

PROJECT COMPLETION REPORT

97-7 “Developing a sustainable Market for Northeast U.S.A. Aquacultured Products by Effecting Attitudinal Changes in the Foodservice/Restaurant Sector “

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INTRODUCTION

Many Americans continue to feel more comfortable eating fish and seafood in restaurants or in other food service settings rather than preparing it at home. It is estimated that between sixty and eighty percent of all fish and seafood consumption takes place outside of the home. In addition, as many other commodity groups have discovered, the restaurant/food service setting has become a natural pathway for the introduction of new foods to the American marketplace and table. Consumers tend to be more adventurous when dining out, each individual can select his/her own entrée which eliminates concerns about different tastes within the group and preparation barriers, i.e. odor problems, don’t know how to cook it, etc., are eliminated.

Fish and seafood products are generally understood and better handled within a restaurant venue than in the home kitchen. To a large extent, chefs and kitchen staff have been trained in fish and seafood preparation and are often more familiar with new species than the average home consumer. But, even

the most well-trained chef or food service buyer is sometimes unaware of the many fish and seafood products that are farm-raised and available for purchase.



courtesy of Jim Avery

Aquacultured fish and seafood products are ideal and cost effective for restaurant and other food service applications. To date, their use is not as widespread as it should be in menu planning. Previous studies

(Gall & O'Dierno, 1994) suggested that many food service buyers and suppliers are still unaware of the positive attributes and availability of farm-raised fish and seafood products. Although aquacultured products have inherent advantages that make them ideal for menu planning, food service buyers and chefs are largely unaware of these positive attributes. Among the most important characteristics of the product are consistency of supply, price and quality, all of which are important in developing a satisfied clientele and projecting future profit margins. Food service operators continue to find it difficult to source product especially fish and seafood farmed in the United States.

In order for the United States aquaculture industry to compete effectively, it is critical that products be marketed in a manner to develop greater acceptance in the food service sector. This study focuses on ways to position farm raised fish and seafood products in this market.

To overcome the difficulties of using farm-raised fish and seafood products that chefs/restaurateurs either experience or *perceive*, it was necessary to first gain an understanding of their overall view of aquacultured products and then to provide positive, upbeat, accurate information to counteract the morass of misinformation and disinformation that currently exists. The overall objective was to develop a knowledgeable cadre of food service buyers to increase the demand for aquacultured products. A widely held prejudice against aquacultured products is the perceived lack of flavor when compared to wild harvest. This is supported by a number of food writers (see Appendix). There is also a perception, held by both chefs and the general public, that aquaculture operations are not environmentally friendly. This perception was furthered by the publication Murky Waters. Additional concerns about off-flavor or health-related issues exist.

Making appropriate fish and seafood menu decisions and maintaining a positive bottom line is dependent on menu item costs. Menu pricing structures ultimately affect the degree of profit. To establish bottom line costs, foodservice managers must accurately calculate center of the plate costs. Drastic price swings experienced by wild harvest fish and seafood products make this process difficult, if not impossible.

Inclement weather conditions can prevent commercial boats from fishing, often resulting in a

diminished market supply of fish and seafood. In other instances, boats leave port, enter the fishing grounds only to discover that the expected stocks of fish aren't there. Boats are forced to return to the dock without the targeted species disappointing prospective buyers. Another factor that interrupting the regular supply of fish and seafood are the state and federal government management regimes that dictate when, where and how much seafood can be harvested. These wild caught fish and seafood supply peaks and valleys further complicate the task of menu planning.

Food service managers must often rely on menus that offer "catch of the day" or "market price" options, making it difficult for foodservice operations to: 1) offer fish or seafood products on a regular basis, 2) determine menu pricing and 3) project profit margins. This is unfortunate for both the commercial fishing industry and the aquaculture industry since the majority of fish and seafood consumption (60-80%) takes place outside of the home.

The most common scenario employed by the restaurant sector is to replace seafood entrees with chicken alternatives when supply is doubtful and/or the price escalates. Poultry is a natural substitute for the same consumer segment that normally orders fish. This substitution is extremely common in general fare restaurants but more difficult in seafood houses where a greater proportion of the menu features fish and seafood.

The practice of commodity substitution results in fish and seafood items appearing sporadically on menus. The customer who experienced a great seafood entrée returns the following week to find it vanished from the menu. The success of fast food chains is based largely on the degree of "sameness" which meets the expectations of customers. A large portion of the public reacts positively to that level of uniformity.

