



Australian Government

AHCIRG339 Monitor soils under irrigation

Release: 1

AHCIRG339 Monitor soils under irrigation

Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 4.0.

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 licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Irrigation (IRG)

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. Assess the physical properties of irrigated soil	1.1 Identify the profile of irrigated soil 1.2 Determine soil texture and structure within the soil layers 1.3 Interpret tests for organic matter level in soil 1.4 Test for slaking and dispersion in irrigated soil 1.5 Assess the infiltration rate for irrigated soil

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.6 Measure soil moisture levels 1.7 Assess the environmental impacts of cultivation and watering practices on the physical properties of soil
2. Monitor soil moisture properties	2.1 Identify soil moisture tension and its role in determining water availability to plants 2.2 Assess the field capacity of irrigated soil 2.3 Observe the wilting point for a plant species in irrigated soil 2.4 Calculate the readily available water (RAW) in irrigated soil
3. Monitor soil chemical properties	3.1 Interpret soil test results for salinity and sodicity levels in 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 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	Use correct terminology to 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

Skill	Description
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
AHCIRG339 Monitor soils under irrigation	AHCIRG308 Monitor soils under irrigation	Performance criteria clarified Foundation skills added Assessment requirements updated	Equivalent unit

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 AHCIRG339 Monitor soils under irrigation

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

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

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:

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

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
- 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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