

FISH FEED PRODUCTION

UNIT CODE: AQ/CU/AM/CR/02/4/B

Relationship to Occupational Standards

This unit addresses the unit of competency: Produce fish feeds

Duration of Unit: 120 hours

Unit Description

This unit describes the knowledge, skills and attitudes required to produce fish feeds. It involves ability to apply food safety measures in producing fish feeds, promote growth of natural fish foods and produce on-farm formulated feeds. It also involves trial of the fish feeds to evaluate their performance.

Summary of Learning Outcomes

1. Apply food safety measures in producing fish feeds
2. Culture natural fish foods
3. Produce on-farm formulated fish feeds
4. Package and store fish feeds
5. Carry out record keeping

Learning Outcomes, Content and Suggested Assessment Methods

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

	<ul style="list-style-type: none"> • Components of HACCP plan for fish feed production <ul style="list-style-type: none"> ○ Critical control points ○ Critical control limits ○ Monitoring procedures on the control limits ○ Corrective actions ○ Verification and validation ○ Record keeping • Standards and legislations in food safety on producing fish feeds 	
2. Culture natural fish foods	<ul style="list-style-type: none"> • Types of fish feeds <ul style="list-style-type: none"> ○ Natural feeds ○ Artificial feeds • Nutritional requirement of commonly cultured fish species • Use of PPEs in production of natural fish foods • Tools and materials for natural fish food production • Production of natural feeds <ul style="list-style-type: none"> ○ Types of plankton ○ Types of fertilizers ○ Methods of fertilization ○ Frequency of fertilization ○ Measuring productivity in ponds 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Practical tests
3. Produce on-farm formulated fish feeds	<ul style="list-style-type: none"> • Use of PPEs in production of fish feeds • Safety measures to be observed • Uses of fish feed production materials, supplies, tools and equipment • Production of artificial feeds <ul style="list-style-type: none"> ○ Feed ingredients and their properties ○ Pearson's square method ○ Anti-nutritional factors in feed ingredients ○ Factors affecting mixing of particles ○ Procedure of mixing 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Oral presentation • Practical tests • Projects

	<ul style="list-style-type: none"> ○ Pelletizing process ○ Drying methods 	
4. Package and store fish feeds	<ul style="list-style-type: none"> ○ Types of packaging materials ○ Packaging methods ○ Labelling information ○ Fish feed handling and storage 	<ul style="list-style-type: none"> ● Oral questioning ● Practical tests ● Oral presentation ● Written tests
5. Perform record keeping.	<ul style="list-style-type: none"> ● Fish feeding trials ● Fish sampling procedure <ul style="list-style-type: none"> ○ Types and uses of sampling gears ○ Handling of fish samples ● Fish feeding records 	<ul style="list-style-type: none"> ● Oral questioning ● Practical tests ● Written tests ● Projects

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

- Meat mincers, blenders, grinders, weighing scales, dryer, mixers, containers, bag sealers, ovens, burners, drying racks.

Materials and supplies

- Fertilizers, secchi disks,
- Buckets , gunny bags, sticks, stakes
- Packaging bags, drying canvas/ polythene

Personal protective equipment (PPEs)

- Safety goggles
- Gum boots
- Helmets
- Gloves
- Dust coats
- First aid kits
- Mouth piece