

The
United States Market
for
**ORGANIC
SEAFOOD**

Identification and Evaluation of Viable Market Opportunities For Organically-Grown Aquatic Products

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Introduction

For the purposes of this report, the term seafood is used to characterize all freshwater and saltwater finfish and shellfish used for food. The inclusion of bivalve molluscan shellfish raised on leased beds as a farm-raised product differs from state to state, but for the purposes of this report, those products are considered farm-raised.

Numerous groups have voiced concerns about the deteriorating American diet especially among young people. Poor diet has led to an increase in diabetes, coronary heart disease, obesity, and escalating health care costs. Although dietary and lifestyle strategies are in place that could significantly change this statistic, the number one cause of death in the United States remains coronary heart disease. Numerous groups including the American Heart Association, the American Cancer Society, the American Academy of Natural Sciences, the American Diabetes Association, and the United States Department of Agriculture all recommend that Americans significantly increase their consumption of seafood products to maintain good health.

Although consumers have generally positive attitudes toward seafood, its consumption in the United States has remained relatively static over the past fifty years. Per capita annual consumption reached a record 16.6 pounds in 2004 (National Marine Fisheries Service). The top ten products consumed in 2004 were shrimp, canned tuna, salmon, pollock, catfish, tilapia, crab, cod, clams and flatfish. (National Fisheries Institute). The list reflects the growing importance of aquaculture in supplying the American market. The fish farming community increasingly supplies shrimp, salmon, catfish, tilapia and clams. Many speculate that this increase in consumption of farm-raised products may be due to decreasing prices and increasing supply among those commodities.

Fish and shellfish account for less than 8 percent of the total for all high protein animal foods consumed in the United States and, for centuries, wild harvesting of fish and shellfish provided the bulk of the seafood supply. Blake (2000) discusses how the centuries

old practice of harvesting fish from the wild is in jeopardy due to over-fishing. According to Blake, in 2000; there were 96 species of fish that were classified as “threatened” and it is estimated that by 2010 there will be 125. Although the United States has developed an extensive fisheries management program designed to significantly reduce by-catch, allow species to rebuild, and establish maximum sustainable yields to help ensure the future of fishery stocks, the vast majority of seafood consumed in the United States is imported. These imports often originate in countries that do not have management programs for their wild catch and do not practice environmentally sound aquaculture.

Although aquaculture is increasingly supplying the American market, many consumers do not have a clear understanding of fish farming. This is further exacerbated by misinformation and agenda-driven disinformation that is routinely provided to and reported by the media. Robertson et al. (1999) conducted a survey of New England

residents to understand consumers' knowledge and attitudes towards marine aquaculture and found that most respondents (53.6 percent) were unfamiliar with aquaculture.

Currently aquaculture is the fastest growing food producing sector. In 2002, the Food and Agriculture Organization (FAO) reported that world aquaculture production of fish, crustaceans, and mollusks, totaled 39.8 million metric tons in comparison to captured production of 93.2 million metric tons; (Chan 2005). There are, however, concerns relating to aquaculture that have put the industry under the intense scrutiny. Examples of health concerns that have been widely reported in the media are levels of PCBs and use of colorants in farmed salmon.

Concerns relating to health and the environment have led to an increased consumer desire to purchase “natural,” “hormone-free”, and “antibiotic-free” fish and shellfish (Boehmer at el., 2005). Consumers have come to recognize organic farming as a production method that can satisfy that desire. Consumers view organic food as being produced without synthetic pesticides, unnatural fertilizers, added growth hormones, antibiotics, artificial additives, food coloring, ionizing radiation, and not genetically modified in any way. The United States Department of Agriculture (USDA) Organic Food Production Act defines an organic production system as “a production system that is managed in accordance with the Act and regulations in this part to respond to site-specific conditions by integrating cultural, biological, and mechanical products that foster cycling of resources, promote ecological balance and conserve biodiversity” (www.ams.usda.gov/nop/NOP/standards.html). The USDA focus is the production system rather than the resultant product.

The sale of organic food grew by more than 20 percent year after year in the 1990's and in 2002 the organic food market was estimated to be at \$11 billion (Willer and Yussefi, 2004). Although the total percentage of the food supply produced using organic methods in the United States is only between 1 and 2 percent, that number is on the rise as a result of the demand from consumers (Whole Foods Market, Wild Oats, Trader Joe's).

Table 1: Consumer Sales and Growth Rates of Organic Foods, 1997-2003

Year	Sales (Billion dollars)	Growth Rate (percent)
1997	\$3.6	
1998	\$4.3	19.7
1999	\$5.0	18.2
2000	\$6.1	21.0
2001	\$7.4	20.7
2002	\$8.6	17.3
2003	\$10.4	20.2

Source: Nutrition Business Journal, 2004

Although relatively new to organic production principles, there have been efforts to begin applying organic principles to aquaculture. When compared to other organic foods, organic aquaculture is still in its infancy worldwide. According to figures released by

FAO on the status of organic aquaculture, as of June 2004, worldwide production in 2000 was estimated at approximately 5,000 metric tons (Franz, 2004). For the year 2003 the report uses data from Naturland, a German organic certifier, to estimate that worldwide organic aquaculture production reached a total of about 7,500 metric tons, the bulk of which is from the production of organic salmon.

A study funded by the EU FAIR Programme (Aarset, 2000) to understand European consumers perception of organic salmon production; revealed that the term ‘organic’ as it applies to salmon rendered a great deal of confusion. In general, respondents indicated an expectation that organic salmon should be environmentally friendly and be produced in a sustainable manner. In addition to leaving consumers confused about the terminology, organic aquaculture is a tough sell among many consumers in Europe. A study done by Seafish Research and Information (Gross, 2001) surveyed housewives in the UK to understand consumer attitudes and concluded that the concept of organic seafood did not resonate among highly committed organic food consumers. These consumers believe that “the concept of organic seafood lacks credibility.” This lack of credibility existed even though there is an established organic seal developed by the UK Soils Association.

In the U.S., a survey of seafood consumers conducted by the Seafood Choices Alliance (2001) indicates interest by a sizable number of respondents in consuming organic seafood. When respondents were asked how likely they would be to purchase fish labeled “organic” over a fish of the same species or a similar tasting fish, 36 percent indicated at least somewhat more likely to purchase the product labeled organic compared to 16 percent who responded less likely. This study looked only at label considerations and did not include a price component.

Research Objectives

The long-term goal of this project is to develop a better understanding of potential market opportunities for organically grown fish and shellfish products in the United States. Organic production offers tremendous potential for small farmers who would like to differentiate their products and develop viable markets for premium products. Segmented premium price markets are especially vital to the survival of the small farmer since cost of production is generally higher and the output is lower for this producer segment.

Availability of appropriate market intelligence will assist farmers in meeting the challenges of a global market. It will allow industry to adjust business and market planning to develop innovative strategies that can support *viable* price structures over the long term.

Marketability of organically grown fish and shellfish is a national priority supported by the National Organic Aquaculture Working Group, which operates under the auspices of the USDA Agriculture Marketing Service National Organic Program and the National

Fisheries Institute, a Washington-based industry trade group. This group provided a draft set of Organic Standards to the National Organic Standards Board for review. Currently, there are no accepted standards in the United States for the production of organic seafood. The lack of standards means that imported product can bear the seal of a foreign certifying agency and be sold as organic in all states except California. Numerous European certifying agencies have adopted standards for specific aquacultured products and labeled product is making its way into the United States market and potentially capturing long-term market share.

The project identifies those components of “brand” (organically-grown) utility that are most potent in developing and increasing market share. It provides an in-depth analysis of consumer and retailer perceptions of seafood, farm-raised seafood and organically grown seafood in four target markets. The project identifies barriers to consumer acceptance and suggests possible remedies to lower these barriers. It provides insights into the most viable markets and market penetration strategies for organically grown seafood products. The potency of descriptors such as “natural”, “environmentally friendly”, and “sustainable” that could be used on product labels in addition to the federally mandated term “farm-raised” is explored. The influence of the recently adopted requirement for country of origin and method of production labeling on purchase decision is evaluated.

For the consumer, the availability of organically grown aquatic products will increase their comfort level and, possibly, increase their willingness to purchase and prepare seafood products for their families. This shift would greatly add to the quality of the American diet

Methodology

The methodology employed was a compilation of qualitative and quantitative data collection in four target markets that were identified as representative of specific consumer purchase patterns. Those markets were: Colorado Springs, Colorado (land-locked market without a strong seafood consumption tradition but with an influx of consumers from across the country); Boston, Massachusetts (strong market with a highly developed seafood tradition); Chicago, Illinois (an inland market that purchases a high volume of bivalve molluscan shellfish); and Central New Jersey (an affluent, well educated market). Prior to the focus groups, on-line supermarket weekly circulars were reviewed to help identify those farmed seafood products that were most commonly sold in each of the four target markets. Price points for those products also were considered.

The project took a drill-down approach in which focus group/survey participants were asked about seafood products in general, farm-raised seafood products and lastly, organically-grown seafood products. This provides specific information about organically grown seafood products embedded in the general mindset toward seafood. In several instances, survey questions were developed to mimic questions asked in other similar studies to provide benchmarks.

Local supermarkets in each of the target markets hosted focus groups. Sites included both upscale stores that carry a broad range of organic products and cater to a health-conscious consumer as well as more generic stores. Participants in the focus groups received dinner and a \$20 store gift card. The focus groups were conducted in the evening to allow participation by a greater range of shoppers. Most participants enjoyed the opportunity to share their views and were forthcoming in their answers. At the conclusion of each focus group, participants were asked to complete a short individual questionnaire. The questionnaire helped to verify their answers especially about willingness to pay. Consumers were more apt to indicate greater willingness to pay during group discussions but then reconsidered when completing the individual questionnaire.

The focus groups provided direction for a larger telephone survey in each of the target markets. A professional telephone survey company was hired to conduct the survey and phone numbers were randomly generated. Two hundred telephone surveys were completed in each of the four target markets for a total of 800 surveys. The telephone surveys were limited to individuals who actually purchase seafood for home consumption.

At the completion of the consumer portion of the project, a nationwide survey of retailers was undertaken. Two hundred and fifty-seven questionnaires were mailed to retail seafood executives. Each survey was accompanied by a postage paid return envelope. The return was better than expected (14.8 percent) and many respondents were extremely forthcoming about their attitudes and concerns regarding seafood products including aquacultured and organically grown products. Funding constraints limited this portion of the survey to a single contact with no follow-up.

Phase 1-Consumer Focus Groups

Executive Summary

To best achieve the goals of the overall project and develop a meaningful survey instrument to be utilized with a larger sample (800 respondents) during Phase II of the project, focus groups were held in four locations: Central New Jersey; Boston, Massachusetts; Chicago, Illinois; and Colorado Springs, Colorado. In addition to gaining qualitative insight into consumer attitudes and perceptions regarding organically farmed aquatic products, a short individual questionnaire was administered at the completion of each focus group to gather quantitative information. Respondents' views on seafood varied often depending on their geographic location of residence.

Overall, respondents were enthusiastic about the availability of organic seafood. A large majority (72 percent) indicated they would purchase organic seafood if presented with the opportunity. However, there was reluctance to totally commit. Fifty-two percent of the participants felt that they would purchase those products from time to time, while 28 percent were not convinced of the value of the products and would not purchase them (*Figure 1*). A major concern was the cost of an organic product since many consumers already view seafood as an expensive alternative.

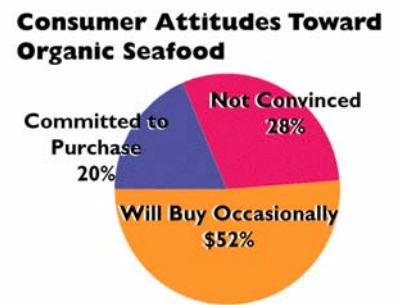


Figure 1

Aquaculture production systems raised additional concerns about the use of synthetic hormones and genetically modified organisms. Ninety-five percent of the consumers in the focus groups felt that a major advantage of organic fish/shellfish was that it was chemical/pesticide free and this was a major force driving interest in the purchase of organic products. Other reasons for wanting to purchase organic seafood were that it: is antibiotic free (87 percent); has superior flavor (62 percent); is ecologically sound (59 percent); and has better quality (59 percent). (Table 15)

Reasons for not wanting to purchase organic seafood were that it: is too expensive (67 percent); has no credible standards (53 percent); is not worth the price differential (40 percent); and has limited availability (13 percent). When asked about the attributes of organic products, thirteen percent of those surveyed indicated that they were not concerned about additives, chemicals or residues (Table 16). Because they are not concerned, most felt that purchasing organic product was not worth the price differential.

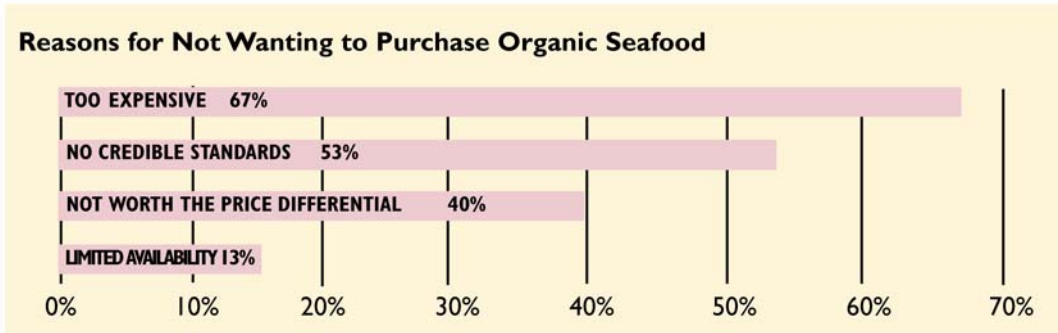


Figure 2

Consumers showed an overall preference for wild-caught seafood products as many felt it is superior in quality and taste compared to farm-raised. Fifty-one percent indicated that they strongly prefer wild and 27 percent indicated that they somewhat prefer wild-caught seafood (Figure 4).

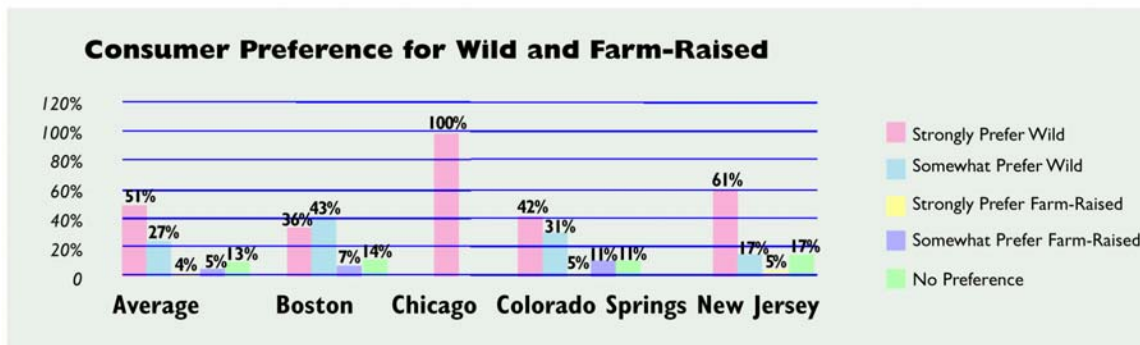


Figure 3

Respondents also indicated preference for domestic seafood products. Fifty-nine percent indicated that they strongly prefer domestic and 21 percent indicated that they somewhat prefer domestic while 14 percent had no preference (Table 8). However, in the broader telephone survey, when asked about whether country of origin would influence the purchase decision, only 60 percent said yes.

Most people continue to consume less seafood than is recommended for a well balanced diet. To change this dynamic will require a well-directed consumer education campaign especially in terms of farm-raised and organically grown seafood products.

Phase I- Focus Group Results

INTRODUCTION

The first phase of the project included a series of consumer focus groups held in four target markets-Central New Jersey, Boston, Chicago and Colorado Springs. The focus groups included upscale, health-conscious and more generic shoppers. Separate focus groups were drawn from general supermarkets and up-scale, healthy lifestyle markets in an attempt to better understand shopping patterns in those locations. A portion of the focus group interaction was devoted to developing a better understanding of those terms and labels that conveyed quality in the minds of the consumer. This information can be used in developing product-positioning strategies, packaging, and marketing materials.

DEMOGRAPHICS

The focus groups were composed of a diverse population. Twenty-five percent reported annual household incomes over \$100,000, 20 percent between \$50,000 and \$75,000, and 14 percent between \$75,000 and \$99,999. Twenty percent chose not to answer. Forty-seven percent had children living at home. Forty-one percent had a household size of 3, while 23 percent had households of 5. Seventy-seven percent of the participants were female and 23 percent male. Twenty-seven percent were between 55 and 64 years of age, 23 percent between 35 and 44, 21 percent between 45 and 49 and 16 percent between 50 and 54. When asked about average monthly expenditures on seafood, 42 percent estimated between \$25 and \$50, 37 percent between \$50 and \$100, 7 percent more than \$150 and 5 percent between \$100 and \$150.

Since most of the consumers in the focus groups were recruited at the seafood counter, almost all felt comfortable preparing seafood at home and purchased seafood at least once a week. The shoppers from the upscale stores were more familiar with organic products and most felt that those products had a high intrinsic value. Shoppers from the more generic markets were often unconvinced. Almost all of the participants were eager to learn more about seafood. Several even arrived at the focus group meetings armed with written lists of questions.

Consumers in each of the groups had distinct attitudes and purchase habits. The Boston participants viewed seafood as a traditional dish. Almost all participants indicated that they had grown up eating fish and that it was part of their family background. A number indicated that they purchased fish at the supermarket but also went to a local fish market where the fish was “fresh off the boat.” Retail chain executives and seafood counter associates actively participated in the Boston focus groups.

Colorado Springs consumers were concerned about how the product reaches inland markets. Many were transplants from other parts of the country and wanted to see a greater variety of products available in the marketplace. This group expressed major concerns about freshness, most likely as a result of the inland location.

The Chicago participants were very health conscious but expressed concerns about the price of seafood and felt that price limited their ability to purchase more seafood.

The New Jersey groups were the most diverse. One group clearly saw an advantage to organic labeling while the second group felt that it wasn't worth the extra cost. Participants had a very good idea of the price of seafood products and could provide an accurate range of price for a particular species. This was especially true for the more exotic and higher priced species most likely as a result of "sticker shock".

ATTITUDES TOWARD SEAFOOD

THE SEAFOOD SHOPPING EXPERIENCE

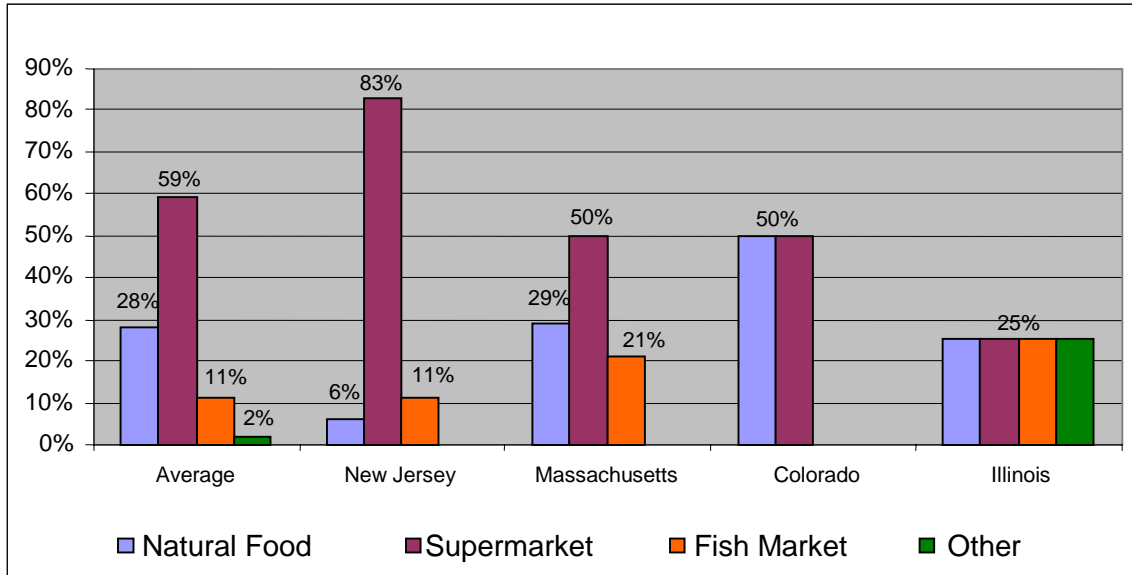
Most consumers continue to purchase seafood as part of their regular grocery shopping at the supermarket. The Colorado group was evenly divided between natural food stores and supermarkets. This might be a factor of the fewer number of food outlets in the area that would limit place of purchase options. Many indicated that they purchase seafood based on the reputation of the store. The reputation of the store essentially becomes the brand. The counterperson and his/her interaction with the customer continue to be a driving force behind seafood purchase. A comment that reverberated was, "I trust what the sales associate suggests." In almost all of the focus groups, consumers mentioned knowledgeable sales associates as an important consideration in making seafood purchases. People relied heavily on the expertise of those individuals, and it is an important area where stores might consider increased training to boost sales.

Many consumers indicated that they shopped once a week and this limited their ability to purchase seafood since they use it on the day of purchase or the next day. There remains a major bias against frozen seafood products. Many consumers do not understand that some products sold at the fresh counter are previously frozen. Even when the product was clearly labeled as "previously frozen," as in the case of shrimp, the majority of the participants felt that this practice was deceptive.

It is interesting to note that in at least one upscale store that featured organic/natural products, there was a great deal of consumer interest in the opening of a national chain, known for both natural/organic foods and lower prices, in their neighborhood. Clearly, price is a major consideration for many seafood users. Although many participants expressed an interest in purchasing seafood at a natural foods/upscale market, many felt that the prices were prohibitive for routine purchases.

