CARRY OUT PLANT HUSBANDRY

UNIT CODE: APB/OS/AB/CR/07/6/A

UNIT DESCRIPTION

This unit specifies the competencies required to carry out plant husbandry. It involves demonstrating plant propagation, managing a greenhouse facility, managing horticultural plants and demonstrating plant pathology. It also involves demonstrating use of plant hormones, applying tissue culture and demonstrating crop yield loss.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the **key outcomes** which make up workplace function (to be stated in active)	**PERFORMANCE CRITERIA** These are **assessable statements** which specify the required level of performance for each of the elements (to be stated in passive voice) ***Bold and italicized terms are elaborated in the Range***
1 Demonstrate plant propagation	1.1 Planting materials are screened as per plant husbandry procedures. 1.2 Seed dormancy is broken as per plant husbandry procedures. 1.3 Seeds are germinated as per plant husbandry procedures. 1.4 Conditions for seed germination are demonstrated as per plant husbandry.
2 Managing a green house facility	2.1 Types of green houses are identified based on structure, shape and materials. 2.2 Green house is constructed as per the crop to be established. 2.3 Green house is managed as per plant husbandry procedures.
3 Manage horticultural plants	3.1 ***Horticultural plants*** are identified based plant husbandry practices. 3.2 ***Management*** of horticultural crops is demonstrated as per plant husbandry practices
4 Demonstrate plant pathology	4.1 Symptoms of ***plant fungal diseases*** are identified as per MoALF production manual. 4.2 Plant fungal diseases are controlled as per MoALF production manual

	4.3 Symptoms of ***plant bacterial diseases*** are identified as per MoALF production manual. 4.4 Plant bacterial diseases are controlled as per MoALF production manual 4.5 Symptoms of ***plant viral diseases*** are identified as per MoALF production manual. 4.6 Plant viral diseases are controlled as per MoALF production manual 4.7 Symptoms of plant nematode diseases are identified as per MoALF production manual. 4.8 Plant nematode diseases are controlled as per MoALF production manual
5 Demonstrate use of plant growth substances	5.1 ***Plant growth substances*** are identified as per plant husbandry practices. 5.2 Plant growth substances are applied as per plant husbandry practices.
6 Apply tissue culture	6.1 ***Tissue culture types*** are identified based on part of plant involved. 6.2 Tissue culture process are carried out based on standard tissue culture practices
7 Demonstrate crop yield loss	7.1 Causes of yield loss in crops are identified as per MoALF production manual 7.2 ***Methods of assessing yield loss*** in crops are determined as per MoALF production manual

RANGE

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

VARIABLE	**RANGE**
Horticultural plants include but are not limited to:	• Vegetable crops • Mushrooms • Fruits • flowers

Management include but are not limited to:	• Nursery establishment • Planting • Weeding • Pest & disease control • Watering • Harvesting • Post-harvesting
Plant fungal diseases include but are not limited to:	• Blight • Rust • Anthracnose • Smut • Gall • Mildew • Damping off • Wilt • mould
Plant bacterial diseases include but are not limited to:	• Bacterial wilt
Plant viral diseases include but are not limited to:	• Mosaic
Plant growth substances include but are not limited to:	• Auxins • Gibberellins • Cytokinin • Ethylene • Abscisic acid
Tissue culture types include but are not limited to:	• Seed • Embryo • Callus • Organ • Protoplast
Methods of assessing yield loss include but are not limited to:	• Experimental • Statistical

REQUIRED SKILLS AND KNOWLEDGE

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

Required Skills

The individual needs to demonstrate the following skill

- Maintenance
- Communication
- Interpersonal
- Analytical
- Critical thinking
- Problem solving
- Innovation
- Creativity
- Observation

Required Knowledge

The individual needs to demonstrate knowledge of:

- Microscopy
- Cytological techniques
- Cell growth and division
- Histological techniques
- Specimen collection methods
- Storage of specimens
- Plant pathology

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	Assessment requires evidence that the candidate: 1.1 Screened planting materials 1.2 Broke seed dormancy 1.3 Germinated seeds 1.4 Demonstrated conditions for seed germination 1.5 Identified types of green houses 1.6 Constructed a green house 1.7 Managed a green house

		1.8 Managed horticultural plants 1.9 Identified symptoms of plant fungal diseases, plant bacterial diseases, plant viral diseases and nematodes 1.10 Controlled symptoms of plant fungal diseases, plant bacterial diseases, plant viral diseases and nematodes 1.11 Demonstrated use of plant growth substances 1.12 Identified types of tissue culture 1.13 Carried out tissue culture process 1.14 Identified causes of yield loss in crops 1.15 Determined methods of assessing yield loss in crops
2	Resource Implications	The following resources should be provided: 2.1 Well-equipped biology laboratory facility 2.2 Laboratory procedures manual 2.3 Laboratory reagents and chemicals 2.4 Workshop tools and equipment 2.5 PPEs
3	Methods of Assessment	Competency in this unit may be assessed through: 3.1 Oral 3.2 Written 3.3 Observation 3.4 Third party 3.5 Practical test
4	Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5	Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.