



Australian Government

AHCARB805 Perform mycology assays

Release: 1

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Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 5.0.

Application

This unit of competency describes the skills and knowledge required to safely work within a laboratory environment, collect and identify wood decay fungi specimens from the field, prepare in-vitro cultures, and carry out primary experiments on fungi cultures. Work is performed using laboratory hygiene and safety procedures for sampling, sterilisation and cleaning of laboratory equipment and instruments.

The unit applies to individuals with highly specialised advanced theoretical and technical knowledge for professional work and research in arboriculture. They exercise advanced cognitive, technical and communication skills and demonstrate complete autonomy, judgement and adaptability in research and analysis for complex problems.

No licensing, legislative or certification requirements are to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Arboriculture (ARB)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Research pathogenic and saprophytic wood decay fungi species	1.1 Investigate role of microbiological organisms on tree and forest health 1.2 Investigate the role and contribution of wood decay fungi to forest and tree health, and responses

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.3 Examine the taxonomy and evolutionary relationships of corticoid and polypore wood decay fungi 1.4 Investigate the role of fungal species on specific host trees 1.5 Analyse lifecycle, biology, ecology and effects of wood decay fungal species 1.6 Examine relationship between fungal species and tree defects and failures 1.7 Analyse biosecurity implications of pathogenic fungal species 1.8 Review state and federal biosecurity plans and procedures
2. Evaluate decay and identify fungi in trees	2.1 Observe and evaluate signs and symptoms of fungi causing decay in trees 2.2 Identify wood decaying fungi to generic level in field 2.3 Identify non-pathogenic fungi to generic level in field 2.4 Record location, size, and condition of wood decay fungi and mycoparasites of hollows and cavities in trees 2.5 Document details of environmental characteristics of fungal affected trees 2.6 Determine methods of dissemination and infection of fungi to other trees and vegetation 2.7 Sample wood decay fungi and mycoparasites from trees for in-vitro culture and identification
3. Prepare in-vitro media, cultures	3.1 Select, check and fit personal protective equipment and contamination prevention clothing according to workplace procedures 3.2 Decant and prepare standard laboratory chemicals and materials 3.3 Prepare selective media to isolate and culture mycology specimens 3.4 Prepare field samples ready for culturing on media 3.5 Excise specimens and apply to media 3.6 Maintain cultures and repeat excise procedures to isolate clean specimens 3.7 Prepare and maintain cultured samples for further testing 3.8 Update records and store securely according to chain of evidence protocols

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
4. Conduct laboratory identification and assays	4.1 Prepare microscope slides of isolated cultures 4.2 Examine and identify cultured fungal samples 4.3 Perform laboratory identification of wood decay fungi to generic level 4.4 Record digital images of identified fungi 4.5 Perform laboratory assay tests to evaluate fungal characteristics 4.6 Document experimental assay test results 4.7 Develop and maintain mycology culture collection and submit to government database and culture collections according to procedures 4.8 Prepare a diagnostic report on suspected emergency plant pest according to state and federal biosecurity procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Interpret information from complex texts and research reports and select information relevant to microbial activity and impact on forest ecosystem and trees
Numeracy	Use complex formulae to calculate chemical concentrations when formulating mycological growing media

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCARB805 Perform mycology assays	AHCARB702 Analyse mycology cultures	Code changed to reflect AQF alignment Elements and performance	Equivalent

		criteria clarified Foundation skills added Assessment requirements updated	
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Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>