On the opposite side, there are adventurous diners that like to sample the catch of the day. The concept of a changing menu also plays to the consumer's desire for "fresh" fish and seafood. The question remains which of these two segments is contributing the most to bottom line profits. This most likely varies from restaurant to restaurant, and each individual manager will need to make his/her own determination.

The correlation most likely occurs in the average entrée price with pricier restaurants willing to offer a

variety of fish and seafood on a regular basis. The background of the diners in upscale establishments may be more cosmopolitan and adventurous in their food choices. Another factor that may be at play is the skill of the chef and kitchen staff in handling a variety of seafood products.

Many domestic fish and seafood farmers rely heavily on the ethnic market segment in which product is sold live. Although this is a lucrative and easily accessed market, it is also finite and large-scale production requires expanding into a larger universe of food service markets.

METHODOLOGY

To address the issues identified above, the research team: 1) assessed the knowledge and use of farm-raised products among chefs/restaurateurs/food service operators in the Northeast, 2) based on those results, developed educational programs/materials including an **Aquacultured Products Handling Guide (APHG)** to address the knowledge gaps and concerns identified, and 3) conducted a follow-on survey to determine which barriers still existed.

An advisory group was created to assist in the selection of aquacultured products and questions to be included in the proposed survey. Background information on the project, a potential list of species for inclusion in the survey instrument and draft questions was sent to 47 individuals including aquaculturists, extension and government personnel, aquaculture associations and chefs in the Northeast. Nineteen individuals agreed to participate on the advisory committee for the project. This group identified the following products in ranked order for inclusion in the survey: trout, oysters, hard clams, tilapia, hybrid striped bass, salmon, catfish, and mussels. Scallops were added to the list at the request of one aquaculture company. The latter was difficult to assess since most restaurants use scallops but many of those scallops are harvested in the wild. Many of the farmed scallops are imported from Asian countries. Trout may also have caused some confusion since wild harvest sea trout is often found on restaurant menus in the region. As a matter of fact, George Washington often dined on grey sea trout at Fraunces Tavern in lower Manhattan.

The project's key priority was the development of user-friendly educational materials that could be incorporated into the Northeast aquaculture community's plan to develop and expand market

opportunities. The resulting educational booklet, *"Aquacultured Products-Recipes and Information for Chefs and Food Service Professionals"* featured general information about aquaculture plus detailed information on eight species of fish and seafood farmed in the region. The eight species selected for inclusion were Atlantic salmon, hybrid striped bass, trout, catfish, tilapia, mussels, oysters and clams.

The venues for distribution included educational institutions with the intent of familiarizing future chefs with the positive benefits of using farm-raised fish and seafood products. The materials were also distributed to restaurants and other food service establishments. By reading and using the information on the eight farm-raised species, it was hoped that positive attitudinal changes would occur within this sector resulting in the development of a stronger market-demand. These changes could lay the groundwork for additional purchases of aquacultured products and ultimately assist in driving industry expansion.

To assist in quantifying the required attitudinal changes, a survey and follow-on survey were conducted over a two-year period. The original survey was conducted prior to the inception of the educational program and distribution of the booklet.

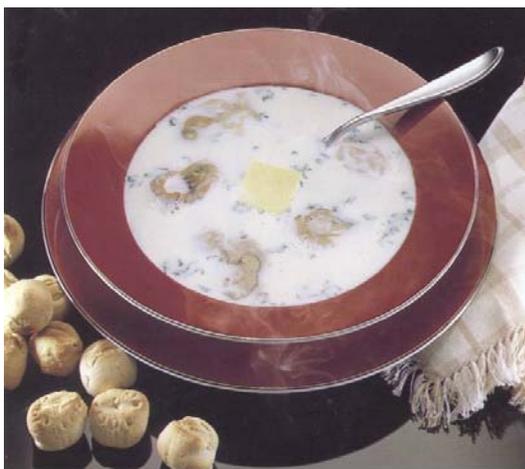
The educational effort was based on developing a better market position for aquacultured products and dispelling some of the negative perceptions that were identified in the target audience. The basic message to restaurateurs was that aquacultured products are: 1) consistent in supply, 2) consistent in quality, and 3) consistent in price. These attributes make farm-raised products ideal candidates for the restaurant menu. The inherent stability of the product supply allows for advanced planning and cost/revenue projections.