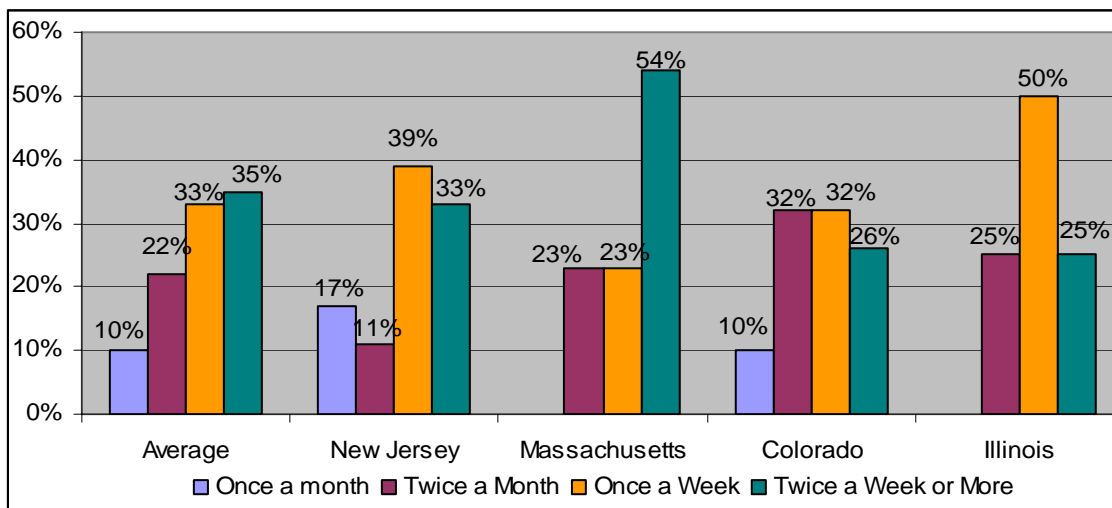
Some of the inland participants felt that they would like to see "fresher fish" and a better variety at the seafood counter. Several commented that they were tired of seeing the same old catfish, salmon and rainbow trout with a smattering of mussels and hard clams that did not look appetizing. There was some concern about seeing previously frozen products in the fresh case.

FIGURE 4: PRIMARY LOCATION OF SEAFOOD PURCHASE FOR HOME CONSUMPTION



Most participants purchase seafood in conventional supermarkets. This is especially the case for many of the respondents in New Jersey. In New Jersey, over 83 percent of the respondents indicated that they purchase seafood in supermarkets. It is interesting to note that, on average, only 11 percent shopped at fish stores even though the area has a large number of small fish markets. Those participants that did shop at a fish store felt that the product was fresher and better than at the supermarket (Figure 4). Many people indicated that they made purchases at both fish stores and supermarkets depending on their mood or needs.

FIGURE 5: FREQUENCY OF SEAFOOD PURCHASE



Since focus group participants were recruited at the seafood counter, most were frequent purchasers of seafood for home consumption. Sixty-eight percent of the participants purchased seafood at least once a week for home consumption. During the focus group

sessions, many of the participants indicated that they purchased a wide variety of seafoods. People were excited about seafood and talked about calamari, escargot and other more exotic species.

MOST COMMONLY CONSUMED SEAFOOD PRODUCTS

Participants were asked to list the five seafoods that they most commonly consume. Since this was strictly a recall question, it is not reflective of actual consumption. Salmon was listed by 16 percent of the respondents and shrimp was listed by 14 percent. Some of the New Jersey participants indicated that they tend to eat shrimp most often in restaurants rather than preparing it at home because they perceive that shrimp is difficult to prepare. Tuna was listed by 9 percent. Cod was listed by 6 percent. Crab was also listed by 6 percent. It is not clear whether this was a true crab or a surimi based product. Tilapia, although it was not in the top five species, was listed by 4 percent of those surveyed. (Table 2)

TABLE 2: MOST COMMONLY CONSUMED SEAFOODS

National Rank (NFI)	Top 5 Most Commonly Consumed Seafood Listed by Focus Group Participants				
	Average	New Jersey	Massachusetts	Colorado	Illinois
Shrimp	Salmon (16%)	Shrimp (17%)	Scallops (14%)	Salmon (20%)	Salmon (22%)
Canned tuna	Shrimp (14%)	Salmon (16%)	Shrimp (12%)	Shrimp (13%)	Shrimp (17%)
Salmon	Tuna (9%)	Scallops (8%)	Lobster (11%)	Tuna (11%)	Tuna (17%)
Pollock	Cod (6%)	Tuna (7%)	Haddock (8%)	Trout (9%)	Cod (11%)
Catfish	Crab (6%)	Tilapia (7%)	Salmon (8%)	Halibut (8%)	Haddock (1%)

Table 2

In all markets, shrimp and salmon were good sellers. Species selection had a regional nature. No consumers in the coastal markets, Massachusetts and New Jersey, mentioned catfish among their list of top five species. Catfish was mentioned by 3 percent of the Colorado respondents. Many of the species, such as scallops (14 percent), lobster (11 percent), haddock (8 percent), and clams (8 percent) mentioned in the Massachusetts groups were traditional New England harvests. In Colorado Springs, since many consumers were transplants, they were looking for species that they consumed back home. Trout (9 percent) ranked highly among this group.

PRICING

Most consumers had a good idea of seafood prices, however, the focus groups were composed of people who regularly purchase seafood. Participants were asked to give an example of a seafood product and a corresponding price for that product. Many quoted prices for very expensive species. Clearly, they had at least looked at those products and

the prices made an impression. New Jersey consumers mentioned Chilean sea bass at \$18.99 a pound.

In almost all of the focus groups, consumers felt that the price of seafood was too high. However, in some instances, that did not affect purchase. In at least one upscale store, the frequent response was “I want what I want and am willing to pay for it”. This group was comprised primarily of dual-income, no kids at home families. A number of people in that group indicated that their households were small, generally two person, and since they didn’t need to buy much, cost wasn’t that much of an issue. One woman with several children said that she sometimes purchases farm-raised fish since the price is more affordable. In an upscale store group, most participants felt that the price of seafood was about three times the price of meat. There was consensus that organic meat was priced 30-40 percent higher and organic poultry was priced 20-25 percent higher than non-organic products in the same category. For those consumers interested in organic seafood products, most indicated that they were willing to pay between \$3 and \$5 more per pound for organic seafood.

SEAFOOD INSPECTION

When asked about seafood inspection, consumers had varying opinions. Many felt that there was no inspection. Several mentioned size regulations and were familiar with conservation issues in the recreational harvest but were unsure of commercial harvest. Most felt that meat and poultry inspection was more strenuous. When asked about the inspecting agency, the most common consumer response was USDA as a result of their knowledge of meat and poultry inspection. Several mentioned that there was no “seal” on the products.

Several felt that if the government provides the standards, there is less of an onus on the consumer. Government certification was an important consideration in the purchase decision and labeling coupled with an education program might help to increase sales.

Many people indicated that they trust the store to inspect the product and offer wholesome, good quality seafoods. This reinforces the idea of the store reputation being a driving factor in seafood purchase.

TRYING NEW SPECIES

In most of the focus groups, consumers felt that they would try a new product if it were on sale. Others were interested in product samples. Many said that they try new seafoods and new preparations in restaurants and then try to recreate the dish at home. Almost all indicated that they would not purchase a new species unless they tasted it first. Several indicated that store associates had been instrumental in getting them to try something new.

SEAFOOD AND HEALTH

Food safety information was confused at best. Contaminants were a major concern. In one group, people said that they refuse to eat seafood products from species that dwell on the ocean floor because they eat and concentrate toxics in their flesh. Most people were familiar with the advisory about mercury and pregnant women, but could not identify the species that should be avoided. Several individuals felt that farmed salmon should be avoided by pregnant women because of “mercury concerns”. Individuals also expressed concerns about PCBs in farmed salmon. The farmed salmon information that was reported by the press in the winter of 2004 had an effect on people’s perception of the product and that perception remains a concern.

“No bottom feeders or large fish”

“Seafood is unhealthy unless it is fresh, clean and raw.”

One individual in an upscale store indicated that she asked the sales associate about mackerel and was told that the store did not carry mackerel because it was a bottom feeder.

Almost all participants were familiar with the term omega-three fatty acids and had some level of awareness that omega-three fatty acids were good for coronary health but did not have any information about other possible benefits. Although the new USDA Food Pyramid was announced on the day of the Colorado Springs focus groups, there was no mention of it.

Almost all of the participants agreed that in order to maintain good health, you should eat seafood at the very least twice a week. Many thought three times would be the ideal. However, when this was compared to average monthly expenditures for seafood, it did not seem that they were actually following this advice.

Quality and safety of the product were often viewed as a function of where the fish was caught. Alaska and Hawaii were deemed safe harvest areas. It is interesting to note, that in the questionnaire portion, many consumers were swayed by the simple use of an additional modifying term. A number of consumers selected the *pristine* waters of the Gulf of Mexico as the point of origin label that they most likely select (Table 3). Consumers were also swayed by what they perceived as vacation or “romantic” locations such as Cape Cod. The concept of water quality seems to be directly tied to a region’s image.

TABLE 3: PACKAGE LABEL THAT CONSUMERS WOULD MOST LIKELY SELECT IN THE SUPERMARKET

Label		Percentage				
		Average	New Jersey	Massachusetts	Colorado	Illinois
Farm-Raised in:	Jersey Shore	18%	17%	-	-	-
	Virginia Shore		-	0	-	-
	Colorado		-	-	37%	-
	Great Lakes Region		-	-	-	0
Farm-Raised on Cape Cod		61%	55%	80%	47%	75%
Farm-Raised in Chile		9%	0	7%	16%	25%
Farm-Raised in the Pristine Waters of the Gulf of Mexico		12%	28%	13%	0	0

Seventy-five percent of the participants indicated that they be much more likely to purchase particular seafood products if they were informed about regions that are known for high quality and availability. This reinforces the need for greater consumer education. (Table 4)

TABLE 4: CONSUMERS LIKELIHOOD OF PURCHASE IF THEY WERE INFORMED ABOUT REGIONS THAT ARE KNOWN FOR HIGH QUALITY AND AVAILABILITY

Likelihood	Percentage				
	National Average	New Jersey	Massachusetts	Colorado	Illinois
Much more likely	75%	89%	67%	63%	100%
Somewhat more likely	21%	0%	33%	37%	0%
No difference	4%	11%	0%	0%	0%

SEAFOOD AND FOOD INFORMATION

Many consumers receive health and food information from television often as part of local or national news broadcasts. It was obvious that often this was a sound bite and many of the participants did not get a clear, complete message. A number of people said that they regularly look for health information on the web. Many were devoted “foodies” and watched the “Food Network” on a daily basis. Local cooking shows were also mentioned.

FOOD MILES

TABLE 5: PERCEPTIONS ABOUT SEAFOOD ORIGIN THAT CONVEY THE HIGHEST QUALITY

Fish/Shellfish Origin		Percentage				
		Average	New Jersey	Massachusetts	Colorado	Illinois
Imported		32%	28%	0	60%	25%
Locally Grown In:	New Jersey	47%	17%	-	-	-
	Cape Cod		-	100%	-	-
	Colorado		-	-	35%	-
	Great Lakes		-	-	-	50%
Grown in	Cape Cod	21%	55%	-	-	-
	Virginia		-	0	-	-
	California		-	-	5%	-
	California		-	-	-	25%

The importance of local production, often referred to as “food miles”, has been touted by the food press and is considered an important factor in food selection among health and quality conscious consumers. This was of special concern to the Colorado participants. To test how this concept relates to seafood purchase, focus group participants were asked to select the term that conveyed the highest quality. On average, locally grown was selected by 47 percent of the participants. However, 32 percent chose imported and 21 percent selected other more distant regions. New Jersey, although it is a coastal state and many residents regularly visit the Jersey Shore, did not score well with the participants. Only 17 percent of the New Jersey respondents selected locally grown as an indicator of quality. Twenty-eight percent of New Jersey participants selected imported as being of higher quality. The locally grown connotation seems to vary in potency from location to location. (Table 5)

Both Colorado groups had a higher acceptance of imported products than the other groups. Overall 32 percent of those in the focus groups felt that imported product was higher quality than local production. This represents a disconnect between opinions that were voiced in the focus group about the relationship of quality to the distance that product had to travel to reach the market. Massachusetts’s participants, probably because of their close association with the sea and the high quality reputation of the region as a seafood harvesting area, preferred local production unanimously.

Other studies (Gross, 2001) have shown that the geographic descriptors (the Scottish Coast) that romanticize the production location can sway consumers. New Jersey consumers chose Cape Cod (55 percent) over locally grown on the Jersey Shore (17 percent). A similar study conducted for the Southeastern Massachusetts Aquaculture Center (Barnes, 2003), sampled consumers in New York, New Jersey, Massachusetts, Connecticut, New Hampshire and Vermont and found that 26 percent would definitely

pay more for farm-raised clams branded from Cape Cod, 51 percent probably would, 16 percent probably would not and 6 percent definitely would not.

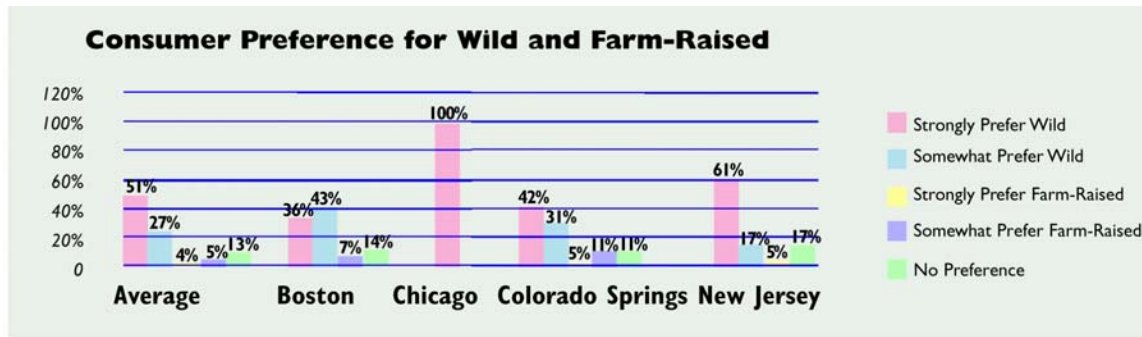
PRODUCT LABELING

WILD VS. FARMED

“I prefer wild. I don’t understand why farm-raised salmon lose their color and have to be dyed to be sold. Are the fish okay?”

Seventy-eight percent of the participants indicated that they preferred wild seafood. Only 9 percent preferred farm-raised, and 13 percent had no preference. Although this is a strongly expressed preference, price is an important determining factor in actual purchase decision. Generally, prices for farmed seafood are lower than those for wild caught product. The term farm-raised conjured up antibiotics, hormones, GMOs, and all the negative issues that have been raised about other farm-raised products. (Figure 6)

FIGURE 6: CONSUMER PREFERENCE FOR WILD AND FARM-RAISED



The next set of questions dealt with terms that are commonly used to describe aquacultured products.

TABLE 6: PREFERRED TERMINOLOGY FOR FARM-RAISED SEAFOODS

Seafood Production Process	Percentage				
	Average	New Jersey	Massachusetts	Colorado	Illinois
Aquacultured	54%	66%	50%	35%	100%
Cultured	20%	17%	25%	25%	0
Farm-Raised	26%	17%	25%	40%	0

Although it might be thought that the term “farm-raised” would have a better resonance with the consumer, there was actually a preference for the term “aquacultured” in the

focus groups. USDA country of origin labeling requirements use the term farm-raised. In the Gross, 2001 study, active environmentally-concerned consumers viewed the term “farmed” as implying too much human intervention, but overall it received a positive response. Farm-raised might imply more of an active involvement with the animals and most people don’t make this association with fish. “Cultured” is a term often used by the molluscan shellfish industry. Many industry members believe that it conveys an up-market image, however this was the least popular term in the focus group component of the project. (Table 6)

NATURAL VS. ORGANICALLY GROWN

In the next set of questions, the terms organically grown and natural were added to the mix.

TABLE 7: CONSUMER PERCEPTIONS ABOUT SEAFOOD TYPE THAT CONVEYS THE HIGHEST QUALITY

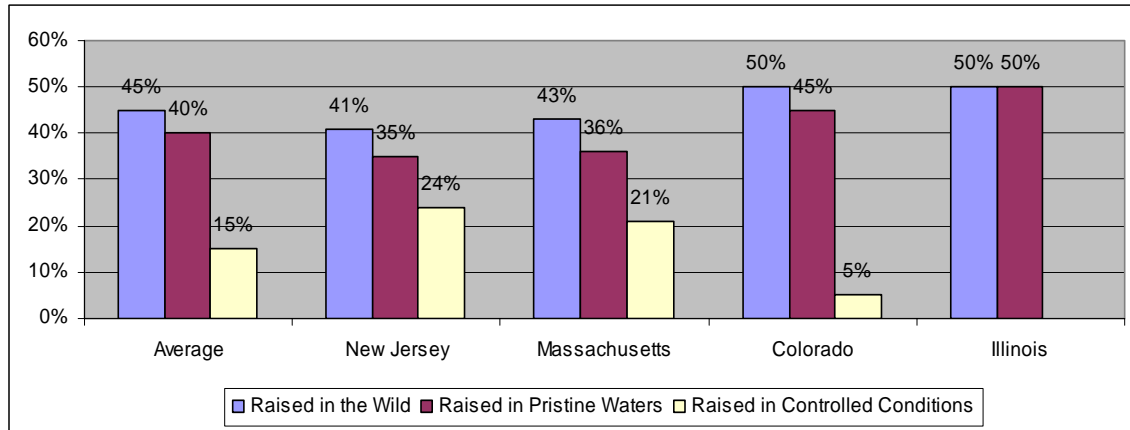
Fish/Shellfish Type	Percentage				
	Average	New Jersey	Massachusetts	Colorado	Illinois
Organically grown	24%	28%	20%	25%	25%
Harvested from the Wild	53%	50%	47%	60%	50%
All Natural	23%	22%	33%	15%	25%

When asked which term conveys the highest quality, consumers in each of the focus groups preferred “harvested from the wild.” This may be a reflection of the food press that tends to promote the idea that wild harvest is preferable to farm-raised product because it is perceived to have a more distinct taste. Since consumers in coastal states might hear more about marine recreational fishing advisories issued based on the level of contaminants in sportfish, there could be some transference between those advisories and consumption of commercial fish. Concerns about those contaminants might be expected to drive sales toward organic products; however, this wasn’t evident in the responses. Although there are freshwater advisories in inland states, much of the seafood sold at retail is comprised of marine species. (Table 7)

When asked what the term organic means, consumers responded with natural, whole, unprocessed, no pesticides, natural fertilizers, and no sprays. About seventy-eight percent of the consumers polled indicated that they had purchased organic products. All agreed that organic products cost more. There were differing opinions about whether or not they were worth the price differential. Most had never seen a seafood product labeled organic, although in several of the stores in which focus groups were conducted such products were on display at the seafood case.

WATER QUALITY

FIGURE 7: SEAFOOD PRODUCTION TERMINOLOGY THAT CONVEYS THE HIGHEST QUALITY



Again in this triplet, consumers preferred the term wild; however, using the adjective “pristine” to describe the growing waters considerably improved consumer perceptions. This is similar to the strategies employed by bottlers of spring water. Using this type of positive terminology may be an important consideration in positioning farm-raised seafood products in the marketplace. The Chicago consumers, when the term “raised” was added to the wild connotation, were equally divided between “raised in the wild” and “raised in pristine waters.” Consumers did not like the term “raised in controlled conditions”. This is similar to the 1992, Gall and O’Dierno study, in which consumers indicated that they felt raising fish in aquaculture facilities was somehow artificial and carried too much of a factory connotation. During the discussion portion of the focus groups, there were numerous concerns about the quality of the water in aquaculture operations. This is clearly an area where consumer education is required and the use of labeling that reinforces the idea of clean water may influence purchase decisions.

“I’ve seen those facilities and the fish are swimming in dirty water. It’s unhealthy”

Many consumers continue to have a bias against farm-raised. They were concerned about the use of antibiotics, drugs, and hormones in the production of seafood in aquaculture facilities. Most were familiar with concerns about color additives. Negative press on color additives and presence of PCBs in farmed salmon has had a lasting impact on consumers especially those heavy users of seafood. In several groups, consumers expressed concerns about “genetically altered” foods. The overall perception was the less control of the process, the better the product.

“It’s not what nature intended”.

“Wild is better because of the lack of human involvement.”

“Chickens are not housed in containers.”

“Wild seems more natural. Less contrived.”

To gain mainstream acceptance, the aquaculture industry will have to undertake an educational campaign to make consumers feel more comfortable with the product. Many consumers expressed concerns about the crowded conditions in aquaculture facilities and the quality of the water.

There were also concerns about the fish feed. A number of people said that the feeds were unnatural. At least three people felt that fish-eating fish was “unnatural”. It was somehow cannibalistic. Others felt that fish feeds composed of soy meal and corn were “unnatural”. There was no discussion of possible implications for marine ecosystems of feeding fish to higher-level predators although this issue is often a major criticism of aquaculture practices raised by environmental groups. Discussions centered entirely on the diets being unnatural.

COUNTRY OF ORIGIN LABELING

Consumers had strong positive reactions to product that was labeled with a USA origin. Fifty-nine percent strongly preferred domestic product. Twenty-one percent preferred imported while 14 percent had no preference. However, during the discussion, most consumers had not noticed country of origin labeling at the seafood counter although the stores in which the participants were recruited clearly labeled their products. In spite of a clear bias toward purchasing USA product, the vast majority of the seafood sold in this country is imported.

TABLE 8: CONSUMER PREFERENCE FOR DOMESTIC AND IMPORTED SEAFOOD

Preference	Percentage				
	National Average	New Jersey	Massachusetts	Colorado	Illinois
Strongly prefer domestic	59%	55%	86%	37%	75%
Somewhat prefer domestic	21%	17%	7%	42%	0%
No preference	14%	22%	7%	16%	0%
Somewhat prefer import	4%	6%	0%	0%	25%
Strongly prefer import	2%	0%	0%	5%	0%

In this set of questions, major seafood farming countries were used as production locations. When presented with specific country of origin options, 95 percent of the respondents selected farm-raised in the USA. However, in Table 5, when individual local production areas within the United States were identified, 32 percent felt that imported product was higher quality. The brand of preference seems to be “USA”.

TABLE 9: PERCEPTIONS ABOUT COUNTRY OF ORIGIN THAT CONVEY THE HIGHEST QUALITY

Fish/Shellfish Country of Origin	Percentage				
	Average	New Jersey	Massachusetts	Colorado	Illinois
Farm-Raised in Chile	5%	0	7%	5%	25%
Farm-Raised in China	0	0	0	0	0
Farm-Raised in the USA	95%	100%	93%	95%	75%

ECO-FRIENDLY LABELING

TABLE 10: EFFECT OF ECO-FRIENDLY LABELING ON PURCHASING DECISION(S)

Effect	Percentage				
	Average	New Jersey	Massachusetts	Colorado	Illinois
More likely to purchase	71%	83%	73%	53%	100%
Less likely to purchase	4%	0	7%	5%	0
No effect	25%	17%	20%	42%	0

Seventy-one percent of those surveyed indicated that they would be more likely to purchase product that carried an eco-friendly label. Many were familiar with the issue of dolphin-safe tuna and made a concerted effort to change their purchase patterns when the concern was prominent in the media. As media attention for the issue diminished, those labels have become less prominent. Twenty-five percent said that eco-labeling would have no effect on purchase decision.

