maintenance needs of the machineries such as broken nut, bolts etc.	-	-	-	-
PC2. organise manufacturer-approved spare parts, tools and equipment to carry out repair and maintenance	-	-	-	-
PC3. follow the instructions given in the operator's manual to carry out repair and maintenance	-	-	-	-
Oversee repair and maintenance activities	**5**	**5**	**-**	**5**
PC4. ensure that all the machineries required for carrying out operations while Coir Grow Media Production is functioning properly	-	-	-	-
PC5. ensure that machineries are cleaned or replaced as per the maintenance schedule	-	-	-	-
PC6. ensure refilling of the engine, transmission and, hydraulic, oil of the correct grade if these are below the recommended level	-	-	-	-
PC7. ensure all machine components are well lubricated	-	-	-	-
PC8. ensure that maintenance of coir grow-media machinery, Coir Pith Block Machine Fibre cutting machines, Coir Grow Slab Machine, Coir Pot extruders, Stone removers, Husk chips machine etc. have been carried out as per schedule	-	-	-	-
PC9. maintain the record of repair and maintenance	-	-	-	-
NOS Total	**10**	**10**	**-**	**10**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0539
NOS Name	Prepare the machineries for Coir Grow Media Production operation
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Plantation Crops Cultivation
NSQF Level	4
Credits	1
Version	1.0
Last Reviewed Date	NA
Next Review Date	25/08/2025
NSQC Clearance Date	25/08/2022

AGR/N0540: Carry out Coir Pith Extraction, Processing and composting

Description

This OS unit is about the process of carrying out Coir Pith Extraction, Processing, and composting

Scope

The scope covers the following :

- Carry out Coir Pith Extraction and Processing
- Carry out Coir Pith Composting

Elements and Performance Criteria

Carry out Coir Pith Extraction and Processing

To be competent, the user/individual on the job must be able to:

PC1. separate coir pith from coir fibre

PC2. collect and aggregate the coir pith adhering to recommended principles safely

PC3. carry out coir pith washing and drying using suitable techniques and adhering to best practices

PC4. estimate labour and energy consumption while carrying out Coir Pith Extraction and Processing

PC5. perform the activities as per quality control processes and procedures

PC6. • use appropriate machinery and tools for yard drying and packing of coir pith
  • a. Pith spreaders
  • b. Rotovators
  • c. Other advanced systems for yard drying

PC7. carry out coir pith buffering process appropriately as per recommended duration to have required ion exchange for coir pith

PC8. carry out pith grading by using appropriate filters

PC9. use suitable Conveyors to move products, create buffers and deliver products in sequence for a production line

PC10. test the properties and control metrics of coir pith like pH, air filled porosity, expansion, electrical conductivity etc.

Carry out Coir Pith Composting

To be competent, the user/individual on the job must be able to:

PC11. check the availability of sufficient raw materials like raw Coir pith, Spawn bags, spent mushroom substrates, bio gas slurry, soil etc. are available for carrying out composting process

PC12. ensure availability of proper quantity of coir pith having required properties for carrying out composting

PC13. ensure having all the characteristics which makes Coir pith a highly potential resource if utilized post composting

PC14. check the availability of suitable place to carry out composting so that composting process can be prevented from direct sun light and heavy rain

PC15. follow relevant technology for bioconversion of coir pith into Coir Pith Organic Manure (C-POM)

PC16. carryout composting process using microorganisms capable of degrading lignin and polyphenols and bringing down C: N ratio which will make Coir pith suitable for use in agri-horticulture

PC17. utilize appropriate spent Mushroom Sub- strate (SMS) of edible mushrooms after cultivation as a co-composting material in the coir pith compost

PC18. analyse the physio-chemical properties such as organic carbon (%), pH, EC, potassium (%), calcium (%), manganese (ppm), and copper (ppm) before and after inoculation of SMS

PC19. check the nutrient availability in coir pith and their characteristics which make it ideal for use as a mulch and soil amendment

PC20. carryout process of sandwiching of composing input materials appropriately to required height for efficient and effective composting

PC21. sprinkle water on the heap optimally to maintain sufficient moisture required and allow the heap to decompose as per recommended days for accelerated composting of Coir Pith

PC22. check and ensure availability of acceptable Electrical Conductivity (EC), pH, and Cation Exchange Capacity (CEC).

