



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **AHCHYD301A Implement a maintenance program for hydroponic systems**

**Release: 1**

## AHCHYD301A Implement a maintenance program for hydroponic systems

### Modification History

Not Applicable

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers the process of implementing a maintenance program for hydroponic systems and defines the standard required to: read nutrient analysis information; assist in performing nutrient measurement tests; administer nutrients to a hydroponic system as instructed; undertake hydroponic system maintenance and repairs of sheds, structures and other associated equipment.
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### Application of the Unit

<b>Application of the unit</b>	This unit includes monitoring the health of the plants, the hydroponic environment, and the nutrient solution that is vital to the success of hydroponic farming.
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### Licensing/Regulatory Information

Not Applicable

### Pre-Requisites

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

Not Applicable

## Elements and Performance Criteria

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
1. Monitor plant health	1.1. Workplace information is interpreted and clarified with the supervisor. 1.2. Growth rate of plants are assessed against targets set in the production plan. 1.3. Plants are assessed for overall health according to sound horticultural practice. 1.4. Plant is assessed for onset of fruit according to production plan.
2. Monitor the hydroponic environment	2.1. Environmental parameters are monitored according to the production plan and adjustments made as required. 2.2. Samples are collected and sent off for analysis to identify potential sources of contamination. 2.3. Hygiene procedures are monitored and adjusted according to enterprise guidelines. 2.4. Disposal of materials is monitored to ensure it follows enterprise guidelines, and with due consideration of the environmental implications.
3. Monitor nutrient solution	3.1. Ingredients of the hydroponic nutrient solution are identified. 3.2. Samples are taken for testing and analysis. 3.3. Results are interpreted and discussed with the supervisor. 3.4. Nutrient solution is modified in accordance with results to ensure the correct balance of ingredients for optimum growing conditions.
4. Perform routine maintenance checks	4.1. All buildings and structures are inspected and checked for wear and tear. 4.2. Equipment for delivering the nutrient solution is checked according to enterprise guidelines. 4.3. Equipment controlling the atmospheric and root zone environments is checked according to enterprise guidelines. 4.4. OHS hazards are identified, risk assessed and suitable controls implemented according to enterprise guidelines.
5. Complete monitoring activities	5.1. Any significant problems are reported to the manager and/or owner operator. 5.2. All checks are recorded according to enterprise requirements.

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

- identify hazards and implement safe work procedures
- read and interpret design and layout plans
- test and calibrate hydroponic equipment
- monitor and test environment parameters and nutrient solutions
- read and interpret test results accurately
- record all test results clearly and concisely with attention to detail
- undertake minor repairs of equipment, e.g. pumps, pipes and drippers
- dispose of unused or waste materials from site in an environmentally safe and sensitive manner
- use oral communication skills/language competence to fulfil the job role as specified by the organisation, including questioning techniques, active listening, clarifying information and consulting with supervisors as required
- use numeracy skills to estimate, calculate and record routine workplace measures
- use interpersonal skills to work with and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

#### Required knowledge

- equipment used in hydroponic systems
- properties of a nutrient solution
- testing methods for the gauging of environmental parameters
- testing methods for a hydroponic nutrient solution
- recirculated and non-recirculated systems
- media choices and their properties
- characteristics of healthy plants
- potential problems associated with a range of crops grown in a hydroponic environment
- environmental implications of the disposal of chemicals or chemical containers, and the drainage of high nutrient effluent.

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
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.	
<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<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"> <li>• read nutrient analysis information</li> <li>• assist in performing nutrient measurement tests</li> <li>• administer nutrients to a hydroponic system as instructed</li> <li>• undertake hydroponic system maintenance and repairs of sheds, structures and other associated equipment.</li> </ul>
<b>Context of and specific resources for assessment</b>	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

<b>RANGE STATEMENT</b>	
The range statement relates to the unit of competency as a whole.	
System may include:	<ul style="list-style-type: none"> <li>• hydroponic systems including equipment and nutrient solutions.</li> </ul>

## Unit Sector(s)

<b>Unit sector</b>	Hydroponics
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## Co-requisite units

<b>Co-requisite units</b>		

## Competency field

<b>Competency field</b>	
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