



Australian Government

AHCBAC514 Design and manage a crop or pasture nutrition program

Release: 1

AHCBA514 Design and manage a crop or pasture nutrition program

Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 6.0.

Application

This unit of competency describes the skills and knowledge required to review, test and analyse site characteristics, determine plant nutrient requirements, design a nutrient management plan, and monitor and evaluate a crop or pasture nutrition program and nutrient management plan.

The unit applies to individuals who apply specialised skills and knowledge to the design and management of a crop or pasture nutrition program, and take personal responsibility and exercise autonomy in undertaking complex work. They analyse and synthesise information, and analyse, design and communicate solutions to sometimes complex problems.

All work must be carried out to comply with workplace procedures, health and safety in the workplace requirements, legislative and regulatory requirements, and sustainability and biosecurity practices.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Broad Acre Cropping (BAC)

Elements and Performance Criteria

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. Review, test and	1.1 Review workplace crop or pasture production plan in consultation

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<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
analyse site characteristics	with land manager to determine production, economic output and environmental goals for assessment and development of nutrition program 1.2 Access and review climate, environmental and site data 1.3 Determine soil, plant and water tests for plant species and climatic conditions according to industry accepted standards and workplace requirements 1.4 Develop soil, plant and water testing program that includes visual inspection, sampling, field testing, off-site analysis, task responsibilities, scheduling and desired information outcomes 1.5 Implement and monitor a soil, plant and water testing program 1.6 Supervise liaison with outside testing agencies and take remedial action where necessary 1.7 Determine characteristics, condition and nutritional status of soil and plant species by analysing and comparing data against industry accepted standards
2. Determine plant production system nutrient requirements	2.1 Identify plant species nutrition requirements during growing cycle from published data, historical records, current site data, experience and workplace guidelines 2.2 Identify appropriate soil conditions and nutrient availability for plant production according to workplace crop or pasture production plan 2.3 Calculate capital and maintenance nutrient applications using nutrient planning tools 2.4 Determine potential seasonal variations requirements 2.5 Document nutrition program according to analysis of plant production nutrient requirements
3. Design a nutrient management plan	3.1 Identify criteria for determining and selecting fertiliser and soil amendment products 3.2 Calculate application rates according to soil, plant and water test results, plant requirements, growth stage, manufacturer specifications and workplace crop or pasture production plan 3.3 Select application methods and timings to ensure effective and efficient product formulation and to minimise loss 3.4 Identify and cost resource requirements for program, and confirm

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	availability of suppliers, contractors and appropriate personnel 3.5 Calculate cost-effective unit cost, total costs and estimated returns of soil management and amendment, and provision of plant nutrients 3.6 Identify and apply applicable compliance requirements of legislation and regulations 3.7 Identify and assess workplace health and safety, environmental hazards and risks, and environmental and biosecurity impacts of nutrition program 3.8 Develop and document workplace health and safety and environmental and biosecurity controls to minimise risks, impacts and poor nutrient management practices according to workplace environmental and biosecurity procedures 3.9 Document workplace nutrient management plan according to analysis of nutrient management requirements
4. Monitor and evaluate nutrition program and nutrient management plan	4.1 Monitor and evaluate nutrition program and nutrient management plan implementation and results, and produce according to industry accepted standards and workplace requirements 4.2 Review and refine nutrition program in response to changing conditions 4.3 Identify non-compliance with documented nutrient management plan, and determine remedial actions 4.4 Document remedial action to improve plant nutrition, and report to relevant personnel 4.5 Record nutrition program results, and incorporate changes to nutrient management plan and nutrition program for future season application

Foundation Skills

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.

Skill	Description
Reading	Identify and interpret information regarding requirements for crop

Skill	Description
	or pasture nutrition program and nutrient management plan
Oral communication	Use clear communication with relevant personnel to discuss and report plant nutrition remedial action

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCBAC514 Design and manage a crop or pasture nutrition program	Not applicable	The unit has been created to address an emerging skill or task required by industry	Newly created

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCBA514 Design and manage a crop or pasture nutrition program

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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 designed and managed a crop or pasture nutrition program on at least one occasion, and has:

- reviewed and analysed workplace crop or pasture production plan, findings on plant structure, biology and nutritional requirements, nutrients available from fertilisers, soils and soil amendments
- documented a nutrition program and nutrient management plan, including remedial actions
- calculated fertiliser and soil amendment application rates
- identified nutrition program resource requirements, and calculated cost and estimated returns
- identified and complied with legislation and regulations requirements applicable to designing and managing a crop or pasture nutrition program
- applied relevant workplace health and safety and environmental and biosecurity legislation, regulations and workplace procedures
- developed and documented relevant workplace health and safety and environmental and biosecurity controls to minimise risks, impacts and poor nutrient management practices.

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:

- principals of workplace crop or pasture production plan
- site evaluation techniques, including methods of sampling and analysing soils and other growth media
- characteristics and variability of soil and uses of soil amendments and additives to enhance available nutrition for specific crops

- characteristics of plants at various growth stages, including nutritional requirements and demands
- plant nutritional requirements of selected crop species
- organic matter, pests and disease, and nutrient interactions in soil and nutrient cycle
- soil amendments commonly required to treat soil problems experienced by workplace
- nutrients and water required by plants grown within workplace, and effects of nutrient deficiency and toxicity on individual plant species and varieties, including visual symptoms
- processes and techniques for preparing, costing and documenting a plant nutrition program
- common and compound fertiliser products and soil ameliorants available to workplaces, including analysis, solubility, salt index, application rates, method, timing and costs
- methods of nutrient uptake by plants and favourable conditions for effective uptake to occur
- legislation and regulations requirements relevant to designing and managing a crop or pasture nutrition program
- workplace health and safety and environmental and biosecurity legislation, regulations and workplace procedures relevant to designing and managing a crop or pasture nutrition program.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - a workplace setting or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - climate, environmental and current site data
 - species published data and historical records
 - soil, plant and water samples and testing equipment
 - plant identification keys and booklets
 - test results
 - soil amendment product specifications and performance data
 - fertiliser labels, product cards and material safety data sheets (MSDS)
- specifications:
 - workplace crop or pasture production plan
 - workplace health and safety and environmental and biosecurity legislation, regulations and workplace procedures relevant to designing and managing a crop or pasture nutrition program
 - legislation and regulations requirements relevant to designing and managing a crop or pasture nutrition program
- relationships:

- staff, managers, suppliers, contractors, consultants, appropriate personnel and customers
- timeframes:
 - according to the job requirements.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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