TABLE 11: CONSUMER PERCEPTIONS ABOUT ECOLOGICALLY SOUND SEAFOOD PRODUCTION METHODS THAT CONVEY THE HIGHEST QUALITY

Term	Percentage				
	Average	New Jersey	Massachusetts	Colorado	Illinois
Harvested from a Sustainable resource	21%	18%	20%	25%	25%
Farm-raised in an ecologically-sound manner	41%	29%	47%	50%	25%
Harvested in an ecologically-sound manner	38%	53%	33%	25%	50%

The term ecologically sound had more resonance with the participants than sustainability probably because of the lack of familiarity with the concept of sustainable resources. Since both “farm-raised in an ecologically-sound manner” (41 percent) and “harvested in an ecologically-sound manner” (38 percent) were weighted about equally, there seems to be little distinction between farmed and wild harvest in this context (Table 11).

ORGANIC LABELING

Consumers expressed a clear interest in the purchase of organic seafood. When asked about organic labeling, consumers preferred the term “organically grown” (Table 12). This may reflect the current labeling for fruits and vegetables. Although it might be thought that farmed or farming has a resonance with the consumer, for aquatic products, this did not seem to hold true. “Organically aquacultured” (34 percent) was favored over “organically farmed” (12 percent). This is reflective of the results in Table 6 in which consumers preferred the term aquacultured (54 percent) over farm-raised (26 percent).

TABLE 12: ORGANIC SEAFOOD TERMINOLOGY THAT CONVEYS THE HIGHEST QUALITY

Types of Organically Grown	Percentage				
	Average	New Jersey	Massachusetts	Colorado	Illinois
Organically Farmed	12%	12%	13%	15%	0
Organically Aquacultured	34%	35%	27%	30%	75%
Organically Grown	54%	53%	60%	55%	25%

ORGANIC SEAFOOD

Consumer Perceptions of Organic Foods

Table 13: STATEMENT THAT BEST DESCRIBES CONSUMER ATTITUDE TOWARDS ORGANIC FOODS

Statement	Percentage				
	Average	New Jersey	Massachusetts	Colorado	Illinois
I am committed to buying organic products as often as I can. I am prepared to actively seek out sources.	32%	35%	20%	39%	25%
I believe that organic products are better/good for you, and will purchase them from time to time.	46%	35%	67%	33%	75%
I'm not convinced about the value of organic products in terms of health and taste benefits.	22%	30%	13%	28%	0

In 2001, Seafish conducted a similar study of housewives in the United Kingdom. In that study, 52 percent of the consumers were non-converts to the organic concept and agreed with the third statement (I'm not convinced about the value of organic products in terms of health and taste benefits.). In the current study, only 22 percent of the respondents were unconvinced. (Table 13) Only 5 percent of the U.K. consumers agreed with the first statement, while 32 percent of the consumers in the current study agree. This increase in willingness to purchase organic products may reflect differences in the two markets, United Kingdom versus United States, or may be attributable to the increasing availability and acceptance of organic products at mainstream markets. In any case, it meshes with broader studies that have shown a clear increase in purchase of organic products.

CONSUMER PERCEPTIONS OF ORGANIC SEAFOOD

TABLE 14: STATEMENT THAT BEST DESCRIBES ATTITUDE TOWARDS ORGANIC SEAFOOD

Statement	Percentage				
	Average	New Jersey	Massachusetts	Colorado	Illinois
I am committed to buying organic fish/shellfish as often as I can. I am prepared to actively seek out sources.	20%	18%	13%	28%	25%
I believe that organic fish/seafood are better/good for you, and will purchase them from time to time.	52%	47%	60%	44%	75%
I'm not convinced about the value of organic fish/shellfish in terms of health and taste benefits.	28%	35%	27%	28%	0

Commitment to purchasing organically grown seafood was not as high (20 percent- Table 14) as commitment to purchasing organic products (32 percent -Table 13). This may be a factor of the greater availability of organic produce and dairy products. The consumer has seen those products over a period of years and familiarity/acceptance has grown as a result of advertising and educational efforts. Although several of the stores that hosted the focus groups had imported seafood product that was labeled organic, the overwhelming majority of shoppers had not noticed the label. However, 52 percent felt that organic seafood is better and would purchase the product occasionally (Table 14). This demonstrates a willingness on the part of the consumer to begin purchasing organic seafood products.

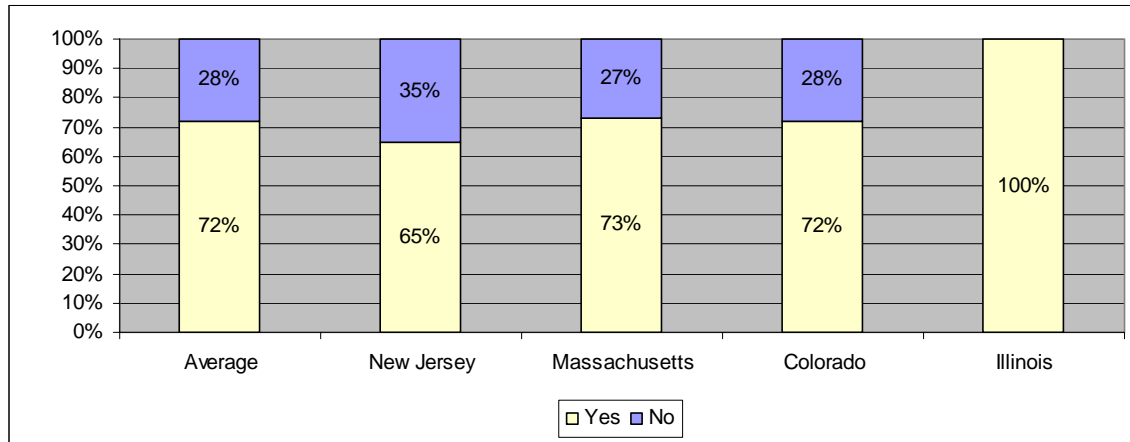
Consumers in the focus groups were reluctant to fully commit to purchasing organic seafood. Fifty-two percent of the participants felt that they would purchase those products from time to time while 28 percent were not convinced of the value of the products (Table 14). Chicago consumers were most convinced of the value of such products, but many of those consumers were also interested in purchasing from stores that carry a wide range of frozen seafood products at a moderate price. Pricing strategies will be important in building market share.

Many consumers in the focus groups had heard negative stories about aquacultured seafood and felt, specifically in this category, that it was important to have some third party guarantees on the safety of the product. Several individuals reiterated the

importance of the store reputation in ensuring the safety of the product. Most had specific stores in which they purchased seafood because they felt the quality and safety of the product was better.

Consumers in New Jersey and Massachusetts were least convinced about the benefits of organic production. This might be attributed to the idea that they had grown up with wild-caught seafood.

FIGURE 8: IF AVAILABLE, WOULD CONSUMERS PURCHASE ORGANIC SEAFOOD?



Although there was a strong consumer interest in purchasing organically grown seafoods, no attempt was made to quantify the frequency of purchase or to determine which species would profit most from organic labeling. This level of interest may be directly related to concerns about the safety of the product. Media coverage of negative stories about farmed seafood may increase demand for products that are labeled organic but this demand may be short-lived. Twenty-eight percent of the shoppers were not interested in an organic product and most did not see any value in purchasing it (Table 14).

TABLE 15: REASONS FOR WANTING TO PURCHASE ORGANIC SEAFOOD

Reason	Percentage				
	Average	New Jersey	Massachusetts	Colorado	Illinois
Chemical/Pesticide Free	95%	100%	90%	92%	100%
Free of antibiotics	87%	91%	73%	100%	75%
Safer	64%	64%	73%	54%	75%
Superior flavor	62%	64%	55%	62%	75%
Better quality	59%	55%	46%	69%	75%
Ecologically sound	59%	55%	64%	62%	50%
More nutritious	54%	46%	82%	39%	50%
Credible standards	49%	55%	46%	46%	50%
Animal welfare	36%	55%	27%	39%	0

Ninety-five percent of the consumers in the focus groups felt that a major advantage of organic fish/shellfish was that it was chemical/pesticide free (Table 15). This points out the concerns that consumers have about contaminants in seafood. Recreational fish advisories and news about contaminants in seafood products are often picked up as sound bites by the nightly news. Those sound bites, rather than the complete story influence consumer beliefs and attitudes.

Eighty-seven percent were concerned about antibiotics and felt that this was an important reason to purchase organic products. Since so few drugs are used by the aquaculture community, this should be selling point for all farm-raised seafood products. Overall, there was an attitude that organic products were safer. Sixty-four percent of those questioned indicated that they felt organic fish and shellfish would be safer. The groups also thought that it would have a superior flavor (62 percent), and be of better quality (59 percent). Better quality and ecological soundness were tied (59 percent). It is difficult to interpret what is meant by better quality and how quality differs from flavor and the other components of wholesomeness. Quality may involve an appearance component.

Superior flavor was also viewed to be a major attribute of organic seafood; however, this is somewhat contradictory to the identification of wild harvest as having superior flavor to aquacultured products.

TABLE 16: REASONS FOR NOT WANTING TO PURCHASE ORGANIC SEAFOOD

Reason	Percentage				
	Average	New Jersey	Massachusetts	Colorado	Illinois
Too expensive	67%	83%	50%	60%	-
No credible standards	53%	17%	75%	80%	-
Not worth the price difference	40%	0	25%	100%	-
Limited availability	13%	0	25%	20%	-
Additives/Chemicals/Residues not a concern	13%	17%	0	20%	-

Price was a major purchase barrier but, surprisingly, lack of credible standards was also a significant consideration. Many consumers wanted to see a government seal. This traces back to the concerns raised about quality seals. Many consumers wanted some authority figure to do their due diligence. In many instances, because of the lack of quality/inspection seals, the store reputation becomes that authority.

Conclusions

Effective marketing strategies can be developed to better position organically grown seafood products in the marketplace when marketers have an understanding of which attributes of organically grown seafood products are important to consumers.

Factors Affecting the Decision to Purchase of Organic Seafood

- What center of the plate protein choices the consumer currently purchases;
- Where they purchase seafood; and
- The intrinsic dollar value that they place on organically grown seafood.

Qualitative information gathered during the focus group portion of the project provided a clearer understanding of how consumers make their purchase decision, their general knowledge and understanding of seafood, farm-raised seafoods and organically grown seafoods. It also provided a qualitative understanding of the inherent values that they place on farm-raised and organically grown seafoods

Because clear distinctions emerged between upscale, health conscious consumers and the more generic consumer, especially in terms of overall commitment to the purchase of organic seafood and willingness to pay, organic products will require a very specific market placement. In general, price is a limiting factor in frequency of seafood purchase and this will extend to the purchase of organically grown products. Product safety rather than environmental considerations is the major driving force behind organic purchase. A higher value is placed on products that are more “natural” and have less “human intervention”.

When discussing organic food and seafood, consumers consistently consider the end product and not the production process. Committed consumers of these products view them as being safer than conventional products. Approximately 25 percent of the sample was unconvinced about the value of organic products and felt that they were not worth the price differential. Committed consumers are willing to pay the price differential but since they already view seafood as an expensive protein choice, they may not be willing to buy more product.

Phase II-Target Market Telephone Survey

Executive Summary

To better examine consumer perceptions and attitudes toward seafood as a food category and specific purchase patterns, the sample was limited to individuals who buy seafood for home consumption. Sixty-nine percent of the original sample indicated that they purchased seafood for home consumption while thirty-one percent did not. If the respondent indicated that he or she did not purchase seafood for home consumption, the survey was terminated. The final sample of 800 respondents consisted of only those respondents who regularly purchase seafood for home consumption.

The most important reason for consuming seafood was taste followed closely by the belief that it is a healthy food. Only 2 percent felt that it was easy to prepare and 2 percent thought that it had gourmet appeal.

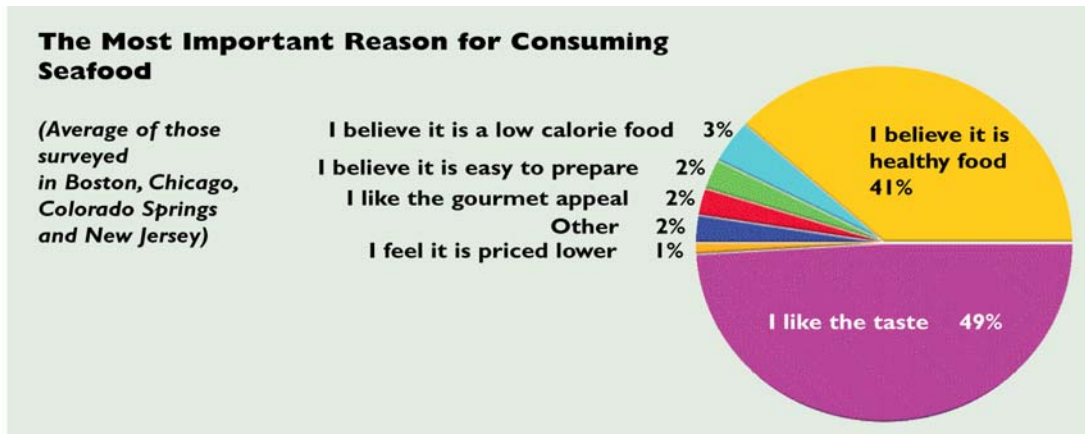


Figure 9

Most of the respondents (62 percent) purchased organic products from time to time. Twenty-three percent never purchased them. Thirteen percent were totally committed to the organic concept.

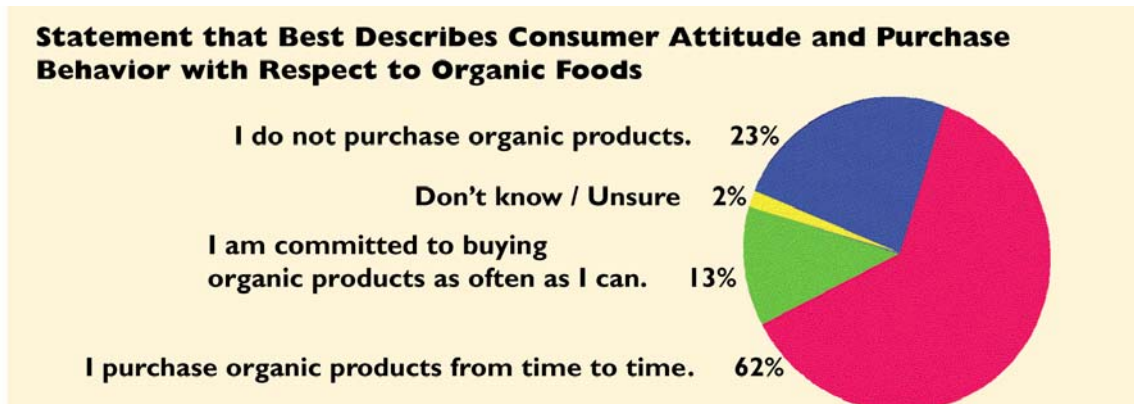


Figure 10

Seventy percent of those surveyed indicated an interest in purchasing organic seafood. Fifty-nine percent that organic seafood would be pesticide and antibiotic free. Throughout the survey, approximately 25 percent saw no advantage to organic products and were not willing to purchase them.

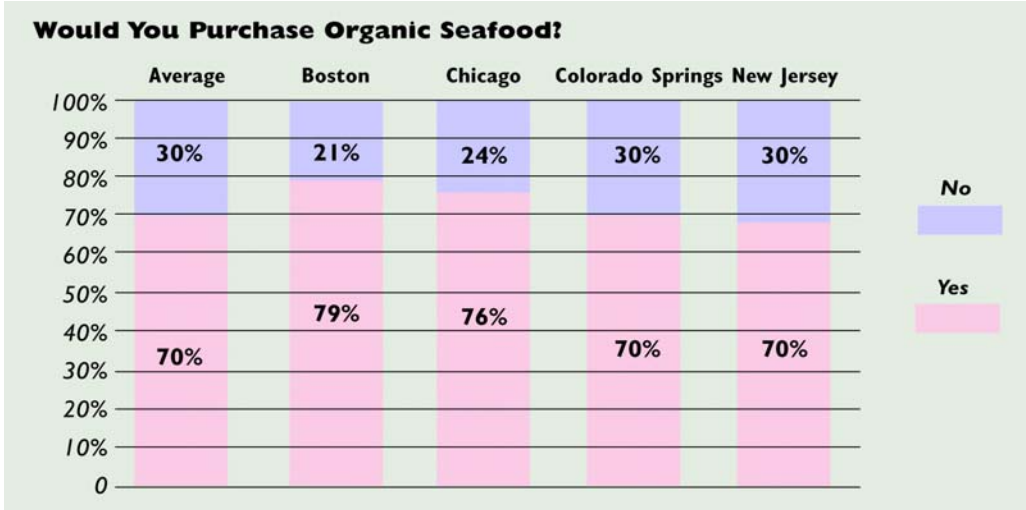


Figure 11

Seventy-four percent of those surveyed indicated that they were aware of health/safety concerns about seafood. When asked what those concerns were forty-seven percent mentioned mercury, 11 percent contaminants, 7 percent bacteria, 7 percent red tide and 5 percent food poisoning. Red tide was prominent in the New England media just prior to the survey and 21 percent of the Boston sample mentioned it.

Many consumers perceived organic products are being safer and less likely to contain pesticides, contaminants and antibiotics than conventional seafood.

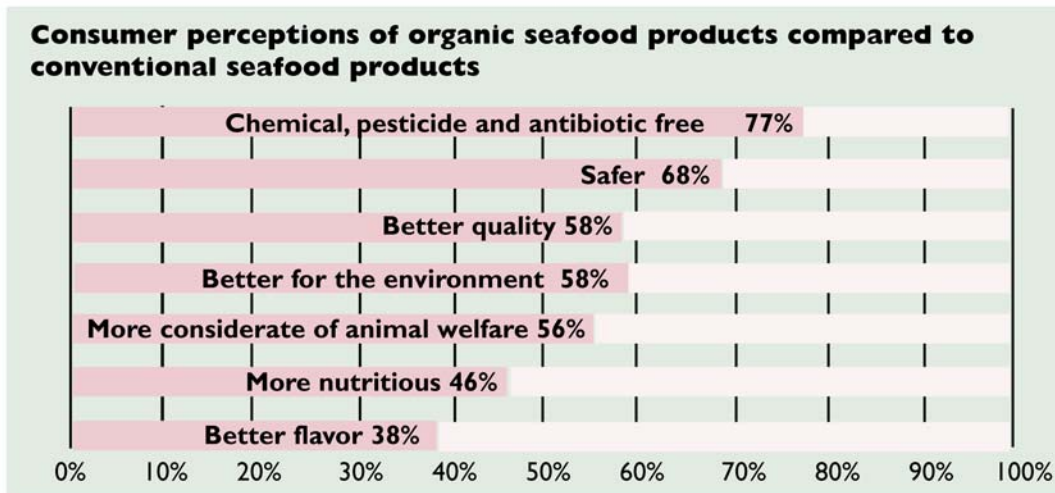


Figure 12

Although this survey was restricted to four target markets, it seems to indicate that there is a population of consumers who would purchase organic seafood. That purchase

decision is based on a number of factors many of which are not directly related to demographics.

CONSUMER PERCEPTIONS

To determine what consumers perceive to be the components of organic farming systems, consumers were asked what makes a food organic. No prompts were given and respondents could provide more than one answer. The question was directed at organic food in general and did not specify organically grown seafood products. The most common answer was pesticide and antibiotic free (59 percent). Nineteen percent said nothing. This reinforces the idea that there remains a hard core of consumers who are not interested in organic products. The next most common answers were better for the environment (5 percent) and more nutritious (5 percent). Four percent felt that the product would be safer/ better taste and animal welfare standards were each listed by 2 percent of respondents.

Consumers are most concerned about contaminants in their food and because they view seafoods as carriers of certain chemical contaminants, especially mercury, organic labeling may be a positive marketing tool. This, however, would be a perception based on the consumer’s misunderstanding of organic farming systems. Some consumers have unachievable expectations of organic production systems specifically a zero tolerance for contaminants.

TABLE 17: CONSUMER PERCEPTIONS OF CHARACTERISTICS THAT MAKE FOOD ORGANIC

Characteristics	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Pesticide/antibiotic free	59%	55%	60%	61%	61%
Other	29%	28%	23%	35%	28%
None	19%	24%	18%	15%	18%
Better for the environment	5%	6%	5%	2%	7%
More nutritious	5%	4%	6%	5%	5%
Safer	4%	6%	4%	4%	4%
Better Quality	3%	4%	4%	2%	1%
Better Taste	2%	4%	2%	2%	1%
Animal welfare standards	2%	3%	1%	3%	3%

Throughout the survey approximately 25 percent of the respondents expressed the belief that organic products are not significantly different from conventional products and are not worth any price differential. Conversely, approximately 25 percent of the sample was committed to the purchase of organic products. That committed group spanned all neighborhoods (urban, suburban and rural), income levels, and ethnic groups. There was

a correlation between education level and interest in purchasing organic seafood. Consumers in the over 65 group were less interested in purchasing organic seafood but those committed consumers in this age category were willing to pay a significant price differential.

Phase II-Target Market Telephone Survey

INTRODUCTION

The second phase of the project consisted of a telephone survey in each of the four target markets. Two hundred surveys were completed in Boston, Chicago, Colorado Springs and Central New Jersey for a total of 800 completed surveys. To help ensure the validity of the survey, a telephone survey firm was contracted to conduct the survey and telephone numbers were randomly generated. The final survey sample consisted only of individuals who purchased seafood for home consumption.

Figure 13



To better examine consumer perceptions and attitudes toward seafood as a food category and specific purchase patterns, the sample was limited to individuals who buy seafood for home consumption. Sixty-nine percent of the original sample indicated that they purchased seafood for home consumption while thirty-one percent did not. If the respondent indicated that he or she did not

purchase seafood for home consumption, the survey was terminated.

The survey took a drill down approach. Consumers were first asked about attitudes toward seafood in general, then farm raised seafoods, and finally organically grown seafoods. This approach provides background information so that attitudes about organically grown seafoods can be considered in comparison and contrast to the entire seafood product category. In some instances, questions were posed in more than one format. This provided an opportunity to verify responses.

In evaluating the data collected, many of the questions require a response to a single facet question while the actual purchase decision is based on an array of product attributes in addition to other factors. When considering responses to questions dealing with organic seafood, a comparison to overall attitudes about farm-raised product versus wild harvest should be considered.

