SETTING UP SMALL-SCALE FISH HATCHERY UNIT

UNIT CODE: AQ/CU/AM/CR/06/6/B

Relationship to Occupational Standards
This unit addresses the Unit of Competency: Set Up Small-Scale Fish Hatchery Unit

Duration of Unit: 300 hours

Unit Description

This unit specifies the competencies required to apply food safety measures in setting up small scale fish hatchery unit, manage a small-scale fish hatchery. It involves designing a simple fish hatchery as well as interpreting already existing designs, select ideal hatchery construction sites and prepare cost estimates for hatchery construction. It also involves supervision of hatchery construction and designing and installation of bio-security measures.

Summary of Learning Outcomes
1. Apply food safety measures in setting up small scale fish hatchery unit
2. Prepare to set up a fish hatchery
3. Manage fish hatchery construction
4. Install hatchery biosecurity and safety measures

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods

1. Apply food safety measures in setting up small scale fish hatchery unit	• Meaning of food safety
	• Importance of food safety
	• Principles of food safety
	• Prerequisite programmes
	  • Meaning, importance, categories and establishment of prerequisite programmes
	  • Relevant programmes for setting up fish hatchery unit
	• Hazard analysis for setting up fish hatchery
	  • Enterprise description
	  • Product description
		• Written tests
		• Oral questioning
		• Observation
		• Third Party reports
		• Project
		• Practical tests

	• Layout of premises and surrounding environment • Development of flow diagram • Identification of hazards at each step of the flow diagram • Describing the hazard • Significance of hazards • Establishment of the HACCP plan for setting up fish hatchery • 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 Standards and legislations in food safety on setting up small scale fish hatchery unit	
2. Prepare to set up a fish hatchery unit.	• Factors to consider in hatchery site selection • Physical factors • Statutory requirements • Economic factors • Basic hatchery designs • Components of a fish hatchery unit • Factors considered in designing a hatchery • Hatchery shade designs • Validation of hatchery design done on-site	• Written tests • Oral questioning • Practical tests • Portfolio of Evidence

	• Costing of hatchery construction • Statutory requirements for setting up a hatchery • EMCA, WARMA	

3. Manage fish hatchery construction	• Use of PPEs in hatchery construction
	• Safety measures to be observed
	• Use of materials, supplies, tools and equipment in hatchery construction
	• Construction of a shed
	  • Site clearing
	  • Construct shade
	  • Installation of indoor hatchery facilities
	  • Sorting tables
	  • Packaging tables
	  • Incubation units
	  • Plumbing works
	• Construction of outdoor culture units
	  • Ponds – earthen, liner
	  • Tanks – plastic, concrete
	  • Collapsible fish ponds
	• Installation and testing of outdoor hatchery facilities
	  • Water intake structures
	  • Piping
	  • Overhead tanks
	  • Drainage systems
		• Written tests
		• Oral questioning
		• Oral presentation
		• Practical tests
		• Portfolio of Evidence

4. Install fish hatchery bio-security and safety measures	• Foot baths
	  • Purpose
	  • Designs
	  • Disinfectants used,
	  • Preparation of stock solutions
	• Hand wash and sanitizers
	  • Types
	  • Siting
	  • Operation
	• Filtration systems for incoming water
		• Oral questioning
		• Written tests
		• Practical tests
		• Projects
		• Portfolio of Evidence

	• Construction of fences and quarantine facilities • Intruder control facilities and devices e.g. nets, meshes, screens, cover nets	

Suggested Methods of Instruction

- Instructor led facilitation of theory
- Demonstration by trainer
- Case studies
- Viewing of related videos
- Group discussions
- project

Recommended Resources

Reference Materials

- Manual of standard operating procedures for risk management
- Statutory requirements and standards for hatchery establishment

Tools and equipment

- Tape measure, spirit level, jembes, spades, pangas, plumbing tools, masonry tools,
- Compactors and rollers, wheelbarrows, aeration equipment, filtration
- Water testing kits and equipment, beakers,

Materials and supplies

Ropes and strings, liners, nets, screens, gates, cover nets, meshes, pegs, plumbing materials, lime, cement, sand, roofing materials, fencing wire, fittings, assorted screens, netting materials, disinfectants, chlorine, water storage tanks, fish culture tanks, aeration systems, filtration systems, water flow structures, cement, sand

Personal protective equipment (PPEs)

Safety goggles, gum boots, helmets, gloves, overalls, first aid kits, mouth piece