

Final Project Report- December 2011

Assessing Consumer Preferences and Demand for Fish: A Market Analysis of the Midwest Aquaculture Industry

Graduate Student Project Funded by the Illinois-Indiana Sea Grant Program

*David L. Ortega, PhD Candidate (Principal Investigator)
Dept. of Agricultural Economic, Purdue University*

*H. Holly Wang, Professor (Co-Principal Investigator)
Dept. of Agricultural Economics, Purdue University*

Research Overview

Consumers are increasingly aware of the quality and safety of the aquaculture products they consume. As dynamic demand from consumers requires changes in the production and marketing of aquaculture products, suppliers are faced with decisions regarding the adoption or discontinuation of various practices regarding the production and marketing of their aquaculture products. Midwest aquaculture producers and retailers face difficult supply management and food safety decisions partially due to significant uncertainty regarding American consumers' WTP for various food product informational attributes. The objectives of this project were to (1) Identify consumer preferences and demand for fish products. (2) Estimate consumers' willingness-to-pay (WTP) for important food safety and quality informational attributes embedded in aquaculture products. (3) Assess the competitiveness of aquaculture products with regards to food safety versus imported aquaculture products.

Consumer Survey

Funds from this grant were solely used to defray the costs of obtaining a nationally representative consumer data set to be used to assess consumer preference regarding aquaculture products.¹ The consumer survey was conducted online through Decipher, Inc., a marketing research services provider that specializes in online survey programming, data collection, data processing, and custom technology development. The survey was administered online to U.S. households and participants were recruited from a large opt-in panel by Survey Sampling International to be representative of the U.S. population, at least 18 years in age, and familiar with the food purchasing behavior of their household. A total of 1,000 respondents completed the survey. Distribution of survey participants are presented in figure 1. The survey included questions regarding soci-demographic characteristics (age, gender, education, household income, number of individuals residing in the household and state of residence, political affiliation) questions regarding fish and shellfish purchasing behavior

¹ Total survey costs totaled over \$10,000.

(both at home and away from the home) and preferences over food labeling practices. Sections were included to elicit consumer perceptions of aquaculture products from various countries as well as consumer perceptions of credence attribute (food safety, production practice, etc) verification from various sources. Data on sources of information particularly regarding food safety outbreaks was also collected. Two choice experiments (CE) were included in the consumer survey to elicit consumers' WTP for pre-selected safety and quality attributes. One CE focused on shrimp and the other on imported Chinese tilapia. Approximately 633 individuals completed the shrimp CE which focused on country-of-origin and included an information treatment to help assess the effect of media reports on consumer preferences. Three hundred and thirty three participants completed the imported Chinese tilapia CE that focused on credence attribute verification.

Project Output and Deliverables

Findings

Aquaculture attributes evaluated via the CEs included food safety, use of antibiotics and type of production practice. Analysis of CE data reveals that consumers are willingness to pay, on average \$10.65 for a pound shrimp with an enhanced food safety characteristic from the United States, \$3.71 a pound for the same quality of shrimp from China and \$4.12 per pound for similar shrimp from Thailand. A similar relationship was found for no antibiotic use. With respect to claims on environmentally friendly aquaculture production practices, consumers only have a significant WTP for this type of practice from U.S. grown shrimp at \$5.41 per pound.

With regards to imported Chinese tilapia, results show that consumers are on average willing to pay \$6.02 and \$4.43 per pound for enhanced food safety in imported Chinese tilapia that is verified by the United States government and a U.S. third party respectively. There is no statistically significant evidence of a positive willingness to pay for Chinese government verified enhanced food safety, no antibiotic use, and an environmentally-friendly type of production practice.

Enhancement of PhD Dissertation

Funds from this project allowed the PI's to expand the scope of his dissertation to include a nation-wide consumer survey as part of his research. Furthermore, the data set obtained with the help of this grant will allow for cross-country comparisons with data that is currently being collected in China.

Presentations (conducted by PI)

- “Heterogeneous Consumers in an Increasingly International Agricultural Market Place: The Future of China and the United States.” China Agricultural University, Beijing, China, November 2011.

- Chinese Food Safety Issues and Consumer Demand.” Inner Mongolia Agricultural University, Hohhot, China, November 2011.
- “Heterogeneous Consumers in an Increasingly International Agricultural Market Place: The Future of China and the United States.” Department of Agricultural Food and Resource Economics, Michigan State University, September 2011.
- “The Economics of Food Safety in China.” Antai College of Economics and Management, Shanghai Jiao Tong University, Shanghai, China, June 2011.

Conference Papers and Abstracts Submitted

- Ortega, David L., Nicole J Olynk, and H. Holly Wang. “Food Safety and Sustainability: Consumer Preferences for Imported Aquaculture Products” Submitted to the joint Agricultural and Applied Economics Association - European Agricultural Economics Association Symposium titled “Food Environment: The Effects of Context on Food Choice,” Boston, MA May 2012.
- Ortega, David L., H. Holly Wang, and Nicole J. Olynk. “Modeling Consumer Preferences for Sustainability, Food Safety, and Production Process Attributes of Imported Aquaculture Products” Submitted to the Agricultural and Applied Economics Association Agricultural Annual Conference, Seattle, WA, August 2012.
- Ortega, David L., H. Holly Wang, and Nicole J. Olynk. “Demand for Food Safety and Eco-Friendly Attributes in Aquaculture Products” Submitted to the International Agricultural Economics Association Tri-Annual Conference, Foz de Iguaçu, Brazil, August 2012

Figure 1. Distribution of Survey Respondents

