

## PRODUCE EDIBLE MUSHROOMS

ISCED UNIT CODE: 0812 451 15A

TVETCDACC UNIT CODE: HO/OS/HP/CR/06/5/MA

### UNIT DESCRIPTION

This unit specifies the competencies required to produce quality and clean edible mushroom. It involves preparing edible mushrooms planting materials, establishing edible mushrooms, managing edible mushrooms and performing edible mushrooms post-harvest practices.

### ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace functions	These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicized terms are elaborated in the range)</i>
1. Prepare edible mushrooms propagation materials	1.1 <b><i>Personal protective equipment's</i></b> are worn as per work requirement 1.2 <b><i>Tools, equipment</i></b> and <b><i>materials</i></b> are assembled as per work requirement 1.3 <b><i>Type of edible mushrooms</i></b> to be established is determined in accordance with market demand. 1.4 Mushroom production structure is sited according to farm plan 1.5 Mushroom house is constructed according to work procedure 1.6 <b><i>Starter culture</i></b> for mushroom is treated as per agronomic requirement 1.7 <b><i>Propagation media</i></b> is prepared as per work procedure 1.8 Spawns are cultured as per work procedure
2. Establish edible mushrooms	2.1 Personal protective equipment's are worn as per work requirement 2.2 Tools, equipment and materials are assembled as per work requirement 2.3 Substrate is prepared in accordance with mushroom production guidelines.

	2.4 Spawning of mushroom on substrate is performed as per agronomic requirement.
3. Manage edible mushrooms	<p>3.1 Personal protective equipment's are worn as per work requirement</p> <p>3.2 Tools, equipment and materials are assembled as per work requirement</p> <p>3.3 Established mushroom are managed as per mushroom production guidelines.</p> <p>3.4 <b><i>Crop protection practices</i></b> are carried out as per mushroom production guideline.</p> <p>3.5 Established mushrooms are harvested as per mushroom production guideline.</p> <p>3.6 Waste management is undertaken in accordance to work requirement</p>
4. Perform edible mushrooms post-harvest practices	<p>4.1 Personal protective equipment's are worn as per work requirement</p> <p>4.2 Tools, equipment and materials are assembled as per work requirement</p> <p>4.3 <b><i>Post-harvest practices</i></b> are carried out in accordance to work requirement</p> <p>4.4 Mushrooms are marketed as per organizational policy</p> <p>4.5 Waste management is undertaken in accordance to work requirement</p>

## RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
1. Personal protective equipment may include but are not limited to:	<ul style="list-style-type: none"> <li>• Gloves</li> <li>• Safety goggles</li> <li>• Safety boots</li> <li>• Overalls</li> </ul>

	<ul style="list-style-type: none"> <li>• Dust coat</li> <li>• Ear muffs</li> <li>• Face masks</li> </ul>
2. Tools, equipment and materials may include but are not limited to:	<ul style="list-style-type: none"> <li>• Weighing scale</li> <li>• Poly tubes</li> <li>• Lockable drum</li> <li>• Table spoon</li> <li>• Sisal twines</li> <li>• Supplement –soya bean meal</li> <li>• Plant residues –stalks and bran</li> <li>• Polythene bags</li> <li>• Shelves</li> <li>• Shade</li> <li>• Spawn</li> <li>• Water</li> <li>• Substrate</li> <li>• PPE –hand gloves, dust coat, dust masks</li> <li>• Hand spray equipment</li> <li>• Oven</li> <li>• Basin</li> <li>• Methylated spirit</li> <li>• Lime</li> <li>• Fuel for heating substrate</li> <li>• Molasses</li> <li>• Sisal twine</li> <li>• Soap</li> </ul>
3. Type of edible mushrooms may include but are not limited to:	<ul style="list-style-type: none"> <li>• White button</li> <li>• Oyster</li> <li>• Shitake</li> <li>• Portobello</li> <li>• Enoki</li> </ul>

