

Modification history

Release	Comments
Release 2	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 4.0.
Release 1	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 1.0.

AHCSOL303	Implement soil improvements for garden and turf areas
Application	<p>This unit of competency describes the skills and knowledge required to collect and test soil samples for their physical and chemical characteristics and take corrective action to improve the soil for garden beds and turf areas.</p> <p>The unit applies to individuals who work under broad direction and take responsibility for their own work. They use discretion and judgement in the selection, allocation and use of available resources and for solving problems.</p> <p>No occupational licensing, legislative or certification requirements are known to apply to this unit at the time of publication.</p>
Prerequisite Unit	Nil
Unit Sector	Soil (SOL)

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare and collect soil samples for testing	1.1 Identify purpose and method of soil sampling and testing according to workplace requirements 1.2 Select tools, equipment and materials required for safely collecting soil samples according to testing procedures and workplace requirements 1.3 Collect representative soil samples for testing according to workplace procedures 1.4 Package and label soil samples ready for testing according to laboratory and workplace procedures
2. Determine physical characteristics of sample	2.1 Conduct tests to determine the physical characteristics of soils according to laboratory procedures and safe work practices 2.2 Identify depth of topsoil and assess suitability for cultural requirements of plants to be grown 2.3 Assess soil physical characteristic test results to determine drainage and water holding performance 2.4 Identify and select soil improvements required to meet cultural requirements of plants to be grown according to industry standards 2.5 Prepare a soil improvement plan for improving physical characteristics according to workplace procedures
3. Determine chemical characteristics of sample	3.1 Conduct tests to determine chemical properties of soil according to laboratory procedures and safe work practices 3.2 Assess soil chemical properties test results to determine effect on cultural requirements of plants to be grown 3.3 Identify and select soil chemical improvements required to meet cultural requirements of plants to be grown according to industry standards 3.4 Update soil improvement plan for improving chemical characteristics according to workplace procedures

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
4. Prepare soils for planting or replanting	4.1 Select tools, equipment and materials required to safely incorporate soil treatments according to soil improvement plan and workplace requirements 4.2 Calibrate equipment to ensure application of soil improvement materials complies with improvement plan 4.3 Implement soil improvement plan for garden and turf areas according to workplace procedures and industry standards 4.4 Adjust soil levels and consolidate ready for planting according to workplace procedures 4.5 Record and report work outcomes according to workplace procedures

Foundation Skills	
<i>This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.</i>	
Skill	Description
Writing	<ul style="list-style-type: none"> Accurately record and complete organisational documentation using clear language, correct spelling, grammar and terminology when labelling samples, preparing soil improvement plans, and reporting work outcomes
Numeracy	<ul style="list-style-type: none"> Perform weight and volumetric measurements when preparing and assessing soil tests. Calculate soil improvement materials to include in the soil improvement plan

Unit Mapping Information			
Code and title current version	Code and title previous version	Comments	Equivalence status
AHCSOL303 Implement soil improvements for garden and turf areas	AHCSOL303 Implement soil improvements for garden and turf areas	Changes to Performance Criteria for clarity Updated Performance Evidence and Knowledge Evidence	Equivalent unit

Links	Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72
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TITLE	Assessment requirements for AHCSOL303 Implement soil improvements for garden and turf areas
Performance Evidence	
<p>An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.</p> <p>There must be evidence that the individual has demonstrated the ability to collect soil samples from at least three separate sites ensuring they have:</p> <ul style="list-style-type: none"> • determined the purpose for collecting and testing soil samples • collected representative soil samples for testing and package and labelled according to workplace and laboratory requirements • 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 • selected tools, materials and equipment required for implementing soil improvement plan • calibrated equipment prior to application of soil improvement materials according to workplace procedures • implemented soil improvement plan adjusting physical and chemical properties according to workplace requirements and cultural requirements of the plants to be grown • maintained records and reported soil test outcomes according to workplace procedures. 	
Knowledge Evidence	
<p>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:</p> <ul style="list-style-type: none"> • physical properties of soils and media and methods for testing including: <ul style="list-style-type: none"> • 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 • interpreting moisture release curves • chemical properties of soils (incl. media) and methods for testing including: <ul style="list-style-type: none"> • pH using colorimetric and pH meters • salinity, total dissolved salts, electrical conductivity • nutrient tests and interpretation of results and recommendations • soil sampling, collecting and testing procedures including: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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 including Australian and international standards relevant to their construction • assessment and interpretation of soil test results for physical and chemical properties and their relationship to cultivated plants relevant to workplace 	

Knowledge Evidence	
<ul style="list-style-type: none"> • 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 • development of a soil improvement plan • 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	
<p>Assessment of skills must take place under the following conditions:</p> <ul style="list-style-type: none"> • physical conditions: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • soil testing equipment including, pH meter and colour test kit, conductivity meter, soil colour charts, NPK colour test kits • laboratory equipment for storage, handling and accurate measurement of materials, volumes and weights for soil testing • personal protection and other safety equipment required for safe handling of soils and laboratory chemicals • specifications: <ul style="list-style-type: none"> • workplace procedures and instructions related to soil testing, laboratory use and soil improvement • industry standards for testing and interpreting soil test results <p>Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.</p>	
Links	<p>Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72</p>