



Australian Government

AHCSDT409 Perform a tetrazolium test

Release: 1

AHCSDT409 Perform a tetrazolium test

Modification History

Release	TP Version	Comment
1	AHCv1.0	Initial release

Application

This unit of competency describes the skills and knowledge required to perform a tetrazolium test to assess seed viability or germination potential.

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 replicates for testing	1.1 Draw seeds from the pure seed fraction for the number of replicates to be tested ensuring there is no selection of seed which may cause biased results 1.2 Use safe work practices and personal protective equipment
2. Prepare seed and tetrazolium solution	2.1 Pre-moisten seed under prescribed temperature and light conditions to reduce possibility of injury to seeds when puncturing or cutting and to enable penetration of the tetrazolium

Element	Performance criteria
	solution 2.2 Remove sticky mucilage from seeds as necessary 2.3 Expose seed tissue before staining as appropriate for the species being tested 2.4 Keep seeds moist before testing 2.5 Prepare tetrazolium solution using distilled water and add trace amounts of fungicide or antibiotics to solution if necessary for the species being tested
3. Stain with tetrazolium solution	3.1 Immerse seeds in tetrazolium solution 3.2 Maintain test at a temperature within the range 20 to 40°C, and maintain low light levels to facilitate staining 3.3 Increase duration of staining if temperatures below 30°C are used or decrease if higher temperatures are used 3.4 Decant the solution at end of staining period, rinse seeds with water and keep damp
4. Evaluate test results	4.1 Examine and evaluate each seed as viable or non-viable based on staining patterns applicable to the species being tested 4.2 Count the number of seeds considered viable in each replicate 4.3 Calculate the percentage of viable seed in each replicate and determine average percentage of viable seed across all replicates
5. Finalise reporting and clean up	5.1 Record and report results of test 5.2 Collect and dispose of laboratory and hazardous waste 5.3 Clean apparatus and equipment used in tetrazolium test and dispose of used chemicals and solutions safely

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 AHCSDT409A Perform a tetrazolium seed viability 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 AHCSDT409 Perform a tetrazolium 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 replicates for testing
- prepare seed and tetrazolium solution
- stain seeds with a tetrazolium solution
- evaluate and report test results
- record and report test results
- clean apparatus and equipment used in test and dispose safely of used products

Knowledge Evidence

The candidate must demonstrate knowledge of:

- calculations, tolerances and rounding results
- enterprise and/or legal traceability requirements
- enterprise standard operating procedures (SOPs)
- interpretation and recording of test result, including simple calculations
- relevant health, safety and environment requirements
- seed biology
- tetrazolium testing procedures
- the role of the International Seed Testing Association (ISTA) and the ISTA Rules for Seed Testing

Assessment Conditions

Assessors must satisfy current standards for RTOs.

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