Australian Government

AHCARB704 Conduct an entomology research project

Release: 1

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Modification History

Release	TP Version	Comment
1	AHCv1.0	Initial release

Application

This unit of competency describes the skills and knowledge required to conduct an entomology research project.

This unit applies to individuals with broad and coherent theoretical and technical knowledge with depth in one or more disciplines or areas of practice and cognitive, technical and communication skills to demonstrate autonomy, well developed judgement and responsibility in undertaking complex self-directed work and learning to provide specialist advice and functions.

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

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 Insects	1.1 Describe and identify anatomical, morphological and taxonomical features of insect specimens 1.2 Examine and describe the behaviour, ecology and nutrition of insect interaction with trees 1.3 Research annualised population and generational behaviour of

Element	Performance criteria
	insects
2. Construct professional resource collections	2.1 Develop and document an insect collection 2.2 Construct database of tree pests and vectors 2.3 Compile host, climatic and geographic distribution data 2.4 Record and compile generational phenology
3. Research and assess tree-pest and vector interactions	3.1 Research and identify natural antagonists, predators and parasitoids of insects 3.2 Identify phytophagous and damaging insect-tree dynamics 3.3 Identify symbiotic/beneficial and insect-tree dynamics 3.4 Research physiology of tree resistance to insects 3.5 Research host-pathogen and pathogen-vector interactions 3.6 Evaluate conditions associated with the selection of host trees by subcortical feeding insects and the factors associated with successful attack 3.7 Research and assess insect transmission of disease 3.8 Evaluate multi-trophic interactions between host plant-pest-pathogen/parasitoids from a systems approach
4. Evaluate control systems	4.1 Determine economic costs of insects 4.2 Evaluate insects as environmental indicators 4.3 Determine insect biological hazards 4.4 Investigate direct and indirect impact and effects of chemical pesticides or biocontrol agents on target and non-target organisms 4.5 Research insect resistance to pesticides 4.6 Investigate fungi as biological control agents of tree pests 4.7 Evaluate biological control methods of Integrated Pest Management (IPM) 4.8 Research and evaluate plant health management options to offset the effects of insect damage
5. Present results	5.1 Collect, tabulate, and statistically analyse data for publications 5.2 Determine the relevance of the results to arboriculture 5.3 Compile and communicate research and test results in a research paper 5.4 Submit research paper to a professional technical peer-reviewed journal 5.5 Review feedback and amend where appropriate 5.6 Communicate key facts and conclusions to industry in an article published in a non-technical industry publication or via presentation to an industry training event

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