

## A NOTE ON THE DEVELOPMENT OF NEW DRIED FISH PRODUCTS

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*Abstract*

Traditional dried products are generally made from small fish. Nontraditional large fish are more difficult to dry in a standardized manner. Procedures are described for the development of novel dried products using fish mince.

## INTRODUCTION

Fish used for traditional dried fish products have been relatively small in size, e.g., squid (*Sepia esculenda* hoyre), file fish (*Stephanolepis cirrhifur*), globe fish (*Spherooides rubripes*), half beak (*Hermiraphus sajori*), etc. Since these fishes are flat they can be treated and dried easily. On the other hand, large round fish such as Alaska pollack (*Theragra chalcogramma*), cod (*Gadus macrocephalus*), etc. are not easily dried and there is also a difference in the drying time between the body and the tail; this makes it difficult to produce a standardized product.

Traditional dried fish processing was unsanitary and inefficient because it was based mainly on manual operations. This experiment was conducted to overcome such shortcomings and to improve the products. The fish were frozen in containers before being sliced and dried. It was found that a standardized product with an enhanced rate of drying could be produced. Two products were made; one from fish fillets and the other from cheap and less valuable fish, and from minced trimmings from the filleting operation.

## PROCESS

For the preparation of fillets a filleting machine was used. The mince was obtained from species of low value and from filleting waste by means of a meat/bone separator.

Essentially the process for both products consisted:

- bleaching the fish in water; for minced products, 3 parts water to 1 part fish;
- dehydrating in a centrifuge;
- seasoning with additives such as salt, sugar, D-sorbitol, glucose, sodium glutamate, sodium succinate, polyphosphate, etc.;
- freezing in trays (48.7 x 29.5 x 6 cm) in a contact plate freezer to a centre temperature of  $-4^{\circ}$  to  $-5^{\circ}\text{C}$ ;
- slicing with an electric band saw, and meat slicer to give thin slices;
- drying; Alaskan pollack was sun-dried for 4-7 hours during the period September to November and for 5-9 hours from May to September, and
- finally, the product made from the mince was roasted in a machine at  $180^{\circ}\text{C}$  and softened by passing 2 or 3 times through a roller.

If the raw material was of poor quality, the product made from fillets tended to crack during drying and the product made from mince was not easily softened even if rolled. When the major part of the raw material was Alaska pollack, a product with good texture and colour could be obtained by mixing 3-4 percent of squid, file fish, globe fish, shrimp, crab, laver, etc.

#### ADVANTAGES OF THE PRODUCTS

Possibility of mass production.

Speed of drying

Since the minced type product can be produced using various species of fish, a variety of products can be produced

By-products produced in fish processing can be utilized

The fillet type product is of good shape and can be torn easily