The original premise of the research team was that the most effective way to increase utilization was to focus on the positive attributes of aquacultured products in providing reasonably priced fish and seafood alternatives and improving bottom line profits. The focus on profits was not reflective of the survey results but this might be attributable to how restaurateurs perceive themselves, i.e. more concerned about quality and taste rather than profits. An interesting follow-up would be to conduct some focus groups to delve further into the issue of self-image and how it drives purchases.

This message was supplemented by information about product forms, actual suggestions as to product use, and pricing examples in the “*Aquacultured Products-Recipes and Information for Chefs and Food Service Professionals*”. Discussions with restaurant planners, determined that a list of varied suggestions rather than actual recipes would be the best approach since chefs like to develop their own recipes. The proposed suggestion lists for each species were designed to be innovative, and to spark the interest and creativity of the reader. For those who prefer, recipes were formulated and included. Pricing structures and special diet substitutions were provided to demonstrate how these products could be effectively incorporated into almost any menu.

To assist chefs in gaining a better overall understanding of aquacultured products, the initial section of the guide was devoted to an explanation of aquaculture and the benefits of farm-raised fish and seafood to the environment and to the consumer.

The APHG was developed to be visually attractive with a variety of pictures of locally farmed products. Recognizing the importance that chefs place on their own creativity and menu planning skills, materials in the APHG were designed to be suggestive of different preparation methods to make menus more appealing.



Courtesy NJ Dept. of Agriculture

This dish features an oyster stew as an additional menu suggestion. Each section of the Guide provided a list of possible preparations to spur creativity and increase the opportunity to include farm-raised fish and seafood products on the menu.

Trade Show Survey

A survey instrument (see Appendix) was developed for use at trade shows throughout the northeast region. The objective of the survey was to identify barriers and prejudices against increased usage of aquacultured product. The survey was conducted at the New York Restaurant Show, the New Jersey Restaurant Show, the Boston Seafood Show, the Mid-Atlantic Food Service Show, the Cook and the Book in Philadelphia, and the Northeast Chapter of the American Culinary Federation Meeting held in Rochester, New York.

Mail Survey

After distribution of the Aquaculture Product Handling Guide (APHG) and a series of educational programs at the Mid-Atlantic Food Service Show, the New York Restaurant Show, the Cook and the Book Show in Philadelphia, the Northeast Region American Culinary Federation Conference in Rochester, New York, and the International Boston Seafood Show. The follow-on survey was conducted via a direct mail campaign.

Each individual completing a survey received a recipe booklet in appreciation. Response to this strategy was much better than had been expected. The survey generated so much interest that individuals actually called to ask questions and request additional information. Based on the response to the mail survey, it would seem that an important way to reach this audience is through educational programs and materials. Many of the restaurant associations and chefs' groups in the Northeast have regularly scheduled shows and educational events. This is an excellent venue at which to offer educational programs.

To further expand the outreach of the program, a copy of the handling guide was provided to Publications International, Inc. This group puts together cookbooklets for broad distribution at supermarkets, bookstores and other outlets throughout the United States. They regularly use fish and seafood recipes. Once a recipe is listed with them, they incorporate it into appropriate publications on an on-going basis. The organization providing the recipe receives credit each time the recipe is used. This is a method to reach large audiences with no additional costs.

TRADE SHOW SURVEY RESULTS

The majority (59%) of respondents indicated their entrée prices were in the \$15-\$20 range. This was common to all sampling venues. Very few respondents were in either the over \$25 (6%) or less than \$10 (12%) range. The survey did not attempt to segregate out institutional foodservice and restaurant use but some inferences can be made based upon the price categories reported with prices less than \$10 being most likely representative of the institutional setting.

Among the survey respondents, many local seafood houses along the coast included aquacultured products on their menus and, in some cases, advertised them as such. Based on the responses received from upscale restaurants, \$25 and up for entrees, there seems to be a significant prejudice against farm-raised products based on the perceived lack of flavor.

Restaurateurs were asked to indicate which aquacultured products they used and with what frequency. There was clearly some confusion about which products were farm-raised and which were wild harvest. This is evidenced by the number of responses that included question marks in some categories.



