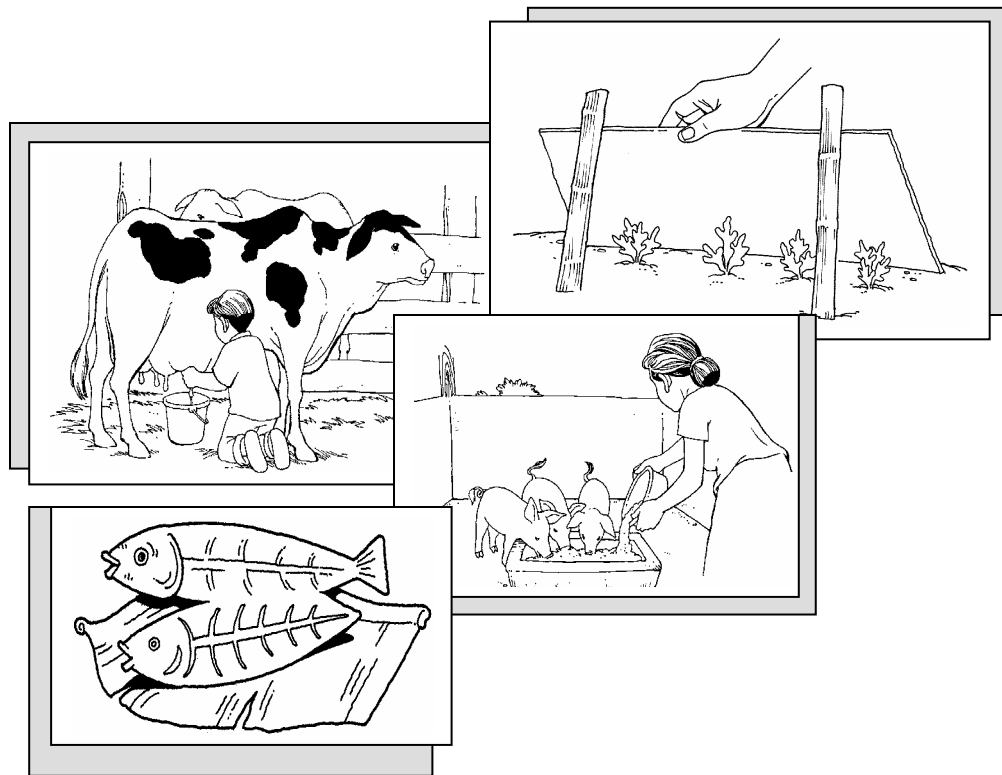


PROJECT EASE

Effective and Affordable Secondary Education

TECHNOLOGY AND LIVELIHOOD EDUCATION

Agriculture and Fishery Arts



MODULE 14

BUREAU OF SECONDARY EDUCATION

Department of Education
DepEd Complex, Meralco Avenue
Pasig City



Fish Production

First Year

Module 14

Long and Lasting Life



What this module is about

“Fish be with you.” Since you have gained considerable knowledge of fish capture and fish culture in the previous modules, you are now ready to embark on fish preservation.

Preservation of fish is done to prevent spoilage. Since fish is very perishable, it is therefore, necessary to preserve fish if not consumed or disposed immediately. Do you know some ways of preserving fish? Well, be ready, for this module will help you how to give a long and lasting life to the fish you caught or bought in the market. Enjoy reading.



What to learn from this module

This module is about fish preservation and it aims to:

1. explain the fundamental concepts/principles and importance of fish preservation;
2. explain the preparatory procedure needed in fish preservation; and
3. discuss the procedure of the different methods of fish preservation.



PRETEST

Write only the letter of the best answer.

1. An extremely perishable food.
 - a. fish culture
 - b. fish
 - c. *bagoong*
 - d. dried fish

2. The part of the fish which is being removed when drying split fish.
 - a. kidney
 - b. gut
 - c. head
 - d. scales

3. Fish preparation which removes most bones.
 - a. gutted
 - b. boned
 - c. boneless
 - d. split

4. Storage period of *bagoong* before it is used.
 - a. 4 months
 - b. 9 months
 - c. 6 months
 - d. 5 months

5. A method of preventing spoilage.
 - a. fish culture
 - b. fish capture
 - c. fish preservation
 - d. fish spoilage

6. Fish preparation which removes all bones including pin bones.
 - a. gutted
 - b. split
 - c. boneless
 - d. boned

7. Percentage of brine solution used in drying split fish.
 - a. 30%
 - b. 25%
 - c. 20 %
 - d. 15 %

8. Fish preparation when fish is thoroughly washed.
 - a. gutted
 - b. dressed
 - c. fillet
 - d. split

9. Ratio of salt and fish in *bagoong* making.
 - a. 1 part salt: 3 parts fish
 - b. 2 parts salt: 4 parts fish
 - c. 3 parts salt: 1 part fish
 - d. 4 parts salt: 2 parts fish

