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.

AHCIRG308	Monitor soils under irrigation
Application	This unit of competency describes the skills and knowledge required to assess physical and moisture properties of soil, monitor soil chemical properties, assess soil health and plant growth under irrigation, and implement strategies to optimise irrigation on the soil plant growing environment. The unit applies to individuals who monitor soils under irrigation under broad direction and take responsibility for their own work. No occupational licensing, legislative or certification requirements apply to this unit at the time of publication.
Prerequisite Unit	Nil
Unit Sector	Irrigation (IRG)

Elements	Performance Criteria
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Assess the physical properties of an irrigated soil	1.1 Describe the profile of an irrigated soil 1.2 Determine soil texture and structure within the soil layers 1.3 Interpret tests for organic matter level in a soil 1.4 Test for slaking and dispersion in an irrigated soil 1.5 Assess the infiltration rate for an irrigated soil 1.6 Measure soil moisture levels 1.7 Describe the impacts of cultivation and watering practices on the physical properties of a soil
2. Define soil moisture properties	2.1 Describe soil moisture tension and its role in determining water availability to plants 2.2 Assess the field capacity of an irrigated soil 2.3 Observe the wilting point for a plant species in an irrigated soil 2.4 Calculate the readily available water (RAW) in an irrigated soil
3. Monitor soil chemical properties	3.1 Interpret soil test results for salinity and sodicity levels in an irrigated soil 3.2 Interpret pH tests and the potential impact of pH on soil structure and nutrient availability
4. Implement strategies to optimise the irrigation growing environment for plants	4.1 Assess the risk of erosion in an irrigated soil 4.2 Implement and monitor a watering schedule 4.3 Adjust the frequency of watering based on available moisture, soil properties and plant response 4.4 Record and report soil and plant moisture status and irrigation requirements

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	• Interpret textual information from a range of sources to identify relevant and key information about workplace operations
Writing	• Document soil and plant moisture status and irrigation requirements
Oral communication	• Use clear language to describe irrigated soil profile, impacts of cultivation and watering practices, and soil moisture tension, and to report soil and plant moisture status and irrigation requirements
Numeracy skills	• Interpret irrigated soil test results • Calculate RAW for irrigated soil
Navigate the world of work	• Recognise and follow workplace requirements, including safety requirements, associated with own role and area of responsibility

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCIRG308 Monitor soils under irrigation Release 2	AHCIRG308 Monitor soils under irrigation Release 1	Minor changes to performance criteria and foundation skills	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

TITLE	Assessment requirements for AHCIRG308 Monitor soils under irrigation

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 monitored soils under irrigation on at least one occasion and has:

- adjusted watering practices to meet plant needs
- applied the results of soil testing to assessing soil properties
- assessed the erosion potential of an irrigated soil
- calculated moisture holding capacity of plants, including readily available water (RAW)
- conducted soil structure and texture assessment
- used soil moisture monitoring equipment.

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:

- adverse environmental impacts of irrigated plant production
- RAW calculations
- critical measures for moisture availability
- effect of dispersible soils under irrigation
- field capacity
- interpreting salinity, sodicity and pH tests
- signs of moisture stress & nutrient deficiency in plants
- soil moisture definitions and calculations
- soil moisture monitoring procedures
- soil structure and texture
- types of erosion
- wilting point.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
  - a workplace setting or an environment that accurately represents workplace conditions
- resources, equipment and materials:
  - irrigated soil and water test results
  - irrigation system equipment
  - irrigation system performance measuring tools and equipment
  - computer and software for recording, calculating and reporting data
- specifications:
  - measuring and recording procedures
- relationships:
  - supervisor
- timeframes:
  - according to job requirements.

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

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