DEMOGRAPHICS

Fifty-three percent of the households surveyed were 1-2 person, while 35 percent were 3-4 person households. Sixty-four percent of the respondents were female and 36 percent male. Twenty-five percent considered their neighborhood to be urban, 62 percent suburban and 10 percent rural. Thirty-four percent were between 36 and 50 years of age, 28 percent between 51 and 65, 21 percent over 65, 14 percent between 21 and 35 and 1 percent younger than 20. The survey was slightly biased toward older consumers because of the time the survey was conducted and the greater willingness among older

consumers to participate. Higher levels of seafood consumption among these individuals might also have been a factor since many consumers indicated that they are aware of the heart healthy benefits of seafood. Twenty-seven percent of those surveyed refused to answer the question dealing with income. Seventeen percent reported household incomes between \$50-\$75,000, 16 percent \$25-\$50,000, 15 percent \$75-\$100,000, 7 percent under \$25,000 and 6 percent over \$100,000. Fifty percent were employed full time, 25 percent retired, 10 percent employed part-time, 8 percent homemakers, and 2 percent unemployed but looking for work.

Forty-three percent of those surveyed consumed seafood at home 1-2 times per month while 31 percent ate seafood at home 3-4 times per month. Only 14 percent reported consuming seafood at home 5-6 times per month, 6 percent 7-8 times per month and 6 percent 9 or more times per month. Currently, most health organizations recommend a minimum of two eight-ounce fish servings per week. According to FDA statistics, the average per capita U.S. weekly consumption is 2.292 ounces, which is only 14 percent of the recommended intake. In this survey, only 12 percent of those sampled were consuming the recommended amount of seafood.

SEAFOOD

Reasons for Consuming Seafood

The most important reason for consuming seafood was taste as reported by 49 percent of the respondents while 41 percent indicated health benefits. This is similar to the results in the 1992 survey of consumers in the New York metropolitan area conducted by Gall and O'Dierno. The ranking of results in the 1992 survey was: I purchase seafood because 1) I like the taste; 2) I believe it is a healthy food choice, and 3) I believe it is a low calorie food.

TABLE 18: THE MOST IMPORTANT REASON FOR CONSUMING SEAFOOD

Reason	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Like the taste	49%	48%	43%	55%	49%
I believe it is healthy food	41%	42%	43%	35%	42%
I believe it is a low calorie food	3%	2%	5%	3%	3%
I believe it is easy to prepare	2%	3%	2%	2%	2%
I like the gourmet appeal	2%	1%	3%	2%	1%
I feel it is priced lower	1%	2%	1%	1%	1%
Other	2%	2%	3%	2%	2%

In the current study, only 2 percent of the sample felt that it was easy to prepare and 2 percent thought it had gourmet appeal. During the focus group portion of the project, several people indicated that they don't buy shrimp for home consumption because it is too difficult to prepare. Both of these attitudes should be relatively simple to change with a good promotional campaign. One percent felt it was low priced. Currently, the price gap between seafood and other center of the plate protein choices such as poultry and red meat is shrinking. This may be a marketable moment for seafood products but it will require a directed effort to convince consumers.

Factors/Information that would induce consumer to purchase more seafood

Sixty-nine percent of those sampled indicated that they would purchase more seafood if prices were lower. Even if prices for poultry and meat continue to escalate, this may be a difficult perception to change. Increased national consumption of aquacultured products including farmed salmon, catfish and tilapia may be directly attributable to the lower and more stable price among these species.

TABLE 19: INFORMATION THAT WOULD INDUCE CONSUMERS TO PURCHASE MORE SEAFOOD

Information Type(s)	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Lower Price	69%	72%	73%	72%	60%
Product Freshness	67%	69%	66%	68%	65%
Visual Appeal	48%	50%	48%	48%	45%
Knowledgeable Counter Personnel	34%	40%	30%	37%	31%
Availability of Recipes or Information	30%	24%	39%	29%	27%
In-Store Demonstration/Samples	23%	24%	26%	24%	20%
None	5%	4%	4%	2%	9%
Don't know / Unsure	1%	1%	2%	0%	1%

Sixty-seven percent of those surveyed listed product freshness as an important contributor to the purchase decision. Gall and O’Dierno (1992), reported that consumers strongly identified product freshness with product quality/safety. After an extensive discussion, those consumers determined that freshness was not synonymous with quality/safety. Many consumers tend to equate the term “fresh” with “high quality”. The terms are often used interchangeably. In its strictest interpretation, fresh would mean not previously frozen. If product freshness is a major concern to consumers, there should be a direct correspondence to local production. However, when local production sites were introduced to the focus groups, consumers did not equate local sites with production of high quality seafood.

Thawed product being sold out of the fresh case was a problem for a number of consumers in the Colorado focus groups. This is an opportunity for companies to aggressively educate consumers about the quality of frozen products that are produced using new improved technologies. Frozen product fits into modern lifestyles. Purchasing frozen product allows consumers to prepare seafood more frequently because they can shop once a week and still eat seafood several times during the week. In the focus group portion of this study, many consumers were limited in the number of times that they would eat seafood by the number of shopping trips they were willing to make. It was generally agreed among focus group participants that seafood should be consumed on the day of purchase or the next day at the very latest. Inland consumers in the Colorado focus groups were concerned about the distance seafood had to travel to reach the market. Many complained about thawed product that was being sold in the fresh case even when that product was clearly marked previously frozen. They perceived this as a disceptive practice even when the product was clearly labeled “previously frozen”.

Visual appeal of the product was listed by 48 percent of those surveyed and 34 percent felt that knowledgeable counter personnel were important. Both of these responses

highlight the importance of sales associates in driving seafood purchases. Consumers tend to lack confidence in their ability to select seafood and often depend on store associates to help them make a decision. Purchase is often based on the reputation of the store. Many of the consumers in the focus groups indicated that they restrict their purchase of seafood to specific stores because those are the stores that sell good quality seafood. Many consumers in the focus groups had a good relationship with the sales associate and, clearly, depended upon his/her suggestions and advice.

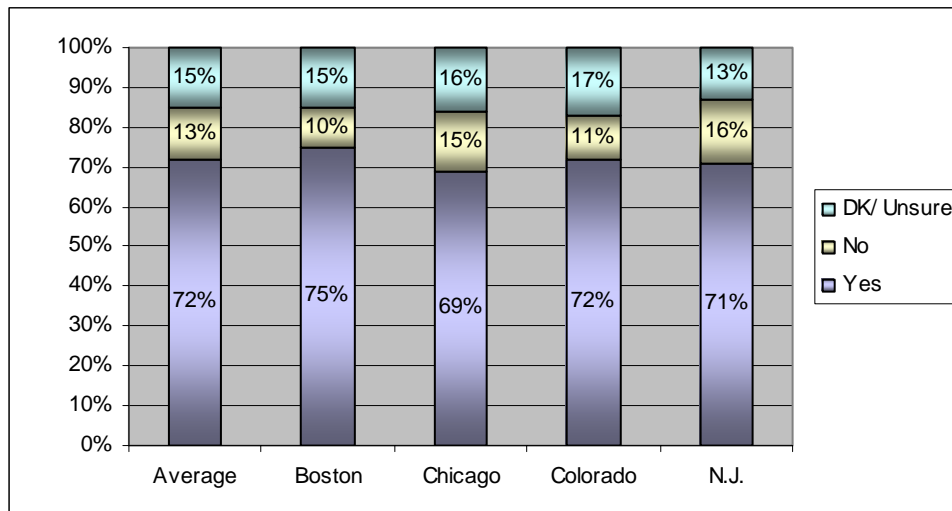
In the 1992 Gall and O’Dierno study, consumers were asked what influences the purchase decision at the seafood counter. Product freshness was the most important factor while price was second. Visual appeal scored third and confidence in the seafood department fourth.

In the current study, thirty percent wanted more information and recipes. Twenty-three percent wanted in-store demonstrations and samples. This is similar to opinions voiced during the focus groups where consumers wanted more information and were unwilling to purchase a new product unless they sampled it first. Demonstrations and sampling programs are an effective means to entice customers to purchase new or unfamiliar items. These activities allow customers to taste new products and reduces the anxieties that can develop if they are not sure that they will like a product when they prepare it at home.

Seafood Inspection

Seventy-two percent of the consumers surveyed felt that seafood was being inspected. Thirteen percent felt that it was not being inspected and fifteen percent were unsure. The numbers were fairly consistent in each of the markets. During the focus groups, consumers were unclear about which agency was actually conducting the inspections. Many people discussed USDA since they were familiar with meat and poultry inspection. Some people in the focus groups also thought that it was the store that inspected the product for quality and safety.

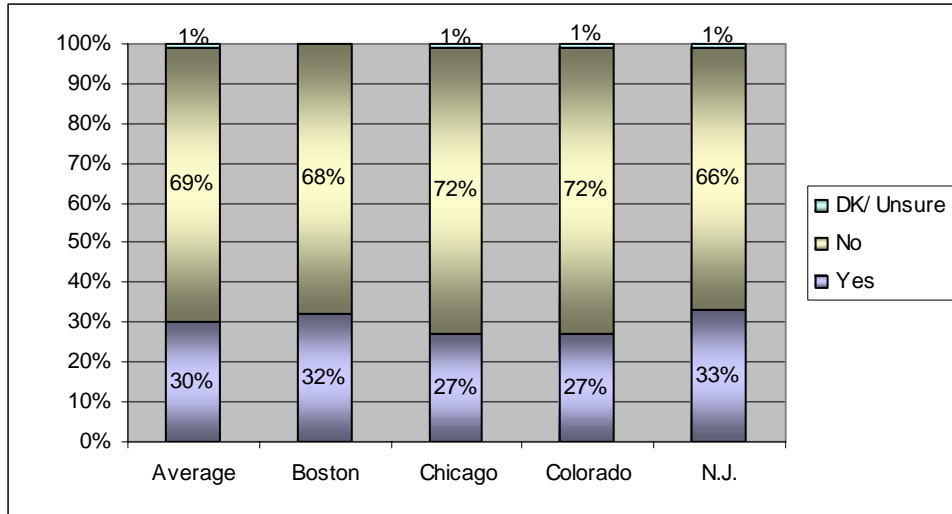
FIGURE 14: DO CONSUMERS BELIEVE SEAFOOD IS BEING INSPECTED FOR QUALITY AND SAFETY?



Country of Origin Labeling

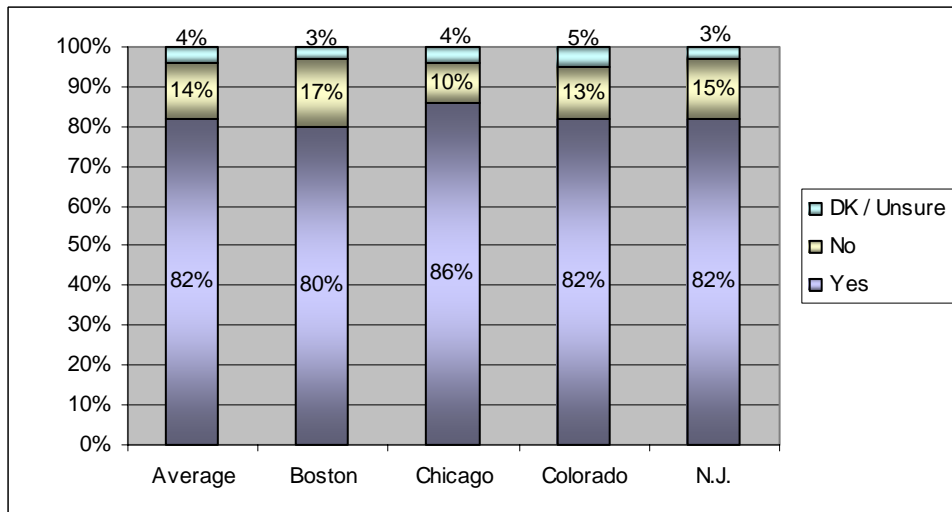
The survey was conducted during August of 2005 a full four months after the USDA country of origin rule had been implemented and stores were complying with the requirements to list production method and country of origin.

FIGURE 15: HAVE CONSUMERS NOTICED COUNTRY OF ORIGIN LABELING (COOL) OF SEAFOOD AT THE SUPERMARKET?



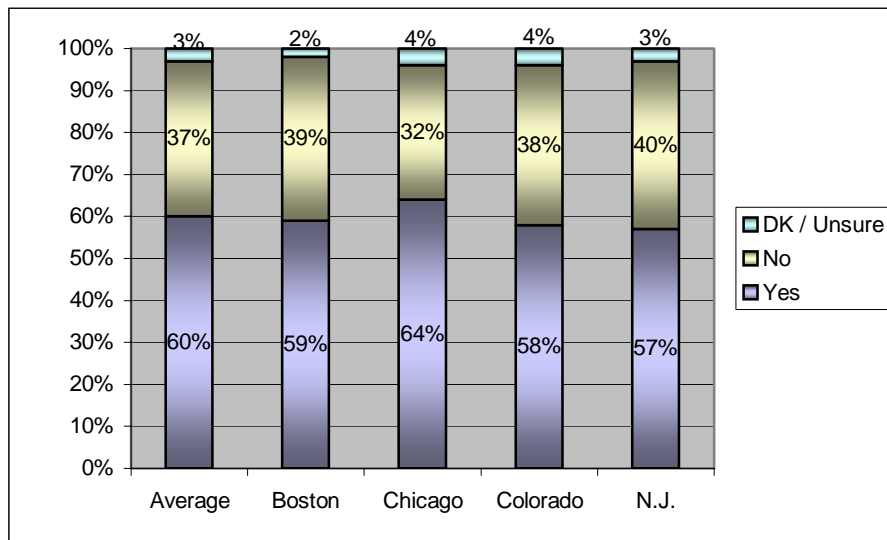
Sixty-nine percent of those surveyed had not noticed Country of Origin Labeling (COOL) even though the survey was conducted a full four months after country of origin labeling had been instituted. The USDA has made country of origin labeling mandatory for all retailers who hold a Perishable Agricultural Commodities Act (PACA) license. A PACA retailer is defined in the as a business engaged in the selling of fresh and frozen fruits and vegetables at retail with an annual invoice value of more than \$230,000. Fish markets and restaurants are exempt from the labeling requirement.

FIGURE 16: DO CONSUMERS BELIEVE COUNTRY OF ORIGIN LABELING (COOL) OF SEAFOOD IS USEFUL?



Eighty-two percent of the respondents indicated that they believed COOL would be useful, while only 60 percent said that it would influence purchase decision. However, in the focus groups, when asked which location conveys the highest quality, 80 percent of those sampled preferred domestic product while only 10 percent chose imported. The preference for imported product was highest in Chicago (11 percent) and Colorado Springs (12 percent) and lowest in Boston (4 percent).

FIGURE 17: DOES COUNTRY OF ORIGIN LABELING (COOL) INFLUENCE CONSUMER PURCHASING DECISIONS?



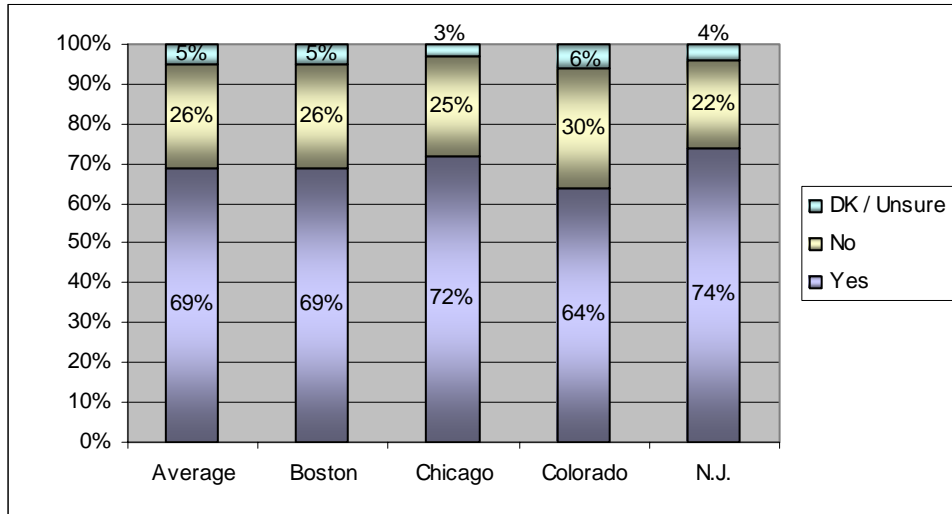
During the focus groups, consumers were asked which package label they would most likely select in the supermarket. Only 18 percent of those surveyed selected a local production site. Sixty-one percent chose a site, Cape Cod, that conjured up a romantic idealized location. Twelve percent chose the “pristine waters of the Gulf of Mexico”. This clearly demonstrates the importance of product labeling. Nine percent chose farm-raised in Chile.(Table 3) When presented with the option of “imported” product in the focus groups, 32 percent chose that terminology over 47 percent who chose a local production site. (Table 5) Acceptance of those local production sites varied considerably in different regions. Later in the focus groups, seventy-five percent indicated that they would be much more likely to purchase a product if they were informed about regions that are know for high quality. (Table 4) These responses seem to indicate that food miles are not as important as the consumer’s general perception of the growing area.

Eco-Labeling

Sixty-nine percent indicated that an “environmentally-friendly” label would influence the purchase decision. This was about the same percentage as those that felt country of origin labeling (60 percent) would influence their purchase decisions. This number was lowest in Colorado (64 percent) and highest in New Jersey (74 percent).

When retailers were asked whether or not consumers would choose an environmentally friendly label, only 50 percent thought that it would drive the purchase decision.

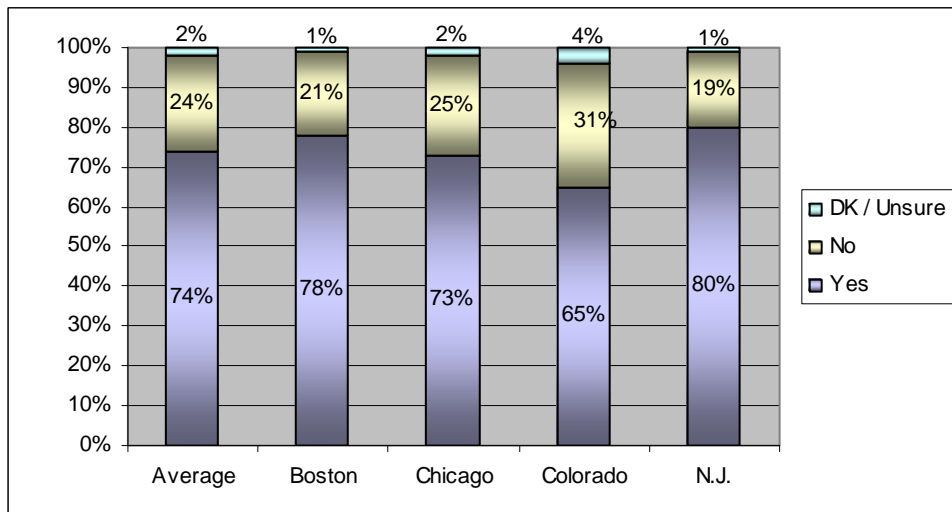
FIGURE 18: WOULD AN “ENVIRONMENTALLY-FRIENDLY” LABEL AFFECT CONSUMER PURCHASING DECISION?



Seafood and Health

Seventy-four percent of those surveyed were aware of health concerns about seafood. The highest level of awareness was in New Jersey where 80 percent reported that there were health concerns about seafood. The second highest number was 78 percent in Boston. Many consumers in Boston were familiar with the red tide issues that had widespread press in 2005. Colorado had the lowest level of awareness 65 percent.

FIGURE 19: ARE CONSUMERS AWARE OF ANY HEALTH CONCERNS WITH SEAFOOD?



Consumers were asked what specific concerns they had heard. No prompts were given. Sixty-five percent had heard concerns about mercury, 15 percent mentioned contaminants in general, 7 percent identified bacterial concerns, and 6 percent food poisoning. In both Chicago and Colorado Springs, people specifically mentioned cadmium as a concern. Although people were aware of possible health concerns, the quantitative portion of the study did not provide any insights into the overall level of understanding.

TABLE 20: CONSUMER PERCEPTION OF HEALTH CONCERNS WITH SEAFOOD.

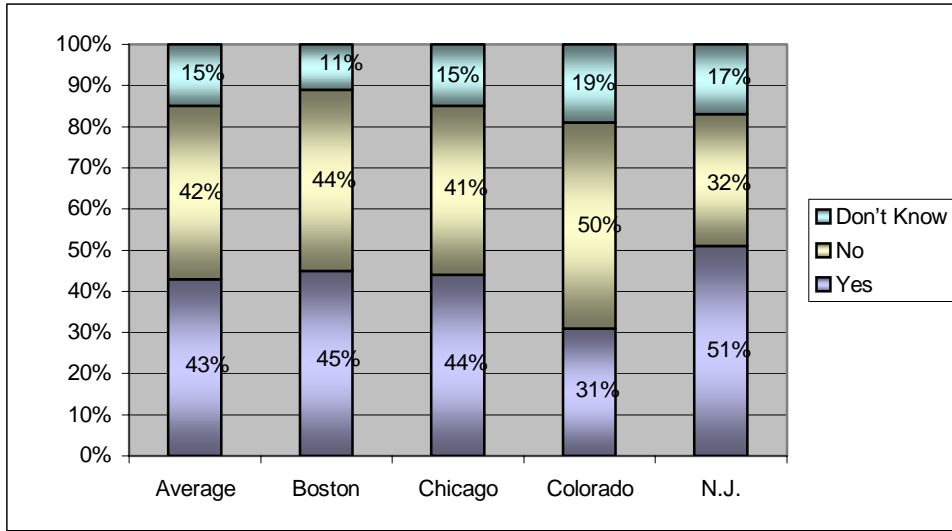
Health Concerns	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Mercury	65%	66%	68%	58%	69%
Other	24%	22%	23%	31%	24%
Contaminants	15%	10%	11%	22%	18%
Red Tide	9%	30%	1%	2%	2%
Bacteria	9%	6%	12%	12%	8%
Food Poisoning	6%	4%	8%	7%	7%
PCBs	3%	3%	1%	5%	4%
Cholesterol	2%	4%	0%	1%	3%
Viruses	2%	1%	6%	2%	1%
Colorants	1%	1%	1%	0%	3%
Cadmium	1%	0%	1%	2%	0%

FARM-RAISED SEAFOOD

Purchase Patterns

Shoppers were provided with a definition of aquaculture. On average, fifteen percent of the shoppers were unsure about whether they had ever purchased aquacultured seafood while 43 percent indicated that they had and 42 percent indicated that they had not. This number was tested later in the survey when they were asked a recall question about particular species where much of the production is aquacultured. This survey was conducted four months after country of origin labeling for seafood had been implemented. In addition, those regulations require larger supermarkets to label their seafoods with method of production, either wild caught or farm raised.

