



Australian Government

AHCSDT407 Perform an endophytic seed test

Release: 1

AHCSDT407 Perform an endophytic seed test

Modification History

Release	TP Version	Comment
1	AHCv1.0	Initial release

Application

This unit of competency describes the skills and knowledge required to determine of the presence of fungal endophyte in certain grasses.

It applies to senior seed analysts who analyse information and exercise judgement to complete a range of advanced skilled activities and demonstrate deep knowledge in a specific technical area. They have accountability for the work of others and analyse, design and communicate solutions to a range of complex problems. All work is carried out to comply with workplace procedures.

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

Seed testing (SDT)

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. Prepare for endophyte testing	1.1 Review test request to identify samples to be tested, test methods and equipment 1.2 Clean and prepare equipment and working space 1.3 Prepare endophyte staining solution and alkaline or acid solution depending on method to be used 1.4 Prepare working sample from Pure Seed
2. Test seed for	2.1 Soften seed for recommended time in the prepared solution at the

Element	Performance criteria
endophyte presence	prescribed temperature 2.2 Rinse seed thoroughly in running tap water 2.3 Remove lemma, palea and endosperm from seed and place the remaining tissue on a microscope slide in a drop of endophyte staining solution crushing if necessary 2.4 Place cover glass on seed, applying gentle pressure and blot up excess stain 2.5 Examine seed with compound microscope and score as positive if endophytic hyphae are present, or negative if absent
3. Test seedlings for endophyte presence	3.1 Take 200-250 seeds from working sample at random 3.2 Sow seeds in good quality commercial potting mix at low density to allow for good growth 3.3 Examine well-developed seedlings from the germinated sample after growing for a minimum of 42 days 3.4 Cut seedling away from remnant seed and remove outermost sheath from the base of the seedling 3.5 Discard sheaths which are discoloured or have developed chlorophyll 3.6 Isolate a 3-5 mm wide longitudinal section of the sheath and place section on a microscope slide with the epidermis side down 3.7 Stain section immediately with the endophyte staining solution for prescribed time period 3.8 Place cover glass over the stained sheath section, press gently and blot of any excess staining solution 3.9 Examine the section with compound microscope and score as positive or negative if endophytic hyphae are present or absent
4. Record and report test results	4.1 Enter results under 'other determinations' 4.2 Record sample size used for testing and whether seeds or seedlings were tested 4.3 Report results in terms of the percentage of seeds or seedlings in which endophyte was detected

Foundation Skills

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

Range of Conditions

Unit Mapping Information

This unit is equivalent to AHCSDT407A Perform an endophytic seed test.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCSDT407 Perform an endophytic seed test

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Performance Evidence

The candidate must be assessed on their ability to integrate and apply the performance requirements of this unit in a workplace setting. Performance must be demonstrated consistently over time and in a suitable range of contexts.

The candidate must provide evidence that they can:

- prepare endophyte staining solution
- test seed for endophyte presence
- test seedlings for endophyte presence
- record and report results of tests

Knowledge Evidence

The candidate must demonstrate knowledge of:

- enterprise standard operating procedures (SOPs)
- identification of endophytes
- recording and reporting protocols
- relevant health, safety and environment requirements
- seed biology

Assessment Conditions

Assessors must satisfy current standards for RTOs.

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