

## HYDROPONIC FARM MANAGEMENT

**ISCED UNIT CODE:** 0811 551 24A

**TVET CDACC UNIT CODE:** HO/CU/HP/CR/04/6/MA

**Unit duration:** 100 Hours

### Relationship to Occupational Standards

This unit addresses the Unit of Competency: **Manage hydroponic farm**

### Unit Description

This unit specifies the competencies required to setup and run a hydroponic farm. It involves installing hydroponic system, preparing hydroponic plant media, establishing hydroponic plants, managing hydroponic plants and performing hydroponic crops post-harvest practices.

### Summary of Learning Outcomes

SNO	Learning Outcome	Duration (Hours)
1.	Install hydroponic system	25
2.	Prepare hydroponic plant media	25
3.	Establish hydroponic plants	25
4.	Manage hydroponic plants	25
	<b>TOTAL</b>	<b>100</b>

### Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcomes	Content	Suggested Assessment Methods
1 Install hydroponic system	<b>Theory</b> 1.1 Designing hydroponic systems 1.1.1 Definition of hydroponic system 1.1.2 Importance of designing hydroponic systems 1.1.3 Types of hydroponic systems 1.1.3.1 Deep water float system	<ul style="list-style-type: none"><li>• Written tests</li><li>• Reflection papers</li><li>• Projects</li><li>• Interviews/ Oral questions</li><li>• Individual/group assignments</li></ul>

	1.1.3.2 Nutrient film technique (NFT) 1.1.3.3 Drip 1.1.3.4 Wick 1.2 Setting up of hydroponic systems 1.3 Maintaining hydroponic systems  <b>Practice</b> 1.4 Set up different types hydroponic systems 1.5 Maintain different types hydroponic systems	<ul style="list-style-type: none"> <li>• Practicals</li> </ul>
2 Prepare hydroponic plant media	<b>Theory</b> 2.1 Preparation of hydroponic planting media practice 2.1.1 Definition of hydroponic plant media 2.1.2 Types of hydroponic planting media 2.1.2.1 Pumice 2.1.2.2 Vermiculite 2.1.2.3 Perlite 2.1.2.4 Cocoa peat 2.2 Determining nutrient solution	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Reflection papers</li> <li>• Projects</li> <li>• Interviews/ Oral questions</li> <li>• Individual/group assignments</li> <li>• Practicals</li> </ul>
3 Establish hydroponic plants	<b>Theory</b> 3.1 Preparation of hydroponic planting materials 3.1.1 Importance of preparing hydroponic planting materials 3.1.2 Types of hydroponic planting materials 3.1.2.1 Seeds 3.1.2.2 Splits 3.1.2.3 Suckers 3.1.2.4 Buds 3.2 Transplanting of hydroponic plants <b>Practice</b> 3.3 Prepare hydroponic planting materials 3.4 Transplant hydroponic plants	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Reflection papers</li> <li>• Projects</li> <li>• Interviews/ Oral questions</li> <li>• Individual/group assignments</li> <li>• Practicals</li> </ul>

4	Manage hydroponic plants	<p><b>Theory</b></p> <p>4.1 Field management practices</p> <p>1.1.1 Gapping</p> <p>1.1.2 Fertilizer application</p> <p>1.1.3 Pest and disease control</p> <p>1.1.3.1 Causal agent</p> <p>1.1.3.2 Signs and symptoms</p> <p>4.2 Harvesting of hydroponic plants</p> <p>4.3 Management of wastes</p> <p><b>Practice</b></p> <p>4.4 Carry out management practices using various methods</p> <p>4.5 Carry out harvesting of hydroponic plants</p> <p>4.1 Carry out management of waste</p>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Reflection papers</li> <li>• Projects</li> <li>• Interviews/ Oral questions</li> <li>• Individual/group assignments</li> <li>• Practicals</li> </ul>
5	Perform hydroponic plants post-harvest practices	<p><b>Theory</b></p> <p>5.1 Post-harvest practices</p> <p>5.2 Examples of post-harvest practices</p> <p>1.2.1 Cooling</p> <p>1.2.2 Freezing</p> <p>1.2.3 Drying</p> <p>1.2.4 Grading</p> <p>1.2.5 Sorting</p> <p>1.2.6 Packaging</p> <p>1.2.7 Storage</p> <p>1.2.8 Transportation</p> <p>5.3 Marketing techniques</p> <p>1.3.1 Online marketing</p> <p>1.3.2 Influencer marketing</p> <p>1.3.3 Public relation</p> <p>5.4 Management of wastes</p> <p><b>Practice</b></p>	

	5.5 Carry out post-harvest practices using various methods	
	5.6 Carry out the management of waste	

### **Suggested Methods of Instruction**

- Role playing
- Group discussion
- Direct instruction
- Role playing
- Group discussion
- Direct instruction
- Questionnaires
- Interviews
- Experiment
- Survey
- Observation

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### **Recommended Resources for 25 Trainees**

#### **Tools**

- 25 Hoes
- 25 Machetes
- 25 Secateurs
- 25 Shovels
- 25 Soil augur
- 25 Panga
- 25 Pegs

#### **Equipment's**

- 25 Hammers
- 25 Saw
- 25 Buckets
- 25 Secateurs

- 25 Shears
- 25 Dibblers
- 25 Spray pumps
- 25 Watering cans
- 25 Hose pipes
- 25 Ploughs
- 25 Harrows
- 25 Ridges
- 25 Boom sprayer
- 25 Pruning saw
- 25 Wire strainers
- 25 Traps
- 25 Pipe sprinklers
- 25 Scouting flags
- 25 Storage tanks
- 25 Tractors
- 25 Grading shed
- 25 Bud count square
- 25 Meteorological equipment

### **Materials**

- 25 Pesticides
- Fertilizers
- 25 Stationery
- Manures
- 25 Seedlings /planting materials
- 25 Khaki paper bags size 3
- 25 Rope
- 25 Nets
- 25 Translucent papers
- 25 Papers

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- 25 Papers
- 25 Fencing wire
- 25 Staking sticks
- 25 Nails
- 25 Herbicides
- 25 Pesticides
- 25 Pheromones
- 25 Seeds
- 25 Seedlings
- 25 Splits
- 25 Crowns
- 25 Slips
- 25 Cuttings
- 25 Suckers
- 25 Plantlets

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