	Always	Sometimes	Never
Trout	3%	18%	46%
Oysters	18%	40%	72%
Clams	54% (cockles 1)	16%	32%
Tilapia	10%	18%	74%
Hybrid striped bass	3%	18%	82%
Salmon	48%	18%	22%
Scallops	48%	14%	28%
Catfish	0	42%	52%
Mussels**	24%	16%	68%
Sea Bream	2%	0%	92%
Arctic Char	2%*	0	92%
Crayfish	0	2%	21%

n=203

*Used arctic char once but then couldn't get it again.

**Many of these respondents were ethnic restaurants primarily Italian, Portuguese and Spanish

Percentages are based on the total number of respondents. In some cases, people did not respond to a specific question.

BEST SELLING AQUACULTURED SPECIES

Food service professionals were asked to check off a list of farm-raised fish and seafood products used in their establishments. The volume of usage was denoted by “always”, “sometimes” and “never”. The list of species included was developed by the project advisory committee. In some cases, the researchers felt that the respondent was not aware of whether or not the product was farmed or wild harvest. A large number of respondents included a question mark in the column indicating that they were using a specific product but were unaware of its source. For certain species, like salmon, catfish and trout much of the supply is aquacultured. For other species such as scallops, shrimp, clams, oysters, and mussels, there are likely to be significant amounts of both wild and farmed product commingled. This is especially true in the case of scallops. Thus, the data



above suggests that respondents really do not know the source of their fish supply.

A respondent from an Asian restaurant indicated, “ I have no idea what aquacultured product is. Please

explain.” That restaurateur checked the always category for salmon and tilapia. He was also interested in more information on pricing. This was a recall question, and although these lists cannot necessarily be construed as indicating total sales volume, they do provide an indication of which species were most important to each food service operato

Five Top Selling Species Identified by Restaurants Compared to Average Entrée Price

>\$25	\$20-\$25	\$15-\$20	\$10-\$15	< \$10
Salmon	Salmon	Salmon	Salmon	Salmon
Mussels	Oysters	Scallops*	Tilapia	Clams
Scallops*	Clams	Mussels	Oysters	Mussels
Clams	Scallops*	Clams	Catfish	Catfish
oysters	Mussels	Catfish	Scallops*	Tilapia

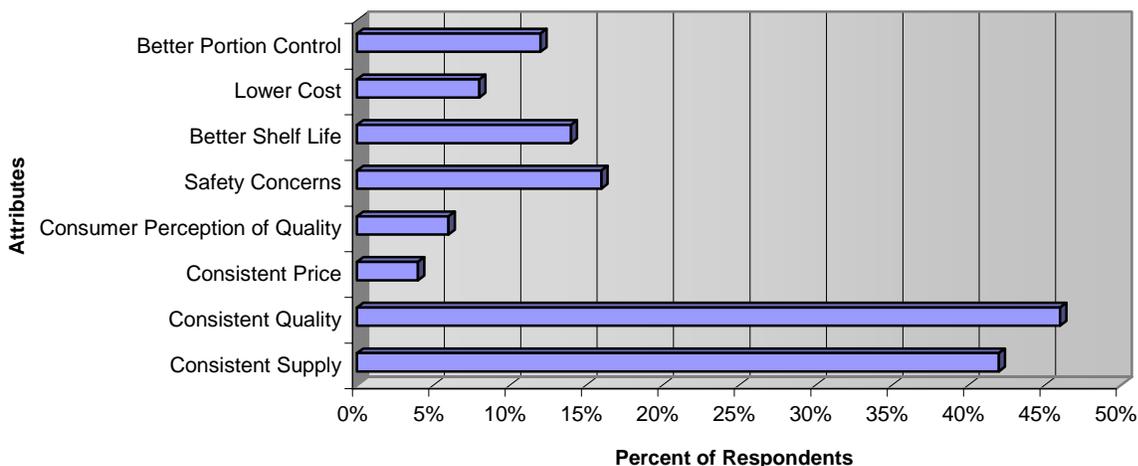
*these are most likely not aquacultured or if they are ,they are probably imported

Across all price categories, salmon was the number one aquacultured product. This is most likely a result of consumer acceptance coupled with current price structure which makes it acceptable to the various margins required by different types of operations and the increased availability of pin-bone-out fillets. It is interesting to note that mussels, probably because of their cosmopolitan appeal, were used in the many upscale restaurants. Although scallops were reported in all price categories except the less than \$10 category, these were most likely wild harvest or cultured in Asia.

