



Australian Government

AHCNSY314 Operate fertigation equipment

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 prepare, operate and shut down fertigation equipment, and report fertigation activities, to deliver fertilisers using an irrigation system.

The unit applies to individuals who operate fertigation equipment 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

Nursery (NSY)

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. Prepare materials and equipment for operation	1.1 Determine work requirements from workplace instructions 1.2 Identify potential hazards and risks, and implement safe working practices to manage risks 1.3 Select required tools, equipment and machinery, and check for safe operation 1.4 Select, fit, use and maintain personal protective equipment applicable to the task

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.5 Identify water quality issues related to fertigation activities 1.6 Calibrate and connect injection or fertigation equipment 1.7 Calculate fertiliser and chemical concentration, and mix according to compatibility requirements 1.8 Prepare equipment to meet fertigation requirements
2. Operate the fertigation process	2.1 Start up fertigation process according to operators manual 2.2 Operate and monitor fertigation process to confirm performance is maintained within specification 2.3 Monitor water quality and test concentrations at irrigation emitter to ensure calculated concentration is achieved 2.4 Identify, rectify and report out-of-specification equipment performance 2.5 Apply emergency procedures in the event of a spillage or chemical accident
3. Shut down fertigation equipment	3.1 Carry out fertigation equipment shut-down according to operators' manual 3.2 Clean fertigation equipment according to maintenance procedure
4. Record information	4.1 Record and report environmental hazards of fertigation process where applicable 4.2 Record and report fertiliser application and storage details according to workplace recording procedures

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	Identify and interpret textual information from a range of sources to identify relevant and key information about fertigation equipment operations
Writing	Use clear language, accurate industry terminology and logical

Skill	Description
	structure to prepare fertigation activity records
Oral communication	Use clear language to report out-of-specification equipment performance
Numeracy	Calculate fertiliser dilution rates

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCNSY314 Operate fertigation equipment	AHCNSY307 Operate fertigation equipment	Minor changes to application Major changes to performance criteria Foundation skills added Assessment requirements updated	Not equivalent

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 AHCNSY314 Operate fertigation equipment

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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 operated fertigation equipment on at least two occasions, and has:

- applied workplace health and safety requirements, including use of PPE
- selected, cleaned, used and maintained fertigation tools and equipment, and injection equipment, according to operators manuals, and scope of works
- selected and prepared fertigation and injection materials
- completed relevant calculations
- handled fertilisers and chemicals safely
- monitored and adjusted the delivery of fertilisers and chemicals
- monitored water quality and tested pH and Ec at irrigation emitter for correct application concentration
- reported and recorded corrective action
- taken corrective action in response to out-of-specification results or non-compliance
- implemented routine maintenance and minor repairs of the system
- removed and disposed of waste material
- recorded fertigation activities.

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:

- workplace requirements applicable to health and safety in the workplace for operating fertigation equipment, including backflow prevention
- purpose and operation of fertigation equipment and instrumentation components
- basic injection equipment operating principles and process control systems where relevant
- the principles and practices of fertigation operation, including:

- chemical handling techniques for fertiliser, chlorine, acid and cleaning agents
- safety data sheets (SDS) information for fertiliser and chemicals to be injected
- fertiliser solubility and dilution rates
- fertiliser compatibility or incompatibility in mixtures, with crops, and fertigation equipment
- water quality monitoring and pH and Ec testing techniques and procedures
- advantages of delivering fertilisers using an irrigation system
- fertigation and injection equipment operators' manuals
- fertigation and injection equipment monitoring and control points
- common causes of application variation and corrective action required
- fertigation and injection equipment shutdown sequence, including emergency shutdown
- cleaning procedures for fertigation and injection equipment
- workplace fertiliser and chemical application and storage, and fertigation activity recording requirements and procedures.

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:
 - fertigation and injection equipment operators manuals
 - fertigation and injection tools, equipment and procedures
 - fertilisers, chemicals and cleaning agents
 - personal protective equipment applicable to operating fertigation and injection equipment
- specifications:
 - workplace requirements applicable to health and safety in the workplace and operating fertigation and injection equipment
 - work instructions and workplace procedures applicable to operating fertigation and injection equipment
 - SDS for substances being injected
 - recording procedures
 - environmental procedures for collection, treatment, disposal or recycling of waste
- relationships:
 - supervisor
- timeframes:
 - according to job requirements.

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

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