



Australian Government

Department of Education, Employment and Workplace Relations

AHCIRG408A Schedule irrigations

Release: 1

AHCIRG408A Schedule irrigations

Modification History

Not Applicable

Unit Descriptor

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| Unit descriptor | This unit covers the process of determining the timing and amount of each irrigation to meet crop or plant needs and environmental requirements, and defines the standard required to: use and maintain in-field equipment that monitors the plant environment; incorporate data from monitoring sources into scheduling systems; monitor crop/plant water use; assess efficacy of irrigation; record irrigation and scheduling parameters; plan for extremes of weather. |
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Application of the Unit

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| Application of the unit | This unit relates to scheduling for an irrigation system will be carried out without supervision but with general guidance on progress. |
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

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| Prerequisite units | | |
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Employability Skills Information

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| Employability skills | This unit contains employability skills. |
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Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

| ELEMENT | PERFORMANCE CRITERIA |
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| ELEMENT | PERFORMANCE CRITERIA |
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| 1. Monitor crop/plant water use | <p>1.1. Water use is measured or estimated from one or more systems.</p> <p>1.2. Water is accumulated as a soil water deficit in the root zone.</p> |
| 2. Apply a measured amount of water | <p>2.1. A pre-determined deficit is predicted using a scheduling system(s).</p> <p>2.2. Irrigation is applied to partly or fully replace the deficit.</p> <p>2.3. Where appropriate, water quantities are increased to ensure dilution and transport of toxic solutes below the root zone.</p> |
| 3. Assess efficacy of irrigation and repeat cycles of irrigation | <p>3.1. Effectiveness of irrigation application with in-field equipment is measured.</p> <p>3.2. The estimated soil moisture level in scheduling system is adjusted to match that measured.</p> <p>3.3. Where necessary, the scheduling system(s) is recalibrated.</p> <p>3.4. Cycles of irrigation are repeated until schedule is correctly established.</p> |
| 4. Record irrigation and scheduling parameters | <p>4.1. Each irrigation and significant rainfall event, plus other appropriate parameters used in scheduling system, are recorded.</p> <p>4.2. Drainage amount below root zone at each irrigation is estimated and recorded.</p> <p>4.3. System performance data is recorded.</p> |
| 5. Plan for extremes of weather | <p>5.1. Estimated deficits are modified to cater for any prolonged saturation following heavy rainfall.</p> <p>5.2. Shift areas, and where applicable, application rates, are altered to suit appropriate irrigation schedules that minimise frost damage.</p> <p>5.3. Strategies involving prioritising of plants/crops and intermittent irrigation are implemented at times of extreme heat.</p> |

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- use and maintain in-field equipment that monitors the plant environment
- incorporate data from monitoring sources (such as in-field equipment and remote sources) into scheduling systems that compute irrigation requirement
- monitor crop/plant water use
- apply a measured amount of water
- assess efficacy of irrigation and repeat cycles of irrigation
- record irrigation and scheduling parameters
- plan for extremes of weather
- follow environmental procedures
- use literacy skills to read, interpret and follow organisational policies and procedures, develop sequenced written instructions, record accurately and legibly information collected and select and apply procedures to a range of tasks
- use oral communication skills/language competence to fulfil the job role as specified by the organisation including questioning, active listening, asking for clarification, negotiating solutions and responding to a range of views
- use numeracy skills to estimate, calculate and record routine and more complex workplace measures and data
- use interpersonal skills to work with others and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

Required knowledge

- inter-relationship between plant, soil and the aerial environments in the determination of water budgets
- plant/crop response to moisture stress at different stages of growth
- possible adverse impacts on the crop and environment from inefficient scheduling or unpredictable weather effects
- recognition of moisture stress effects (sometimes desired) on plants
- physical soil characteristics such as infiltration rate, water holding capacity and wetted volume in the root zone
- weather forecasting of extreme weather events such as heat waves, frosts and storms, and appropriate contingency tactics to minimise impacts
- in-field irrigation reticulation performance and its capacity limits
- water quality monitoring methods and acceptable quality limits
- water authority standards and procedures
- enterprise and environmental policies and procedures.

Evidence Guide

| EVIDENCE GUIDE | |
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| 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 | <p>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:</p> <ul style="list-style-type: none"> • use and maintain in-field equipment that monitors the plant environment • incorporate data from monitoring sources into scheduling systems • monitor crop/plant water use • assess efficacy of irrigation • record irrigation and scheduling parameters • plan for extremes of weather |
| 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

| RANGE STATEMENT | |
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| The range statement relates to the unit of competency as a whole. | |
| Types of irrigation systems may include: | <ul style="list-style-type: none"> • micro • spray • gravity fed • border check systems |
| Irrigation systems may range from: | <ul style="list-style-type: none"> • manual operation and monitoring to fully automated with computer control and monitoring. |

Unit Sector(s)

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| Unit sector | Irrigation |
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Co-requisite units

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| Co-requisite units | | |
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Competency field

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| Competency field | |
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