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DEVELPOMENT AND VALUE ADDED FISHERY PRODUCTS

(Heat Processing , Dehydration and Ice Storage of S*adinella gibbosa* "Salaya")

By

H.M.U.Bandara

Thesis submitted to the University of Sri Jayewardenepura for the award of the degree of Master of Food Science and Technology.

DECLARATION

The work described in this thesis was carried out by me under the supervision of Prof. A.Bamunuarachchi and Dr. K.K.D.S.Ranaweera, Department of Food Science and Technology, University of Sri Jayewardenepura, Nugegoda, Sri Lanka and a report on this has not been submitted in whole or in part to any University or any other Institution for another Degree.

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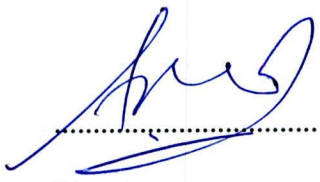
04.09.2006 H.M.U.Bandara

We certify that above statement made by the candidate is true and that this thesis is suitable for submission to the University for the purpose of evaluation.



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Dedicated

To

My dear Parents

And

Loving Teachers.

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ABSTRACT

In Sri Lanka like in most developing countries, little attention is directed towards post harvest aspects in the fishery industry. The fish reaches the customer in poor condition due to storing fish in inadequate ice or un-iced storage. Fish is a highly perishable food which does not keep for long after it is caught particularly in hot climates .This prevents its distribution and utilization in areas distant from the catching or landing points if it is not properly preserved.

Fish processing is needed to prevent the fish spoilage. Furthermore, fish caught seasonally or in glut periods can only be made available for consumption by processing in to a product with greater shelf life than fresh or even iced fish. This helps to increase the distribution and marketing of such products within the country. Such products are significant to the economy of the country and the development of the fish processing industry in the country. Thus steps towards adopting improved handling and processing techniques such as heat processing whereby nutritional and economic losses are minimized would be a great advantage to the Sri Lankan fishery industry.

Traditionally dry fish is made using with unsold stocks and poor hygienic processing methods. This result is poor quality of final dry fish. But consumers have no any other option than buying available dry fish.

To prevent this situation this project was carried out. The objective was to introduce quality, affordable dry fish processing method to fishery industry specially using widely available affordable natural preservation methods such products introduce a new palate to the consumer as well.

The project looked at stability enhancement (improve the shelf life) of the fish by heat processing with different temperatures and coupled with dehydration. Dressed fish ware subjected to different pre-cooking temperature, 50^{O}C, 60 ^{O}C, 70 ^{O}C with adding 2% salt and natural 2% vinegar. Then heat treated in different time intervals such as 5 minutes, 10minutes,15 minutes.One sample was stored at ice storage and other sample was dehydrated by using mechanical and solar dryer.The effects of each temperature treatments and ice storage, mechanical drying and solar drying were studied.Chemical microbiological and sensory analysis were carried out to determine the quality and shelf life of the product. Organoleptic assessment of the heat processed "salaya" showed that the ice-stored samples had a shelf life of 28th days. The fish were in good condition up to the 22nd day. By the 23rd day the cooked fish developed off odor and taste and a slight burning and itching sensation. There was no quality deterioration in the solar dried and mechanical dried sample up to four months.

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