Australian Government

# AHCARB702 Analyse mycology cultures

**Release: 1**

# AHCARB702 Analyse mycology cultures

## Modification History

| Release | TP Version | Comment |
|---|---|---|
| 1 | AHCv1.0 | Initial release |

## 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, prepare in vitro cultures, and carry out primary experiments.

This unit applies to individuals with advanced theoretical and technical knowledge and skills for professional or highly skilled work and/or further learning in one or more disciplines or areas of practice. This unit applies to individuals with advanced cognitive, technical and communication skills to provide specialist advice, analyse, generate and transmit solutions to complex problems, and to demonstrate autonomy, well-developed judgement, adaptability and responsibility as a practitioner or learner.

The role involves the self-directed application of specialised knowledge in arboriculture with substantial depth in areas of tree pathology and mycology.

Work is performed under standard laboratory procedures of hygiene and safety for sampling, and use, sterilisation and cleaning of standard laboratory equipment and instruments.

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

## Pre-requisite Unit

Nil.

## Unit Sector

Arboriculture (ARB)

## Elements and Performance Criteria

| Element | Performance criteria |
|---|---|
| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element. |
| 1. Research pathogenic | 1.1 Research the role of fungi in biodiversity, tree nutrition, forest |

| Element | Performance criteria |
|---|---|
| and saprophytic wood decay fungi species | health, environmental biochemistry and pathology<br>1.2 Research the role and contribution of wood decay fungi to forest health, the influence of environmental stresses and physiological tree responses<br>1.3 Examine the taxonomy and evolutionary relationships of corticoid and polypore wood decay fungi<br>1.4 Investigate the role of fungal species on various hosts<br>1.5 Conduct analysis of lifecycle, biology, ecology and effects of pathogenic wood decay fungi species<br>1.6 Conduct analysis of lifecycle, biology, ecology and effects of saprophytic wood decay fungi species<br>1.7 Examine the relationships of fungal species with branch and tree failures<br>1.8 Analyse biosecurity implications of known and threat fungal species<br>1.9 Review PLANTPLAN biosecurity plans and procedures |
| 2. Evaluate decay and identify fungi | 2.1 Perform visual evaluation of the signs and symptoms of fungi and decay, including: visual symptoms such as dieback, reduced growth rate and chlorosis, presence of basidiocarps, decayed wounds, hollows and cavities<br>2.2 Perform field identification of wood decay species of fungi to generic level<br>2.3 Perform field identification of non-pathogenic fungi species to generic level<br>2.4 Document location, size, and condition of wood decay fungi, presence of mycoparasites, and size, condition and extent of hollows and cavities<br>2.5 Document details of environmental characteristics of fungal affected trees: site characteristics, site history, soil conditions, climate and microclimatic variables, proximity of adjacent trees and vegetation, movement of people and vehicles, and potential impacts to assets, property and landscape<br>2.6 Determine methods of introduction, establishment, spread, and susceptibility of adjacent trees and vegetation<br>2.7 Perform field sampling techniques of wood decay fungi and mycoparasites suitable for in-vitro culture and identification |
| 3. Prepare in-vitro media, cultures | 3.1 Decant and prepare standard laboratory chemicals and materials<br>3.2 Create selective culturing media to grow and isolate field samples<br>3.3 Prepare field samples for culturing on media<br>3.4 Take samples from field samples and apply to growth media<br>3.5 Isolate clean cultures from primary field cultures, and repeat until |

| Element | Performance criteria |
|---|---|
| | clean sample is obtained<br>3.6 Prepare cultured samples for further testing such as deoxyribonucleic (DNA) based assay techniques<br>3.7 Document records and store securely digital and physical evidence: field samples, slides, growth media, DNA and cultured samples, following chain of evidence protocols |
| 4. Conduct laboratory identification and assays | 4.1 Prepare microscope slides of isolated cultures<br>4.2 Examine and identify cultured fungal samples<br>4.3 Perform laboratory identification of wood decay fungi to generic level<br>4.4 Record digital images of identified fungi<br>4.5 Perform laboratory assay tests for growth rate, temperature range, pathogenicity, and mycoparasitism to evaluate fungal characteristics<br>4.6 Document experimental assay test results<br>4.7 Develop and maintain a culture collection for identification of fungi and submission to relevant government databases and culture collections<br>4.8 Document a diagnostic report on a suspected emergency plant pest (EPP) following PLANTPLAN guidelines |

## Foundation Skills

Foundation Skills essential to performance are explicit in the performance criteria of this unit of competency.

## Range of Conditions

## Unit Mapping Information

Not in unit mapping for CfE, but is used in AHC80115 - no equivalent.

## Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72