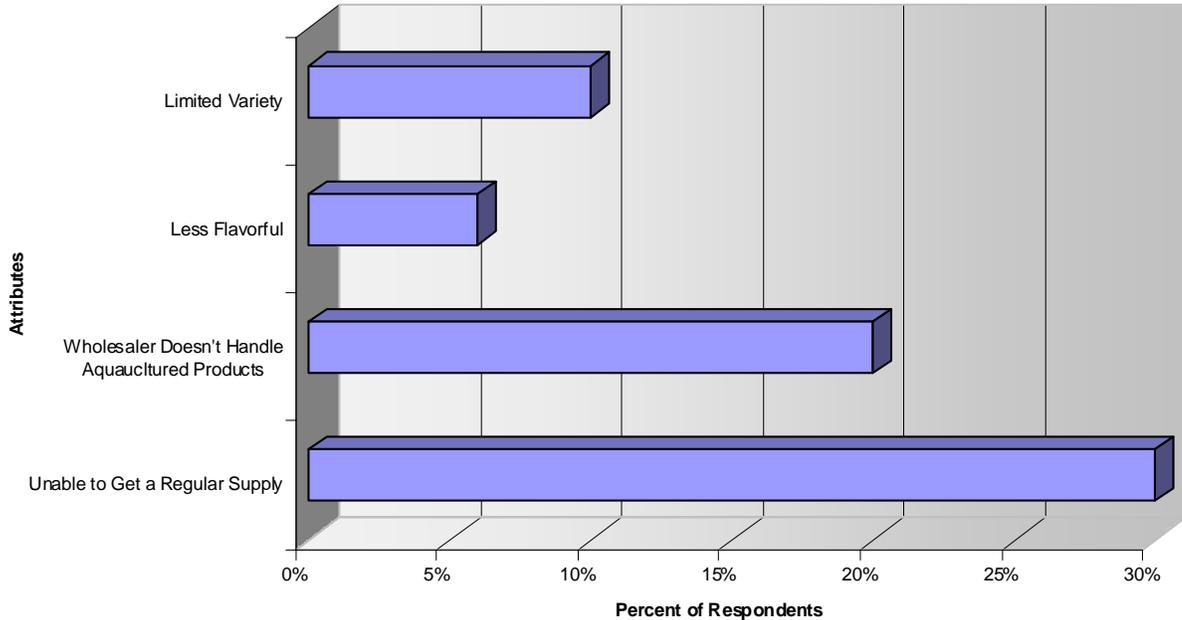
When asked to identify the perceived advantages of aquacultured products, consistent quality (46%)

and supply (42%) were clearly the most important attributes reported. This may be a factor of the prompts in the survey combined with the respondent’s self perception, i.e. quality is my most important concern. In developing overall marketing strategies, this may be an important promotional point. Consistent price (4%) and lower price (8%), attributes that were deemed important by the researchers, were rated much lower by the user community. Safety concerns (16%) still played an important role in the user’s overall product perception although that response was lower than in previous studies. Better shelf life (14%) and better portion control (12%)

Perceived Advantages of Aquacultured Products



Perceived Disadvantages of Aquacultured Products



were also important. It should be remembered that respondents may reflect what they want the world to think and/or what they think the survey team wants to hear. By developing an understanding of how the buyer perceives the product, more effective strategies can be developed to position product in the marketplace. The importance of consistent supply is reinforced by the buyer's inability to purchase product on a regular basis. This can be attributed to lack of a consistent source of volume production. Many aquaculture operations in the region are small and harvest on an infrequent basis. This negates the advantage of consistent supply. A small farmer harvests and sells his/her product and then begins a new growth cycle. Catfish has gained prominence not only because of the product attributes (white, mild tasting, boneless fillet) but also the availability of a consistent supply of product.

Consistent supply was identified as a primary advantage (42%). However when respondents were asked to provide information about disadvantages, the major constraints were the lack of regular supply and the small number of wholesalers carrying aquacultured products. This is in direct contradiction to the perceived advantages. This is an important

concern that must be addressed by aquaculturists as they develop markets. This concept was reinforced in the follow-on survey. Several suppliers completed the survey and indicated that the only farm-raised product that they handled was salmon and they did not promote it as an aquacultured product.