10. Fish preparation wherein the internal organs are removed.
 - a. gutted
 - b. split
 - c. fillet
 - d. dressed

Lesson 1

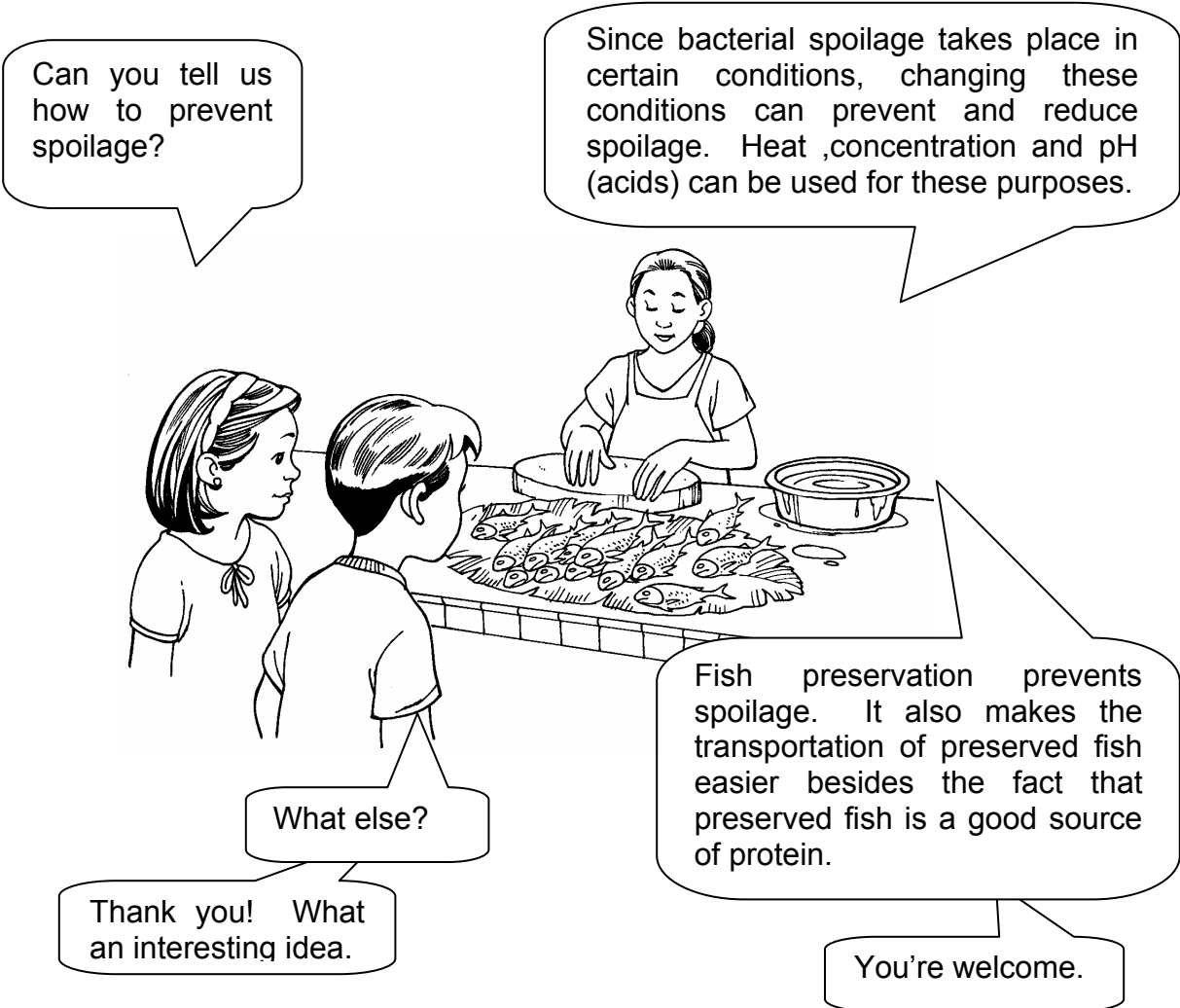
Principles/Concepts and Importance of Fish Preservation

Have you experienced buying fish and forgetting to cook it on that day? Or have you bought more fish than what you need and got delayed in going home? What happened to the fish? You're right, the fish get spoiled. Do you want to know the reasons why? Let me tell you these.