PC23. check the characteristics and nutrients post composting which makes coco peat an ideal soil amendment and component of soilless container media for commercial horticultural plants.

PC24. check the usability of Coco peat obtained post composting in propagation methods, hardening of tissue and embryo cultured plants, hydroponic system of plant cultivation, cultivation of glass house plants, soil conditioning, lawn making etc.

PC25. carry out composting of Coir Pith for substituting urea with natural supplements using recommended methods

PC26. undertake necessary measures to avoid problem of accumulating coir pith in the coir fibre extraction units

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. basic Agronomic Principles and package of practices of agriculture and horticulture crops production

KU2. plant Nutrients - Micro and Macro Nutrients

KU3. weed Management

KU4. basics of Soil Science and Grow-Media

KU5. types of Soils and their relevance for different crops

KU6. principles and practices in soil and grow-media fertility and nutrient management

KU7. ion exchange and its role in grow-media preparation

KU8. composition structure and properties of coir pith depending on maturity of coconut, method of extraction and disposal, period between extraction and use and environmental factors

KU9. Economic value of coir pith and their uses in commercial horticultural plants

KU10. Different techniques for coir pith composting - conventional methods, hillock, and modified hillock method, layering and sandwiching techniques

KU11. advantages and disadvantages of different techniques for coir pith composting

KU12. manufacturing process of Coir Pith Organic Manure (C-POM)

KU13. advantages and properties of C-POM

KU14. nutrient Status and technical specification of C-POM

KU15. prospects of C-POM in the domestic market

KU16. dosage (per annum) for application of C-POM on different crops

KU17. difference in coir pith from different types of extraction processes

KU18. techniques and best practices in washing coir pith

KU19. techniques and best practices in drying coir pith

KU20. process of testing of properties and control metrics of coir pith - pH, air-filled porosity, expansion, electrical conductivity

KU21. collection and aggregation practices in coir pith

KU22. different procedures in carrying out coir pith washing using different techniques, resource estimates, labour and energy consumption, quality control processes and procedures

KU23. polyhouse drying of coir pith

KU24. usage of different types of rotovators

KU25. use of washing tanks and concrete drying yards

KU26. application of different materials for drying yard surfaces

KU27. machinery and tools for yard drying and packing of coir pith

KU28. coir pith buffering process

KU29. practices and procedures in blending nutrient mixes

KU30. environmental impact due to of Coir pith hillocks

KU31. utilization of coir pith for organic farming in agri-horticulture

KU32. coir pith supplemented with natural nitrogen sources as a substitute of urea

KU33. moisture retention capacity of coir pith

KU34. proper and safe waste disposal

KU35. waste segregation into categories

KU36. use of coir pith in horticulture as a soil conditioner, surface mulch/rooting medium and desiccant

KU37. acceptable Electrical Conductivity (EC), pH and Cation Exchange Capacity (CEC)

KU38. export Potential of Coir Pith

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. prepare work-related records and notes

