

POST-HARVEST HANDLING AND PROCESSING OF TILAPIA

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### Introduction

In the Philippines where prevailing temperature is high, the fish catch begins to deteriorate at a very rapid rate. In order to effectively use all the fish produce, there is a need to improve and develop proper methods of handling and distribution in order to delay spoilage, as well as to introduce methods of fish utilization. Efforts should be concentrated on the elimination of wastage in processing, marketing and distribution and on development of new fishery products out of least utilized fish.

Tilapia is considered to be a nutritious low cost freshwater fish. It is well accepted as food, although in some areas the marketability of tilapia is quite poor because of improper handling.

### Post-harvest Technology

Tilapia is usually packed in wooden boxes (kaha), tubs (bañera) or baskets (kaings). The catch is transported to different markets immediately after harvest while the fish is still alive. Icing is not necessary when transporting over short distances. Usually, the source of fish is near outlets or markets and fish reach the consumers in a few hours. Proper handling techniques should however be observed.

The use of ice would preserve quality of tilapia transported over long distances. Crushed ice should be interspersed with fish, the ratio of ice to fish depending on the distance of the inland market. Re-icing should also be carried out in order to maintain quality during the time required to sell the fish. If packaging and icing are well done, fish would be in excellent condition even after an overnight journey from the source to the market.

Fish retailed in public markets are arranged in stalls according to species and size. Retailers sometimes remove the ice because some consumers do not like iced fish. Although tilapia is not commonly found in supermarkets, it could be sold either or frozen like any other fish.

### Processing

Acceptability of tilapia is still a problem in some areas. However, introduction of new methods of processing like freezing, filleting, and formulations from minced fish like fish balls, fish cakes and sausages, and other convenience food items have partially solved the problem.

To encourage utilization of tilapia, several studies on processing have been conducted both here and in other Asian countries. Some of these methods are:

1. Drying - Dried tilapia usually comes in the form of butterfly fillets. One limitation of drying is the additional labor involved in removing the scales particularly when done in commercial quantity. This could, however, be solved with the use of mechanized scalers.

2. Smoking - Trials on smoking Tilapia mossambica have also been made using the conventional method. However, although the taste is acceptable, the general appearance is not.

In Nigeria, a smoked minced tilapia product is consumed directly as a food constituent in such dishes as soups and stews. The smoked minced tilapia is said to have a moisture content of about 25%. No mould growth was noted for at least 60 days when stored at 20°C.

3. Fermentation - Tilapia has been found to be a good raw material for our 'buro' and could be a substitute for mudfish or 'dalag'.

4. Canning - Studies undertaken by BFAR and NIST have led to the canning of tilapia. Formulations were tested and modified to obtain products with high acceptability.

5. Fish Meal - Some of the catch which are not utilized for human consumption may be converted to fish meal. In some cases, unsold dried tilapia are ground into meal for animal feed.

Fish offal from canning and filleting constitute about 40% to 50% of the total weight of fish. This could be utilized for fish meal using the wet reduction method.