

## FISH HATCHERY OPERATION

**UNIT CODE:** AQ/CU/AM/CR/03/4/B

### Relationship to Occupational Standards

This unit addresses the unit of competency: Operate fish hatchery

**Duration of Unit:**220 hours

### Unit Description

This unit describes the knowledge, skills and attitudes required to operate fish hatchery. It involves ability to apply food safety measures in fish hatchery operation, prepare fish hatchery for stocking, stock and feed broodstock. It also involves harvesting, packaging and transporting fish fry and fingerlings. It further involves maintenance of fish hatchery.

### Summary of Learning Outcomes

1. Apply food safety measures in fish hatchery operation
2. Stock hatchery with broodstock
3. Feed broodstock
4. Harvest and package fingerlings

### Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Apply food safety measures in fish hatchery operation	<ul style="list-style-type: none"><li>• Introduction to food safety<ul style="list-style-type: none"><li>○ Meaning of food safety</li><li>○ Importance of food safety</li><li>○ Principles of food safety</li></ul></li><li>• Prerequisite programmes<ul style="list-style-type: none"><li>○ Meaning and importance of prerequisite programmes</li><li>○ Relevant programmes in fish hatchery operation</li></ul></li><li>• Hazard analysis for fish hatchery operation<ul style="list-style-type: none"><li>○ Types and sources of hazards</li><li>○ Significance of hazards</li><li>○ Methods of hazard control</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Written tests</li><li>• Oral questioning</li><li>• Observation</li></ul>

	<ul style="list-style-type: none"> <li>• Components of HACCP plan for fish hatchery operation <ul style="list-style-type: none"> <li>○ Critical control points</li> <li>○ Critical control limits</li> <li>○ Monitoring procedures on the control limits</li> <li>○ Corrective actions</li> <li>○ Verification and validation</li> <li>○ Record keeping</li> </ul> </li> <li>• Standards and legislations in food safety on fish hatchery operation</li> </ul>	
2. Prepare broodstock facilities	<ul style="list-style-type: none"> <li>• Safety measures <ul style="list-style-type: none"> <li>○ Use of PPEs in hatchery operations</li> <li>○ Carrying out basic first aid-cuts, CPR, fractures</li> </ul> </li> <li>• Handling and use of tools, equipment and materials</li> <li>• Types of broodstock facilities</li> <li>• Fish pond preparation – <ul style="list-style-type: none"> <li>○ Filling with water</li> <li>○ Pond fertilization</li> <li>○ Happa net preparation and setting</li> <li>○ Water flow within the system</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Oral questioning</li> <li>• Practical tests</li> <li>• Oral presentations</li> <li>• Projects</li> </ul>
3. Stock hatchery with broodstock	<ul style="list-style-type: none"> <li>• Broodstock selection</li> <li>• Broodstock acclimatization <ul style="list-style-type: none"> <li>○ Transfer and stocking</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Oral questioning</li> <li>• Oral presentations</li> <li>• Practical tests</li> <li>• Projects</li> </ul>
4. Feed broodstock	<ul style="list-style-type: none"> <li>○ Feeding schedules <ul style="list-style-type: none"> <li>○ Interpret schedule</li> <li>○ Weighing feed rations</li> </ul> </li> <li>○ Feeding methods</li> <li>○ Feeding behaviour</li> <li>○ Record keeping</li> </ul>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Oral questioning</li> <li>• Oral presentations</li> <li>• Practical tests</li> </ul>
5. Natural fish propagation	<ul style="list-style-type: none"> <li>○ Broodstock – males and females</li> <li>○ Stocking density</li> <li>○ Checking for fry after 2 weeks</li> <li>○ Harvesting fry</li> <li>○ Sorting fry</li> <li>○ Packaging fry</li> </ul>	<ul style="list-style-type: none"> <li>• Written tests</li> <li>• Oral questioning</li> <li>• Oral presentations</li> <li>• Practical tests</li> <li>• Projects</li> </ul>

6. Maintain hatchery facility	<ul style="list-style-type: none"> <li>○ Sanitation of hatchery and related components <ul style="list-style-type: none"> <li>○ Cleaning and disinfection</li> <li>○ Waste disposal</li> </ul> </li> <li>○ Water flow rates</li> </ul>	<ul style="list-style-type: none"> <li>● Oral questioning</li> <li>● Practical tests</li> <li>● Oral presentations</li> <li>● Written reports</li> </ul>
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### **Suggested Delivery Methods**

- Instructor led facilitation of theory
- Demonstration by trainer
- Practical work by trainee
- Viewing of related videos
- Projects
- Group discussions

### **Recommended Resources**

#### **Tools and equipment**

Weighing balance, measuring cylinders, harvesting gear, happa nets, buckets, refrigerators,

#### **Materials and supplies**

Feeds, fertilizers, assorted bowls, scoops, perforators, basins, packaging materials, sieves, wading suits.

#### **Personal protective equipment (PPEs)**

- Safety goggles
- Gum boots
- Wading suit
- Gloves
- Dust coats
- First aid kits
- Life ring
- Life jacket