GS2. listen attentively to understand the client/ customer requirements

GS3. plan and prioritise tasks for efficient time-management

GS4. take quick decisions to deal with workplace emergencies/ accidents

GS5. communicate politely and professionally with clients and colleagues

GS6. identify possible disruptions to work and take preventive measures

GS7. read the relevant literature to get latest updates about the field of work

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out Coir Pith Extraction and Processing	**10**	**10**	**-**	**10**
PC1. separate coir pith from coir fibre	-	-	-	-
PC2. collect and aggregate the coir pith adhering to recommended principles safely	-	-	-	-
PC3. carry out coir pith washing and drying using suitable techniques and adhering to best practices	-	-	-	-
PC4. estimate labour and energy consumption while carrying out Coir Pith Extraction and Processing	-	-	-	-
PC5. perform the activities as per quality control processes and procedures	-	-	-	-
PC6. • use appropriate machinery and tools for yard drying and packing of coir pith • a. Pith spreaders • b. Rotovators • c. Other advanced systems for yard drying	-	-	-	-
PC7. carry out coir pith buffering process appropriately as per recommended duration to have required ion exchange for coir pith	-	-	-	-
PC8. carry out pith grading by using appropriate filters	-	-	-	-
PC9. use suitable Conveyors to move products, create buffers and deliver products in sequence for a production line	-	-	-	-
PC10. test the properties and control metrics of coir pith like pH, air filled porosity, expansion, electrical conductivity etc.	-	-	-	-
Carry out Coir Pith Composting	**10**	**10**	**-**	**10**
PC11. check the availability of sufficient raw materials like raw Coir pith, Spawn bags, spent mushroom substrates, bio gas slurry, soil etc. are available for carrying out composting process	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. ensure availability of proper quantity of coir pith having required properties for carrying out composting	-	-	-	-
PC13. ensure having all the characteristics which makes Coir pith a highly potential resource if utilized post composting	-	-	-	-
PC14. check the availability of suitable place to carry out composting so that composting process can be prevented from direct sun light and heavy rain	-	-	-	-
PC15. follow relevant technology for bioconversion of coir pith into Coir Pith Organic Manure (C-POM)	-	-	-	-
PC16. carryout composting process using microorganisms capable of degrading lignin and polyphenols and bringing down C: N ratio which will make Coir pith suitable for use in agri- horticulture	-	-	-	-
PC17. utilize appropriate spent Mushroom Sub-strate (SMS) of edible mushrooms after cultivation as a co-composting material in the coir pith compost	-	-	-	-
PC18. analyse the physio-chemical properties such as organic carbon (%), pH, EC, potassium (%), calcium (%), manganese (ppm), and copper (ppm) before and after inoculation of SMS	-	-	-	-
PC19. check the nutrient availability in coir pith and their characteristics which make it ideal for use as a mulch and soil amendment	-	-	-	-
PC20. carryout process of sandwiching of composing input materials appropriately to required height for efficient and effective composting	-	-	-	-
PC21. sprinkle water on the heap optimally to maintain sufficient moisture required and allow the heap to decompose as per recommended days for accelerated composting of Coir Pith	-	-	-	-
PC22. check and ensure availability of acceptable Electrical Conductivity (EC), pH, and Cation Exchange Capacity (CEC).	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC23. check the characteristics and nutrients post composting which makes coco peat an ideal soil amendment and component of soilless container media for commercial horticultural plants.	-	-	-	-
PC24. check the usability of Coco peat obtained post composting in propagation methods, hardening of tissue and embryo cultured plants, hydroponic system of plant cultivation, cultivation of glass house plants, soil conditioning, lawn making etc.	-	-	-	-
PC25. carry out composting of Coir Pith for substituting urea with natural supplements using recommended methods	-	-	-	-
PC26. undertake necessary measures to avoid problem of accumulating coir pith in the coir fibre extraction units	-	-	-	-
NOS Total	**20**	**20**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0540
NOS Name	Carry out Coir Pith Extraction, Processing and composting
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Plantation Crops Cultivation
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	25/08/2025
NSQC Clearance Date	25/08/2022

AGR/N0541: Prepare Value Added Coir Pith and Coir Grow Media for diversified commercial use

Description

This OS unit is about preparation of Value-Added Coir Pith and Coir Grow Media for diversified commercial use

Scope

The scope covers the following :

- Prepare Value Added Coir Pith and Coir Grow Media
- Adhere to ecological sustainability measures

Elements and Performance Criteria

Prepare Value Added Coir Pith and Coir Grow Media

To be competent, the user/individual on the job must be able to:

PC1. manufacture various value-added coir pith products viz. Coir Husk Chips, Coir Grow Poles, Coir Grow Slabs, Coir Grow Bags, Coir Seedling Coins, Coir Mulch Sheets, Coir Pots, Coir Grow Poles, Coir Pith Blocks and Discs, grow media for green walls and coco lawn, Amendment

PC2. prepare value-added products as per required formulation by client for hydroponics, tissue culture hardening etc.

