

## 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>

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

4 Manage hydroponic plants	<p><b>Theory</b></p> <p>4.1 Field management practices</p> <ul style="list-style-type: none"> <li>1.1.1 Gapping</li> <li>1.1.2 Fertilizer application</li> <li>1.1.3 Pest and disease control <ul style="list-style-type: none"> <li>1.1.3.1 Causal agent</li> <li>1.1.3.2 Signs and symptoms</li> </ul> </li> </ul> <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><b>4.1</b> 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> <ul style="list-style-type: none"> <li>1.2.1 Cooling</li> <li>1.2.2 Freezing</li> <li>1.2.3 Drying</li> <li>1.2.4 Grading</li> <li>1.2.5 Sorting</li> <li>1.2.6 Packaging</li> <li>1.2.7 Storage</li> <li>1.2.8 Transportation</li> </ul> <p>5.3 Marketing techniques</p> <ul style="list-style-type: none"> <li>1.3.1 Online marketing</li> <li>1.3.2 Influencer marketing</li> <li>1.3.3 Public relation</li> </ul> <p>5.4 Management of wastes</p> <p><b>Practice</b></p>	

	<p>5.5 Carry out post-harvest practices using various methods</p> <p>5.6 Carry out the management of waste</p>	
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### 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

- 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