FIGURE 20: HAVE CONSUMERS EVER PURCHASED AQUACULTURED OR FARM-RAISED SEAFOOD?



To further test the validity of the purchase questions, consumers were asked which aquacultured species they had purchased. Salmon was listed by consumers in all of the markets and was listed by 65 percent of the total respondents. Shrimp (27 percent) was the second most commonly listed product. Catfish was purchased by 23 percent of the overall sample and was most popular in Chicago (40 percent) and Colorado Springs (31 percent) as might be expected since those markets have a less developed seafood tradition and catfish has been extensively promoted. Tilapia (12 percent) was a popular species and was listed by New Jersey consumers (17 percent). This may be attributable to a local wholesale company that has been aggressively marketing this product to Atlantic City casinos and New Jersey supermarkets for a ten-year period. Purchase of common farm-raised products like catfish and tilapia was lowest in the Boston sample probably because of the highly developed market for traditional wild caught marine species. In some instances, consumers listed products that are not being farmed or being farmed in very small numbers. Three percent of Chicago consumers listed crab and 2 percent listed lobster as aquacultured species. Two percent of Boston consumers listed cod, a traditional New England species, while 3 percent of the Colorado consumers included cod in their lists. Mussels, a product that has gained a great deal of market acceptance over the last few years, were not listed in Chicago, Colorado Springs or New Jersey.

TABLE 21: TYPE (S) OF AQUACULTURED SEAFOOD PURCHASED BY CONSUMERS.

Seafood Type(s)	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Catfish	23%	7%	40%	31%	19%
Clams	2%	3%	1%	0%	2%
Mussels	2%	8%	0%	0%	0%
Oysters	2%	2%	1%	3%	1%
Salmon	65%	80%	56%	55%	66%
Shrimp	27%	20%	27%	27%	33%
Tilapia	12%	6%	15%	11%	17%
Trout	7%	10%	4%	8%	6%
Other	8%	7%	9%	6%	8%

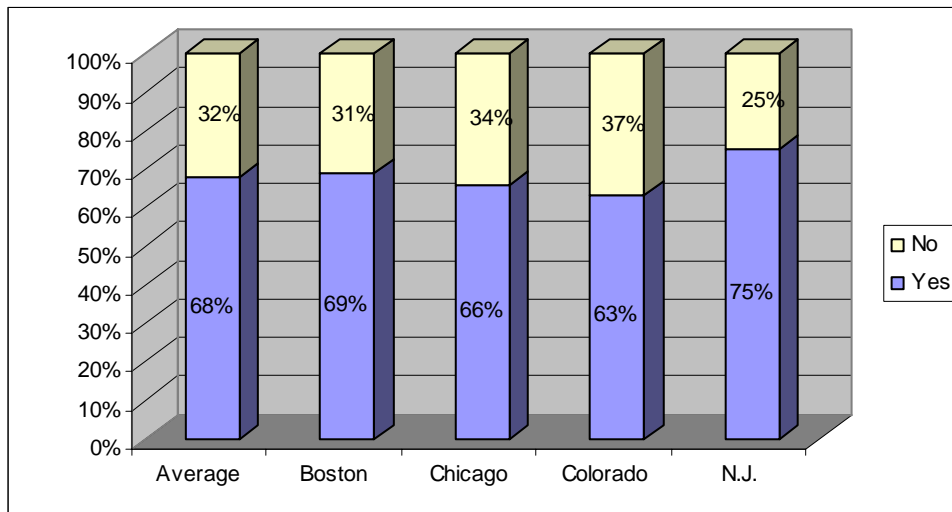
SPECIES SPECIFIC PURCHASE PATTERNS

The next set of questions dealt with the purchase of species that are often farm-raised. Consumers were asked whether or not they had purchased specific types of seafood during the past month. No attempt was made to determine whether or not the consumer recognized those species as being farmed. It should be noted that the survey was conducted during the summer and seafood purchase often has a seasonal component. The survey was taken during the summer of 2005.

Crustaceans

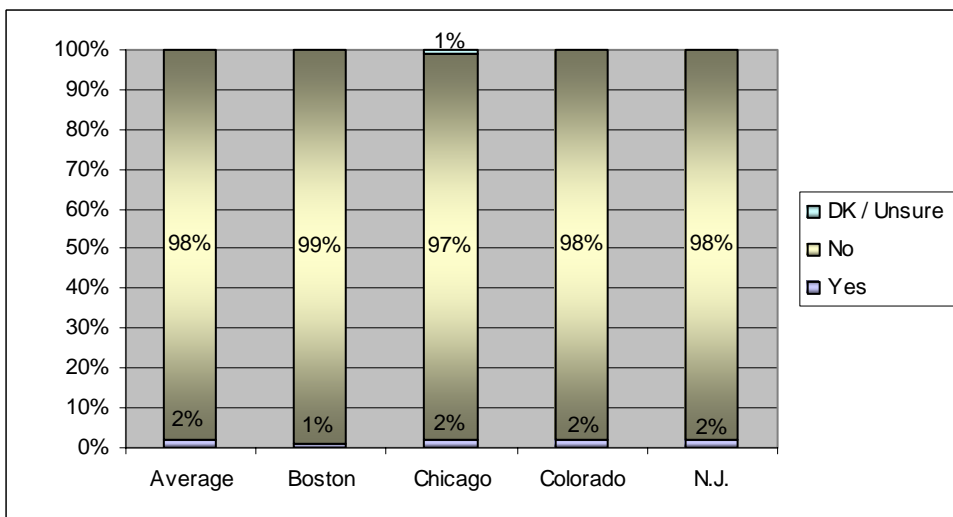
Consumers were asked about purchase of individual aquacultured species during the past month. Shrimp was purchased by 68 percent of the respondents. There was no mechanism to determine whether or not this was farmed shrimp. The highest purchase level was in New Jersey (75 percent) and the lowest in Colorado Springs (63 percent). This level of purchase is supported by the national consumption figures that list shrimp as the number one seafood consumed in the United States

FIGURE 21: DID CONSUMERS PURCHASE SHRIMP IN THE PAST MONTH?



Crayfish purchase was extremely low and indicates that this might be a species where markets could be significantly expanded. Only two percent indicated that they had purchased crayfish during the past month. Species-specific purchase patterns will change depending upon the season and holidays. Crayfish purchase would be expected to increase during Mardi Gras.

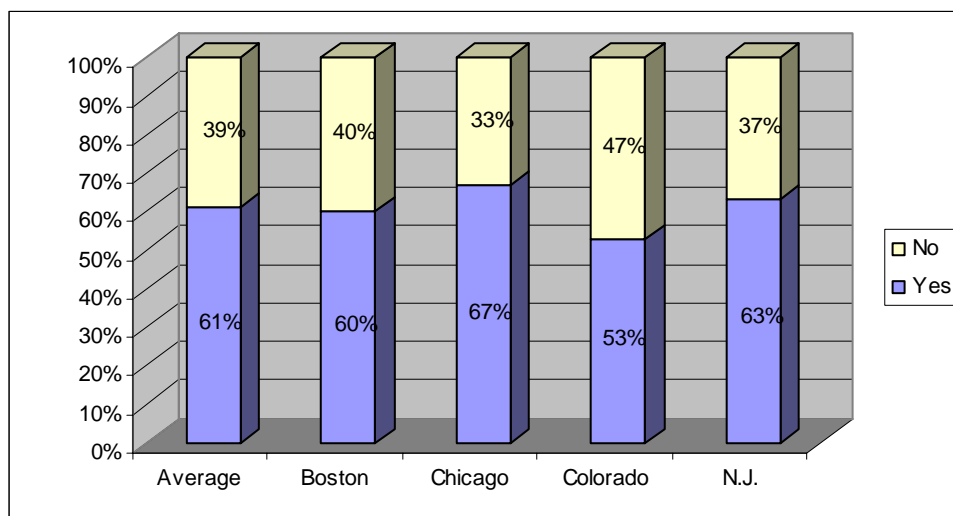
FIGURE 22: DID CONSUMERS PURCHASE CRAYFISH IN THE PAST MONTH?



Finfish

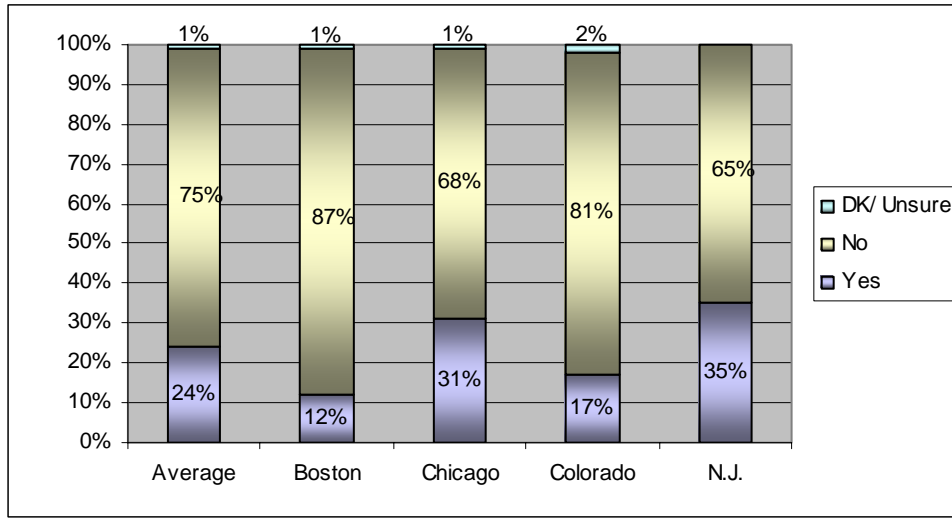
Salmon was listed by consumers in each of the markets. Sixty-one percent of the total sample indicated that they had purchased salmon during the past month. Again, there was no mechanism to determine whether or not this was a farmed product. Among finfish, salmon has the best market position by a wide margin and was readily accepted in each of the target markets. This is similar to the national consumption figures compiled by the National Fisheries Institute (www.NFI.org).

FIGURE 23: DID CONSUMERS PURCHASE SALMON IN THE PAST MONTH?



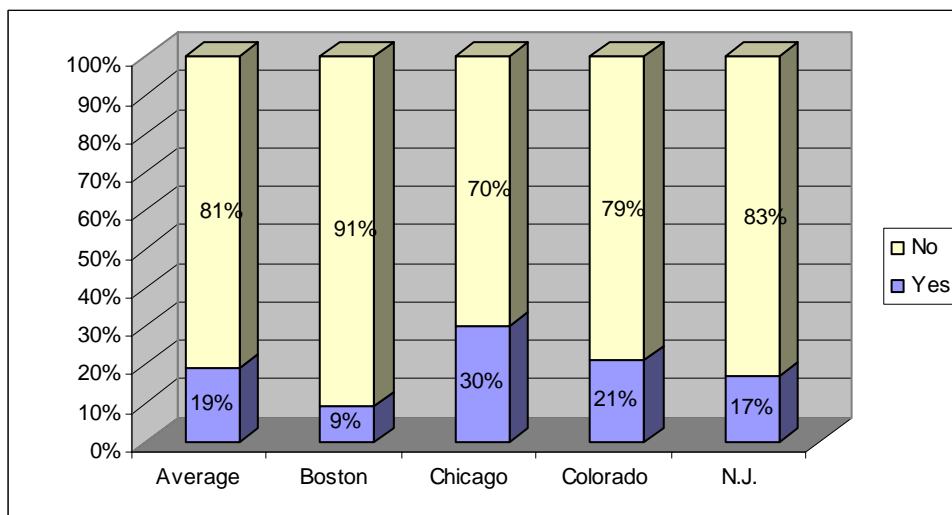
On average 24 percent of the consumers surveyed indicated that they had purchased tilapia during the past month with the highest purchase levels in New Jersey (35 percent), and Chicago (31 percent). Boston was the lowest at 12 percent. In Colorado, where it might be expected that this fish would be good seller, it was listed by only 17 percent of the sample. An aggressive well-targeted marketing campaign would most likely boost these sales.

FIGURE 24: DID CONSUMERS PURCHASE TILAPIA IN THE PAST MONTH?



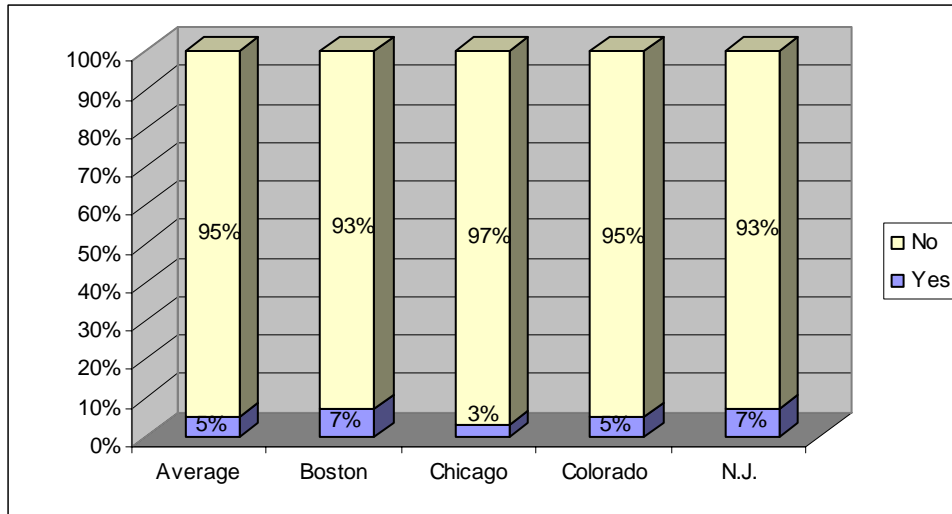
Catfish was purchased by an average of 19 percent of those surveyed. The highest purchase levels were in inland markets with Chicago at 30 percent and Colorado Springs at 21 percent. Catfish was listed by 17 percent of the consumers in New Jersey while only 9 percent of the Boston consumers indicated purchase. Greater acceptance of catfish in New Jersey as compared to the Boston market may be due to aggressive marketing and supermarket advertising.

FIGURE 25: DID CONSUMERS PURCHASE CATFISH IN THE PAST MONTH?



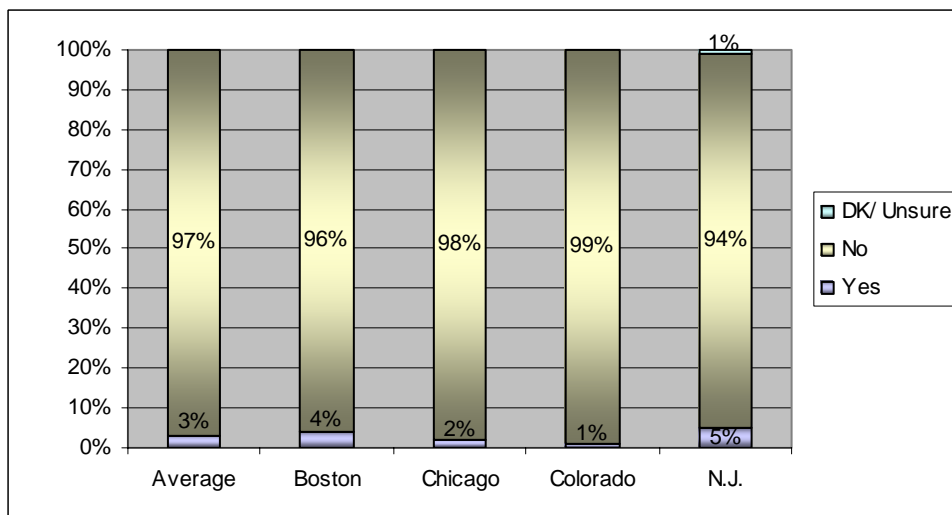
Trout was identified by 7 percent of the respondents in both New Jersey and Boston while only 5 percent of the Colorado consumers and 3 percent of the Chicago consumers indicated a purchase within the last month. There may be some consumer confusion between sea trout and freshwater trout.

FIGURE 26: DID CONSUMERS PURCHASE TROUT IN THE PAST MONTH?



Only 3 percent of these surveyed indicated that they had purchased hybrid striped bass. Purchase was highest in New Jersey 5 percent, and lowest in Colorado Springs 1 percent. This may be an anomaly since many New Jersey consumers are familiar with wild striped bass and it may have resonated with them as a possible choice. Consumers may not make a distinction between striped bass and hybrid striped bass.

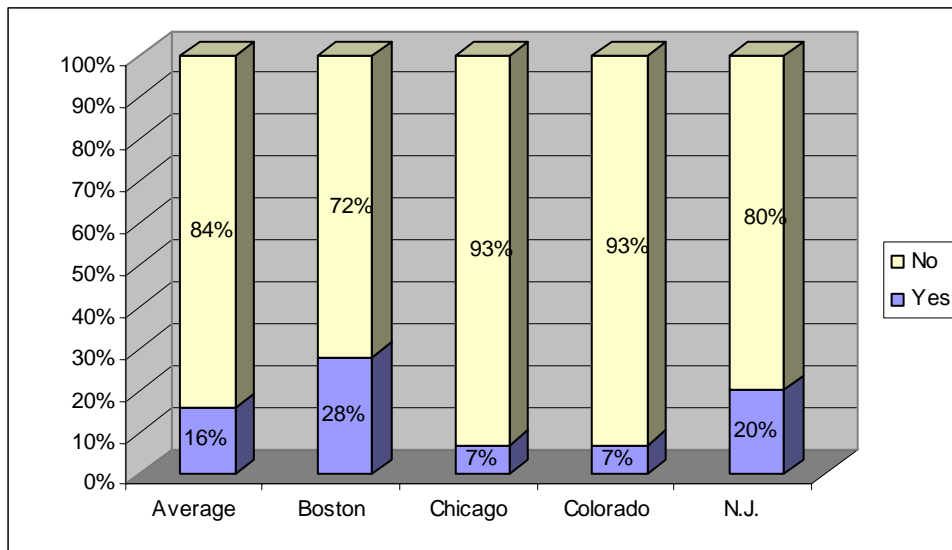
FIGURE 27: DID CONSUMERS PURCHASE HYBRID STRIPED BASS IN THE PAST MONTH?



Molluscan Shellfish

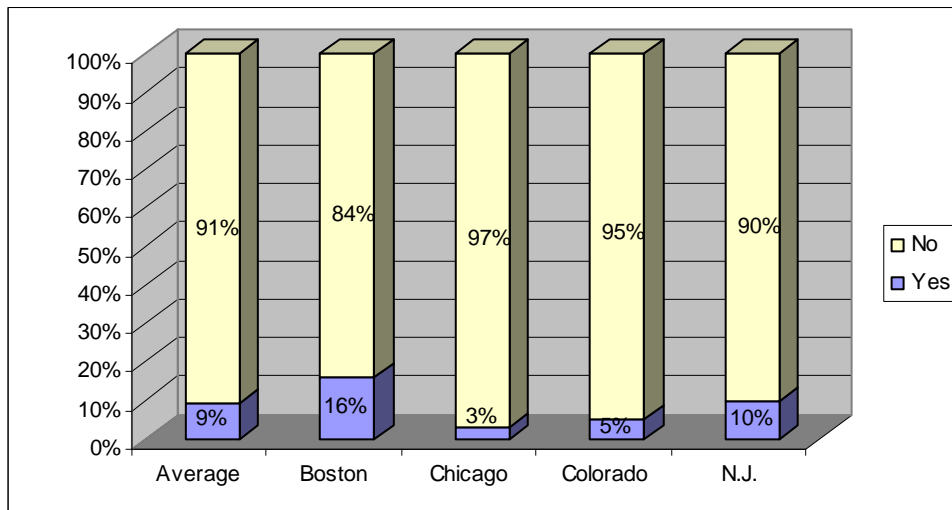
Clams were purchased by 16 percent of those surveyed. With the highest purchase levels in Boston (28 percent) and New Jersey (20 percent). Supermarkets in New Jersey were actively promoting local clams during the time that survey was conducted. Both Colorado and Chicago had purchase levels of 7 percent. There remain a number of issues about classifying molluscan shellfish raised on leased grounds as farm-raised and this definition can vary state by state. Clams are also produced by the wild harvest fishery.

FIGURE 28: DID CONSUMERS PURCHASE CLAMS IN THE PAST MONTH?



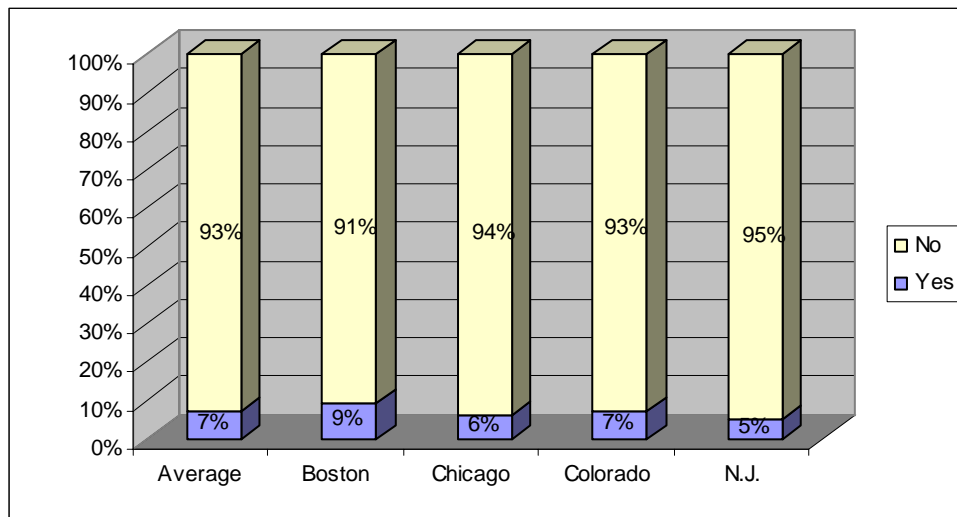
Earlier in the survey, when asked to list the farm-raised seafoods that they had purchased only consumers in Boston listed mussels. When specifically asked about purchase of mussels during the past month, 10 percent of New Jersey consumers, 5 percent of Colorado consumers, and 3 percent of Chicago consumers listed mussels. Consumers may not be aware that many mussels are farm-raised.

FIGURE 29: DID CONSUMERS PURCHASE MUSSELS IN THE PAST MONTH?



Seven percent indicated that they had purchased oysters during the past month. There was no attempt to discriminate among shellstock, shucked oysters, and canned product. During the preliminary research for this project, a cursory examination of supermarket weekly circulars in each of the target markets was undertaken to determine which aquacultured species were being promoted. Shucked oysters were often featured in Midwestern supermarket circulars.

FIGURE 30: DID CONSUMERS PURCHASE OYSTER DURING THE PAST MONTH?