PC3. prepare value-added products as per required formulation by client for hydroponics, tissue culture hardening etc.

PC4. prepare potting mixes for home gardening

PC5. prepare diversified commercial utility products of coir pith for utilization depending on its physical / chemical properties for application in field of Mulching effect to preserve the moisture and soil conditioning, Organic manure (Compost), Activated carbon, Bio-gas production, Mushroom cultivation, Wetting agent, Potting mixture for seedling growth, Erosion control, Adhesion compounds in pesticides, fertilizers, Dispersing agent etc.

PC6. customize the Coir-Grow Media as per client requirements

Adhere to ecological sustainability measures

To be competent, the user/individual on the job must be able to:

PC7. analyse the environmental impact of Coir Pith Processing and best available remedies

PC8. treat waste water discharge from coir grow media units by appropriate methods

PC9. follow best practices and techniques for Particle and particulates management

PC10. segregate waste into different categories

PC11. dispose non-recyclable waste appropriately

PC12. ensure proper and safe waste disposal so that fire hazards, environmental problems and ground water contamination due to the release of tannins and phenolic compounds is minimized

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the manufacturing process for the value-added coir pith products like Coir Husk Chips, Coir Grow Poles, Coir Grow Slabs, Coir Grow Bags, Coir Seedling Coins, Coir Mulch Sheets, Coir Pots, Coir Grow Poles, grow media for green walls and coco lawn

KU2. coir Geotextiles for horticultural applications

KU3. coir pith for hydroponics - concepts and best practices

KU4. coir pith for tissue culture hardening - concepts and best practices

KU5. enriched coir grow media - synthetic and organic

KU6. preparation of potting mixes for home gardening

KU7. need based nutrient management and infusions in coir grow media

KU8. biological Treatments for Enhancing Rate of Composting of Coir Pith

KU9. scope for further value addition of coir pith and new ideas

KU10. basic concept of hydroponics

KU11. use of polyhouses for horticulture and floriculture - concepts and practice

KU12. modern nutrient management and fertigation techniques

KU13. advanced technologies for humidity and light control

KU14. modern horticultural systems - technologies and practices - software and integrated farm management systems

KU15. parameter of selection of coir pith for manufacturing of coco peat

KU16. qualities of coir pith has which recommend its use as a peat substitute

KU17. coir pith block and disc specifications

KU18. coir pith as a substitute for peat moss

KU19. advantages of Coir pith over Sphagnum peat

KU20. mulching for weed management and moisture retention

KU21. mulching for weed management and moisture retention

KU22. impact of waste water discharge from coir grow media units and treatment methods

KU23. particle and particulates management and techniques

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. prepare work-related records and notes