	<ul style="list-style-type: none"> <li>• Morel</li> <li>• Straw</li> <li>• Lion`s Mane</li> <li>• Ganoderma</li> </ul>
4. Mushroom production structures may include but are not limited to:	<ul style="list-style-type: none"> <li>• Mushroom House</li> <li>• Shelves</li> <li>• Plastic Bags</li> <li>• Heat Oven</li> </ul>
5. Starter culture may include but are not limited to:	<ul style="list-style-type: none"> <li>• Organic soils,</li> <li>• Plant growth regulators,</li> <li>• Vitamins,</li> <li>• Amino acids and</li> <li>• Complex organic supplements,</li> <li>• Carbohydrates,</li> <li>• Water media matrix, and</li> <li>• Appropriate PH 7.2-7.5</li> </ul>
6. Spawns may include but are not limited to:	<ul style="list-style-type: none"> <li>• Spores</li> <li>• mycelia</li> </ul>
7. Propagation media may include but are not limited to:	<ul style="list-style-type: none"> <li>• Grain</li> <li>• Liquid</li> <li>• Wood</li> </ul>
8. Spawning may include but are not limited to:	<ul style="list-style-type: none"> <li>• Seeding the substrate with mushroom inoculums</li> </ul>
9. Crop protection practices may include but are not limited to:	<ul style="list-style-type: none"> <li>• Pest control</li> <li>• Disease control</li> </ul>
10. Post-harvest practices may include but are not limited to:	<ul style="list-style-type: none"> <li>• Transportation</li> <li>• Cleaning</li> <li>• Sorting</li> <li>• Grading</li> <li>• Cooling</li> <li>• Processing</li> <li>• Packaging</li> </ul>

	<ul style="list-style-type: none"> <li>• Branding</li> <li>• Storage</li> <li>• Drying</li> </ul>
11. Marketing techniques may include but are not limited to:	<ul style="list-style-type: none"> <li>• Online marketing</li> <li>• Influencer marketing</li> <li>• Referrals</li> <li>• Advertisement</li> <li>• Auctioneering</li> <li>• Public relation</li> <li>• Cold calling</li> <li>• Content marketing</li> <li>• Invoicing</li> <li>• Loyalty programs</li> </ul>

## REQUIRED KNOWLEDGE AND SKILLS

This section describes the knowledge and skills required for this unit of competency.

### Required knowledge

The individual needs to demonstrate knowledge of:

- Sources of quality water
- Types of tools and equipment used in production of edible mushrooms
- Structures for production of edible mushrooms
- Types of edible mushrooms
- Physiology of edible mushrooms
- Phyto-sanitary requirements
- Sources of quality propagation materials for edible mushrooms
- Husbandry practices in edible mushrooms production
- edible mushrooms production Technologies
- Procedures for calibration of equipment
- Record keeping and accounting
- Waste Management
- Occupational Safety and Health Procedures
- Determining mushroom maturity
- Harvesting and Post Harvesting Handling of mushrooms

- General management of mushroom production farm

### Required skills

The individual needs to demonstrate the following skills:

- Measuring
- Levelling
- Spraying
- Pests and diseases scouting
- Equipment calibration
- Technical Report writing
- Observation
- Negotiation
- Digital literacy

### EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills range.

1. Critical aspects of competency	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Used personal protective equipment as per work requirement</p> <p>1.2 Treated starter culture for mushroom according to treatment guidelines</p> <p>1.3 Prepared propagation media according to work requirements</p> <p>1.4 Cultured mushroom spawns according to production guidelines.</p> <p>1.5 Managed established mushroom as per mushroom production guidelines.</p> <p>1.6 Carried out post-harvest handling of mushroom in accordance with work requirements</p>
2. Resource implications	<p>The following resources should be provided:</p> <p>2.1 Appropriately simulated environment where assessment can take place</p> <p>2.2 Access to relevant work environment</p>

	2.3 Resources relevant to the proper activities or tasks
3. Methods of assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Observation</p> <p>3.2 Oral questioning</p> <p>3.3 Portfolio of evidence</p> <p>3.4 Interviews</p> <p>3.5 Third party report</p> <p>3.6 Written tests</p>
4. Context of assessment	<p>Competency may be assessed:</p> <p>4.1 Workplace or simulated workplace</p>
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector and workplace job role is recommended.