Farm Raised vs. Wild Caught

Forty-seven percent of those surveyed believed that wild caught was better quality than farm raised. This number was the highest in Boston (57 percent) and lowest in Chicago (40 percent). It is difficult to determine exactly which attributes contribute to quality. It could be taste or safety considerations or simply an undefined perception. This prejudice against farmed product is fostered by the popular food media. Food writers and media chefs regularly promote the idea that wild harvest seafood is superior to farmed product.

TABLE 22: CONSUMER PERCEPTION ABOUT THE TYPE OF SEAFOOD THAT IS BETTER QUALITY

Type	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Farm Raised	35%	24%	41%	34%	42%
Wild Caught	47%	57%	40%	46%	43%
Don't Know / Unsure	18%	19%	19%	20%	15%

When asked which type of seafood tastes better 52 percent responded wild caught while 24 percent chose farm-raised and 24 percent were unsure. The popular food press is a major driving force behind this concept. Many cookbooks, food columnists and television chefs reinforce this idea by touting wild harvest as having a more distinct and stronger flavor. However, stronger flavor may not be valued by the consumer. One regional upscale chain in the northeast has begun advertising that they only carry farmed salmon because of the uniformity of the product. Since wild salmon species vary in taste, quality and fat content, they want their customers to have a uniform and expected dining experience.

TABLE 23: CONSUMER PERCEPTION ABOUT THE TYPE OF SEAFOOD THAT TASTES BETTER

Type	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Farm Raised	24%	18%	30%	19%	29%
Wild Caught	52%	60%	46%	59%	45%
Don't Know / Unsure	24%	22%	24%	22%	26%

When asked about safety, fifty-seven percent felt that farm-raised was safer. According to MarketResearch.com (2005), safety is one of the most basic factors driving consumer purchase behavior. This seems to be especially true for seafood products since consumers routinely hear recreational fish advisories and health advisories about mercury, PCBs and colorants. Although these compounds are found in other foods, that information is seldom reported in the media and often the message is unclear. During the focus group portion of this study, many consumers had heard about mercury and PCBs in some seafood but were very unclear about the actual advisories. Often they invented their own conclusions from the information. The only species that they could readily identify as being cited in the mercury advisory were tuna and swordfish. Consumer fears about safety could be an opportunity for organic producers.

TABLE 24: CONSUMER PERCEPTION ABOUT THE TYPE OF SEAFOOD THAT IS SAFER

Type	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Farm Raised	57%	50%	60%	59%	60%
Wild Caught	27%	34%	26%	22%	25%
Don't Know / Unsure	16%	16%	14%	19%	15%

When it came to price, 48 percent of the sample felt that wild harvest was more expensive while 31 percent believed that farm-raised product was more expensive.

TABLE 25: CONSUMER PERCEPTION ABOUT THE TYPE OF SEAFOOD THAT IS MORE EXPENSIVE

Type	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Farm Raised	31%	28%	33%	27%	36%
Wild Caught	48%	51%	50%	48%	42%
Don't Know / Unsure	21%	21%	17%	25%	22%

When asked which type of seafood is more environmentally friendly, 52 percent chose farm-raised while 38 percent favored wild caught. Ten percent were unsure. Although there has been a great deal of negative press about aquaculture, the majority of respondents viewed it as an environmentally friendly practice. When this issue was discussed during the focus groups, many consumers mentioned the dolphin safe tuna label. Although these labels are no longer prominent, this campaign has had lasting resonance with the public.

TABLE 26: CONSUMER PERCEPTION ABOUT THE TYPE OF SEAFOOD THAT IS MORE ENVIRONMENTALLY FRIENDLY

Type	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Farm Raised	52%	48%	60%	50%	50%
Wild Caught	38%	42%	32%	41%	37%
Don't Know / Unsure	10%	10%	8%	9%	13%

Consumers had definitely received the message that aquacultured seafoods are available year round. Seventy-eight percent understood that farm raised products were more readily available than wild harvest. Fluctuations in supply and price have often been cited as reasons why consumers do not purchase more wild harvest seafood. Farming eliminates those peaks and valleys.

TABLE 27: CONSUMER PERCEPTION ABOUT THE TYPE OF SEAFOOD THAT HAS YEAR-ROUND AVAILABILITY

Type	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Farm Raised	78%	77%	84%	80%	73%
Wild Caught	9%	9%	5%	8%	14%
Don't Know / Unsure	13%	14%	11%	12%	13%

ORGANIC SEAFOOD

CONSUMER PERCEPTIONS OF ORGANIC SEAFOOD

To determine what consumers perceive to be the components of organic farming systems, consumers were asked what makes a food organic. No prompts were given and respondents could provide more than one answer. The question was directed at organic food in general and did not specify organically grown seafood products. The most common answer was pesticide and antibiotic free (59 percent). Nineteen percent said nothing. This reinforces the idea that there remains a hard core of consumers who are not interested in organic products. The next most common answers were better for the environment (5 percent) and more nutritious (5 percent). Four percent felt that the product would be safer/ better taste and animal welfare standards were each listed by 2% of respondents.

Consumers are most concerned about contaminants in their food and because they view seafoods as carriers of certain contaminants especially mercury, organic labeling may be a positive marketing tool. This, however, would be a perception. Some consumers have unachievable expectations of organic production systems specifically a zero tolerance for contaminants. Almost all consumers considered the end product not the production system.

TABLE 28: CONSUMER PERCEPTION OF ATTRIBUTES OF ORGANIC FOOD

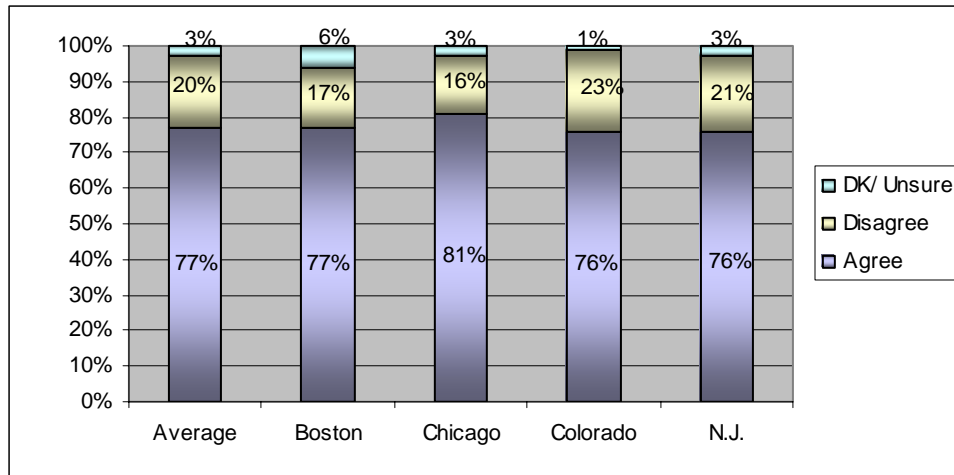
Characteristics	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Pesticide/Antibiotic Free	59%	55%	60%	61%	61%
Other	29%	28%	23%	35%	28%
None	19%	24%	18%	15%	18%
Better for the Environment	5%	6%	5%	2%	7%
More nutritious	5%	4%	6%	5%	5%
Safer	4%	6%	4%	4%	4%
Better Quality	3%	4%	4%	2%	1%
Better Taste	2%	4%	2%	2%	1%
Animal Welfare Standards	2%	3%	1%	3%	3%

CONSUMER PERCEPTIONS OF ORGANIC SEAFOOD COMPARED TO CONVENTIONAL SEAFOOD

The next set of questions compared organically grown seafood to conventional seafoods. The conventional seafoods could have been wild harvest or farm-raised. No further information was provided.

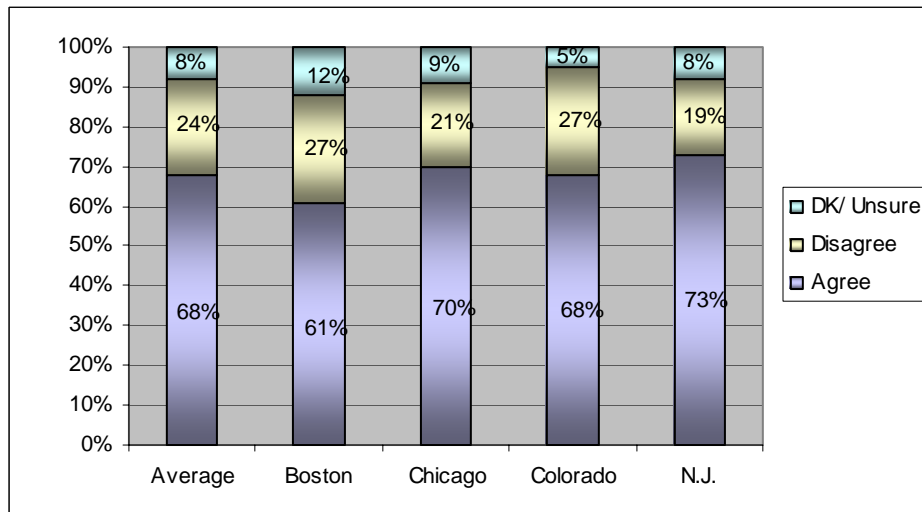
Seventy-seven percent of the sample felt that organic seafood would be *free* of chemicals, pesticides and antibiotics. Consumers in the focus group portion of the study expressed concerns about aquaculture based on the perceived use of these substances. They felt that those synthetic substances are used in traditional agriculture and would appear in farm-raised seafoods. Many respondents felt that organic production systems would reduce those concerns.

FIGURE 31: CONSUMER PERCEPTION THAT ORGANIC SEAFOOD WOULD BE FREE OF CHEMICALS, PESTICIDE, AND ANTIBIOTICS



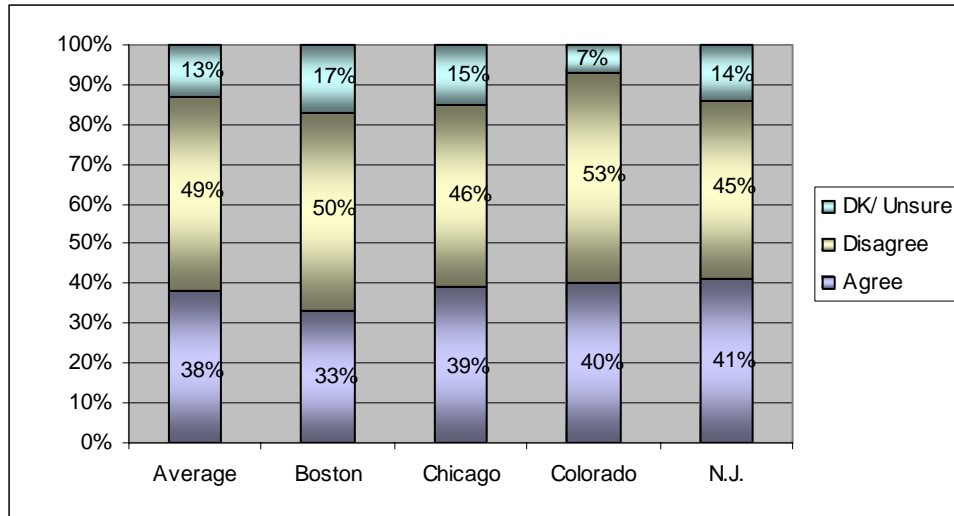
Sixty-eight percent felt that organically grown seafoods would be safer than conventional seafood. Again, the Boston consumers had a higher level of confidence in the wild harvest while New Jersey consumers had the highest level of confidence in organically grown seafoods.

FIGURE 32: CONSUMER PERCEPTION THAT ORGANIC SEAFOOD WOULD BE SAFER THAN CONVENTIONAL SEAFOOD



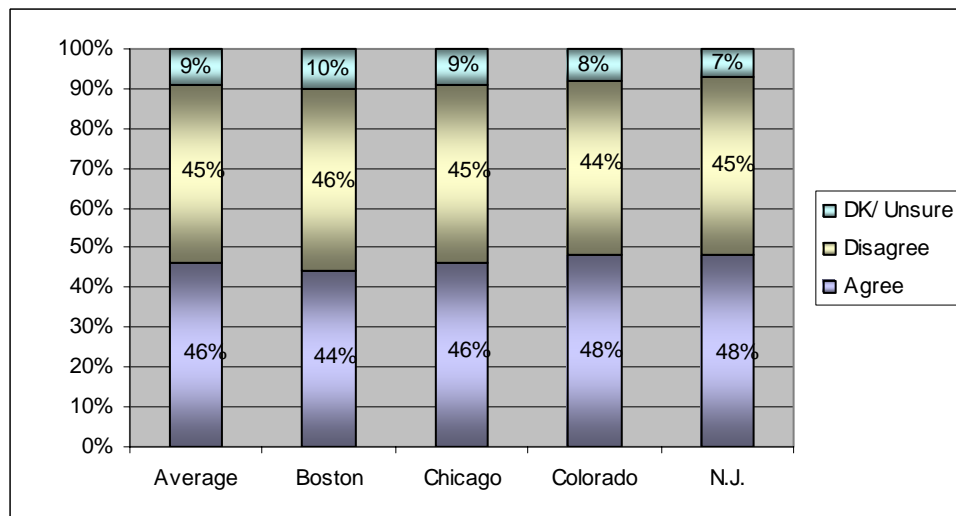
Conventional seafood (49 percent) was thought to have a better flavor than organically grown seafood (38 percent). This reinforces the idea of a prejudice toward wild harvest product over farm raised. When asked about the flavor of farm-raised seafood compared to wild harvest, 52 percent of the respondents in the focus groups chose wild while only 24 percent chose farm-raised as having the best flavor.

FIGURE 33: CONSUMER PERCEPTION THAT ORGANIC SEAFOOD WOULD HAVE BETTER FLAVOR THAN CONVENTIONAL SEAFOOD



Consumers were evenly divided about the nutritive value of organic seafood (46 percent) compared to wild harvest (45 percent).

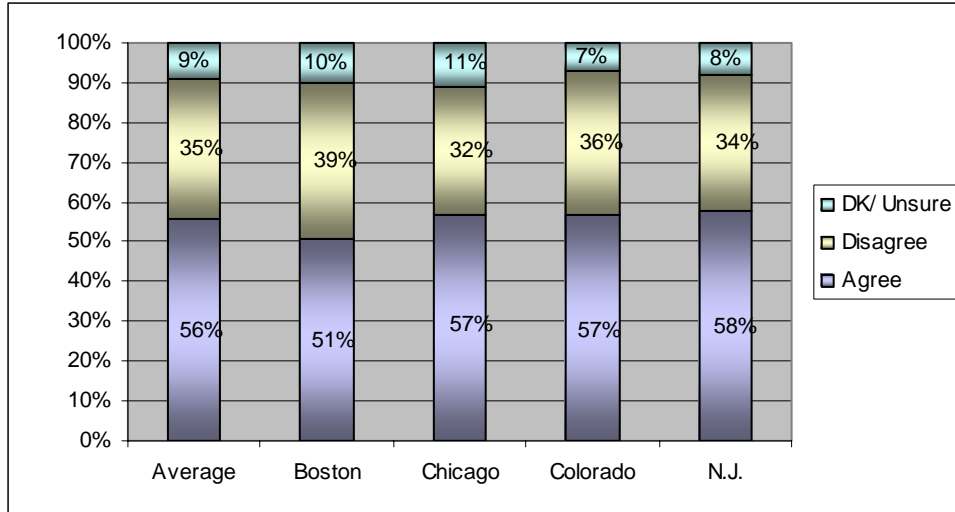
FIGURE 34: CONSUMER PERCEPTION THAT ORGANIC SEAFOOD WOULD BE MORE NUTRITIOUS THAN CONVENTIONAL SEAFOOD



Consumers believed that organic seafood (56 percent) would be of better quality than conventional seafood (35 percent). It is difficult to quantify what a consumer means by

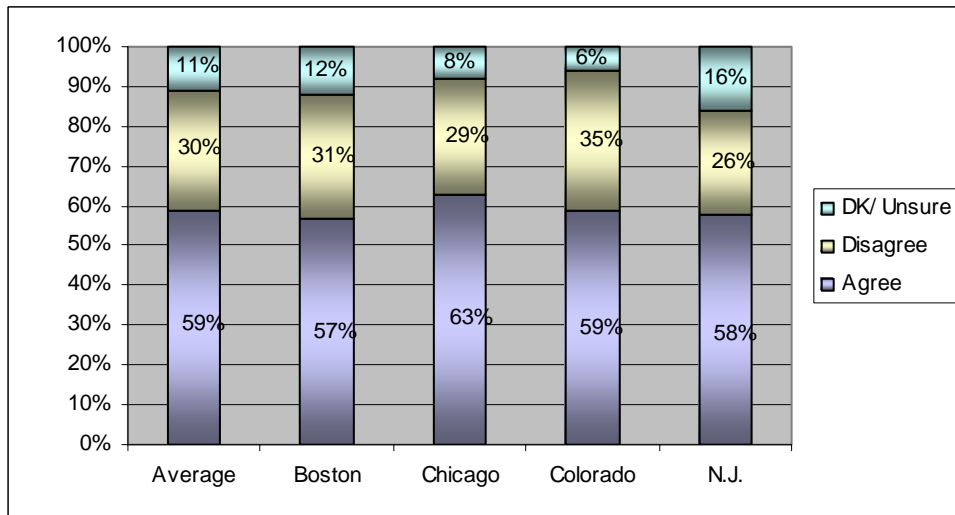
the term “quality”. When focus group participants were asked to compare farm-raised and wild harvest seafood in terms of quality, 35 percent felt that farm-raised would be better quality while 47 percent chose wild harvest.

FIGURE 35: CONSUMER PERCEPTION THAT ORGANIC SEAFOOD WOULD BE OF BETTER QUALITY THAN CONVENTIONAL SEAFOOD



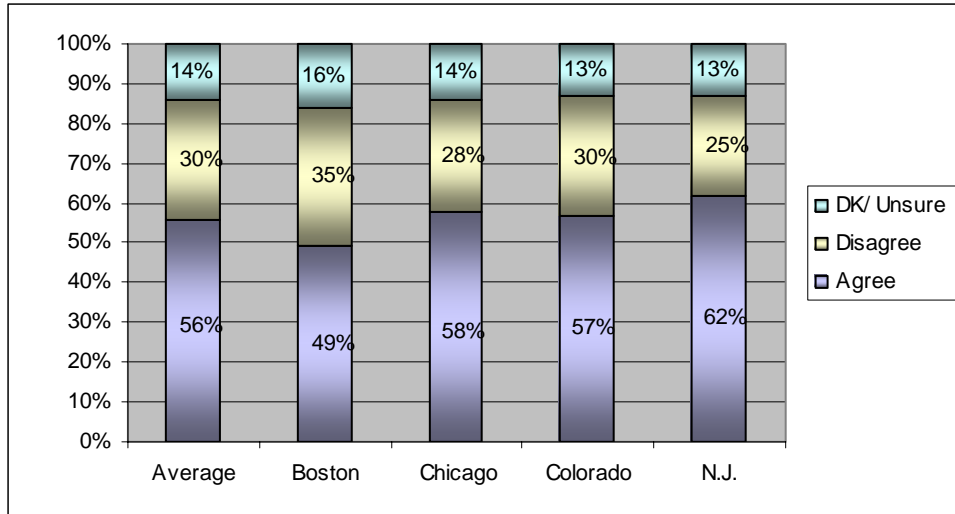
However when it came to environmental impact, 59 percent of those surveyed felt that organic production would be better while only 30 percent felt that conventional was better. During the focus groups 52 percent felt that aquacultured product was better for the environment while 38 percent chose wild harvest.

FIGURE 36: CONSUMER PERCEPTION THAT PRODUCING ORGANIC SEAFOOD WOULD BE BETTER FOR THE ENVIRONMENT THAN CONVENTIONAL SEAFOOD



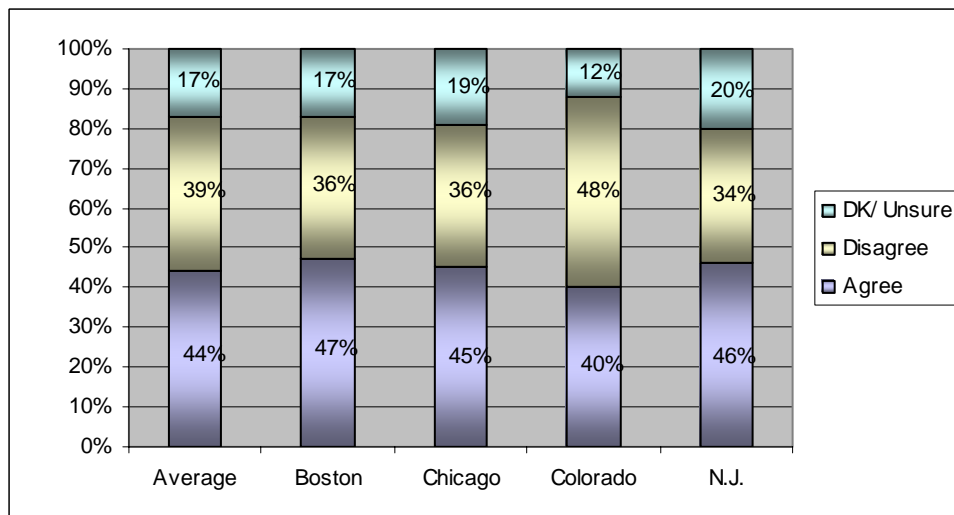
When consumers considered animal welfare, 56 percent felt that organic would be superior to conventional (30 percent). The idea of animal welfare was not easily identified as a characteristic of organic production systems. The response was much greater when consumers were asked the question directly rather than asking them to list attributes of organic production without providing prompts.

FIGURE 37: CONSUMER PERCEPTION THAT ORGANIC SEAFOOD PRODUCTION CONSIDERS ANIMAL WELFARE MORE THAN CONVENTIONAL SEAFOOD PRODUCTION



Forty-four percent of those surveyed felt that small farmers would have a competitive advantage in the production of organically-farmed seafood. This number was consistent in all markets.

FIGURE 38: CONSUMER PERCEPTION THAT SMALL FARMERS HAVE A COMPETITIVE ADVANTAGE IN THE PRODUCTION OF ORGANIC SEAFOOD



PURCHASE PATTERNS

The next question dealt with level of commitment to the purchase of organic foods. Thirteen percent indicated that they purchased organic products as often as they could while 23 percent did not purchase them at all. Sixty-two percent purchased them from time to time. The question dealt with organic foods in general. These numbers may have changed if the question specifically referenced organically-grown seafood since there is a high level of concern about contaminants in seafood and a general mistrust of aquaculture methods because of water quality issues, perceived use of antibiotics, hormones, and genetically modified organisms.