GS2. listen attentively to understand the client/ customer requirements

GS3. plan and prioritise tasks for efficient time-management

GS4. take quick decisions to deal with workplace emergencies/ accidents

GS5. communicate politely and professionally with clients and colleagues

GS6. identify possible disruptions to work and take preventive measures

GS7. read the relevant literature to get latest updates about the field of work

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare Value Added Coir Pith and Coir Grow Media	**10**	**10**	**-**	**10**
PC1. manufacture various value-added coir pith products viz. Coir Husk Chips, Coir Grow Poles, Coir Grow Slabs, Coir Grow Bags, Coir Seedling Coins, Coir Mulch Sheets, Coir Pots, Coir Grow Poles, Coir Pith Blocks and Discs, grow media for green walls and coco lawn, Amendment	-	-	-	-
PC2. prepare value-added products as per required formulation by client for hydroponics, tissue culture hardening etc.	-	-	-	-
PC3. prepare value-added products as per required formulation by client for hydroponics, tissue culture hardening etc.	-	-	-	-
PC4. prepare potting mixes for home gardening	-	-	-	-
PC5. prepare diversified commercial utility products of coir pith for utilization depending on its physical / chemical properties for application in field of Mulching effect to preserve the moisture and soil conditioning, Organic manure (Compost), Activated carbon, Bio-gas production, Mushroom cultivation, Wetting agent, Potting mixture for seedling growth, Erosion control, Adhesion compounds in pesticides, fertilizers, Dispersing agent etc.	-	-	-	-
PC6. customize the Coir-Grow Media as per client requirements	-	-	-	-
Adhere to ecological sustainability measures	**10**	**10**	**-**	**10**
PC7. analyse the environmental impact of Coir Pith Processing and best available remedies	-	-	-	-
PC8. treat waste water discharge from coir grow media units by appropriate methods	-	-	-	-
PC9. follow best practices and techniques for Particle and particulates management	-	-	-	-
PC10. segregate waste into different categories	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. dispose non-recyclable waste appropriately	-	-	-	-
PC12. ensure proper and safe waste disposal so that fire hazards, environmental problems and ground water contamination due to the release of tannins and phenolic compounds is minimized	-	-	-	-
NOS Total	**20**	**20**	**-**	**20**

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0541
NOS Name	Prepare Value Added Coir Pith and Coir Grow Media for diversified commercial use
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Plantation Crops Cultivation
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	25/08/2025
NSQC Clearance Date	25/08/2022

AGR/N0542: Carry out documentation and record-keeping

Description

This OS unit is about preparing relevant documents and maintaining records related to processes, inputs, produce, etc. involved in coir-based media preparation

Scope

The scope covers the following :

- document and maintain records

Elements and Performance Criteria

Document and maintain records

To be competent, the user/individual on the job must be able to:

PC1. maintain various records related to production, machine maintenance, and operations

PC2. maintain a record of coir-grow media production, production journals, timesheets, inventory, etc.

PC3. attendance maintenance – Preparing roster as per requirements of Directorate of Industrial Safety and Health

PC4. documents the Quality parameter of coir grow media production

PC5. keep in safe custody the accounting documents/records/resources provided by organization

PC6. prepare or create work related file manually or electronically as per the organization requirements

PC7. ensure the data is stored using the electronic system used by the organisation

PC8. carry out work-related documentation by seeking requisite information from a source or person

PC9. Write necessary official work-related notes

PC10. perform filing of supporting documents to maintain records

PC11. draft official letter and communication

PC12. review the records to ensure they are up to date

PC13. co-ordinate with the relevant personnel for the audit of the records

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. various Quality parameter of coir grow media production

KU2. production journals, time sheets, inventory

KU3. industrial Safety and Health records

KU4. basic accounting principle

KU5. creation of work-related file manually or electronically

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. prepare work-related records and notes

GS2. listen attentively to understand the client/ customer requirements

GS3. plan and prioritise tasks for efficient time-management

GS4. take quick decisions to deal with workplace emergencies/ accidents

GS5. communicate politely and professionally with clients and colleagues

GS6. identify possible disruptions to work and take preventive measures

GS7. read the relevant literature to get latest updates about the field of work

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Document and maintain records	**5**	**5**	**-**	**5**
PC1. maintain various records related to production, machine maintenance, and operations	-	-	-	-
PC2. maintain a record of coir-grow media production, production journals, timesheets, inventory, etc.	-	-	-	-
PC3. attendance maintenance – Preparing roster as per requirements of Directorate of Industrial Safety and Health	-	-	-	-
PC4. documents the Quality parameter of coir grow media production	-	-	-	-
PC5. keep in safe custody the accounting documents/records/resources provided by organization	-	-	-	-
PC6. prepare or create work related file manually or electronically as per the organization requirements	-	-	-	-
PC7. ensure the data is stored using the electronic system used by the organisation	-	-	-	-
PC8. carry out work-related documentation by seeking requisite information from a source or person	-	-	-	-
PC9. Write necessary official work-related notes	-	-	-	-
PC10. perform filing of supporting documents to maintain records	-	-	-	-
PC11. draft official letter and communication	-	-	-	-
PC12. review the records to ensure they are up to date	-	-	-	-
PC13. co-ordinate with the relevant personnel for the audit of the records	-	-	-	-
NOS Total	**5**	**5**	**-**	**5**

