

## FISH HATCHERY OPERATIONS

**ISCED UNIT CODE:** 0831 451 03A

**TVETCDACC UNIT CODE:** AQ/CU/AM/CR/01/4/MA

**UNIT DURATION: 180 HOURS**

### Relationship to Occupational Standards

This unit addresses the unit: Operate fish rearing unit.

### Unit Description

This unit covers the competencies required to operate fish hatchery. It involves preparing fish hatchery, stocking brood fish, nursing fry and fingerlings and maintaining hatchery unit.

### Summary of Learning Outcomes

By the end of this unit, the trainee will be able to:

1. To prepare fish hatchery
2. To stock brood fish
3. To nurse fry and fingerlings
4. To maintain fish hatchery unit.

### Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcomes	Content	Suggested Assessment Methods
1. Prepare fish hatchery	<p><b>Theory</b></p> <p>1.1 PPEs</p> <ul style="list-style-type: none"><li>• Safety goggles</li><li>• Gumboots</li><li>• Wading suit</li><li>• Gloves</li><li>• Dust coats</li><li>• First aid kits</li><li>• Life ring</li><li>• Life jacket</li></ul> <p>1.2 Assembling of tools, equipment and materials</p> <p><b>Tools and equipment</b></p> <ul style="list-style-type: none"><li>1.2.1 pH meters</li><li>1.2.2 DO meters</li><li>1.2.3 Multiparameter water test kit</li><li>1.2.4 Secchi disk</li></ul>	<ul style="list-style-type: none"><li>• Practical</li><li>• Project</li><li>• Third party report</li><li>• Portfolio of evidence</li><li>• Written tests</li><li>• Oral questioning</li></ul>

	<p>1.2.5 Computer</p> <p>1.2.6 Ammonia alarms</p> <p>1.2.7 Automatic titrators</p> <p><b>Materials</b></p> <p>1.2.8 Assorted reagents</p> <p>1.2.9 Assorted chemicals</p> <p>1.2.10 Test strips</p> <p>1.3 Disinfection of fish hatchery facility</p> <p>1.4 Filling of fish rearing unit</p> <p>1.5 Carrying out of rearing unit water conditioning</p> <ul style="list-style-type: none"> <li>• Sedimentation</li> <li>• Filtration</li> <li>• Flocculation</li> <li>• Desalination</li> <li>• Micro-organism control</li> <li>• Heating/cooling</li> <li>• pH Adjustment</li> <li>• Aeration</li> <li>• Degassing</li> </ul>	
2. Stock brood fish	<p><b>Theory.</b></p> <p>2.1 PPEs are worn</p> <p>2.2 Assembling of tools, equipment and materials</p> <p>2.3 Grading of brooders</p> <p>2.4 Transferring of brood fish</p> <p><b>Practice.</b></p> <ul style="list-style-type: none"> <li>• Carry out brood fish stocking</li> </ul>	<ul style="list-style-type: none"> <li>• Practical</li> <li>• Project</li> <li>• Third party report</li> <li>• Portfolio of evidence</li> <li>• Written tests</li> <li>• Oral questioning</li> </ul>
3 Nurse fry and fingerlings	<p><b>Theory.</b></p> <p>3.1 PPEs</p> <p>3.2 Assembling of tools, equipment and materials</p> <p>3.3 Carrying out of fish fry and fingerlings stocking</p> <p>3.4 Fish fry and fingerling feeding</p>	<ul style="list-style-type: none"> <li>• Practical</li> <li>• Project</li> <li>• Third party report</li> <li>• Portfolio of evidence</li> <li>• Written tests</li> <li>• Oral questioning</li> </ul>

	<p>3.5 Fish rearing unit water quality maintenance 3.6 Fish fry and fingerlings grading based on growth rates</p> <p><b>Practice.</b></p> <ul style="list-style-type: none"> <li>• Carry out fish fry and fingerlings nursing</li> </ul>	
4 Maintain hatchery rearing units	<p><b>Theory</b></p> <p>4.1 Water flow rate regulation 4.2 Aeration systems regular maintenance 4.3 Cleaning schedule development 4.4 Water quality parameter ranges maintenance</p> <ul style="list-style-type: none"> <li>• Dissolved oxygen</li> <li>• Temperature</li> <li>• pH</li> <li>• Ammonia</li> <li>• Nitrite</li> <li>• Alkalinity</li> <li>• Turbidity</li> </ul> <p>4.5 Rearing unit repairs</p> <p><b>Practice.</b></p> <p>Carry out hatchery rearing unit maintenance</p>	<ul style="list-style-type: none"> <li>• Practical</li> <li>• Project</li> <li>• Third party report</li> <li>• Portfolio of evidence</li> <li>• Written tests</li> <li>• Oral questioning</li> </ul>

### Suggested Methods of Instruction

- Project
- Demonstration
- Practicals
- Discussions
- Direct instruction

### Recommended resources for 25 trainees.

S/NO	Category/Item	Description/specification	Qty	Recommended ratio (item: trainee)
	Projector	EPSON	1	1:25
	Whiteboard/smartboard	2.5 By 1.5.M	1	1:25
	Desktop/computer		1	1:25

	Classroom	Well-lit with 25 seats	1	1:25
	Hatchery	operational	1	1:25
	Feed production manual	Up to date	5	1:5
	Sets of Writing materials		25	1:25
	Video clips		5	1:25
	Human resource	Trainer and Technician	2	1:25
	Library	Equipped with fish production books and E-section	1	1:25