

## FISH HATCHERY OPERATIONS

**UNIT CODE:** 0831 341 03A

**TVET CDACC 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 of learning, the trainee should be able to:

S/No	Learning Outcomes	Duration (Hours)
1.	Prepare fish hatchery	50
2.	Stock brood fish	30
3.	Nurse fry and fingerlings	50
4.	Maintain the hatchery	50
<b>Total</b>		<b>180</b>

## Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcomes	Content	Suggested Assessment Methods
1. Prepare fish hatchery	<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> <p>1.2.1 pH meters</p> <p>1.2.2 DO meters</p> <p>1.2.3 Multiparameter water test kit</p> <p>1.2.4 Secchi disk</p> <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>	<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>1.2.9 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>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>2.5 Carry out brood fish stocking</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. Nurse fry and fingerlings</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> <p>3.5 Fish rearing unit water quality maintenance</p> <p>3.6 Fish fry and fingerlings grading based on growth rates</p> <p>3.7 Carry out fish fry and fingerlings nursing</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>4. Maintain hatchery rearing units</p>	<p>4.1 Water flow rate regulation</p> <p>4.2 Aeration systems regular maintenance</p> <p>4.3 Cleaning schedule development</p> <p>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>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