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0542
NOS Name	Carry out documentation and record-keeping
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Plantation Crops Cultivation
NSQF Level	4
Credits	1
Version	1.0
Last Reviewed Date	NA
Next Review Date	25/08/2025
NSQC Clearance Date	25/08/2022

AGR/N0544: Maintain health and general Industrial safety at the workplace

Description

This OS is about maintaining health and safety of self and other co-workers at the workplace

Scope

The scope covers the following :

- Maintain personal hygiene
- Adhere to general Industrial Safety norms
- Render appropriate emergency procedures

Elements and Performance Criteria

Maintain personal hygiene

To be competent, the user/individual on the job must be able to:

PC1. Wash hands, legs and face with soap/alcohol based sanitizer at reasonable intervals

PC2. Wash the worn clothes with soap and sun-dry before use next time

PC3. Ensure the face is covered with mask or three layers of cloth-piece

PC4. Follow the workplace sanitization norms including distancing from sick people

PC5. Avoid touching your eyes, nose and mouth

PC6. Minimize the risk of infection and enhance overall health by following basic personal hygiene habits

Adhere to general Industrial Safety norms

To be competent, the user/individual on the job must be able to:

PC7. Implement safe and good housekeeping practices adhering to applicable occupational health and safety guidelines

PC8. Undertake efforts and procedures to achieve safe working environment

PC9. carry out basic safety checks before operation of all tools, implements, and machinery and report identified hazards to the supervisor

PC10. wear appropriate Personal Protective Equipment (PPE) while performing work in accordance with the workplace policy

PC11. follow the instructions mentioned on the labels of chemicals/ pesticides/ fumigants etc. to avoid hazards

PC12. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practices

PC13. sanitize equipment, tools and machinery before and after use

PC14. use equipment and materials safely and correctly and return the same to designated storage after use

PC15. dispose waste safely and correctly in the designated area

PC16. recognize risks / unsafe situations and take required preventive action to reduce the risks

PC17. work in a manner which minimizes environmental damage, ensuring all procedures and instructions for controlling risks are followed

PC18. report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger

PC19. follow government / workplace advisories incase of outbreak of any disease/disaster

PC20. apply 5S in the work place

Render appropriate emergency procedures

To be competent, the user/individual on the job must be able to:

PC21. follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to the location of emergency, as per the workplace requirements

PC22. use emergency equipment in accordance with manufacturer's specifications and workplace requirements

PC23. provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques

PC24. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate

PC25. report details of first aid administered in accordance with workplace procedures

PC26. Identify safety alarms and use them as per requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Relevant legislation, standards, policies, guidelines and procedures at work related to occupational health and safety

KU2. Relevant health and safety requirements applicable to the work environment

KU3. Safe work practices and housekeeping for achieving safe working environment

KU4. Own job role and responsibilities and sources of information pertaining to work

KU5. How to implement good housekeeping practices

KU6. Importance of following health, hygiene, safety and quality standards and the impact of not following the standards on consumers and the business

KU7. Personal hygiene and fitness requirement and also the importance of sanitization of the workplace

KU8. The risks to health and safety including contagious diseases and the measures to be taken to control those risks in the area of work

KU9. Workplace procedures and requirements for the prevention and treatment of workplace injuries/illnesses

KU10. Use safety equipment's at workplace e.g different types of fire extinguishers

KU11. How to recognise and report unsafe situations

KU12. Procedures to be followed in the case of illness, accidents

KU13. Who to approach for support in order to obtain work related information, clarifications and support

KU14. Identification of personal protection equipment (PPE) and use them for the appropriate work environment