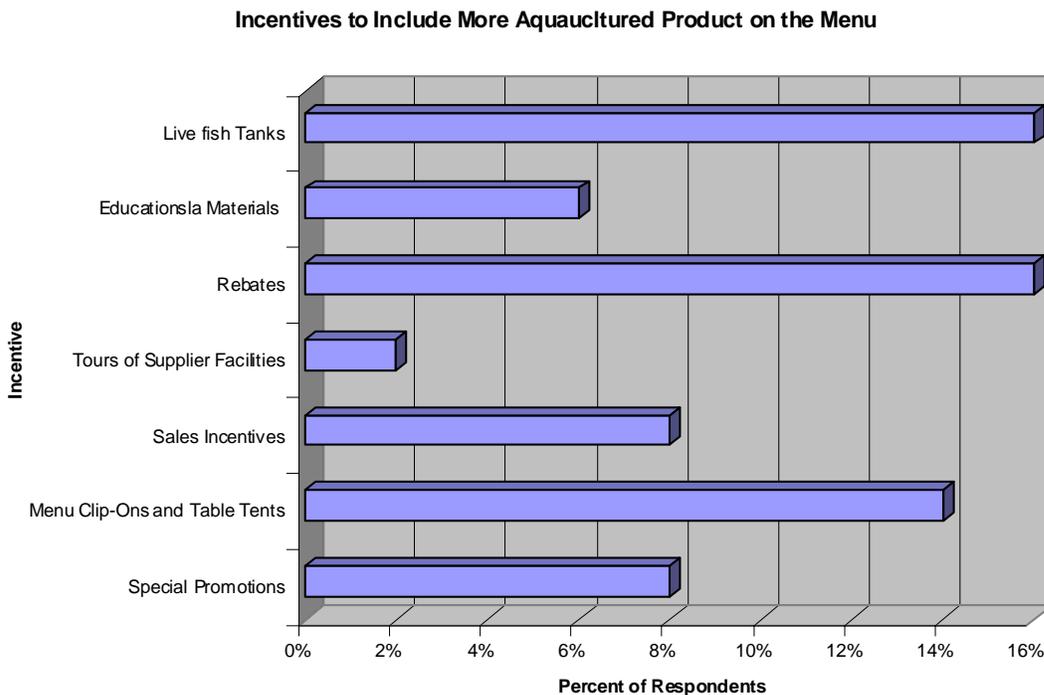
One user indicated that he was "not aware of any advantages."

One individual from a shoreside restaurant concluded, "In my experience most farm-raised products do not have the flavor of "wild" or products captured in their natural habitat."

Incentives

When asked to identify incentives for the promotion of aquacultured products, there was clearly an interest in the development of table tents and menu clip-ons. The Alaska Seafood Marketing Institute regularly uses rebates and incentives targeted at suppliers and supermarkets. Since prompts were used in this question, there was also considerable interest in rebates.

Restaurateurs also perceived live tanks as a positive incentive that could increase sales. This perception may be a result of lobster tanks, which help to connote product freshness. When using live tanks with finfish, there is an increased need for skilled food handlers and this may not part of consumers who may be squeamish about selecting a live fish.

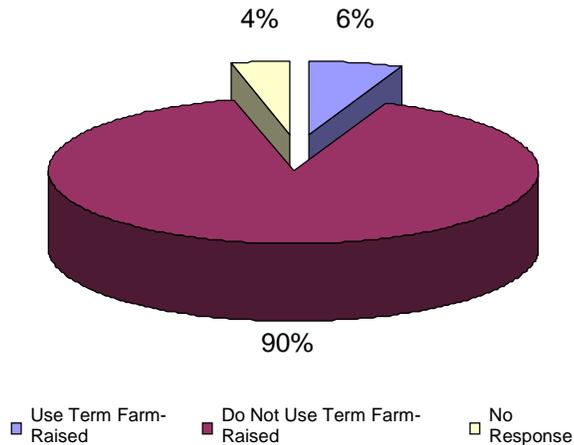


Educational materials are aimed at the foodservice and restaurant staff to help them understand what farm-raised fish and seafood are and why they should be using them. Rebates are desirable because they put money back into the pocket of the restaurant or foodservice operation. Menu clip-ons, table tents and live fish tanks are aimed at generating customer interest and ultimately sales. Therefore, to compare these “incentives” to each other may not be doing justice to continuing the educational aspect of developing a larger market share for farm-raised products.

USE OF THE TERM FARM-RAISED AS A MARKETING TOOL

Very few restaurants used the term farm-raised as a marketing tool. This is in direct contrast to the 1980’s when there were significant concerns about pollution and product safety. At that time, cultured products were perceived to have a decided advantage over wild-harvest. Given the barrage of concerns about food safety, consumers have become numb to those issues.

