

DEVELOPMENT ² AND VALUE ADDED FISHERY
PRODUCTS

**(Heat Processing , Dehydration and Ice Storage of *Sardinella*
gibbosa “Salaya”)**

By

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**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.

04.09.2006

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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.

CONTENTS

<u>TITLE</u>	<u>PAGE</u>
Contents	I
Acknowledgement	V
Abstract	VI
List of Figures	VIII
List of Appendix	X
List of Plates	XI
List of Tables	XII
CHAPTER 1. Introduction	1
CHAPTER 2. Literature Review	
2.1 Fishery Industry in Sri Lanka	4
2.2. Fish harvesting and Processing	6
2.3. Fishery products in Sri Lanka	8
2.4. Health Hazards of Fishery Products	11
2.5. <i>Sardinella gibbosa</i>	13
2.6. Health benefits of <i>Sardinella</i> sp.	15
2.7. Proximate composition of " <i>Sadinella</i> "	15
CHAPTER 3. Experimental	
3.1. Heat treatment	
3.1.1. Materials	16
3.1.2. Methods	17

3.2 Dehydration	
3.2.1 Materials	17
3.2.1 Methods	18
3.3 Ice Storage	18
3.4. Chemical analysis	
3.4.1 Determination of Try Methyl Amine Content	
3.4.1.1 Materials	18
3.4.1.2 Methods	19
3.4.2. Determination of Moisture Content by Oven Drying Method	
3.4.2.1. Materials.	19
3.4.2.2. Methods.	20
3.4.3. Determination of pH .	
3.4.3.1. Materials.	20
3.4.3.2. Methods.	21
3.4.4. Determination of Free Fat Content (Soxhlat Extraction Method)	
3.4.4.1. Materials.	21
3.4.4.2. Methods.	21
3.4.5. Determination of Total Fat Content	
3.4.5.1. Materials.	22
3.4.5.2. Methods.	23
3.4.6. Determination of Crude protein Content-(Kheldhal Method)	
3.4.6.1. Materials.	24
3.4.6.2. Methods.	24

3.5 Microbiological analysis	
3.5.1 Materials	25
3.5.2. Methods.	26
3.6 Organoleptic analysis	27
3.7 Sensory Evaluation	
3.7.1 Materials	27
3.7.2 Methods	27
CHAPTER 4. Results and Discussion	
4.1 Bacterial Colony formation during ice storage	29
4.2 Total Plate Count During Ice Storage.	30
4.3 Total Plate Count During Mechanical Drying.	31
4.4 Total Plate Count during Solar Drying.	32
4.5 Mould Formation in PDA during Mechanical Drying.	33
4.6 Mould Formation in PDA During Mechanical Drying.	34
4.7 Autolysis during ice storage and prevention of Autolysis by increasing heat processing temperature.	35
4.8 Change in TMA and pH during ice storage in untreated fish	36
4.9 Change in TMA and pH during ice storage in plane water heat treated fish.	37
4.10 Change in TMA and pH during ice storage in 2% Salt water heat treated fish.	38
4.11 Change in TMA and pH during ice storage in 2% Salt+ 2% Vinegar heat treated fish.	39

4.12 Change in TMA and pH during solar drying in 2% Salt+ 2% Vinegar heat treated fish.	40
4.13 Change in TMA and pH during mechanical drying in 2% Salt+ 2% Vinegar heat treated fish.	41
4.14 Rehydration Ratio after one month in solar dried and mechanical dried fish sample.	42
4.15 Moisture content during Mechanical and Solar drying.	43
4.16 Free fat and total fat Content during Different Treatments.	44
4.17 Protein Content during Different Treatments.	45
4.18 Sensory evaluation.	46
CHAPTER 5. Conclusion.	52
Reference	XXII

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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 were subjected to different pre-cooking temperature, 50^oC, 60^oC, 70^oC 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.

LIST OF FIGURES

	<u>PAGE</u>
Fig.2.1.1. Annual Fish Production in Sri Lanka	XIII
Fig. 2.1.2 Shore Seine variety production (including "salaya") by District	XIV
Fig.2.1.3. Supply of Dried and Canned Fish for Consumption/mt	XV
Fig.2.1.4. Import Quantity of Fish and Fishery Products/mt	XVI
Fig.3.5.2 Bacteria Formation during Ice Storage (Total Plate Count/gx10 ⁴)	30
Fig.3.5.3 Bacteria Formation during Mechanical Drying (Total Plate Count/gx10 ⁴)	31
Fig.3.5.4 Bacteria Formation during Solar Drying (Total Plate Count/gx10 ⁴)	32
Fig.3.5.5 Mould Formation during Mechanical and Solar Drying (Total Plate Count /gx10 ⁴).	34
Fig.3.4.1.1 Change in TMA and pH during ice storage in untreated fish.	36
Fig.3.4.1.2 Change in TMA and pH during ice storage in plane water heat treated fish.	37
Fig. 3.4.1.3 Change in TMA and pH during ice storage in 2% Salt water heat treated fish.	38
Fig. 3.4.1.4 Change in TMA and pH during ice storage in 2% Salt + 2% Vinegar heat treated fish.)	39
Fig. 3.4.1.5 Change in TMA and pH during solar drying in 2% Salt + 2% Vinegar heat treated fish.)	40
Fig. 3.4.1.6 Change in TMA and pH during mechanical drying in 2% Salt + 2% Vinegar heat treated fish.)	41

Fig.3.2.1 Rehydration Ratio (after one month)	42
Fig.3.2.2 Moisture Content during Mechanical and Solar drying.	43
Fig. 3.4.4 and 3.4.5 Free Fat and Total Fat content during different treatments.	44
Fig.3.4.6 Protein content during different treatments.	45
Fig.3.7 Sensory Evaluation of Different Treatments	51

LIST OF APPENDIX

	<u>PAGE</u>
APPENDIX- 1 Process flow chart	XX
APPENDIX- 2 Scored of sensory evaluation	XXI

LIST OF PLATES

	<u>PAGES</u>
Plate – 1 <i>Sardinella gibbosa</i>	13
Plate -2 Bacteria formation after two week during ice storage.	29
Plate -3 Mould Formation in PDA during Mechanical Drying (After three months)	33
Plate -4 Autolysis during Ice Storage-Heat treated at 60 ^o C	35
Plate -5 Prevention of Autolysis during Ice Storage-Heat treated at 70 ^o C	35
Plate -6 Traditional Dry Fish Processing Method.	XVII
Plate- 7 Mechanical Drier	XVII
Plate-8 Solar Drier.	XVII
Plate-9 Fish Marketing	XVIII
Plate-10 2% salt water heat treated solar dried “salaya”	XIX
Plate-11 Plane water heat treated mechanically dried “salaya”	XIX
Plate-12 2%salt+2%vinegar heat treated solar dried “salaya”	XIX
Plate-13 2%salt +2%vinegar heat treated heat mechanically dried “salaya”	XIX