

## APPLY ENTOMOLOGICAL TECHNIQUES

**UNIT CODE:** APB/OS/AB/CR/08/6/A

### UNIT DESCRIPTION

This unit specifies the competencies required to apply entomological techniques. It involves determining classification of insects, demonstrating anatomy and physiology of insects, and determining insect ecology. It also involves carrying out rearing of insects, demonstrating pest control and management and determining control of arthropod vectors

### ELEMENTS AND PERFORMANCE CRITERIA

<b>ELEMENT</b> These describe the <b>key outcomes</b> which make up workplace function (to be stated in active)	<b>PERFORMANCE CRITERIA</b> These are <b>assessable statements</b> which specify the required level of performance for each of the elements (to be stated in passive voice) <i><b>Bold and italicized terms are elaborated in the Range</b></i>
1 Determine classification of insects	1.1 Classification of insects is carried out as per entomological procedures
2 Demonstrate anatomy and physiology of insects	2.1 External features of insects are identified and drawn as per anatomical procedures 2.2 <i><b>Systems</b></i> in insects are drawn as per physiological procedures 2.3 <i><b>Life cycles</b></i> of insects are determined as per entomological procedures
3 Determine insect ecology	3.1 <i><b>Adaptations</b></i> of insects is demonstrated based on the insect 3.2 Intrinsic rate of insects is determined as per entomological procedures 3.3 <i><b>Methods of collecting insects</b></i> are identified based on entomological procedures
4 Carry out rearing of insects	4.1 Insect cages are constructed based on the insects to be reared 4.2 <i><b>Insects</b></i> are reared as per entomological procedures 4.3 Insectary is managed as per entomological procedures
5 Demonstrate pest control and management	5.1 Insect pests are identified as per entomological procedures 5.2 <i><b>Methods of pest control</b></i> are determined as per entomological procedures

6 Determine control of arthropod vectors	6.1 Arthropod vectors are identified as per parasitological procedures 6.2 Transmission methods are identified as per parasitological procedures 6.3 Methods of control of arthropod vectors are determined as per parasitological procedures
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## 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
Systems include but are not limited to:	<ul style="list-style-type: none"> <li>• Digestive</li> <li>• Gaseous exchange</li> <li>• Endocrine</li> </ul>
Life cycles include but are not limited to:	<ul style="list-style-type: none"> <li>• Complete metamorphosis</li> <li>• Partial metamorphosis</li> <li>• Incomplete metamorphosis</li> </ul>
Adaptations include but are not limited to:	<ul style="list-style-type: none"> <li>• Anatomical</li> <li>• physiological</li> </ul>
Methods of collecting insects include but are not limited to:	<ul style="list-style-type: none"> <li>• Light traps</li> <li>• Sweep nets</li> <li>• Pit fall traps</li> <li>• Pheromones</li> </ul>
Insects include but not limited to:	<ul style="list-style-type: none"> <li>• Locust</li> <li>• Fruit fly</li> </ul>
Methods of pest control include but not limited to:	<ul style="list-style-type: none"> <li>• Cultural</li> <li>• Biological</li> <li>• Physical</li> <li>• Chemical</li> <li>• Integrated Pest Management (IPM)</li> </ul>

## 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
- First aid
- Innovation
- Creativity

### Required Knowledge

The individual needs to demonstrate knowledge of:

- Microscopy
- Cytological techniques
- Histological techniques
- Insect collection methods
- Storage of insects
- Rearing of insects
- Pest control and management

## 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 Carried out classification of insects 1.2 Identified and drew external features and systems of insects 1.3 Determined life cycles of insects 1.4 Demonstrated adaptations of insects 1.5 Demonstrated intrinsic rate of insects 1.6 Identified methods of collecting insects 1.7 Constructed insect cages 1.8 Reared insects
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	<p>1.9 Managed insectary</p> <p>1.10 Demonstrated pest control and management</p> <p>1.11 Identified arthropod vectors</p> <p>1.12 Identified transmission methods</p> <p>1.13 Determined control methods of arthropod vectors</p>
2 Resource Implications	<p>The following resources should be provided:</p> <p>2.1 Well-equipped biology laboratory facility</p> <p>2.2 Science laboratory procedures manual</p> <p>2.3 Laboratory reagents and chemicals</p> <p>2.4 Workshop tools and equipment</p> <p>2.5 PPEs</p>
3 Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Oral</p> <p>3.2 Written</p> <p>3.3 Observation</p> <p>3.4 Third party</p> <p>3.5 Practical test</p>
4 Context of Assessment	<p>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.</p>
5 Guidance information for assessment	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>