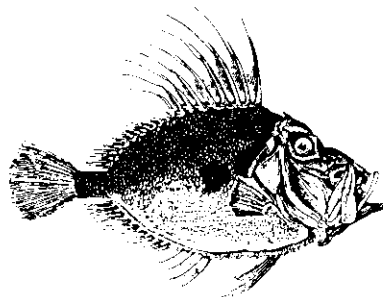
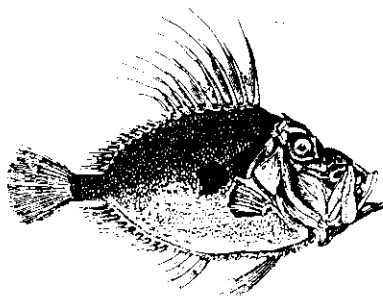


SGR-101

# **Tropical and Subtropical Fisheries Technological Society of the Americas**



**Conference Proceedings  
Fourteenth Annual Conference  
October 1-4, 1989  
Atlanta, Georgia**



**Florida Sea Grant College Program  
Building 803  
University of Florida  
Gainesville, FL 32611**



**FOURTEENTH ANNUAL CONFERENCE**

**TROPICAL AND SUBTROPICAL FISHERIES  
TECHNOLOGICAL SOCIETY OF THE AMERICAS**

**October 1-4, 1989**

**Atlanta, Georgia**

**Conference Chairman,  
Keith Gates, Seafood Technologist  
Georgia Sea Grant College Program  
University of Georgia (Brunswick)**

**Proceedings compiled by:  
Steven Otwell, Seafood Technology Specialist  
Florida Sea Grant Extension Program**

The Tropical and Subtropical Fisheries Technological Society of the Americas is a professional, educational association of fishery technologists interested in the application of science to the unique problems of production, processing, packaging, distribution, and utilization of tropical and subtropical fishery species.

These papers are compiled and reproduced with limited editions and without formal review by the Florida Sea Grant College Program. Content is the sole responsibility of the author(s). The Conference intent is to compile preliminary results from ongoing research and advisory services to facilitate communication between regional investigators, industries, and government entities. Reproduction in this Proceedings does not preclude supplementation and further publication of work in reviewed journals or similar productions.

**Florida Sea Grant College Program  
Building 803  
University of Florida  
Gainesville, Florida 32611**

**September 1990**

**Price: \$10.00**

## ORDERING CONFERENCE PROCEEDINGS

Copies of annual proceedings from the second through eleventh editions are available from the Texas Sea Grant College Program. Please note that the tenth annual proceedings contain a cumulative index and that no copies of the first annual proceedings are available for purchase. Prices for early Proceedings follow: second through eighth, \$10; ninth, \$12; tenth and eleventh, \$15. Please order from **Texas Sea Grant College Program, Texas A & M University, College Station, TX 77843-4115.**

The proceedings for the twelfth through fourteenth annual conferences may be purchased from the **Florida Sea Grant College Program, Building 803, University of Florida, Gainesville, FL 32611.** Proceedings for the twelfth annual conference were published as SGR-92 and is listed at \$15 (note: the 12th edition includes proceedings from a joint meeting with the Atlantic Fisheries Technological Society). The proceedings for both the thirteenth (SGR-94) and fourteenth (SGR-101) annual conferences may be obtained for \$10 each. Please make checks payable to the University of Florida.

Proceedings	Cost	Source
2nd	\$10.00	Texas Sea Grant*
3rd	\$10.00	Texas Sea Grant
4th	\$10.00	Texas Sea Grant
5th	\$10.00	Texas Sea Grant
6th	\$10.00	Texas Sea Grant
7th	\$10.00	Texas Sea Grant
8th	\$10.00	Texas Sea Grant
9th	\$12.00	Texas Sea Grant
10th	\$15.00	Texas Sea Grant
11th	\$15.00	Texas Sea Grant
12th	\$15.00	Florida Sea Grant**
13th	\$10.00	Florida Sea Grant
14th	\$10.00	Florida Sea Grant

<p>*Texas Sea Grant Program Marine Information Service P.O. Box 1675 Galveston, TX 77553-1675</p>	<p>**Florida Sea Grant College Program Building 803 University of Florida Gainesville, FL 32611</p>
---	---

