

## PRODUCE VEGETABLE CROPS IN OPEN ENVIRONMENT

**ISCED UNIT CODE:** 0812 251 01A

**TVETCDACC UNIT CODE:** HO/OS/HP/CR/01/3/MA

### UNIT DESCRIPTION

This unit specifies the competencies required to produce vegetable crops in open environment. It involves propagating vegetable crop seedlings, preparing land for vegetable crop, growing vegetable crop, harvesting vegetable crop, undertaking post-harvest activities and undertaking marketing activities.

### ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the <b>key outcomes</b> which make up <b>workplace function</b> .	These are <b>assessable</b> statements which specify the required level of performance for each of the elements. <i><b>Bold and italicized terms are elaborated in the range.</b></i>
1. Propagate vegetable crop seedlings in open environment	1.1 Market survey is undertaken as per vegetable crop type demand 1.2 Sources of finances are managed as per financial procedures 1.3 Business planning is undertaken as per resource implications 1.4 Vegetable crop seeds are selected for propagation as per ecological requirements 1.5 Work safety measures are observed as per the work requirements 1.6 Vegetable crop parts are identified as per vegetable crop type. 1.7 Tools and equipment are assembled as per work requirements 1.8 Suitable site is identified based on vegetable crop type 1.9 Water for irrigation is applied as per vegetable crop type 1.10 Crop nursery is prepared as per vegetable crop type 1.11 Tools and equipment are maintained as per type.

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	1.12 Crop nursery <i><b>management practices</b></i> are carried out as per vegetable crop type 1.13 Farm activities costs is documented as per task requirements 1.14 Waste is disposed in accordance with EMCA 2015 requirements 1.15 Emerging trends are applied in nursery preparation as per current technological development
2. Prepare land for growing vegetable crop	2.1 Work safety measures are observed as per the work requirements 2.2 Tools, equipment and materials are assembled as per work requirements 2.3 Land is cleared as per agronomic requirements 2.4 <i><b>Land tillage</b></i> is carried out as per agronomic requirements. 2.5 Soil testing is carried out as per soil testing procedure. 2.6 <i><b>Soil amendments</b></i> is applied as per soil analysis report 2.7 Planting furrows are made as per vegetable crop type 2.8 Farm activities costs is documented as per task requirements 2.9 Tools and equipment are maintained as per type. 2.10 Waste is disposed in accordance with EMCA 2015 requirements 2.11 Records on land preparations are developed and shared based on workplace policy 2.12 Emerging trends are applied in preparing Land as per current technological development
3. Grow vegetable crop	3.1 Work safety measures are observed as per the work requirements 3.2 Tools, equipment and materials are assembled as per work requirements 3.3 Land is watered as per vegetable crop type requirement

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	<p>3.4 Vegetable seedlings are transplanted as per agronomics requirements</p> <p>3.5 Vegetable seeds are planted as per agronomics requirements</p> <p>3.6 <i><b>Mulching</b></i> of the vegetable crops is carried out as per agronomic requirements.</p> <p>3.7 Vegetable crops are watered as per vegetable crop type requirement.</p> <p>3.8 Vegetable crops are gapped and thinned based as per agronomic requirements</p> <p>3.9 Vegetable crops are trained and pruned as per agronomic requirements</p> <p>3.10 <i><b>Crop protection measures</b></i> are applied as per agronomic requirement</p> <p>3.11 <i><b>Crop nutrition measures</b></i> are undertaken as per vegetable crop type requirement.</p> <p>3.12 Food safety measures are implemented in conformity with assessment standards</p> <p>3.13 Tools and equipment are maintained as per type.</p> <p>3.14 Farm activities costs is documented as per task requirements</p> <p>3.15 Waste is disposed in accordance with EMCA requirements</p> <p>3.16 Emerging trends are applied in growing vegetable crop type as per current technological development</p>
4. Harvest vegetable crop	<p>4.1 Work safety measures are observed as per the work requirements</p> <p>4.2 Tools, equipment and materials are assembled as per work requirements</p> <p>4.3 <i><b>Maturity indices</b></i> are observed as per vegetable crop type.</p>

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	<p>4.4 Food safety measures during harvesting are implemented in conformity to assessment standards</p> <p>4.5 Crop <b>Picking</b> is carried out as per vegetable crop type</p> <p>4.6 Produce is transported to the pack house as per vegetable crop type requirements</p> <p>4.7 Tools and equipment are maintained as per type.</p> <p>4.8 Farm activities costs is documented as per task requirements</p> <p>4.9 Harvest records are developed and maintained as per</p> <p>4.10 Waste is disposed in accordance with EMCA requirements</p> <p>4.11 Emerging trends are applied in harvesting vegetable crop type as per current technological development</p>
5. Undertake post-harvest activities	<p>6.1 Work safety measures are observed as per the work requirements.</p> <p>6.2 Tools, equipment and materials are assembled as per work requirements.</p> <p>6.3 Post harvest food safety measures are observed in in conformity to assessment standards</p> <p>6.4 Harvested vegetables are received at the packhouse as per vegetable crop type requirement.</p> <p>6.5 Vegetables are sorted as per vegetable crop type requirement.</p> <p>6.6 Produce is cleaned as per the vegetable crop type requirements.</p> <p>6.7 Vegetables are graded as per market requirements.</p> <p>6.8 Vegetables are packaged as per market requirements.</p> <p>6.9 Produce is stored as per vegetable crop type requirement.</p> <p>6.10 Tools and equipment are maintained as per type.</p> <p>6.11 Farm activities costs is documented as per task</p>

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	requirements. 6.12 Waste is disposed in accordance with EMCA requirements. 6.13 Emerging trends are applied in undertaking post-harvest activities as per current technological development.
7. Undertake marketing activities	7.1 Crop price is compared based on different markets. 7.2 Produce price range and market is decided based on the market demand. 7.3 <i><b>Basic value addition</b></i> is undertaken as per the market demand. 7.4 Farm activities costs is documented as per task requirements. 7.5 Waste is disposed in accordance with EMCA requirements. 7.6 Emerging trends are applied in undertaking Marketing activities as per current technological development.