KU15. Basic emergency first aid procedure

KU16. Basics of environmental pollution and various methods for minimizing environmental damage during work

KU17. Environmental pollution legislation, avoiding waste and disposing waste

KU18. Concept of 5s and their application in the work place

KU19. Precautionary measures to avoid associated risk at workplace

KU20. Handling, storing or disposing off dangerous goods and substances

KU21. Evacuation procedures, mock drills

KU22. Criticality of fire safety in coir industry

KU23. Fire safety methods for production shop floor, mills, open spaces coir pith hillocks, coir fibre stocks, and drying yards etc.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. Record the data as per the requirement

GS2. Report problems to the appropriate personnel in a timely manner

GS3. Read instruction manual for hand tool and equipment and important signals and signs

GS4. Read fire and safety procedures

GS5. Communicate clearly and effectively with co-workers, and other stakeholders

GS6. Comprehend information shared by senior people and experts

GS7. Make decisions pertaining to personal hygiene and safety

GS8. Schedule daily activities and draw up priorities

GS9. Manage relationships with co-workers, manager and other stakeholders

GS10. Assess situation and identify appropriate control measures

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Maintain personal hygiene	**5**	**5**	**-**	**5**
PC1. Wash hands, legs and face with soap/alcohol based sanitizer at reasonable intervals	-	-	-	-
PC2. Wash the worn clothes with soap and sun-dry before use next time	-	-	-	-
PC3. Ensure the face is covered with mask or three layers of cloth-piece	-	-	-	-
PC4. Follow the workplace sanitization norms including distancing from sick people	-	-	-	-
PC5. Avoid touching your eyes, nose and mouth	-	-	-	-
PC6. Minimize the risk of infection and enhance overall health by following basic personal hygiene habits	-	-	-	-
Adhere to general Industrial Safety norms	**5**	**5**	**-**	**5**
PC7. Implement safe and good housekeeping practices adhering to applicable occupational health and safety guidelines	-	-	-	-
PC8. Undertake efforts and procedures to achieve safe working environment	-	-	-	-
PC9. carry out basic safety checks before operation of all tools, implements, and machinery and report identified hazards to the supervisor	-	-	-	-
PC10. wear appropriate Personal Protective Equipment (PPE) while performing work in accordance with the workplace policy	-	-	-	-
PC11. follow the instructions mentioned on the labels of chemicals/ pesticides/ fumigants etc. to avoid hazards	-	-	-	-
PC12. assess risks prior to performing manual handling jobs, and work according to currently recommended safe practices	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. sanitize equipment, tools and machinery before and after use	-	-	-	-
PC14. use equipment and materials safely and correctly and return the same to designated storage after use	-	-	-	-
PC15. dispose waste safely and correctly in the designated area	-	-	-	-
PC16. recognize risks / unsafe situations and take required preventive action to reduce the risks	-	-	-	-
PC17. work in a manner which minimizes environmental damage, ensuring all procedures and instructions for controlling risks are followed	-	-	-	-
PC18. report any accidents, incidents or problems without delay to an appropriate person and take necessary immediate action to reduce further danger	-	-	-	-
PC19. follow government / workplace advisories incase of outbreak of any disease/disaster	-	-	-	-
PC20. apply 5S in the work place	-	-	-	-
Render appropriate emergency procedures	**5**	**5**	**-**	**5**
PC21. follow procedures for dealing with accidents, fires and emergencies, including communicating location and directions to the location of emergency, as per the workplace requirements	-	-	-	-
PC22. use emergency equipment in accordance with manufacturer's specifications and workplace requirements	-	-	-	-
PC23. provide treatment appropriate to the patient's injuries in accordance with recognized first aid techniques	-	-	-	-
PC24. recover (if practical), clean, inspect/test, refurbish, replace and store the first aid equipment as appropriate	-	-	-	-
PC25. report details of first aid administered in accordance with workplace procedures	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. Identify safety alarms and use them as per requirements	-	-	-	-
NOS Total	**15**	**15**	**-**	**15**