## TABLE OF CONTENTS

<b>Pro-Phenoloxidase (PPO) From the Cuticle of Florida Spiny Lobster (<i>Panulirus argus</i>): Purification and Activation</b>	
M.T. Ali, M.R. Marshall, R.A. Gleeson, R.B. Shireman, and W.S. Otwell	1
<b>High Performance Liquid Chromatography (HPLC) Assay of Tyrosine Hydroxylation by Phenoloxidase From the Cuticle of Florida Spiny Lobster (<i>Panulirus argus</i>)</b>	
M.T. Ali, R.S. Rolle, M.R. Marshall, and C.I. Wei	9
<b>Comparison of Phenoloxidase Activity From Florida Spiny Lobster and Western Australian Lobster</b>	
J.S. Chen, R.S. Rolle, M.R. Marshall, and C.I. Wei	16
<b>Immunological Characteristics of Phenoloxidase Antibodies</b>	
R.S. Rolle, M.R. Marshall, C.I. Wei, and J.S. Chen	28
<b>Purification and Characterization of a Protease With Tryptic Activity From the Pyloric Ceca of Mullet (<i>Mugil cephalus</i>)</b>	
N. Guizani, R.S. Rolle, M.R. Marshall, and C.I. Wei	42
<b>Isolation and Characterization of Two Trypsin-Like Enzymes From Menhaden, <i>Brevoortia tyrannus</i>, Intestine</b>	
J.H. Pyeun, H.R. Kim, and J.S. Godber	50
<b>Development of Rock Shrimp Specific Monoclonal Antibody for Rock Shrimp Identification</b>	
C.I. Wei, H. An, M.R. Marshall, W.S. Otwell, K.J. Kao, and P.A. Klein	62
<b>Use of a Urea Gel Isoelectric Focusing Technique for Quantification of Shrimp in Shrimp-Surimi Mixtures</b>	
T.S. Huang, J.S. Chen, W.S. Otwell, M.R. Marshall, and C.I. Wei	81
<b>Monitoring Lactic Acid Residuals in Natural and Treated Shrimp</b>	
L.A. Applewhite and W.S. Otwell	91
<b>Studies on Bacterial Growth and Histamine Production on Vacuum Packaged Tuna</b>	
C.I. Wei, C.-M. Chen, J.A. Koburger, W.S. Otwell, and M.R. Marshall	103
<b>Chillpack and Refrigerated Storage of Pond-Raised Hybrid Striped Bass Fillets</b>	
L.C. Boyd, D.P. Green, and L.A. LePors	112
<b>Vibrio Vulnificus in Raw Gulf Coast Oysters</b>	
A.D. Ruple, D.W. Cook, and R. Dusho	118
<b>Low Dose Gamma Irradiation of Vibrio Vulnificus in Blue Crab (<i>Callinectes sapidus</i>)</b>	
R.M. Grodner and M.A. Watson	128
<b>Thermal Death Times for <i>Listeria monocytogenes</i> in Crabmeat</b>	
M.A. Harrison and Y.-W. Huang	135

## TABLE OF CONTENTS

(Continued, page 2 of 2)

<b>Effect of Packaging on the Quality of Iced Fish</b> K. Kouadio, Y.-W. Huang, and K. Gates	141
<b>Identification and Comparison of Volatile Odorous Compounds in Pollack and Menhaden Surimis</b> C.F. Lin and T.C.-Y. Hsieh	159
<b>Screening Moisture Binding Agents Which Influence Shrimp Texture and Yields</b> L.E. Barton, L.A. Applewhite, and W.S. Otwell	168
<b>Quality Evaluation of Soft-Shell Crawfish as Effected by Post-Harvest Holding Conditions</b> E.D. Park, J.S. Godber, D.D. Culley, B.W. Walker-Bryan, and M.W. Moody	174
<b>Fatty Acids of Adipose Tissue and Muscle of Swine Fed Different Fat Diets</b> Y.-W. Huang, P.E. Koehler, and R. Seerley	186
<b>An Economic Analysis of Potential Regulatory Changes in the Mullet and Seatrout Fisheries in Florida</b> C.M. Adams, R.L. Degner, and S.D. Moss	192
<b>Species Identification of Retail Snapper Fillets in Florida</b> Y.-H. P. Hsieh, P.K. Kirsch, and B.B. Woodward	218

### ABSTRACTS

The following abstracts represent conference presentations not submitted as full length papers. The Tropical and Subtropical Fisheries Technological Society encourages publication of all presentations, but publication is an author's option.

<b>Extraction and Characteristics of Flavor Concentrate From Mechanically Recovered Crab Meat</b> M. Nieto, A. Beltran, and R.T. Toledo	225
<b>Monoclonal Antibody-Based Enzyme Immunoassay of Rock Shrimp</b> C.-I. Wei, H. An, M.R. Marshall, W.S. Otwell, K.-J. Kao, and P.A. Klein	225
<b>A Biochemical Method to Distinguish Wild From Cultured Fish</b> M. Jahncke, T.T.J. Smith, and G. Seaborn	226
<b>Preliminary Comparison of the Effect of Lactic Acid Versus Lactic/Acetic Acid Mixture on the Inhibition of Growth and Resuscitation of <i>Listeria monocytogenes</i></b> M. Barbier, W.S. Otwell, and G. Rodrick	226
<b>Quality and Stability of Frankfurters Containing Minced Fish With Red Meats</b> M. Hale, J. Gooch, and M. Jahncke	227
<b>Microbiological Hazards in Seafoods</b> L. R. Beuchat and R.E. Brackett	227