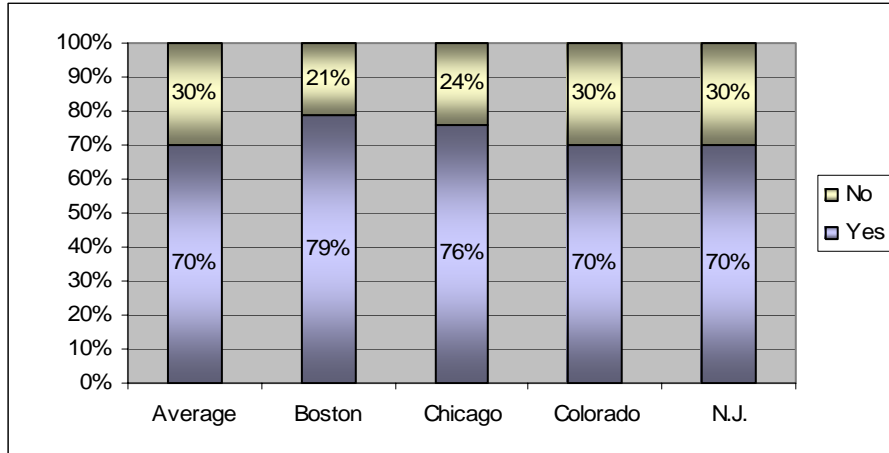
In 2001, Seafish conducted a similar consumer study in the United Kingdom. In that study, 52 percent of the consumers were non-converts to the organic concept and agreed with the third statement (I'm not convinced about the value of organic products in terms of health and taste benefits).

TABLE 29: STATEMENT THAT BEST DESCRIBES CONSUMER ATTITUDE AND PURCHASE BEHAVIOR WITH RESPECT TO ORGANIC FOODS

Statement	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
I am committed to buying organic products as often as I can.	13%	17%	10%	14%	10%
I purchase organic products from time to time.	62%	61%	61%	60%	66%
I am not convinced of the value of organic products and do not purchase them	23%	19%	28%	23%	23%
Don't know / Unsure	2%	3%	1%	3%	1%

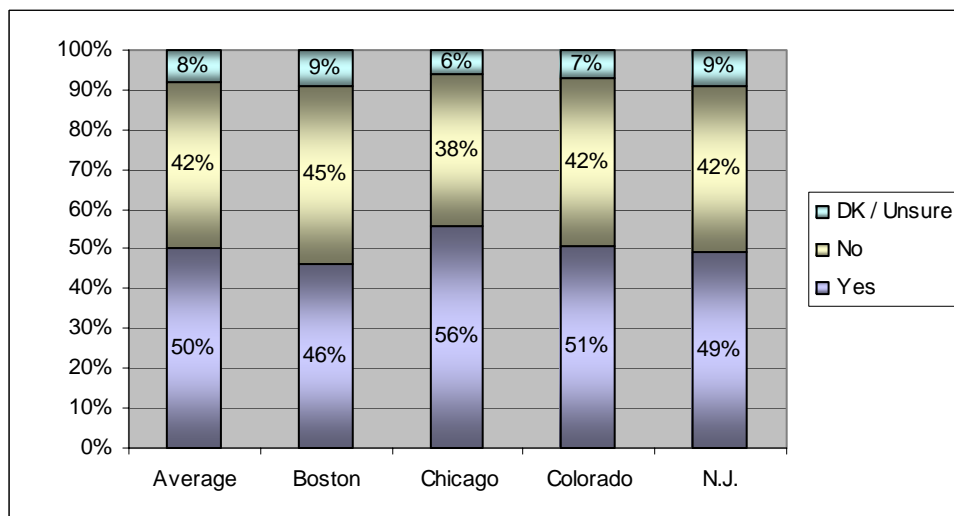
When asked about possible interest in purchasing an organic seafood product, 70 percent of those surveyed responded positively. The level of commitment was slightly higher (72 percent) in the focus groups. This might be due to the more general sample used in the telephone survey. In the focus groups, several populations were drawn from upscale stores that offer a wide range of organic products. Those consumers were familiar with organic products and often purchased them.

FIGURE 39: ARE CONSUMERS INTERESTED IN PURCHASING ORGANIC SEAFOOD?



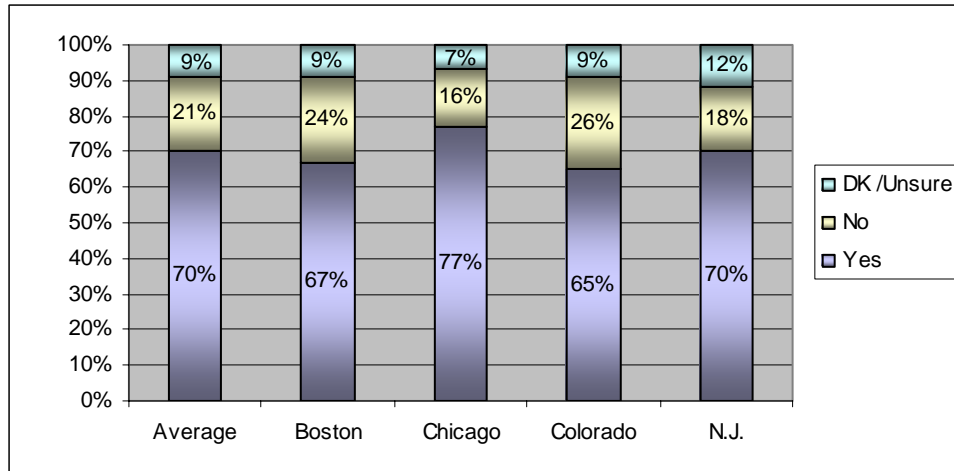
Fifty percent of those surveyed indicated that they would change their shopping location to be able to purchase organic seafood. The overall image or impression of an individual store and the way that seafood is handled in that store have a profound effect on the final purchase decision. Most consumers are very specific about the stores in which they will purchase seafood. The availability of organically-grown seafood products promotes a positive image of the store and reinforces the consumers' impression that the store will cater to the customers' wants and needs.

FIGURE 40: WOULD CONSUMERS CHANGE THEIR SHOPPING LOCATION TO BE ABLE TO PURCHASE ORGANIC SEAFOOD?



Seventy percent of those surveyed indicated that they would trust an organic label for seafood while 21 percent would not. This has been an area of concern since USDA does not have regulations in place to certify aquacultured products as organic. Several foreign certification agencies are providing seals for products including farmed salmon that are reaching American supermarkets. This provides a competitive advantage for those operations. Consumers also expressed an interest in having an external certification for quality and wholesomeness.

FIGURE 41: WOULD CONSUMERS TRUST AN ORGANIC LABEL FOR SEAFOOD?



WILLINGNESS TO PAY

Consumers were then asked how much of a price premium they would be willing to pay for certified organic seafood. Twenty-six percent indicated that they would not be willing to pay a premium for organically grown seafood. Fourteen percent were willing to pay a premium of up to 50 cents or more for an organic product. Twenty-one percent said they would be willing to pay more than 50 percent more per pound. Since the price point was unrealistically low, one dollar per pound, the responses are somewhat biased. It provides limited insight into consumer behavior when the price more accurately reflects a much higher true market price.

TABLE 30: IF SEAFOOD CONSUMERS PURCHASE REGULARLY COSTS \$1, HOW MUCH OF A PRICE PREMIUM ARE THEY WILLING TO PAY FOR CERTIFIED ORGANIC SEAFOOD?

Price Premium	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
None	26%	28%	25%	32%	17%
Yes, I would pay up to 5 cents more per pound	6%	5%	7%	9%	5%
Yes, I would pay up to 10 cents more per pound	12%	12%	17%	10%	7%
Yes, I would pay up to 25 cents more per pound	16%	13%	14%	18%	20%
Yes, I would pay up to 50 cents more per pound	14%	14%	13%	11%	18%
Yes, I would pay more than 50 cents more per pound	21%	22%	19%	18%	26%
Don't Know / Unsure	5%	6%	5%	2%	7%

PROFILE OF SEAFOOD CONSUMERS

To gain a better understanding of consumer purchase behavior, baseline data were developed about seafood purchase in general. When consumers were asked about their average monthly expenditure on seafood, there was no significant difference between male and female consumers. Throughout this section of the survey, a core group of approximately 25 percent of the sample has emerged as committed seafood consumers who purchased more seafood than average. Forty percent of those surveyed spent less than \$25 a month on seafood purchases. This would seem to indicate that most of those sampled ate far less seafood each month than is recommended by most health and dietary organizations

TABLE 31: MONTHLY EXPENDITURE ON SEAFOOD BY GENDER

Monthly Expenditure	Gender Distribution	
	Female	Male
\$0-25	43%	39%
\$25-50	23%	24%
\$50-75	13%	14%
\$75-More	21%	24%
Total	100%	100%

Monthly expenditures on seafood were not significantly associated with neighborhood of residence. It might have been expected that more consumers in urban areas would spend more on seafood because of the number of outlets available to them and a more cosmopolitan lifestyle.

TABLE 32: MONTHLY EXPENDITURE ON SEAFOOD BY NEIGHBORHOOD

Monthly Expenditure	Neighborhood		
	Urban	Suburban	Rural
\$0-25	43%	39%	41%
\$25-50	22%	25%	18%
\$50-75	11%	13%	19%
\$75-More	23%	23%	23%
Total	100%	100%	100%

There was a significant association (1 percent) between expenditures on seafood and household size, however this should be expected simply because of the number of people to feed.

TABLE 33: MONTHLY EXPENDITURE ON SEAFOOD BY HOUSEHOLD SIZE

Monthly Expenditure	Household Size					
	1	2	3	4	5	6
\$0-25	58%	41%	39%	34%	27%	33%
\$25-50	17%	28%	30%	20%	19%	13%
\$50-75	8%	11%	10%	21%	22%	17%
\$75-More	17%	20%	21%	25%	32%	38%
Total	100%	100%	100%	100%	100%	100%

There was a significant association (1 percent) between age and monthly expenditure on seafood but this might be anticipated given smaller household size and fixed income limitations.

TABLE 34: MONTHLY EXPENDITURE ON SEAFOOD BY AGE

Monthly Expenditure	Age Distribution			
	Up to 35	36 to 50	51 to 65	>65
\$0-25	37%	33%	40%	57%
\$25-50	23%	24%	26%	21%
\$50-75	13%	17%	11%	10%
\$75-More	28%	26%	23%	12%
Total	100%	100%	100%	100%

There was a significant association (1 percent) between ethnicity and seafood expenditure.

TABLE 35: MONTHLY EXPENDITURE ON SEAFOOD BY ETHNICITY

Monthly Expenditure	Ethnicity			
	African American	Asian /Pacific Islanders/ Latino or Hispanic	Caucasian	Other
\$0-25	20%	28%	43%	48%
\$25-50	22%	28%	24%	9%
\$50-75	18%	17%	13%	9%
\$75-More	41%	28%	20%	35%
Total	100%	100%	100%	100%

There was no significant association between education level and monthly expenditures on seafood. However, when considering interest in purchasing organic seafood, there was an association between education level and interest level.

TABLE 36: MONTHLY EXPENDITURE ON SEAFOOD BY EDUCATION LEVEL

Monthly Expenditure	Education Level				
	Some High School	High School	Some College	2 or 4-Year College Degree	Post Graduate
\$0-25	29%	49%	42%	40%	38%
\$25-50	29%	23%	26%	24%	22%
\$50-75	14%	9%	13%	14%	14%
\$75-More	29%	19%	19%	22%	26%
Total	100%	100%	100%	100%	100%

There was a significant association (1 percent) between employment status and monthly expenditures on seafood.

TABLE 37: MONTHLY EXPENDITURE ON SEAFOOD BY EMPLOYMENT STATUS

Monthly Expenditure	Employment Status				
	Employed full-time	Employed part-time	Retired	Homemaker	Other
\$0-25	33%	54%	51%	48%	50%
\$25-50	26%	14%	23%	27%	18%
\$50-75	14%	10%	13%	11%	14%
\$75-More	28%	23%	13%	14%	18%
Total	100%	100%	100%	100%	100%

There was a significant association (1 percent) between income level and monthly expenditures on seafood. This can be expected because of higher disposable income.

TABLE 38: MONTHLY EXPENDITURE ON SEAFOOD BY INCOME

Monthly Expenditure	Income		
	\$ Up to 50,000	\$ 50,000-100,000	\$ 100,000+
\$0-25	60%	36%	26%
\$25-50	17%	25%	26%
\$50-75	10%	17%	11%
\$75-More	14%	23%	38%
Total	100%	100%	100%

PROFILE OF CONSUMERS INTERESTED IN PURCHASING ORGANIC SEAFOOD

There was no significant difference between male (76 percent) and female (73 percent) interest in purchasing organic seafood. Overall men spent slightly more when asked to estimate their monthly spending on seafood for home consumption

TABLE 39: INTEREST IN PURCHASING ORGANIC SEAFOOD BY GENDER

Interest to Purchase	Gender	
	Female	Male
Yes	73%	76%
No	27%	24%
Total	100%	100%

When considering neighborhood of residence [urban (74 percent), suburban (75 percent), and rural (72 percent)], there was no significant difference in interest in purchasing organic seafood.

TABLE 40: INTEREST IN PURCHASING ORGANIC SEAFOOD BY NEIGHBORHOOD OF RESIDENCE

Interest in Purchase	Neighborhood		
	Urban	Suburban	Rural
Yes	74%	75%	72%
No	26%	25%	28%
Total	100%	100%	100%

When region of the country was considered; 79 percent of those in Boston expressed an interest in purchasing organic seafood, 76 percent in Chicago, 70 percent in Colorado Springs, and 70 percent in New Jersey.

No significant association was found related to household size, however, cost may play a significant role in purchase decision in larger households. This idea was clearly expressed during the focus group sessions. If there is a significant price differential between conventional and organically grown products, sellers might consider targeting high end markets that already carry a wide range of more expensive products.

TABLE 41: INTEREST IN PURCHASING ORGANIC SEAFOOD BY HOUSEHOLD SIZE

Interest in Purchase	Household Size					
	1	2	3	4	5	6
Yes	69%	69%	77%	84%	76%	67%
No	31%	31%	23%	16%	24%	33%
Total	100%	100%	100%	100%	100%	100%

When considering age, there was a slightly significant difference (1 percent) with younger consumers expressing more of an interest in organic products. Interest in purchase decreased to 56 percent in the over 65 category. However, among those consumers who were interested in purchasing organic seafood willingness to pay was not associated with age.

TABLE 42: INTEREST IN PURCHASING ORGANIC SEAFOOD BY AGE

Interest in Purchasing Organic Seafood by Age				
Interest to Purchase	Age Distribution			
	Up to 35	36 to 50	51 to 65	>65
Yes	80%	83%	75%	56%
No	20%	17%	25%	44%
Total	100%	100%	100%	100%

Interest in purchasing organic seafood was not significantly associated with ethnicity.

TABLE 43: INTEREST IN PURCHASING ORGANIC SEAFOOD BY ETHNICITY

Interest to Purchase	Ethnicity			
	African American	Asian/ Pacific Islanders/ Latino or Hispanic	Caucasian	Other
Yes	67%	89%	74%	77%
No	33%	11%	26%	23%
Total	100%	100%	100%	100%

There was a significant association (1 percent) between interest in purchasing organic seafood and education level. This might be explained by a greater interest in health matters and/or higher disposable income.

TABLE 44: INTEREST IN PURCHASING ORGANIC SEAFOOD BY EDUCATION LEVEL

Interest to Purchase	Education Level				
	Some High School	High School	Some College	2 or 4-Year College Degree	Post Graduate
Yes	25%	61%	67%	78%	82%
No	75%	39%	33%	22%	18%
Total	100%	100%	100%	100%	100%

There was a significant association (1 percent) between employment status and interest in purchasing organic seafood.

TABLE 45: INTEREST IN PURCHASING ORGANIC SEAFOOD BY EMPLOYMENT STATUS

Interest to Purchase	Employment Status				
	Employed full-time	Employed part-time	Retired	Homemaker	other
Yes	82%	79%	58%	76%	80%
No	18%	21%	42%	24%	20%
Total	100%	100%	100%	100%	100%

Higher income levels also affected interest in purchasing seafood. There was a significant association (10 percent) between income level and interest in purchasing organic seafood. This would be expected given the real or perceived higher cost of organic products. However, among those consumers committed to paying a premium, the anticipated premium was not associated with income level.

TABLE 46: INTEREST IN PURCHASING ORGANIC SEAFOOD BY INCOME

Interest to Purchase	Income		
	Up to \$50,000	\$ 50,000-100,000	\$ 100,000+
Yes	73%	78%	85%
No	27%	22%	15%
Total	100%	100%	100%

CONSUMER WILLINGNESS TO PAY FOR ORGANIC SEAFOOD

The next set of questions dealt with willingness to pay a premium for organic seafood. This type of questioning provides only a slight indication of what a consumer would do in an actual purchase situation. Additionally, because the dummy price was \$1.00 per pound, actions would be different when the price more closely mirrors the actual retail price of seafood.

The price differential may reflect a psychological luxury price. If it is more expensive, consumers may perceive the product as being better.

When gender is considered, there is a significant association (5 percent) between gender and willingness to pay a premium for organic seafood.

TABLE 47: WILLING TO PAY FOR ORGANIC SEAFOOD BY GENDER

Willing to Pay	Gender Distribution	
	Female	Male
Not Pay	22%	35%
up to 10¢	20%	18%
up to 25¢	17%	16%
up to 50¢	16%	12%
50¢+	24%	19%
Total	100%	100%

There was no significant association between willingness to pay and neighborhood of residence. Again, approximately 25 percent of those surveyed expressed a commitment to the purchase of organic seafood while 25 percent had no interest in purchasing organic seafood.

TABLE 48: WILLING TO PAY FOR ORGANIC SEAFOOD BY NEIGHBORHOOD

Willing to Pay	Neighborhood		
	Urban	Suburban	Rural
Not Pay	25%	28%	24%
up to 10¢	24%	18%	11%
up to 25¢	15%	16%	24%
up to 50¢	10%	17%	16%
50¢+	26%	21%	25%
Total	100%	100%	100%

Willingness to pay a premium for organic seafood is significantly associated (10 percent) with household size. This correlation should be anticipated given the perceived high cost of seafood coupled with grocery budget limitations.

TABLE 49: WILLING TO PAY FOR ORGANIC SEAFOOD BY HOUSEHOLD SIZE

Willing to Pay	Household Size					
	1	2	3	4	5	6
Not Pay	19%	34%	22%	23%	27%	44%
up to 10¢	23%	13%	20%	27%	15%	19%
up to 25¢	17%	13%	23%	16%	20%	19%
up to 50¢	16%	16%	10%	14%	22%	6%
50¢+	24%	24%	25%	20%	16%	13%
Total	100%	100%	100%	100%	100%	100%

Willingness to pay was not significantly associated with age.

TABLE 50: WILLING TO PAY FOR ORGANIC SEAFOOD BY AGE

Willing to Pay	Age Distribution			
	UP to 35	36 to 50	51 to 65	>65
Not Pay	29%	22%	28%	29%
up to 10¢	23%	20%	15%	21%
up to 25¢	16%	19%	15%	16%
up to 50¢	11%	13%	19%	13%
50¢+	21%	25%	22%	21%
Total	100%	100%	100%	100%

Willingness to pay was not significantly associated with ethnicity.

TABLE 51: WILLING TO PAY FOR ORGANIC SEAFOOD BY ETHNICITY

Willing to Pay	Ethnicity			
	African-American	Asian/ Pacific Islanders/ Latino or Hispanic	Caucasian	Other
Not Pay	21%	16%	28%	29%
up to 10¢	29%	22%	18%	18%
up to 25¢	15%	19%	17%	18%
up to 50¢	12%	13%	15%	6%
50¢+	24%	31%	22%	29%
Total	100%	100%	100%	100%

Willingness to pay was not significantly associated with education level.

TABLE 52: WILLING TO PAY FOR ORGANIC SEAFOOD BY EDUCATION LEVEL

Willing to Pay	Education Level				
	Some High School	High School	Some College	2 or 4-Year	Post
Not Pay	67%	34%	37%	22%	24%
up to 10¢	0	15%	17%	21%	20%
up to 25¢	0	12%	16%	19%	18%
up to 50¢	0	13%	14%	17%	13%
50¢+	33%	26%	16%	21%	25%
Total	100%	100%	100%	100%	100%

Willingness to pay was not significantly associated with employment status

TABLE 53: WILLING TO PAY FOR SEAFOOD BY EMPLOYMENT STATUS

Willing to Pay	Employment Status				
	Employed full-time	Employed part-time	Retired	Homemaker	Other
Not Pay	26%	25%	35%	21%	6%
up to 10¢	20%	20%	18%	19%	17%
up to 25¢	18%	16%	15%	17%	22%
up to 50¢	13%	13%	17%	15%	28%
50¢+	24%	26%	15%	28%	28%
Total	100%	100%	100%	100%	100%

Willingness to pay for organic seafood was not significantly associated with income level.

TABLE 54: WILLING TO PAY FOR ORGANIC SEAFOOD BY INCOME

Willing to Pay	Income		
	\$ Up to 50,000	\$ 50,000-100,000	\$ 100,000+
Not Pay	27%	27%	24%
up to 10¢	24%	20%	14%
up to 25¢	15%	19%	17%
up to 50¢	17%	11%	14%
50¢+	17%	23%	32%
Total	100%	100%	100%

Opportunities for Market Penetration

Price, or the perception of higher prices, is a major limiting factor in the purchase of all seafood. The price issue is compounded in the case of organic seafood since many consumers view organic products as being more expensive than conventional products in the same category. Product freshness and visual appeal are important considerations. The consumer needs to perceive an inherent higher value for organic seafood. That will require consumer education.

TABLE 55

Type(s) of Information that Would Induce Consumers to Purchase More Seafood					
Information Type(s)	Percentage				
	Average	Boston	Chicago	Colorado Springs	New Jersey
Lower Price	69%	72%	73%	72%	60%
Product Freshness	67%	69%	66%	68%	65%
Visual Appeal	48%	50%	48%	48%	45%
Knowledgeable Counter Personnel	34%	40%	30%	37%	31%
Availability of Recipes or Information	30%	24%	39%	29%	27%
In-Store Demonstration/Samples	23%	24%	26%	24%	20%
None	5%	4%	4%	2%	9%
Don't Know/Unsure	1%	1%	2%	0%	1%

Approximately 25 percent of those sampled had a commitment to the purchase of organic seafood. That committed group was representative of the full spectrum of those sampled. There was no significant association with neighborhood or residence, age, gender, or ethnicity. There was an association between both household size and income level with willingness to pay.

