



Australian Government

Department of Education, Employment and Workplace Relations

AHCIRG327A Implement an irrigation schedule

Release: 1

AHCIRG327A Implement an irrigation schedule

Modification History

Not applicable.

Unit Descriptor

This Unit covers the skills and knowledge required to monitor available soil moisture and implement a documented irrigation schedule, including consultation with the manager. The Unit requires the ability to: estimate water availability for plants/crops; determine irrigation shifts and rates from the irrigation schedule; test soil moisture levels; monitor and record irrigation data; and evaluate effectiveness of irrigation.

Application of the Unit

This Unit applies to skilled workers in the food and fibre production and amenity horticulture industries. Supervision of others and assessment of the impact of the irrigation program on the irrigated area and surrounding areas are likely to be required.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This Unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a Unit of Competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Interpret the <i>irrigation schedule</i>	1.1 Information on plant growing requirements is obtained 1.2 Moisture requirement throughout the growing season is interpreted 1.3 Predicted seasonal moisture deficit and watering requirements are read and checked with management 1.4 Parameters for the irrigation system are recorded
2 Determine irrigation shifts	2.1 The irrigated area is subdivided into the smallest units capable of individual irrigation and area, and irrigation equipment characteristics are noted for each 2.2 Each unit is defined for its soil irrigation capability 2.3 The crop/plant water requirement is defined for each unit 2.4 Units requiring similar irrigation are combined to form a shift that does not exceed the water delivery capacity of the property irrigation infrastructure 2.5 Water volume required to meet irrigation needs over specified period is determined
3 Implement irrigation schedule	3.1 Resources are coordinated and personnel briefed to deliver requirements 3.2 Watering program is implemented
4 Monitor irrigation	4.1 Plants and crops are inspected for growth rate and signs of stress 4.2 Frequency of irrigation is recorded 4.3 Water usage is measured and recorded, and does not exceed water allocation for a given period 4.4 Differences between estimated water use and actual water used are calculated 4.5 Water quality is measured according to enterprise OHS policy and procedures 4.6 Plant or crop growth and water use efficiency is assessed 4.7 Soil is measured for readily available water 4.8 Climate and weather conditions are recorded 4.9 Watering program is adjusted in response to rainfall events and changes to evapotranspiration rates
5 Record irrigation information and activities	5.1 Plant or crop environment data is recorded 5.2 Water usage is recorded 5.3 Irrigation shifts are recorded 5.4 System process data is recorded

Required Skills and Knowledge

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

Required skills include:

Ability to:

- access and discuss irrigation schedule
- interpret the information in an irrigation schedule
- liaise with other work areas
- consult with appropriate senior personnel or consultants
- compare plant health and growth to benchmark requirements
- identify irrigation requirements throughout the growing season by monitoring:
 - soil moisture levels
 - watertable level
 - water quality
 - signs of plant nutrient deficiencies
 - climatic conditions
 - frost risk
 - plant varietal characteristics and requirements
 - soil type and depth
 - crop stage and requirements if applicable
 - symptoms of water stress
 - effective root depth
- implement the irrigation schedule. This may include consideration of:
 - resources, including operators with appropriate skills
 - application rates
 - timing and length
 - materials, chemicals, services
 - maintenance programs and supplies
 - interaction between different irrigation employees or shifts.
- instruct irrigation system operator(s) as required
- apply sampling techniques
- conduct soil moisture tests
- monitor irrigation activities. This may include:
 - identifying soil moisture content and depth to which water will reach
 - identifying emitter output consistency
- take corrective action in response to out-of-specification results or non-compliance
- report and/or record problems and/or corrective action taken
- monitor the effectiveness of irrigation activities
- monitor the environmental impact of irrigation activities

- identify, rectify and/or report environmental non-compliance
- maintain workplace records
- maintain work area to meet housekeeping standards
- implement and follow relevant enterprise OHS and environmental policies and procedures.

Required knowledge includes:

Knowledge of:

- effect of irrigation techniques on plant growth
- visual symptoms of plant nutrient deficiencies, water stress and frost
- principles of soil moisture monitoring eg volumetric soil moisture content, percentage compared to soil moisture tension
- water budgeting tools
- irrigation strategies
- sampling techniques and procedures
- testing techniques and procedures
- interpretation of routine soil moisture tests
- procedures and responsibility for reporting problems
- resource requirements and availability
- recording requirements and procedures
- consultation requirements and procedures
- OHS hazards and controls
- environmental impacts, hazards and controls for irrigation.

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: • estimate water availability for plants/crops • determine irrigation shifts and rates • test soil moisture levels • monitor and record irrigation data • evaluate effectiveness of irrigation.
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

The range statement relates to the Unit of Competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
<i>Irrigation schedules</i> may include:	any system that schedules irrigation water through a growing season. Schedules may be based on: • soil-based systems, monitoring soil moisture • climate-based systems • plant-based systems, monitoring the plant • a combination of the above.

Unit Sector(s)

Irrigation