



Australian Government

AHCAGB523 Interpret and use agricultural data

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 6.0.

Application

This unit of competency describes the skills and knowledge required to identify, interpret, enter and use agricultural data, identify and address data gaps, and review agricultural data.

The unit applies to individuals who apply specialised skills and knowledge to the interpretation and implementation of agricultural data, and take personal responsibility and exercise autonomy in undertaking complex work. They analyse and synthesise information, and 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

Agribusiness (AGB)

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. Identify, access and apply agricultural data	1.1 Discuss workplace business objectives, goals and farming system with business owner or land manager to determine purpose of information being sought 1.2 Identify existing sources of agricultural data available in the

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	workplace to support workplace business objectives 1.3 Review and select appropriate software programs or applications (app) to meet workplace business objectives 1.4 Access existing agricultural data and enter into software program or app 1.5 Create maps and summary reports using existing data
2. Interpret and explain agricultural data	2.1 Interpret maps or reports to identify opportunities and limitations for operational improvements that support business objectives 2.2 Conduct field work to ground truth data and record interpretations of data for future use 2.3 Document data results using appropriate interpretation and presentation techniques 2.4 Discuss and explain data results and information with business owner or land manager
3. Analyse agricultural data	3.1 Collect and analyse data to determine significance of results 3.2 Undertake simple statistical analysis to detect data outliers, imbalances in generated data sets and identify erroneous data points, including determining spatial density of the managed data set 3.3 Produce variability maps from suitable data sets 3.4 Discuss and recommend solutions utilising agricultural data, and present to business owner or land manager for approval
4. Identify and address data gaps	4.1 Identify validity and reliability, and gaps in existing agricultural data 4.2 Identify solutions to address data gaps utilising existing sources 4.3 Identify and cost hardware and software solutions to address data gaps where required 4.4 Discuss and recommend solutions and seek approval from business owner or land manager
5. Use agricultural data	5.1 Collect and organise agricultural data and enter into software program or app 5.2 Generate maps and reports for agricultural activities for review and discussion with key business personnel 5.3 Incorporate agricultural data into business operations

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	5.4 Determine if corrective action is required and take appropriate action
6. Review and report agricultural data	6.1 Review production data to identify changes in productivity as a result of using agricultural data, and document results 6.2 Identify opportunities for improvements using agricultural data 6.3 Report results to business owner or land manager

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
Oral communication	Initiate discussions with business owner or land manager, using clear language to discuss business objectives, explain data results and information, recommend solutions and seek approval
Numeracy	- Access, record and analyse agricultural data for input into decision making - Estimate hardware and software acquisition, and calculate running costs - Compare hardware and software acquisition and running costs with costs of services provided by off-property suppliers

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCAGB523 Interpret and use agricultural data	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 AHCAGB523 Interpret and use agricultural data

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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 interpreted and used at least three sources of agricultural data on at least two separate occasions during a production cycle, and has:

- discussed workplace objectives and purpose of information being sought with business owner or land manager
- identified, accessed, explained, documented and analysed workplace agricultural data
- generated maps or reports for agricultural activities and incorporated them into business operations
- conducted field work to ground truth data
- identified validity and reliability, gaps in existing data, and solutions to address gaps in existing agricultural data
- identified, recommended and costed hardware and software solutions to address data gaps where required
- collected and organised agricultural data and entered it into software program or application (app)
- implemented corrective actions as required
- identified and reported opportunities for improvements utilising agricultural data.
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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:

- the concept of farming as a system, including the interconnection of:
 - plants
 - soil
 - water
 - environment

- weather
- finance
- production systems
- principles and practices for interpreting and using agricultural data, including:
 - how to distinguish between valid and invalid data and how to clean data
 - how to review data for spatial and temporal variance and compare current data to previous, or average data for consistency or variations
 - how to generate profitability maps of paddocks to highlight areas of differing return
 - how to transfer data to hardware controllers from generated maps
 - the importance of standardised data in generating whole of farm data analysis
 - data tracking and data inputs and outputs of the business
 - the importance of ground truthing
 - how agricultural data and decisions fit into the business plan, business drivers, costs and return on investment
- sources of data to assist with monitoring:
 - plants
 - soil
 - water
 - environment
 - salinity
 - erosion
 - weeds
 - biodiversity
- sources of data to assist with managing:
 - water use
 - precision mapping
 - precision and variable rate prescriptions
 - field record keeping
 - compliance record keeping
 - yield or harvest data
 - soil survey data
 - sensor network data, including; moisture probes, weather stations and canopy sensors
 - crop planning
 - agricultural machinery operation and monitoring
- types of data systems relevant to agricultural production, including:
 - Global Navigation Satellite Systems (GNSS)
 - relevant vegetation indices and their use
 - Unmanned Aerial Vehicle (UAV) imagery.

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:
 - hardware and software used to record agricultural data
- relationships:
 - business owner or land manager
- 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.

Links

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