



Australian Government

Department of Education, Employment and Workplace Relations

AHCPCM402A Develop a soil health and plant nutrition program

Release: 2

AHPCPM402A Develop a soil health and plant nutrition program

Modification History

June 2012: Updated Unit mapping information.

Unit Descriptor

Unit descriptor	This unit covers developing a soil health and plant nutrition program and defines the standard required to: access and analyse information on regional and site factors; assess the physical, chemical and biological characteristics of soils; assess the physical, chemical and biological requirements of plants; select suitable management practices, soil amendments, additives and fertilisers; document implementation plans including monitoring of soil and plant growth.
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Application of the Unit

Application of the unit	This unit applies to those whose job role includes the application of knowledge including soil health and fertility, plant biology and plant nutrition requirements.
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Determine relevant regional data and site characteristics	1.1. Goals and target site for assessment and development of program are defined. 1.2. Relevant climate data, environmental context information and site data are accessed and reviewed. 1.3. Appropriate soil, plant and water tests are determined according to plant species, climatic conditions, prevailing growth media, industry best practice and enterprise guidelines. 1.4. Soil, plant and water testing program is developed that defines sampling, field testing, off-site analysis activities, task responsibilities, involvement of contractors, scheduling and desired information outcomes. 1.5. Testing tasks are implemented and monitored, liaison procedures with outside testing agencies are supervised, and remedial action is undertaken where necessary. 1.6. Data and readings are compiled and presented in a form that can be easily understood. 1.7. Seasonal variations and requirements are determined from published data on species, historical records, own experience, industry best practice and enterprise guidelines. 1.8. Characteristics, condition and nutritional status of soils and plant species are determined by analysing collected data and comparing to accepted standards.
2. Define the requirements for plant nutrition	2.1. Different nutritional requirements of the plant during growing cycle and a range of conditions are identified according to published data on species, historical records, own experience and enterprise guidelines. 2.2. Program is developed to achieve appropriate soil conditions and nutrient availability for plant growth. 2.3. Soil amendments, management practices and fertiliser requirements are determined. 2.4. Resources, tools, equipment and machinery required for program are identified and costed, and availability is confirmed with suppliers, contractors and appropriate personnel. 2.5. Cost-effective approach to soil management, soil amendment, and provision of plant nutrients is determined. 2.6. Occupational Health and Safety (OHS) hazards associated with program are identified, risks are assessed and controls are developed and documented.

ELEMENT	PERFORMANCE CRITERIA
	2.7. Environmental implications of program are identified and documented in plant nutrition program.

ELEMENT	PERFORMANCE CRITERIA
3. Document the soil health and plant nutrition program and specifications	3.1. Detailed plan, objectives, specifications and associated costs are established based on program requirements. 3.2. Detailed on-site procedures and schedules required for program are developed and documented.
4. Monitor plant growth and evaluate the program	4.1. Program implementation and results are monitored by testing soil, plants and/or produce. 4.2. Program is reviewed and refined to ensure it is responsive to changing conditions. 4.3. Non-compliance with documented objectives and specifications is identified and remedial actions are implemented to alleviate or overcome identified shortcomings in program. 4.4. Remedial action to improve plant nutrition is taken and documented. 4.5. Agreed changes are incorporated into a detailed plan.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- consultants and customers
- complying with legislative requirements and codes of practice
- conducting literature and consultative research, and collating and analysing findings on plant nutritional requirements, nutrients available from soils and other growth media, and environmental implications of program
- use literacy skills to read, interpret and follow organisational policies and procedures, develop sequenced written instructions, record accurately and legibly information collected and select and apply procedures to a range of tasks
- 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 SKILLS AND KNOWLEDGE**Required knowledge**

- characteristics of soil and other growth media types, uses and additives to enhance available nutrition for specific plants
- main simple and compound fertiliser products available to enterprise, including analysis, solubility, salt index, application rates and costs
- methods of nutrient uptake by plants and favourable conditions for effective uptake to occur
- nutrients and water required by plants grown within enterprise and affects of nutrient deficiency and toxicity on individual plant species and varieties, including visual symptoms
- plant physiology
- OHS hazards associated with implementing a plant nutrition program and controls necessary to remove or minimise associated risks
- organic matter, pest and disease, and nutrient interactions in soil and nutrient cycling
- practical relevance of the concepts to specific plants and soils used in the enterprise
- practical understanding of environmental issues associated with selecting nutritional materials, implementing a plant nutrition program, needing to comply with legislation and ensuring minimal impact on environment
- processes and techniques for preparing, costing and documenting a plant nutrition program
- relationship between soil and growth media characteristics and availability of nutrients, including macro and micro elements, to plants
- site evaluation techniques, including methods of sampling and analysing soils and other growth media
- soil amendments commonly required to treat soil problems experienced by enterprise.

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:

- access and analyse information on regional and site factors
- assess the physical, chemical and biological characteristics of soils
- assess the physical, chemical and biological requirements of plants
- select suitable management practices, soil amendments, additives and fertilisers
- document implementation plans including monitoring of soil and plant growth.

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 types of soils and growing media.

Nutrients may include:

- all products and materials to meet the nutritional requirements of plants
- to modify soil pH
- soil ameliorants to improve soil fertility.

Unit Sector(s)

Unit sector	Plants
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Co-requisite units

Co-requisite units		

Competency field

Competency field	
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