



Natural Additives in FISH PROCESSING

Edited by: Dr. Viji Pankyamma
and Prerna Pandey

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Despite the fact that fish is a highly nutritious and delicious muscle food commodity, it is highly perishable and hence, the use of preservatives for maintaining the quality of fish and fish products are unavoidable. Worldwide, researchers are exploring natural additives based on plant and animal origin for food applications and many of them have been successfully demonstrated to increase the shelf life of fish products. In addition to the preservative effect, some of the natural additives can also modify the sensory attributes and functional properties of the fish protein. This book is intended to provide an overview of various naturally derived compounds being used as a preservative/additive in different fish or fish products.

Microbial growth and fat oxidation are the major reasons for the rapid deterioration of fish quality. A vast number of natural antimicrobial compounds from plant sources have been identified over the years. Antibacterial compounds from microorganisms are also receiving much importance in the recent years. Chapter 1 gives an overview of safe and effective natural antimicrobial compounds and its application in different seafood products. Chapter 2 provides a brief account of the importance of fish lipids, the oxidation process, natural antioxidant compounds, its mechanism of action and its usage in fish and fish products. Development of active packaging material with the addition of antioxidant/antimicrobial compounds for delaying the spoilage of fish products is a widely encouraged technique. Chapter 3 gives a detailed description of antimicrobial packaging derived from natural sources. Chitosan is an extensively studied biopolymer because of its diverse biological activities useful for food applications. Chapter 4 discusses in details, the usage of chitosan and its derivative as an additive in the fish processing industry. Gelatin is also an important polysaccharide of different functional food applications.

Even though not much, the fish processing industry also requires colorants, especially for imitation products. The adverse health impact of synthetic coloring and flavoring agents are well documented and hence, exploring natural colorants and flavors is the need of the hour. This book also provides a review of the naturally available additives being used in the fish processing industry for the purpose of modifying the color of the seafood products in 5th Chapter. The book also intended to provide detailed information on gelatin, an important natural polysaccharide and for food applications in chapter 6. Finally, in chapter 7, we are trying to emphasize the influence of natural ingredients on the sensory properties of fish during processing or storage. In a nutshell, the book describes the potential of a range of natural ingredients to expand their preservative or other functional advantages in fish and fish products.

In near future, the synthetic additives will definitely be replaced by its natural counterparts. The book may be used as a reference for the students and academicians in the field of food technology with specialization in fish processing in graduate, undergraduate and postgraduate levels. Scientists working in fish processing can also find benefit out of this book. The extensive bibliography will allow the readers for availing further information on the specific area of interest.

We are indebted to the contributors of this book for sharing their expertise in the specific areas of the subject.



Dr. Viji P. is graduated from College of Fisheries, Panangad, Kerala in 2006 and completed M.F.Sc. in 2008 from ICAR-Central Institute of Fisheries Education, Mumbai. She joined as scientist in fish processing division of ICAR-CIFT in the year 2010. She has been associated with research projects in the areas of 'Shelf life extension of chilled and refrigerated fish and fisheries products, application of natural preservatives for improving fresh and frozen fish quality, Value addition of low value fishes and fresh water fishes, Development of n-3 PUFA fortified food products and developing innovative protocols for improving the quality of dried fish and shell fish' and 'improved drying technologies for fish'. She has 21 publications in national and International journals and 15 popular articles in her credit.



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www.delvepublishing.com

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001-905-616-2116

Fax: 001-289-291-7601

Email: orders@arclereducation.com

© 2019 Delve Publishing

ISBN: 978-1-77361-474-8 (Hardcover)

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TABLE OF CONTENTS

<i>List of Contributors</i>	xiii
<i>List of Abbreviations</i>	xvii
<i>Preface</i>	xix

Chapter 1	Natural Antimicrobials for Biopreservation of Fish	1
	1.1 Introduction.....	2
	1.2 Viruses as Natural Antimicrobials.....	3
	1.3 Natural Antimicrobials Produced by Bacteria.....	8
	1.4 Natural Antimicrobials Produced by Aquatic Animals.....	11
	1.5 Natural Antimicrobials of Plant Origin.....	15
	1.6 Methods of Application	21
	1.7 Conclusion	21
	1.8 References	23
Chapter 2	Natural Antioxidants And Its Application In Fish And Fish Products	33
	2.1 Introduction.....	34
	2.2 Lipid Oxidation	34
	2.3 Antioxidants	35
	2.4 Sources of Natural Antioxidants.....	38
	2.5 Plant Extracts For Chilled Fish Preservation	41
	2.6 Plant Antioxidants For Frozen Fish Preservation	43
	2.7 Natural Antioxidants For Fish Oil Stabilization.....	44
	2.8 Active Packaging Against Lipid Oxidation	45
	2.9 Limitations And Future Trend	46
	2.10 References	48
Chapter 3	Natural Additives In Active Antimicrobial Packaging For Fish Preservation	55
	3.1 Introduction	56

