



Australian Government

AHCHYD502 Develop a plan for a hydroponic system

Release: 1

AHCHYD502 Develop a plan for a hydroponic system

Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Release 11.0.

Application

This unit of competency describes the skills and knowledge required to design a hydroponic system. It applies to those who design systems for hydroponic production of horticultural crops.

The unit applies to individuals who apply specialist skills and knowledge to develop a plan for a hydroponic system, take personal responsibility and exercise autonomy in undertaking complex work. They analyse and synthesise information, and analyse, design and communicate solutions to sometimes complex problems.

All work must be carried out to comply with workplace procedures, according to state/territory health and safety regulations, legislation and standards that apply to the workplace, and sustainability and biosecurity practices.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Hydroponics (HYD)

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Carry out preliminary research	1.1 Research type of crop to be grown based on sound marketing principles 1.2 Research the growing requirements of the crop based on sound

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	horticultural practices 1.3 Establish the associated risks of growing a particular crop based on sound horticultural practices 1.4 Identify growing media to be utilised, and calculate estimated number or volume of growing media required for crop establishment 1.5 Determine quantity of the plants to be grown based on a cost-benefit analysis
2. Assess the suitability of a site	2.1 Assess the physical characteristics of the site 2.2 Ascertain and assess the proximity of the site to markets 2.3 Identify local council, legislative and regulatory requirements in relation to the site and the development of a hydroponic farm 2.4 Identify and consider the environmental implications of developing a hydroponic farm on the site
3. Select the required system	3.1 Research main types of hydroponic systems 3.2 Carry out analysis on each type of system for the chosen crops 3.3 Carry out a cost-benefit analysis on each system for each type of crop 3.4 Determine the type of hydroponic system to be installed
4. Design the hydroponic system	4.1 Identify the benefits and disadvantages of a closed and open hydroponic system 4.2 Select and document the water collection and storage system on the plan 4.3 Select the irrigation system and its components according to the required volume of water and flow rate 4.4 Select and document the fertigation system 4.5 Determine the dimensions of the controlled environment structure following full consideration of the relevant factors 4.6 Determine the environmental control system, and document specifications on the plan
5. Prepare and document the design	5.1 Develop a design plan 5.2 Determine specifications and detailed costings, with the help of experts if required 5.3 Develop and document detailed production procedures and

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
	schedules 5.4 Present design documentation to the client for approval

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 information regarding the production and growing requirements of plant species - Identify and interpret market requirements
Writing	Use clear language, accurate industry terminology and logical structure to prepare and document a hydroponic system design
Oral communication	Initiate discussions with client, using clear language to discuss and finalise design plan
Numeracy	Calculate design costs, including labour, materials, equipment and machinery

Unit Mapping Information

Code and title current release	Code and title previous release	Comments	Equivalence status
AHCHYD502 Develop a plan for a hydroponic system	AHCHYD501 Develop a plan for a hydroponic system	Minor changes to application Minor changes to elements and 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 AHCHYD502 Develop a plan for a hydroponic system

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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 developed a plan for a hydroponic system on at least one occasion, and has:

- researched the growing requirements, risks and returns of the proposed crop
- researched, interpreted and applied local council, legislative and regulatory requirements applicable to establishing a hydroponic system
- selected, designed or customised a system for the site and purpose
- surveyed the site for suitability and environmental impacts, and gained approvals
- developed a design plan
- presented a design plan to clients.

Knowledge Evidence

An individual must be able to demonstrate knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- principles and practices for developing a hydroponic system plan, including:
 - advantages and disadvantages of closed and open hydroponic systems
 - advantages and disadvantages of the different equipment used in hydroponic systems
 - environmental implications of the disposal of chemicals or chemical containers and the drainage of high nutrient effluent
 - local council, legislative and regulatory requirements applicable to establishing a hydroponic system
 - plant growing media choices, their properties and workplace specifications
 - technical requirements and operating parameters of recirculated and non-recirculated systems.

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:
 - hydroponic site
 - site information and research data applicable to developing a plan for a hydroponic system
- specifications:
 - local council, legislative and regulatory requirements applicable to establishing a hydroponic system
- relationships:
 - clients
- time frames:
 - 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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