Spoilage is the result of a series of changes brought about in the dead fish mainly due to enzyme and bacterial action. It starts in the fish as soon as the fish dies when caught. In areas where temperature is high, fish spoil within 15-20 hours depending on the specie and the method of capture.

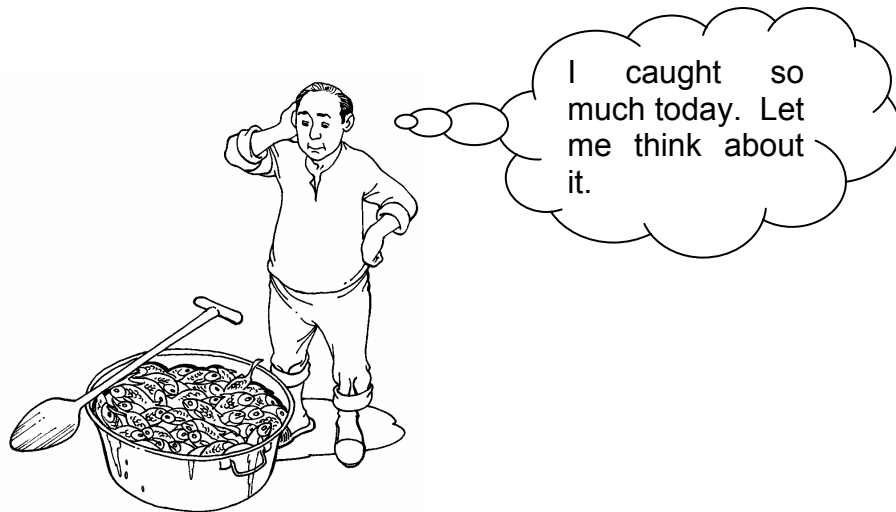
Fish is extremely perishable. It spoils easily.





Did you learn something from the conversation above? Let us find out by working on Activity 1.

Activity 1



Help the fisherman solve his problem by answering the questions below:

1. What is the problem of the fisherman?
2. What can you suggest to solve his problem?

Were you able to help the fisherman solve his problem? If you did, I hope that you can also answer the exercise below.

 Self-check:

Write **T**, if the statement is true and **F**, if it is not true.

1. Fish preservation is a good source of protein.
2. Fish spoilage starts at the time they are caught.
3. Fish spoils within 15-20 hours in places where the temperature is low.
4. Fish preservation prevents spoilage.
5. Fish is perishable or gets easily spoiled.

Lesson 2

Preparatory Procedure in Fish Preservation

Do you know that there are initial preparations before the preservation or processing of fish? Let's find out how fish are prepared for the particular purpose.

1. Fillet
The body of the fish is cut into strips of flesh parallel to the line of its backbone.
2. Gutted
The internal organs are removed by cutting along the ventral surface from the vent to its gill using a knife. Sometimes its head is also removed.
3. Split
The internal organs of the fish are removed and sometimes even the head but not the bones.
4. Boned
Most of the bones are removed.
5. Boneless
All the bones including the small bones are removed.
6. Dressed
Fish are thoroughly washed and prepared for any purpose.

After any of these preparatory procedures, the fish is now ready for a particular method of fish preservation.

How do you find the lesson? Is it interesting? Here is the exercise which will give you the opportunity to test what you've learned.



Self-check:

Draw a line to connect Column A with Column B.

A

B

- | | |
|------------|-----------------------------------------------|
| 1. Gutted | a. Guts are removed along the ventral surface |
| 2. Boned | b. Washed and cleaned before cooking |
| 3. Dressed | c. Cut into strips of flesh |
| 4. Fillet | d. Most of the bones are removed |
| 5. Split | e. Most of the bones are removed |
| | f. Internal organs and head are removed |

What is your score? Is it 5? Excellent! Now, we can move on to the next lesson.

