



Australian Government

Assessment Requirements for AHCSDT412 Perform advanced tests on seeds

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 7.0.

Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has performed each of the following tests on seeds:

- tetrazolium test, including:
 - prepared seed and tetrazolium solution
 - stained seeds with a tetrazolium solution
- seed vigour test
- 1000 seed weight test, including:
 - calculated variance, standard deviation and coefficient of variance
 - determined the weight per 1000 pure seeds from a submitted sample

There must also be evidence that the individual has conducted at least one of the following tests:

- Anguina test on annual ryegrass seed, including:
 - identified galls on ryegrass seed
 - inspected seed samples using a diaphanoscope
 - used a microscope to detect nematode gall (*Anguina* spp.)
- endophytic seed test, including:
 - prepared endophyte staining solution
 - tested seed for endophyte presence
 - tested seedlings for endophyte presence
- electrophoresis test on a seed sample, including:
 - extracted seed and prepared gel
 - centrifuged seed and gel mixes
 - interpreted stain bands and patterns.

There must also be evidence that the individual has:

- verified compliance of seed sample with documentation

- selected and correctly used personal protective equipment (PPE)
- prepared and stored working sample and supplied sample to maintain quality and condition
- selected, prepared and used testing equipment and materials to conduct tests and complied with manufacturer specifications
- selected, and prepared replicates from working samples for testing
- conducted seed tests, examined tested seed, assessed and calculated test results
- maintained accurate labelling and records at each stage of the testing process for traceability according to industry and workplace standards
- cleaned test equipment, laboratory and disposed of waste according to biosecurity and workplace procedures
- disposed of replicates and waste
- updated records.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- industry and workplace operating procedures for seed tests, including:
 - Anguina test on annual ryegrass seed
 - endophytic seed test
 - electrophoresis test on a seed sample
 - tetrazolium test
 - seed vigour test
 - 1000 seed weight test
 - testing equipment, setup, calibration and operation for the different seed tests
- work health, safety and environment requirements
- seed biology and relation to seed quality, condition and seed tests
- role of the International Seed Testing Association (ISTA) and the ISTA Rules for Seed Testing
- seed sampling methods, including:
 - hand samples
 - mechanical samples
 - authorised sampler and seed certification
 - preparing statistically representative replicates by weight or number of seed for testing
- federal and state agencies overseeing seed movement in Australia and sampling and testing standards, including:
 - Australian Quarantine and Inspection Service (AQIS)
 - • Organisation for Economic Co-operation and Development (OECD)
 - • Association of Official Seed Certifying Agencies (AOSCA)
 - • other certification agencies
- calculations and statistical analysis of seed test results

- personal protective equipment (PPE)
- assessment of seed test results and against industry standards and reporting results
- recordkeeping and documentation for traceability and reporting.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in seed testing laboratory or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - seeds of crops or pasture plants
 - use of tools and equipment to perform all tests selected in the Performance Evidence
 - use of personal protective equipment
- specifications:
 - use of sampled seed documentation
 - use of workplace policies, procedures, processes and forms for seed testing
 - use of manufacturer operating instructions for seed sampling and testing equipment
 - access to specific safety data sheets for reagents used in seed testing
 - use of workplace instructions and industry specifications for seed testing and assessment
 - access to specific seed testing and certification regulations and industry practice
- relationships:
 - supplier of seed for testing
 - supervisor(s)
- timeframes:
 - according to seed testing times specified in testing procedures.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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