

FISH FEED PRODUCTION

UNIT CODE: AQ/CU/AM/CR/02/5/B

Relationship to Occupational Standards

This unit addresses the unit of competency: Produce fish feeds

Duration of Unit: 194 hours

Unit Description

This unit describes the competencies required to produce fish feeds. It involves competencies to apply food safety measures in producing fish feeds to 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. Produce natural fish foods
3. Produce on-farm formulated fish feeds
4. Package and store fish feeds
5. Evaluate fish feed performance

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">• 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 for fish feed production• Hazard analysis for fish feed production<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 feed production <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 fish feed production</p>	
<p>2. Produce natural fish foods</p>	<ul style="list-style-type: none"> ● Types of fish feeds <ul style="list-style-type: none"> ○ Natural feeds ○ Artificial feeds ● Nutritional requirement of commonly culture fish species ● Use of PPEs in production of natural fish foods ● Tools and materials for natural fish 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
<p>3. Produce on-farm formulated fish feeds</p>	<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 	<ul style="list-style-type: none"> ● Written tests ● Oral questioning ● Oral presentation ● Practical tests ● Projects

	<ul style="list-style-type: none"> • Production of artificial feeds <ul style="list-style-type: none"> ○ Feed ingredients and their properties ○ Feed formulation methods e.g Pearson's square, computer software ○ Anti-nutritional factors in feed ingredients ○ Factors affecting mixing ○ Procedure of mixing ○ 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 • Fish feeds price determination 	<ul style="list-style-type: none"> • Oral questioning • Practical tests • Oral presentation • Written tests
5. Evaluate fish feed performance	<ul style="list-style-type: none"> • Measurement of fish feeds physical parameters • Fish sampling procedure <ul style="list-style-type: none"> ○ Types and uses of sampling gears ○ Handling of fish samples ○ Sample size determination (5-10%) • Calculation and interpretation of feed conversion ratio (FCR) • Fish feed trial 	<ul style="list-style-type: none"> • Oral questioning • Practical tests • Written tests • Projects

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

- Meat mincers, blenders, grinders, weighing scales, dryer, mixers, containers, bag sealers, ovens, burners, drying racks.
- Fertilizers, secchi disks,
- Buckets , gunny bags, sticks, stakes
- Packaging bags, drying canvas/ polythene

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

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