Lesson 3

Methods of Fish Preservation

What have you learned in the previous lesson?

I learned different fish preparations before fish preservation.



Now you will learn some ways of preserving fish. Are you ready?

There are different methods of fish preservation, among them are drying and salting. Study the following procedure for each method:

A. Drying Split Fish (*daing*)

1. The scales are removed, and the fish is split on the dorsal side.
2. The internal organs, gills, false kidney and black membrane are removed.
3. The fish is washed thoroughly and drained.
4. The fish is soaked in 25% brine solution (salt and water) from 30 minutes to an hour depending on the size of the fish. Smaller fish are soaked for a shorter time compared to the bigger ones.
5. After salting, the fish are washed to remove the dirt and excess salt on the surface.
6. Spread out the fish on drying trays and place under the sun until very dry. Turned them over every 3 hours.

B. *Bagoong* Making

Following is the procedure in *bagoong* making:

1. Wash and drain the fresh fish.
2. Mix with salt. One part salt to three parts fish.
3. Pack tightly in jars and store for six months.

4. Drain the liquid formed (patis) after storing for six months.
 - a. Patis is then filtered and bottled for household or commercial use.
5. Set aside the ground and solids.
6. Add saturated brine to the other solid part.
7. After two weeks, you will have second class patis and bagoong as solid ground.

How do you feel after knowing the procedures on how to preserve fish? Can you now preserve your own fish?

Activity 2

Make your own *bagoong* using 1 kilo of fish. Bring all your materials in the school next time you report to school to perform the activity.

Before ending this lesson, let me see how well you understood what you read and learned. Do the self-check exercise below.



Self-check:

Write C, if the statement is correct and W, if the statement is wrong.

1. Fish is soaked in 25% brine solution for 30 to 60 minutes.
2. The proportion of part salt to fish in making bagoong is 1 is to 3.
3. Liquid drained in bagoong making after 6 months is known as patis.
4. Split fish for drying is washed after salting.
5. Internal organs are not removed in drying split fish.

Did you get five correct answers? Wonderful! You really learned very much from this lesson. Now, let us see if you learned a lot from the entire module. Answer the given posttest.



POSTTEST

Write only the letter of the best answer.

1. An extremely perishable food.
 - a. fish culture
 - b. fish
 - c. *bagoong*
 - d. dried fish

2. The part of the fish which is first removed when drying split fish.
 - a. kidney
 - b. gut
 - c. head
 - d. scales

3. Fish preparation in which most bones are removed.
 - a. gutted
 - b. boned
 - c. boneless
 - d. split

4. Storage period of *bagoong* before use.
 - a. 4 months
 - b. 9 months
 - c. 6 months
 - d. 5 months

5. A method used to prevent spoilage.
 - a. fish culture
 - b. fish capture
 - c. fish preservation
 - d. fish spoilage

6. Fish preparation in which all bones including pin bones are removed.
 - a. gutted
 - b. split
 - c. boneless
 - d. Boned

7. Percentage of brine solution used in drying split fish.
- a. 30 %
 - b. 25 %
 - c. 20 %
 - d. 15 %
8. Fish preparation in which fish is thoroughly washed.
- a. gutted
 - b. dressed
 - c. fillet
 - d. split
9. Ratio of the part of salt to fish in *bagoong* making.
- a. 1:3
 - b. 2:4
 - c. 3:1
 - d. 4:2
10. Fish preparation wherein internal organs are removed.
- a. gutted
 - b. split
 - c. fillet
 - d. dressed

How is the result of your posttest? What's your score? If your score is below 6, go over and work on the module again. If you got 10, very good. You have done well!

Congratulations for a job well done! You can now proceed to the next module.



ANSWER KEY

Pretest

1. b
2. d
3. b
4. c
5. c
6. c
7. b
8. b
9. a
10. a

Lesson 1: Self-check

1. F
2. T
3. F
4. T
5. T

Lesson 2: Self-check

1. a
2. d

3. b
4. c
5. f

Lesson 3: Self-check

1. C
2. C
3. C
4. C
5. W

Posttest

1. b
2. d
3. b
4. c
5. c
6. c
7. b
8. b
9. a
10. a