## RANGE

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

Variable	Range
1. Vegetable crop include but not limited to:	<ul style="list-style-type: none"> <li>• Leaf vegetables <ul style="list-style-type: none"> <li>• Kales</li> <li>• Cabbage</li> <li>• Black nightshade (Managu)</li> </ul> </li> <li>• Fruit vegetables <ul style="list-style-type: none"> <li>• Tomatoes</li> <li>• Capsicum</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>● Cucumber</li> <li>● Root and Tuber <ul style="list-style-type: none"> <li>● Onions</li> <li>● Carrots</li> <li>● Garlic</li> </ul> </li> </ul>
2. Work safety measures include but not limited to:	<ul style="list-style-type: none"> <li>● Personal Safety</li> <li>● PPEs</li> <li>● Warning signage</li> <li>● Tools and equipment safety</li> </ul>
3. Land tillage include but not limited to:	<ul style="list-style-type: none"> <li>● Primary tillage</li> <li>● Secondary tillage</li> <li>● Tertiary tillage</li> </ul>
4. Management practices include but not limited to:	<ul style="list-style-type: none"> <li>● Watering</li> <li>● Thinning</li> <li>● Pricking out</li> <li>● Shading</li> <li>● Weeding</li> <li>● Pest and diseases control</li> <li>● Hardening off</li> </ul>
5. Soil amendment include but not limited to:	<ul style="list-style-type: none"> <li>● Manure application</li> <li>● Gypsum and lime</li> <li>● Fertilizer application</li> </ul>
6. Mulching include but not limited to:	<ul style="list-style-type: none"> <li>● Organic mulch</li> <li>● Inorganic mulch</li> </ul>
7. Crop protection measures include but not limited to:	<ul style="list-style-type: none"> <li>● Biological</li> <li>● Cultural</li> <li>● Mechanical</li> <li>● Chemical</li> </ul>
8. Crop nutrition measures include but not limited to:	<ul style="list-style-type: none"> <li>● Chemical Fertilizers application</li> <li>● Organic Fertilizers application</li> </ul>

9. Maturity indices include but not limited to:	<ul style="list-style-type: none"> <li>• Horticultural maturity</li> <li>• Market maturity</li> <li>• Physiological maturity</li> </ul>
10. Picking include but not limited to:	<ul style="list-style-type: none"> <li>• Cutting</li> <li>• Uprooting</li> <li>• Digging</li> <li>• Pinching</li> </ul>
11. Basic value additions include but not limited to:	<ul style="list-style-type: none"> <li>• Waxing</li> <li>• Packaging</li> <li>• Product Processing</li> </ul>

## REQUIRED SKILLS AND KNOWLEDGE

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

### Required Skills

- Measuring skills
- Spraying skills
- Observation skills
- Record keeping skills
- Marketing skills
- Analytical skills
- Agronomic practices skills

### Required Knowledge

The individual needs to demonstrate knowledge of:

- Crop husbandry practices
- Waste management practices
- Soil and water conservation measures
- Types of Soil
- Soil composition
- Plant anatomy
- Types of weeds and their control
- Safety measures

- Weather patterns
- Pests control measures
- Ecological zones
- Irrigation methods
- Food safety measures
- Basic financial literacy
- Greenhouse structures
- Crop nutrition measures

## EVIDENCE GUIDE

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

1. Critical aspects of competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Selected vegetable crop seeds for propagation as per ecological requirements</li> <li>1.2 Observed work safety measures as per the work requirements</li> <li>1.3 Assembled tools and equipment as per work requirements</li> <li>1.4 Carried out crop nursery management practices as per vegetable crop type</li> <li>1.5 Carried out Land tillage as per agronomic requirements.</li> <li>1.6 Carried out soil testing as per soil testing procedure</li> <li>1.7 Applied soil amendments as per soil analysis report</li> <li>1.8 Applied crop protection measures as per agronomic practice procedure</li> <li>1.9 Applied crop nutrition measures as per crop requirement.</li> <li>1.10 Applied maturity indices as per vegetable crop type.</li> <li>1.11 Stored produce as per vegetable crop type</li> <li>1.12 Applied food safety measures as per conformity assessment standards</li> <li>1.13 Disposed waste in accordance with EMCA 2015 requirements</li> </ul>
2. Resource implications	The following resources should be provided:



	<p>2.1 Appropriately simulated environment where assessment can take place.</p> <p>2.2 Access to relevant work environments.</p> <p>2.3 Resources relevant to the proposed activities or task.</p>
3. Methods of assessment	<p>Competency may be assessed through:</p> <p>3.1 Observation</p> <p>3.2 Oral questioning</p> <p>3.3 Written tests</p> <p>3.4 Practical's</p> <p>3.5 Projects</p>
4. Context of Assessment	<p>Competency may be assessed:</p> <p>4.1 On-the-job</p> <p>4.2 Simulated workplace environment</p>
5. Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>