Use of Farm-Raised as a Marketing Tool



The objective was to create attitudinal change among users and develop a greater acceptance of aquacultured products in the foodservice sector. Positive attributes of aquacultured products were stressed as well as suggestions for including those products in the overall menu planning strategy.

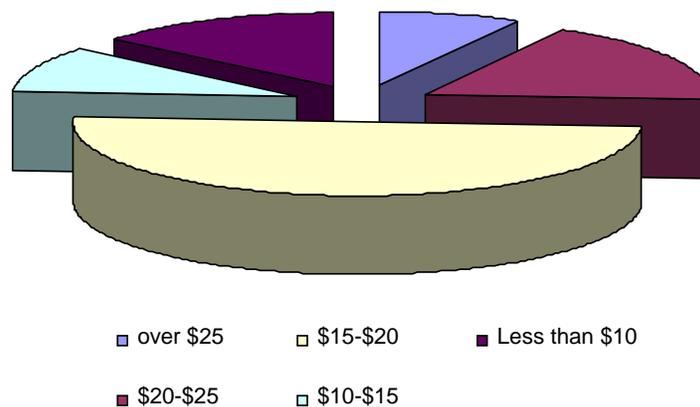
The majority (50%) of restaurants responding to the follow-on survey were in the \$15-\$20 entrée price category. There were also responses from fast food chains where the respondent wanted to increase his/her knowledge about the product. Although these outlets do not use aquacultured products, these individuals may move on to other management positions where they can make or influence purchasing

Results of the Follow-on Survey After Delivery of Educational Program

decisions.

After completion of the initial survey, an educational campaign was mounted. The campaign consisted of participation at trade shows and professional meetings in the northeast where food service professionals learned more about aquacultured products and were provided with a copy of the handling guide.

Percentage of Restaurants/Foodservice Operations Responding in Each Entrée



Frequency of Use of Farm-Raised Products by Percentage of Respondents

	Always	Sometimes	Never
Trout	14%	52%	25%
Oysters	28%	34%	28%
Clams	33%	39%	20%
Tilapia	14%	43%	27%
Hybrid Striped Bass	25%	25%	28%
Salmon	61%	29%	12%
Scallops	41%	30%	23%
Catfish	18%	35%	38%
Mussels	32%	36%	15%
Sea Bream	1%	12%	33%
Arctic Char	3%	17%	56%
Crayfish	5%	21%	47%

n=191

Frequent use of hybrid striped bass has moved up appreciably from 3% in the initial survey to 25% in the follow-on survey. Frequent oyster use increased from 18% to 28%.

This may be a factor of the time during which the two surveys were conducted and seasonality of the product. Catfish went from 0 to 18% in the frequent use category. This may be attributed to extensive and well placed industry promotion.

Five Top Species Identified by Restaurants Compared to Average Entrée Price

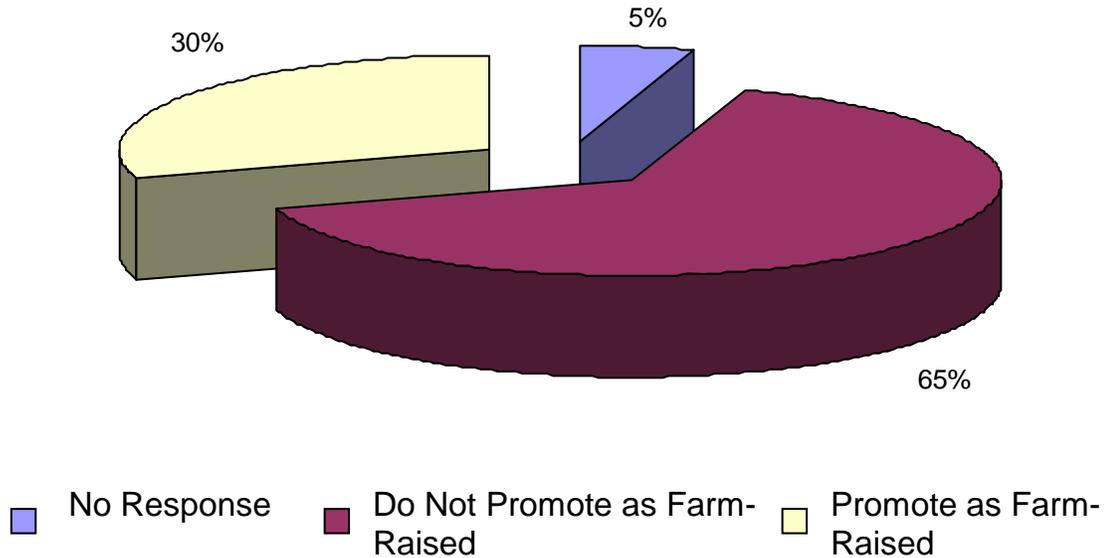
>\$25	\$20-\$25	\$15-\$20	\$10-\$15	< \$10
Salmon	Salmon	Salmon	Salmon	Salmon
Scallops	Oysters	Mussels	Tilapia	Catfish
Mussels	Clams	Clams	Clams	Mussels
Clams	Mussels	Catfish	Oysters	Oysters
Trout	Trout	Tilapia	Catfish	Tilapia

