



Australian Government

Department of Education, Employment and Workplace Relations

AHCSDT306A Perform a seed germination test

Release 1

AHCSDT306A Perform a seed germination test

Modification History

Release	TP Version	Comments
1	AHC10v4	Initial release

Unit Descriptor

This Unit covers the process of performing testing the germination potential of a seed sample under laboratory conditions.

Application of the Unit

This Unit applies to seed analysts working independently within enterprise guidelines. In general, they prepare samples for testing; conduct specified tests in accordance with enterprise requirements; maintain records and interpret results; and troubleshoot equipment problems.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Nil.

Employability Skills Information

This Unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a Unit of Competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

- | | |
|---|--|
| 1. Interpret and schedule test requirements | 1.1 Seeds to be germinated, test methods and equipment are identified.
1.2 Hazards and enterprise control measures associated with the sample, seed pre-treatment, test methods, reagents and/or equipment are recognised.
1.3 Work sequences are planned. |
| 2. Prepare materials for test | 2.1 Prescribed number of replicates are drawn.
2.2 Growing media is selected and prepared.
2.3 Seed is pre-treated to break physiological dormancy where necessary.
2.4 Water quality and pH is checked to ensure within required tolerances.
2.5 Apparatus and/or equipment for germinating seeds is checked and prepared for the test. |
| 3. Plant and maintain seeds | 3.1 Seed is planted on or into selected media according to enterprise guidelines.
3.2 Temperature and light conditions of germination apparatus are monitored in accordance with test procedures. |
| 4. Evaluate test results | 4.1 Seedlings are categorised and counted as normal or abnormal .
4.2 Un-germinated seed is assessed as hard, fresh or dead.
4.3 Other determinations for un-germinated seed are assessed if required.
4.4 Results are recorded and reported in accordance with enterprise guidelines. |
| 5. Maintain a safe work environment | 5.1 Safe work practices and personal protective equipment are used.
5.2 Wastes and environmental impacts are minimised.
5.3 Laboratory and hazardous waste are safely collected and disposed of.
5.4 Equipment and reagents are cleaned and stored. |

Required Skills and Knowledge

This section describes the skills and knowledge required for this Unit.

Required skills include:

Ability to:

- prepare growing media
- pre-treat seed to break dormancy
- plant and maintain seeds in a controlled environment
- assess seed germination
- record and report results
- maintain a safe work environment
- maintain security, integrity, traceability of samples, sub-samples, test data, results and documentation.

Required knowledge includes:

Knowledge of:

- the role of the International Seed Testing Association (ISTA) and the ISTA Rules for Seed Testing
- assessment of germination and determining need for retesting
- seed biology
- enterprise standard operating procedures (SOPs)
- enterprise and/or legal traceability requirements
- relevant health, safety and environment requirements
- calculations, tolerances and rounding results.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this Unit	The evidence required to demonstrate competency in this Unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following: • prepare growing media • assess seed germination • recording and reporting of results.
Context of and specific resources for assessment	Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.
Method of assessment	This Unit should be assessed together with core Units and other Units of Competency relevant to the function or work role.
Guidance information for assessment	To ensure consistency of performance, competency should be demonstrated on more than one occasion over a period of time in order to cover a variety of circumstances, cases and responsibilities, and where possible, over a number of assessment activities.

Range Statement

The range statement relates to the Unit of Competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Growing media</i> may include:	paper substrates; sand; or organic growing media.
<i>Pre-treatment of seeds</i> may include:	Pre-chilling; preheating; pre-storage; light; gibberellic acid; potassium nitrate; acid scarification; or mechanical scarification.
<i>Normal seedlings</i> may include:	intact seedlings; seedlings with slight defects; or seedlings with secondary infection as applicable to the species being tested.
<i>Abnormal seedlings</i> may include:	damaged; deformed or unbalanced; or decayed seedlings as applicable to the species being tested.
<i>Un-germinated seeds</i> may include:	hard; fresh; dead; or other categories of seed.

Unit Sector(s)

Seed Testing