



**Australian Government**

# **Assessment Requirements for AHCSOL304 Implement soil improvements for garden and turf areas**

**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 4.0.

## 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 collected soil samples, including:

- determined the purpose for collecting and testing soil samples
- collected representative soil samples for testing and packaged and labelled them according to workplace and laboratory requirements
- collected samples of at least three different soil types, and:
  - conducted tests safely to determine soil physical and chemical properties according to industry standards
  - assessed test results and prepared soil improvement plan to meet the requirements and conditions required for the plant species to be cultivated.

There must also be evidence that, on at least one occasion, the individual has, according to workplace procedures:

- selected tools, materials and equipment required for implementing soil improvement plan
- calibrated equipment prior to application of soil improvement materials
- adjusted physical and chemical properties according to cultural requirements of the plants to be grown
- maintained records and reported soil test outcomes.

## 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:

- physical properties of soils and media and methods for testing, including:
  - colour
  - organic matter
  - texture tests using field and sieve analysis techniques

- structure
- air filled porosity
- moisture holding capacity
- soil bulk density
- infiltration rate and drainage properties, including hydraulic conductivity
- perched water tables
- wettability
- chemical properties of soils and media, and methods for testing, including:
  - pH using colorimetric and pH meters
  - salinity, total dissolved salts and electrical conductivity
  - types of nutrient tests and their purpose
- soil sampling, collecting and testing procedures, including:
  - tools and equipment required
  - procedures for testing
  - procedures for sampling, securing, packaging and labelling
- soil and media improvement strategies for physical and chemical characteristics, including:
  - products and processes for improving soil and media physical condition
  - soil ameliorants and improvement techniques
  - bio-stimulants
  - organic matter and effect on soil and media
  - water holding capacity and readily available water, including wetting agents and penetrants
  - soil biological organisms and their impact
  - effect of pH, salinity and fertilisers on availability of nutrients
  - soil profile both natural and constructed
  - Australian standards AS4454:2012 Composts, soil conditioners and mulches, and AS4419:2018 Soils for landscaping and garden use
- assessment and interpretation of soil test results for physical and chemical properties and their relationship to cultivated plants relevant to workplace
- basic mathematics for calculating rates of application of soil additives, water holding capacity, air filled porosity and measuring and weighing materials to perform accurate soil tests
- using test results to determine soil improvements
- safe field and laboratory practices when collecting and testing soils and media
- record keeping and reporting procedures for soil collecting, testing and planning procedures.

## Assessment Conditions

Assessment of skills must take place under the following conditions:

- • physical conditions:
  - skills must be demonstrated in a typical workplace environment or an environment that accurately represents workplace conditions
  - at least three separate soil sites or media for collecting and testing
- resources, equipment and materials:
  - soil testing equipment, including pH meter and pH colour test kit, conductivity meter, soil colour charts, NPK colour test kit
  - equipment for storing and handling samples
  - accurate measuring equipment for soil testing
  - personal protection and other safety equipment required for safe handling and testing of soils
- specifications:
  - workplace procedures and instructions related to soil testing and soil improvement
  - industry standards for testing and interpreting soil test results.

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>