

FISH HATCHERY OPERATION

UNIT CODE: AQ/CU/AM/CR/03/5/B

Relationship to Occupational Standards

This unit addresses the unit of competency: Operate fish hatchery

Duration of Unit: 248 hours

Unit Description

This unit describes the competencies required to operate fish hatchery. It involves ability to apply food safety measures in managing fish hatchery, source for quality broodstock, transporting, managing and breeding them. It also involves nursing and packaging fingerlings and maintaining hatchery facility.

Summary of Learning Outcomes

1. Manage Broodstock
2. Produce fingerlings
3. Maintain hatchery facility

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Apply food safety measures in managing fish hatchery	<ul style="list-style-type: none">• Meaning of food safety• Importance of food safety• Principles of food safety• Prerequisite programmes<ul style="list-style-type: none">○ Meaning, importance, categories and establishment of prerequisite programmes○ Relevant programmes in fish hatchery operations• Hazard analysis for fish hatchery operations<ul style="list-style-type: none">○ Enterprise description○ Product description○ Layout of premises and surrounding environment○ Development of flow diagram	<ul style="list-style-type: none">• Written tests• Oral questioning• Observation• Case study• Third Party reports• Project• Practical tests

	<ul style="list-style-type: none"> ○ Identification of hazards at each step of the flow diagram ○ Describing the hazard ○ Significance of hazards ● Establishment of the HACCP plan for fish hatchery operations <ul style="list-style-type: none"> ○ Identification of critical control points ○ Procedures for setting up critical control limits ○ Establishment monitoring procedures on the control limits ○ Establishment of corrective actions ○ Verification procedures ○ Record keeping ○ Validation procedures <p>Standards and legislations in food safety on managing fish hatchery</p>	
<p>2. Manage broodstock</p>	<ul style="list-style-type: none"> ● Meaning of terms e.g. hatcheries, brooder/ broodstock ● Types of hatcheries <ul style="list-style-type: none"> ○ Small scale ○ Commercial ● Types of fish holding facilities in a hatchery ● Safety measures <ul style="list-style-type: none"> ○ Use of PPEs in broodstock management ○ Carrying out basic first aid-cuts, CPR, fractures ● Handling and use of tools, equipment and materials ● Cleaning and disinfection of fish culture units ● Broodstock selection <ul style="list-style-type: none"> ○ Criteria ○ Sources of broodstock □ Transporting broodstock □ Acclimatization, quarantine and stocking 	<ul style="list-style-type: none"> ● Written tests ● Oral questioning ● Practical tests ● Oral presentations ● Projects

	<ul style="list-style-type: none"> □ Management of broodstock <ul style="list-style-type: none"> ○ Feeding –conditions, rations, timings, ○ Water quality management 	
3. Produce fingerlings	<ul style="list-style-type: none"> ● Use of PPEs in production of fingerlings ● Safety measures to be observed ● Use of fingerling production materials, supplies, tools and equipment ● Meaning of terms e.g. spawning, milt, pituitary glands, stripping ● Selection of ripe broodstock ● Types of breeding <ul style="list-style-type: none"> ○ Natural breeding ○ Induced breeding without hormone ○ Induced breeding with hormone ○ Artificial propagation ● Monosex tilapia production <ul style="list-style-type: none"> ○ Preparation of hormone treated feed ○ Stage of hatchlings at first feeding ○ Duration of feeding ● Nursing fry <ul style="list-style-type: none"> ○ Feeding ○ Grading 	<ul style="list-style-type: none"> ● Written tests ● Oral questioning ● Oral presentations ● Practical tests ● Projects
4. Maintain hatchery facility	<ul style="list-style-type: none"> ● Components of a fish hatchery and their operation ● Hatchery sanitation <ul style="list-style-type: none"> ○ Cleaning and disinfection ○ Waste disposal ● Water quality management ● Maintenance and repairs of hatchery components 	<ul style="list-style-type: none"> ● Oral questioning ● Practical tests ● Oral presentations ● Written reports

Suggested methods of Instruction

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

- Group discussions

Recommended Resources

- Dissecting kit, weighing balance, pair of pincers, pestle and mortar, needle and syringe, measuring cylinders, hatching jars, larval rearing trays, perforators, basins, harvesting gear, happa nets, buckets, scoop nets, water test kits, refrigerators,
- Salt, towel, egg substrates, warm water, anaesthesia, 17- α Methyl Testosterone, feeds, fertilizers, ethanol, acetone, vials, cotton wool, assorted bowls
- Safety goggles
- Gum boots
- Wading suit
- Gloves
- Dust coats
- First aid kits
- Life ring
- Life jacket