Supermarket Survey Phase III

INTRODUCTION

The final phase of the study examined attitudes, marketing needs, and opportunities for organic seafood products in the supermarket sector. The survey instrument was designed to provide data that could be used to:

- gain a better understanding of the concerns that retailers have when marketing seafood products,
- determine which attributes of organically-grown seafood can be utilized in promotional programs to develop a better market position,
- identify those markets that present the most promising opportunities for organically-grown seafood, and
- sensitize retailers to the potential availability of organically grown seafood products.

METHODOLOGY

To determine how to better position organically grown seafood products in the American marketplace, the final phase of the project investigated potential opportunities in supermarkets. Questions to be answered delved into overall attitudes and perceptions about seafood, farm-raised products, and the potential for organically grown products.

The second tier of questions dealt with what seafood decision makers view as the attitudes of their customers. An attempt was made to determine how receptive those decision-makers would be to including organically grown seafood in their product assortment.

A mailing list of 257 chain store seafood executives was developed from the *2005 Blue Book of Supermarket Distribution* published by Trade Dimensions. The mailing list was not limited to the four target markets but included major chains from across the country. Each survey was accompanied by a postage paid return envelope. All surveys were anonymous. It was felt that this strategy would improve the response rate. Respondents were given the opportunity to provide a name and mailing address if they wished to receive a final copy of the report. Many opted to do so. The survey netted a 16 percent return. Budget constraints restricted the effort to a single mailing with no follow-up. Given the limitations of the survey method, the response rate can be considered high. Many of the respondents took the time to actually provide more complete insights into

the questions. The level of interest in response seems to indicate that retailers would like to work together to better promote seafood products.

Responses were received from the following states: Arizona, California, Idaho, Illinois, Indiana, Kansas, Minnesota, New Jersey, New York, Ohio, Oregon, Pennsylvania, Texas, Virginia, Wisconsin. Since the surveys were anonymous, no attempt was made to identify individual chains.

PRODUCT IDENTIFICATION

Country of Origin Labeling

The overwhelming majority of those responding believed that country of origin labeling (COOL) for seafood was not influencing consumer choice. This is similar to the findings during the focus groups where most consumers were unaware of country of origin labeling and did not feel that it would play a major role in the overall purchase decision.

Figure 42: Does Country of Origin Labeling Affect Consumer Choice?

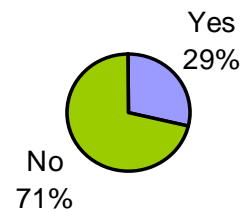
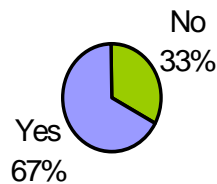


Figure 43: Does Production Method Affect Consumer Choice?



However, retailers did believe that production method, farm raised or wild caught, was a factor in the purchase decision. In the anecdotal sections of the questionnaires, numerous concerns were raised about the negative press surrounding aquaculture.

WILD CAUGHT VS FARM RAISED

The next question dealt with overall consumer preference for wild caught versus farm raised seafoods.



Seventy-two percent of those surveyed indicated that they believe their customers prefer wild caught while 19 percent preferred farm raised. Many felt that farm raised seafood was getting too much negative press and people were increasingly concerned about the use of antibiotics, synthetic chemicals, colorants, and feed ingredients. Feed ingredients were a major concern.

Figure 44

Several mentioned that consumers often believe that “the fish are swimming in dirty water”. Water quality concerns were discussed extensively during the focus groups and represent a major concern among consumers. Consumer education focused on production methods may improve the public perception of aquaculture. Many felt that consumers think wild caught is more natural and less artificial. There is an overall feeling that aquaculture is somehow artificial. A number indicated that although there was an overall preference for wild caught, price points are important in the final purchase decision. One individual felt that if it looks good and is priced right, nothing else matters

Most felt that there was a place for both wild caught and farm raised seafood on their counters.

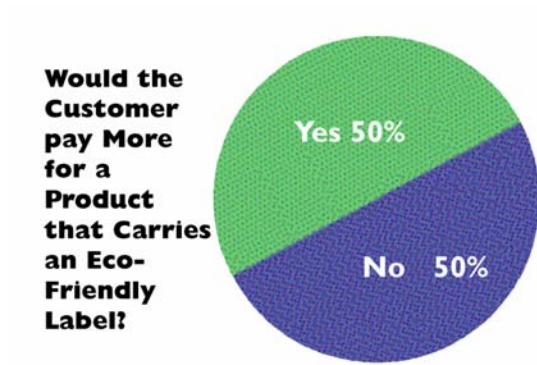
“Customers want the choice. Some care about antibiotics in their food and see it as bad while others see it as okay to raise fish. We need both.”

“Our customers like wild, but they don’t like the retail price”

Several felt that because of all the promotion of wild salmon coupled with the negative press about farm raised salmon, their customers were more inclined to purchase wild.

“I don’t think the average customer cares one way of the other except maybe for salmon. Salmon gets more publicity and people prefer wild. When the press dies down, people don’t even care about salmon”

Eco-Labeling



Most felt that consumer acceptance of an eco-label would depend upon price. Concerns were also raised about the certifying agency for either an eco-label or an organic label. There was a concern about the validity of the label and the standards upon which the label would be based. Almost all respondents felt that at least some of their customers would be interested in either an eco-label or an organic label.

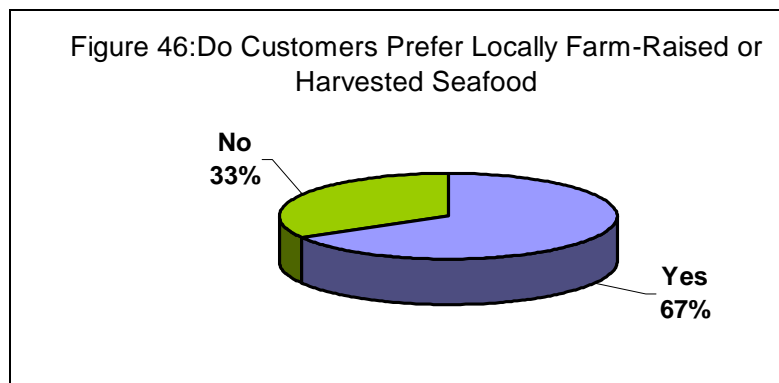
Figure 45

“There are environmental issues in any farming activity. We need to help and support fish farming to become more and more environmentally-friendly.”

Respondents reiterated the need to better educate consumers.

Local Production in the Decision Process

Sixty-seven percent of those responding felt that locally produced product, either farm raised or wild caught, would be preferred by their customers. This ties in with the intrinsic value that consumers place on fresh seafood.



RETAILERS' PERCEPTIONS OF FARM RAISED SEAFOODS

Disadvantages of Farm Raised Seafood

When asked about disadvantages to farm-raised products, several mentioned negative consumer opinion and concerns about contaminants, impact of large farms on the environment, and additives. The most commonly voiced concern was the use of colorants. People were also concerned about negative press and perceived negative environmental impact. There were continuing concerns about the level of PCBs in farm raised salmon compared to wild salmon. This story keeps reappearing. Several individuals mentioned taste as a disadvantage. There was an overall feeling that farm raised seafood was somehow artificial and created in a “factory”.

Three of the respondents did not think there were any real negative aspects to farm raised seafoods.

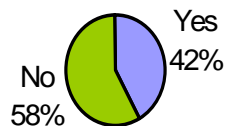
Advantages of Farm Raised Seafood

Seafood sellers were asked what they believe are the advantages of farm-raised seafood, most said lower and consistent price, supply stability, and consistency of product appearance and quality. Several mentioned that it is good for the environment. Three individuals felt that aquacultured product was safer from a contaminant standpoint.

OPPORTUNITIES FOR ORGANIC SEAFOODS

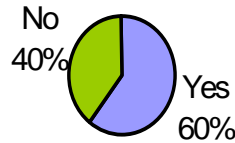
In general, retailers were positive about the opportunity to offer organic seafood and felt that some of their customers would be interested in the product. Most respondents did not feel that their customers would buy more seafood if were labeled organic. .

Figure 47: Would Consumers Buy More Seafood if the Product Were Certified Organic?



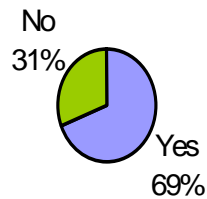
However, most of the respondents also felt that customers would pay more for a product that is certified organic. During the focus groups in one upscale supermarket, most participants felt that they would pay between \$3 and \$5 per pound more for a certified organic seafood.

Figure 48: Would Customers Pay More for a Certified Organic Product?



Retailers also felt that an organic label would increase consumer confidence in the wholesomeness of the product. This mirrors the issues that were raised in the focus groups where consumers wanted some outside certifying agency to increase their comfort level with seafood. If consumers have concerns about the safety of seafood products, it might be expected that they would feel more comfortable purchasing an organic product that they perceived to be more wholesome. Since 41 percent of the respondents in the telephone survey indicated that the most important reason to eat seafood is that it is a healthy food, this perception should be important.

Figure 49. Would Organic Certification Increase Consumer Confidence in the Wholesomeness of the Product?



BARRIERS TO INCREASED SEAFOOD SALES

When asked to identify the major barriers to increased seafood sales, lack of consumer knowledge about seafood (86 percent) was listed as the most important barrier. Negative media coverage (54 percent) was also as an important concern. High price was listed by 46 percent of the respondents. Eleven percent felt that their customers prefer meat while only 3 percent said that their customers prefer poultry.

During the telephone survey, consumers felt that they would purchase more seafood if the price were lower (69 percent), product was fresher (67 percent), better visual appeal (48 percent), and knowledgeable counter personnel (34 percent).

Lack of consumer knowledge about seafood remains a barrier even in an age when information is readily available on the Internet and there are numerous cooking shows on television that feature seafood.

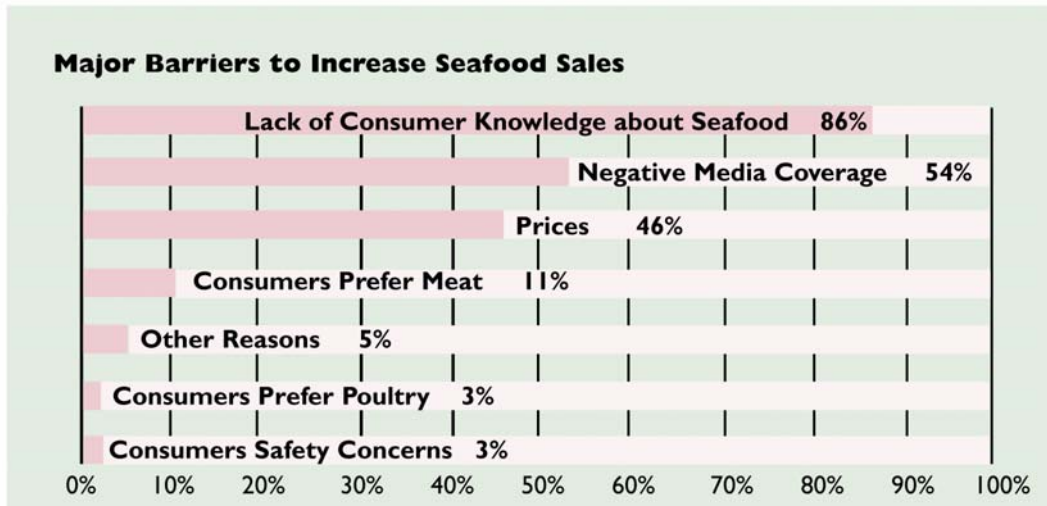


FIGURE 50

PROMOTIONAL MATERIALS

When asked about what types of promotional materials would fit into their seafood programs and help them sell more seafood, in-store demonstrations (76 percent) was the most popular answer followed by sampling (65 percent). This response echoes consumer concerns that they want to taste products before they make a purchase. This is especially important for seafood since the price is high and there are significant taste differences. Increased positive media coverage in local newspaper food columns (62 percent) was higher than increased positive electronic media coverage (43 percent). This is an important public relations opportunity for the seafood industry especially organic growers since a high volume of production would most likely go into the local market. A public relations campaign aimed at local print media is much less expensive than an advertising campaign.

Hard copies of recipe information (59 percent) were favored over electronic printout kiosks of recipe information (27 percent). Again, this is a less expensive mechanism for providing consumer information. However, the success of such a program depends upon the willingness of the store to make sure that the recipe racks are full.

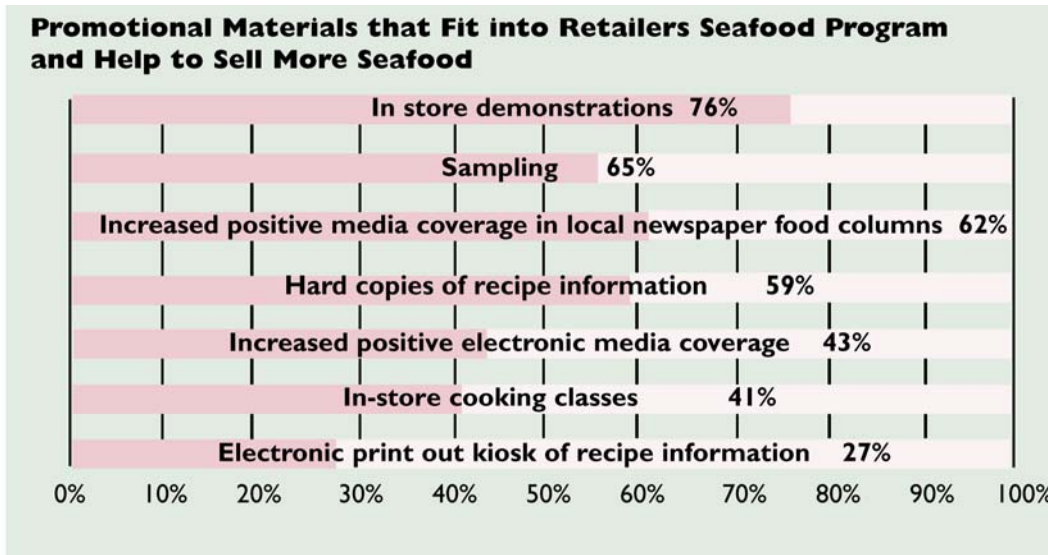


Figure 51

Most felt that there was a market for both farm-raised and wild caught seafood at their counters.

Conclusions

The majority of those surveyed (72 percent) indicated that organic seafood products would fit into their programs. The availability of organic seafoods would help to level the playing field with poultry and red meat categories that have offered organic and natural products for a number of years. Increasing the consumers' comfort level is especially important in the case of seafood since there are health concerns with the product.

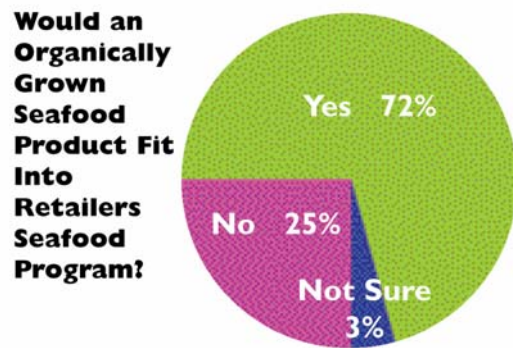


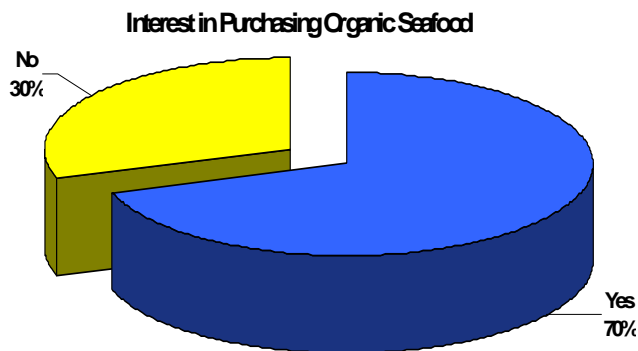
Figure 52

The retailers surveyed viewed price as the most important barrier to increased seafood sales. Both consumers and retailers expressed an interest in the availability of an organic seafood product.

CONCLUSIONS

Consumer Perceptions

Seventy percent of the consumers surveyed expressed an interest in the purchase of organic seafood and sixty-nine percent expressed a willingness to pay a premium for a seafood product that they perceived as being safer than product that is currently on the

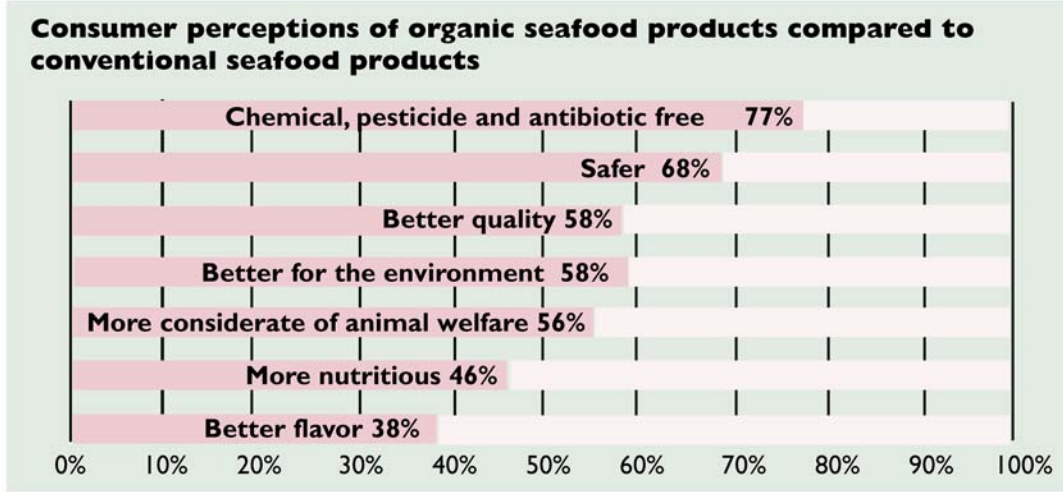


market. Consumers who were committed to the purchase of organic seafood were willing to pay a premium. That willingness was not dependent upon income level or neighborhood of residence. There was a correlation with education level. The more highly educated consumers expressed a greater interest in the purchase of organic seafood.

Fifty-nine percent of those surveyed believed that an organic seafood product would be antibiotic, chemical and pesticide free. Seventy-four percent of the respondents indicated that they were aware of health concerns related to seafood. When asked what those concerns were, sixty-five percent listed mercury. Fifteen percent listed contaminants.

Seventy percent indicated that they would trust an organic label for seafood and many wanted some third party assurance of the quality of seafood products. Currently, many consumers depend heavily on the reputation of the store and the recommendations of sales associates when purchasing seafood. Most indicated that they limit their purchase of seafood products to specific stores.

Overall most consumers had very positive beliefs about organic seafood.



Throughout the survey, approximately 25 percent of the respondents expressed the belief that organic products are not significantly different from conventional products and are not worth any price differential.

A comparable 25 percent were committed to the purchase of organic seafood and believed that it carried an intrinsic value. Those consumers were willing to pay a premium for a product that they perceived as being safer and better for their families.

Purchase Decision

Consumers purchase much less seafood than competing center of the plate protein choices. Although seafood consumption as a discrete category has increased, seafood's share of the animal protein market in the United States remains at 8 percent. The final decision to purchase seafood is dependent upon a wide array of factors working in consort. Forty-one percent of those surveyed indicated that the most important reason that they consume seafood is because they believe it is a healthy food. Forty-nine percent said that the most important reason that they consume seafood is because they like the taste.

Retail Opportunities

Seventy-two percent of the retailers surveyed indicated that their customers prefer wild harvest seafood while 19 percent preferred farm-raised. A number indicated that, although there was an overall preference for wild harvest, price points are important in the final purchase decision. Most felt that their customers want the choice.

Eighty-six percent indicated that lack of consumer knowledge was a significant barrier to increased seafood sales. Fifty-four percent felt that negative media coverage also helped to keep sales down. Only 14 percent felt that their customers actually preferred other center of the plate protein choices. This is an important observation since, at least in the

minds of retailers, there is no perceived purchase barrier inherent in the product. Education and information programs can be developed to drive sales.

Retailers did not believe that their customers would buy more seafood if the product was labeled organic, but they did believe that they would pay a premium for organic products. Sixty-nine percent believed that an organic label would increase consumer confidence in the wholesomeness of the product.

Seventy-two percent felt that an organic product would fit into their seafood program. Most felt that it was important to have in-store demonstrations and sampling programs to help bolster seafood sales. They also felt that increased positive media coverage in local newspaper food columns would help raise sales.

CRITICAL ISSUES THAT NEED TO BE ADDRESSED TO IMPROVE THE MARKETABILITY AND SALE OF SEAFOOD AS A CATEGORY.

- 1) Consumers continue to have a bias against previously frozen products. This indicates that freshness of seafood is an important attribute that consumers look for as they make purchasing decisions.
- 2) Consumers continue to believe that seafood must be used on the date of purchase or the next day. This belief coupled with concerns about freshness and the quality of frozen products limits the time and place of purchase.
- 3) Consumers continue to place their confidence in the store as the authority on fish quality. This limits consumers' exposure to seafood and thus reduces their likelihood of trying species other than those carried by a specific store. It also emphasizes the need for retail associate training programs.
- 4) To increase consumer confidence in the safety and quality of seafood, labels should be developed that would allow consumers to feel confident in their purchase without the assurance of the store. In the case of organic product, this would require a USDA seal. Currently most consumers feel that seafood is not being inspected and the usage of seals whether organic or not would help consumers in identifying products that they perceive as being "safe" and increasing sales.

- 5) For the most part consumers are largely unaware of aquaculture as a food production system. As a result, they tend to associate characteristics of other farming practices, such as hormone usage in poultry farming, into their understanding of aquaculture.
- 6) Consumers overwhelmingly consider seafood as a high priced, luxury alternative rather than an everyday food. As meat and poultry prices continue to escalate, seafood will need to be repositioned in the minds of consumers. To increase seafood sales, seafood needs to be positioned as an everyday choice that can be prepared quickly and easily.

CRITICAL ISSUES THAT NEED TO BE ADDRESSED IN POSITIONING ORGANIC SEAFOOD IN THE AMERICAN MARKET

- 1) Overall consumers need to have a better understanding of aquaculture production systems and the application of organic farming principles to those systems.
- 2) Availability of organic seafood may dispel some of the consumers' concerns about the environmental impacts of aquaculture.
- 3) Availability of organic seafood will help to level the playing field with organic poultry and meat.
- 4) Availability of organic seafood may increase the consumers' comfort level with the product and result in an increase in seafood consumption, which would have a positive impact on the American diet.
- 5) Organic seafood would need to be positioned in those stores in which the largest number of customers perceive organic products as having a high intrinsic value and are willing to pay a premium for the product.

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