National Occupational Standards (NOS) Parameters

NOS Code	AGR/N0544
NOS Name	Maintain health and general Industrial safety at the workplace
Sector	Agriculture
Sub-Sector	Agriculture Crop Production
Occupation	Plantation Crops Cultivation
NSQF Level	4
Credits	1
Version	1.0
Last Reviewed Date	NA
Next Review Date	25/08/2025
NSQC Clearance Date	25/08/2022

Qualification Pack

DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1.   identify employability skills required for jobs in various industries

PC2.   identify and explore learning and employability portals

Constitutional values – Citizenship

To be competent, the user/individual on the job must be able to:

PC3.   recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.

PC4.   follow environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC5.   recognize the significance of 21st Century Skills for employment

PC6.   practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC7. use basic English for everyday conversation in different contexts, in person and over the telephone

PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English

PC9. write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

To be competent, the user/individual on the job must be able to:

PC10. understand the difference between job and career

PC11. prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

To be competent, the user/individual on the job must be able to:

PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings

PC13. work collaboratively with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC14. communicate and behave appropriately with all genders and PwD

PC15. escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC16. select financial institutions, products and services as per requirement

PC17. carry out offline and online financial transactions, safely and securely

PC18. identify common components of salary and compute income, expenses, taxes, investments etc

PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC20. operate digital devices and carry out basic internet operations securely and safely

PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively

PC22. use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research

PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion

PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

To be competent, the user/individual on the job must be able to:

PC26. identify different types of customers

PC27. identify and respond to customer requests and needs in a professional manner.

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings

GS3. behave politely and appropriately with all

GS4. how to work in a virtual mode

GS5. perform calculations efficiently

GS6. solve problems effectively

GS7. pay attention to details

GS8. manage time efficiently

GS9. maintain hygiene and sanitization to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
Constitutional values – Citizenship	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
Basic English Skills	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
Career Development & Goal Setting	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
Communication Skills	**2**	**2**	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**2**	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
Financial and Legal Literacy	**2**	**3**	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
Essential Digital Skills	**3**	**4**	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Entrepreneurship	**2**	**3**	**-**	**-**
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
Customer Service	**1**	**2**	**-**	**-**
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**2**	**3**	**-**	**-**
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	NA
Next Review Date	28/02/2026
NSQC Clearance Date	28/02/2023

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down the proportion of marks for Theory and Skills Practical for each PC.

2. The assessment for the theory part will be based on a knowledge bank of questions created by the SSC.

3. Individual assessment agencies will create unique question papers for the theory part for each candidate at each examination/training centre (as per assessment criteria below).

4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training centre based on these criteria.

5. In case of successfully passing only a certain number of NOSs, the trainee is eligible to take a subsequent assessment on the balance NOS's to pass the Qualification Pack.

6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Minimum Aggregate Passing % at QP Level : 70

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
AGR/N0537.Prepare for and carry out coir fibre extraction	15	20	0	25	60	15
AGR/N0538.Carryout relevant operation and maintenance activity	15	15	0	15	45	15
AGR/N0539.Prepare the machineries for Coir Grow Media Production operation	10	10	0	10	30	15
AGR/N0540.Carry out Coir Pith Extraction, Processing and composting	20	20	0	20	60	20
AGR/N0541.Prepare Value Added Coir Pith and Coir Grow Media for diversified commercial use	20	20	0	20	60	20
AGR/N0542.Carry out documentation and record-keeping	5	5	0	5	15	5
AGR/N0544.Maintain health and general Industrial safety at the workplace	15	15	0	15	45	5
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	0	0	50	5
Total	**120**	**135**	**-**	**110**	**365**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
PGR	Plant Growth Retardant Or Plant Growth Regulator
PPE	Personal Protective Equipment
PPM	Parts Per Million
EC	Electrical Conductivity
MFEM	Mobile Fibre Extraction Machine
CEC	Cation-Exchange Capacity
C-POM	Coir Pith Organic Manure
BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.