

Lesson Plan

COURSE TITLE: Aquaculture Science

LESSON LENGTH:

TOPIC: Feeding Catfish in Commercial Ponds

OVERVIEW: In this lesson, students will learn to calculate pounds of feed needed, cost of feed, pounds of gain, and feed consumption using a chart on feed consumption and feed conversion ratios. Students will solve word problems that require the use of the chart and encourage students to think about given information that is not obvious and to put given information together to solve the problem. This lesson encourages critical thinking and improves problem solving skills in a fun and practical way.

ALABAMA CONTENT STANDARD(S):

- Describe infrastructure necessary for aquaculture production (AS10)
- Describe processes and environmental characteristics that affect growth rates of aquatic animals (AS13)

LEARNING OBJECTIVES:

Students will be able to:

- Explain the importance of observing feeding behavior of catfish
- Discuss factors that influence the type of feed used in a commercial operation
- Determine the cost of feed at a given price for a given number of catfish using the feed conversion ratio
- Calculate the number of pounds gained by a given number of catfish from a given amount of feed
- Explain the common methods used by commercial feed manufacturers in feed formulation
- Calculate the amount of feed consumed by a given number of fish using a feed consumption chart

MATERIALS AND EQUIPMENT NEEDED:

- Pen/pencil
- Paper
- Handout

TECHNOLOGY RESOURCES NEEDED:

- Computer
- Microsoft PowerPoint and Word
- LCD Projector

CONTENT	INTEGRATED CONTENT CODE	LEARNING ACTIVITIES	RESOURCES	TIME ON TASK
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<p>Material to be covered in this lesson:</p> <ul style="list-style-type: none"> • Feed Conversion Ratio • Feed Consumption • Common method of feed formulation • Size and form of feed • Factors that determine the type of feed used • Nutritional requirements • Feeding behavior 	<p>R, W, M, PS, CT</p>	<ul style="list-style-type: none"> • Present the PowerPoint presentation on feeding catfish in commercial ponds • Work some example problems using the chart on feed conversion and consumption • Students will take a quiz on the material from the presentation and the example problems using the chart. 	<p>PowerPoint</p> <p>Handout</p> <p>Handout</p>	
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VARIED ASSESSMENT STRATEGIES: Students will be given a quiz at the end of the presentation on the material covered and the example problems shown in class. Students will be evaluated on their ability to piece given information together to solve a given problem and to think critically about information that is not obvious.

PROVISIONS FOR INDIVIDUAL DIFFERENCES:

INTEGRATED CONTENT CODES

BASIC SKILLS

R=READING SKILLS

W=WRITING SKILLS

C=COMMUNICATION SKILLS

SS=SOCIAL STUDIES

M=MATH
S=SCIENCE
IR-INTERPERSONAL RELATIONSHIP SKILLS
CL=COMPUTER LITERACY SKILLS

PROCESS SKILLS

DM=DECISION MAKING SKILLS
PS=PROBLEM SOLVING SKILLS
CT=CRITICAL THINKING SKILLS

EMPLOYABILITY

ES=EMPLOYABILITY SKILLS
MS=MANAGEMENT SKILLS
WA=WORK ATTITUDES
TW=TEAMWORK

LEADERSHIP SKILLS

IM=INTEGRATION OF LEADERSHIP
CTSO=CAREER/TECHNICAL STUDENT ORGANIZATION
LD=LEADERSHIP DEVELOPMENT SKILLS

THE MORE INTEGRATION THE BETTER

Example Problems on Feed Conversion and Consumption:

1. How many pounds of feed are consumed by 1,000 fish weighing 750 pounds?
2. Approximately how many pounds can you expect 1,000 fish weighing 2,000 pounds to gain from 5,000 pounds of feed?
3. What is the cost of feed in cents/lb if the feed conversion ratio is 2.2 and the price of feed is 11.25 cents/lb?

Feed Conversion and Cost:

Complete the set of problems below using Table 3 as a reference. Show your work in the space provided below each question.

Fish size (lbs./1000 fish)	Feed consumption (% body weight)	Feed conversion ratio
60	4.0 - 4.5	1.1 - 1.2
100	3.5 - 4.0	1.3 - 1.4
300	2.5 - 3.0	1.4 - 1.6
600	2.0 - 2.5	1.6 - 1.8
750	1.5 - 2.0	1.8 - 1.9
1,000	1.3 - 1.5	1.9 - 2.0
2,000	1.1 - 1.2	2.0 - 2.2
3,000	1.0 - 1.1	2.2 - 2.4

1. How many pounds of feed are consumed by 1000 fish weighing 300 pounds?
2. Approximately how many pounds can you expect 1000 fish weighing 600 pounds to gain from 1,000 pounds of feed?
3. What is the cost of feed in cents/lb if the feed conversion ratio is 1.6:1 and the price of feed is 10 cents per pound?
4. How much can you expect the feed cost to be in dollars/lb for 300 pounds of gain at a feed conversion ratio of 1.5:1 and the price of feed at 15 cents/lb?

Short Answer: Answer the following questions on the material from the presentation in class.

5. Why is it important to observe the feeding behavior of the fish?

6. What is meant by the “least-cost” method that catfish feed manufacturers typically use?

7. What three factors determine the size and form of feed that should be used?

8. What are three factors to consider when choosing a catfish feed?

9. True or False. Catfish can only be seen when they are coming up to feed.

10. True or False. On-farm catfish feed milling and preparation is a very common practice.