



Australian Government

Department of Education, Employment and Workplace Relations

RTF5521A Monitor and manage soils

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This competency standard covers the process of monitoring and managing soils. It requires the ability to research information, prepare plans for crops/plants, collect soil and/or media samples, perform basic soil tests, interpret results from own or laboratory tests, and record and store information. It requires knowledge of soil types, soil physical properties, soil chemical properties, plant nutrition through soil management, soil conservation strategies and sustainable production techniques, basic soil field tests, soil sampling techniques, interpreting laboratory results, techniques to ameliorate soil properties, and record keeping.

Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Research information about soil	1.1 Information about soil is obtained from various sources and filed. 1.2 Information about soil is analysed for relevance to particular enterprise operation. 1.3 Particular soil properties, identified as relevant to the enterprise, are researched for further enquiry. 1.4 Relevant soil properties are identified for testing. 1.5 Soil tests are conducted or samples are collected and sent for analysis.
2 Apply information from soil testing to production and/or management plan	2.1 Results from soil testing are interpreted and correlated with soil records and production history. 2.2 Appropriate adjustments are made to production or management plans.
3 Develop soil amendment strategies	3.1 Soil properties capable of being ameliorated are identified for action. 3.2 Relevant soil ameliorants or cultural practices are identified, as appropriate, for inclusion in production/management plan. 3.3 Soil ameliorants are quantified and purchased. 3.4 Soil ameliorating activities are costed and included in production/management plan.
4 Monitor soil amendment strategies	4.1 Records of soil management activities are made and filed. 4.2 Tests are undertaken to monitor the performance of soil amelioration activities. 4.3 The production/management plan is modified accordingly and recorded for later use.

Required Skills and Knowledge

Not applicable.

Evidence Guide

What evidence is required to demonstrate competence for this standard as a whole?

Competence in determining basic properties of soils/media requires evidence that sampling, testing, interpreting and recording techniques have been successfully and appropriately implemented and monitored in an enterprise. The skills and knowledge required to determine the basic properties of soils/media must be **transferable** to a range of work environments and contexts. For example, this could include different soil/media types tested for different properties for a range of crops or plants.

What specific knowledge is needed to achieve the performance criteria?

Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts, and to deal with unplanned events. The knowledge requirements for this unit are listed below:

soil types

soil physical properties

soil chemical properties

plant nutrition through soil management

soil conservation strategies and sustainable production techniques

basic soil field tests

soil sampling techniques

interpreting laboratory results

techniques to ameliorate soil properties

record keeping.

What specific skills are needed to achieve the performance criteria?

To achieve the performance criteria, some complementary skills are required. These skills include the ability to:

research information

prepare production/management plans for crops/plants

collect soil/media samples

perform basic soil/media tests

interpret results from own or laboratory tests

record and store information.

What processes should be applied to this competency standard?

There are a number of processes that are learnt throughout work and life, which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these are covered by the **key competencies**, although others may be added. The questions below highlight how these processes are applied in this competency standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where 0 = not required, 1 = perform the process, 2 = perform and administer the process and 3 = perform, administer and design the process.

1. How can **communication of ideas and information** (3) be applied?

Through researching information and communicating this to staff and others.

2. How can **information be collected, analysed and organised** (3)?

Through recording, interpreting and filing soil/media results.

3. How are **activities planned and organised** (3)?

According to workplace procedures.

4. How can **team work** (2) be applied?

Through working with others to achieve an outcome.

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| 5. How can the use of mathematical ideas and techniques (2) be applied? | Through the use of accepted soil/media tests, calculations and costings for soil amelioration processes. |
| 6. How can problem-solving skills (3) be applied? | Through interpreting own or laboratory results and devising soil amelioration strategies. |
| 7. How can the use of technology (3) be applied? | Through the use of standard soil/media testing equipment. |

Are there other competency standards that could be assessed with this one?

This competency standard **could** be assessed on its own or in combination with other competencies relevant to the job function.

There is essential information about **assessing this competency standard for consistent performance** and **where and how it may be assessed**, in the Assessment Guidelines for this Training Package. All users of these competency standards must have **access** to the **Assessment Guidelines**. Further advice may also be sought from the relevant **sector booklet**.

Range Statement

Range of Variables

The Range of Variables explains the contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in training and assessment requirements may depend on the work situations available

What **tools and equipment** may be relevant to this standard?

Tools and equipment include spades, augers, soil/media sample storing and recording materials, field test kits, and interpreting charts.

What **tests** may be performed?

Soils/media may be tested for depth, colour, texture, structure, compaction, air-filled porosity, readily available water, pH, major nutrient availability, and salinity.

What may be considered a **soil ameliorant**?

Soil ameliorants may include pH modifying agents such as lime, structure modifying agents such as gypsum and artificial structure additives, flocculating agents, texture modifications, and wetting and water retention agents.

What may be considered a **soil ameliorating practice**?

Soil ameliorating practices may include compaction alleviation and modifications to soil drainage or moisture holding capacity.

For more information on contexts, environment and variables for training and assessment refer to the Sector Booklet.

Unit Sector(s)

Not applicable.