3.2 Active Packaging.....	57
3.3 Antimicrobial Packaging	58
3.4 Antimicrobial And Biodegradable Packaging Film From Natural Polymers	59
3.5 Chitosan As Antimicrobial Packaging Material	60
3.6 Natural Antimicrobials As Additives In Packaging Films	61
3.7 Role Of Essential Oils In Chitosan-Based Antimicrobial Packaging.....	61
3.8 Application Of Essential Oil Incorporated Packaging Film For Fish Preservation	64
3.9 Plant Extracts In Packaging Material	66
3.10 Enzymes In Seafood Packaging	67
3.11 Bacteriocins.....	68
3.12 Organic Acids.....	70
3.13 Conclusion	71
3.14 References	72
Chapter 4 Chitins and Its Applications In Seafood Processing	85
4.1 Introduction	86
4.2 Chitosan And Its Properties	87
4.3 Antioxidant Activity of Chitosan In Fish And Fish Products.....	88
4.4 Antibacterial Effects of Chitosan In Seafood	89
4.5 Chitosan-Based Active Packaging Film For Seafood.....	90
4.6 Chitosan As A Gelling Enhancer	91
4.7 Chitosan For Encapsulation of Fish Oil.....	92
4.8 Chitosan For Improving The Quality Of Chill Stored Shrimp	93
4.9 Carboxymethyl Chitosan (CMCS).....	94
4.10 Antimicrobial And Antioxidant Properties of Carboxymethyl Chitosan	96
4.11 CMC In Fish Processing And Preservation	97
4.12 Conclusion	97
4.13 References	98
Chapter 5 Bioactive Colorants For Seafood Applications.....	105
5.1 Introduction.....	105
5.2 Natural Coloring Agents.....	106
5.3 Natural Food Colorant In Fish And Fishery Products	113

5.4 Natural Food Colorant As Preservative and Antioxidant In Seafood.....	117
5.5 Natural Colorant In Smart Packaging.....	119
5.6 Color Enhancement Of Cultured Fish	120
5.7 References	123
Chapter 6 Gelatin: Extraction, Properties And Applications	135
6.1 Introduction	136
6.2 Molecular Structure And Composition Of Gelatin.....	136
6.3 Manufacturing Process.....	137
6.4 Important Physical And Functional Properties	141
6.5 Applications of Gelatin	146
6.6 Food Applications.....	147
6.7 Fish Gelatin	150
6.8 Applications of Gelatin In The Seafood Industry	153
6.9 Mammalian Gelatin And Fish Gelatin – A Comparison	155
6.10 Future Challenges	158
6.11 References	160
Chapter 7 Natural Preservatives: Effect On Sensory Attributes.....	171
7.1 Introduction.....	172
7.2 Factors Influencing The Sensory Quality Of Seafood	173
7.3 Effect Of Natural Additives On Sensory Attributes Of Food	174
7.4 Addition Of Natural Additives In Fish Paste Products.....	176
7.5 Influence Of Plant Extracts/Essential Oils On Whole Fish/Fillets.....	178
7.6 Effect Of Hydrocolloids	179
7.7 Effect Of Fish Protein Hydrolysates	179
7.8 Conclusion	180
7.9 References	181
Chapter 8 Effect Of Chitosan Edible Coating on The Biochemical And Physical Characteristics Of Carp Fillet (Cyprinus Carpio)Stored At –18°C	189
Abstract	190
Introduction.....	190
Materials and Methods	191
Results and Discussion	197

	SDS-Page	204
	Conclusions.....	205
	Acknowledgments	206
	References	207
Chapter 9	Antimicrobial Performance Of Two Different Packaging Materials on The Microbiological Quality Of Fresh Salmon	213
	Abstract	214
	Introduction.....	214
	Experimental Section	216
	Results And Discussion.....	218
	Conclusions.....	222
	Acknowledgments	222
	Author Contributions	222
	References	223
Chapter 10	Natural Food Additives And Preservatives For Fish-Paste Products: A Review Of The Past, Present, And Future States Of Research	225
	Abstract	226
	Introduction.....	226
	Improvement Of The Gel Properties Of Fish-Paste Products.....	229
	Improvement In Quality And Functionality Of Fish-Paste Products.....	253
	Shelf-Life Extension Of Fish-Paste Products	266
	Conclusion	274
	Authors' Contributions.....	275
	Acknowledgments	275
	References	276
Chapter 11	The Effect Of Nisin From <i>Lactococcus Lactis</i> Subsp. <i>Lactis</i> on Refrigerated Patin Fillet Quality	297
	Abstract	297
	Introduction.....	298
	Material And Method.....	299
	Result And Discussion	300
	Conclusion	305
	References	307
	Index	309