Australian Government

Department of Education, Employment and Workplace Relations

AHCSOL401A Sample soils and interpret results

Release: 1

AHCSOL401A Sample soils and interpret results

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers sampling of soils and interpreting of soil test results and defines the standard required to: collect soil/media samples using appropriate sampling methodology; prepare soil/media samples for dispatch to soil analysis laboratory; receive and interpret analytic results; file and record analytic results for future use; implement a nutrient/nutrition program.

Application of the Unit

Application of the unit	This unit applies to those whose job role includes undertaking soil or growing media sampling and interpreting the results as a foundation for further horticultural operations such as nutrition programs and irrigation scheduling.

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for soil sampling	1.1. The soils to be surveyed, surveying activity and contractors are identified according to site plans and enterprise work procedures. 1.2. Tools, equipment and machinery are selected according to site conditions, testing agency requirements and enterprise work procedures. 1.3. If required, pre-operational and safety checks are carried out on tools, equipment and machinery according to manufacturers specifications and enterprise work procedures. 1.4. Areas of homogeneous soil types are identified for sampling. 1.5. Services are located using site plans and in consultation with the supervisor. 1.6. Occupational Health and Safety (OHS) hazards are identified, risks assessed, controls implemented and reported to the supervisor. 1.7. Suitable safety equipment and Personal Protective Equipment (PPE) are selected, used and maintained. 1.8. A clean and safe work area is maintained throughout and on completion of work.
2. Determine soil characteristics by performing soil sampling	2.1. The density and depth for a representative sampling of the area are determined according to enterprise work procedures. 2.2. Holes are excavated at identified sampling sites according to enterprise work procedures, OHS requirements and with due consideration of the environmental implications. 2.3. Samples for off-site testing are collected and prepared, packaged, accurately labelled and dispatched according to testing agency requirements and enterprise work procedures. 2.4. The physical and chemical characteristics of the soil are determined according to investigative requirements and best practice guidelines. 2.5. Sampling and testing tools and equipment are cleaned of all residues and returned to storage according to manufacturer's specifications and enterprise work procedures. 2.6. Results are recorded in an established format according to enterprise work procedures.
3. Interpret results of	3.1. The soil types of the sample area are classified

ELEMENT	PERFORMANCE CRITERIA
soil analysis	according to standards for soil classification. 3.2. The acceptable soil physical and chemical parameters for a specified plant are determined from published data and historical records. 3.3. Collected analytical results are compared with acceptable physical and chemical parameters for a specified plant. 3.4. Soil characteristics are evaluated to determine whether they can be altered to meet plant needs. 3.5. The Readily Available Water (RAW) values for irrigation sites are determined according to industry standards and enterprise work procedures.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communicate with work team members, supervisors and contractors, interpret and apply soil surveying specifications, utilise proforma reporting, analysis and work procedure documents, and understand soil surveying data
- measure distance, depth and spacing, calculate area, volume and RAW values, calibrate tools and equipment, and interpret analytical results
- coordinate own activities with the requirements and schedules of contractors and other work teams to sequentially and effectively complete surveying activities in a timely and cost effective manner
- use oral communication skills/language competence to fulfil the job role as specified by the organisation including questioning, active listening, asking for clarification, negotiating solutions and responding to a range of views
- use numeracy skills to estimate, calculate and record routine and more complex workplace measures and data
- use interpersonal skills to work with others and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

Required knowledge

- practical understanding of the range of sample collection, testing and analytical methods that may be used to perform soil surveys, and the association of surveying methods with site conditions, environmental implications and intended

REQUIRED SKILLS AND KNOWLEDGE
horticultural use of the surveyed site • the physical and chemical properties of soils in relation to their ability to support specified horticultural production • the capacity of soils to provide water to plants • the importance of organic matter in soil in relation to the intended horticultural use • awareness of ameliorants and soil improvement techniques for addressing site limitations identified through surveying • awareness of the comparative environmental implications associated with soil surveying activities and the application of analytical results.

Evidence Guide

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: • collect soil/media samples using appropriate sampling methodology • prepare soil/media samples for dispatch to soil analysis laboratory • receive and interpret analytic results • file and record analytic results for future use • implement a nutrient/nutrition program.
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.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole.	
Soils may include:	• all soil types used for horticultural and agricultural production.
Soil tests may include:	• a range of chemical analyses • structure and texture analysis • soil biology analysis.

Unit Sector(s)

Unit sector	Soils and media

Co-requisite units

Co-requisite units		

Competency field

Competency field	