As entrée price decreased, there was a marked decrease in the use of aquacultured fish and seafood products. Sixty percent of the respondents indicated an infrequent use of these products. Catfish has moved up significantly in the mid-priced restaurants.

Several large corporate cafeterias responded that they sometimes use catfish and tilapia. One respondent indicated that since his is a chain restaurant, purchase decisions and menu planning are handled centrally.

Many foodservice professionals are still not aware of the source of their fish and seafood offerings. One individual in the \$10-\$15 entrée price category indicated, "We do not use farm-raised fish. These are the seafoods that we always use--salmon and mussels." A second individual indicated that he was unaware of the method of the harvest. Another respondent indicated that the only product on the list that he was sure was aquacultured was tilapia.

Use Farm-Raised as a Marketing Tool

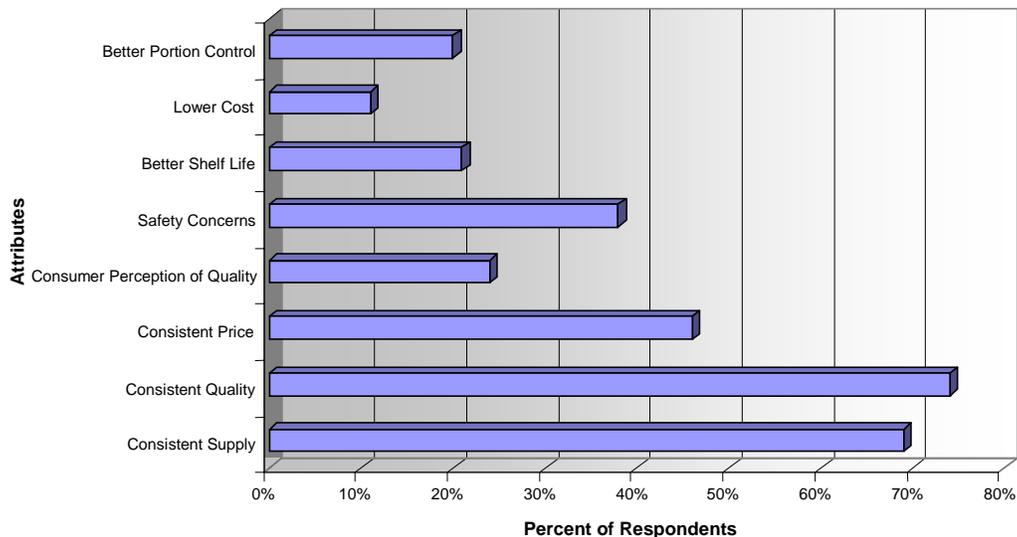


A significant increase in the promotion of product as farm-raised occurred during the interval between the initial survey and the follow-on survey. In 1998, only 6% of the respondents indicated that they used the term “farm-raised” while in 2001 that number increased to 30%.

Several respondents indicated that they use the term “farm-raised” on the menu and that it is preferred to “aquacultured”.

In the follow-on survey, consistent quality (74%) was again listed as the most important attribute. This was an increase over the initial survey in which only

Perceived Advantages of Aquacultured Products



(46%) of the respondents listed this attributed. Consistent supply (69%) was the second most important attribute. This is similar to the initial survey (42%). Consumer perception of quality was not an important attribute in either survey. Concerns about price increased from four percent (4%) to forty-six percent (46%) as can be expected in a tightening economy. Two respondents indicated that the price of aquacultured products fluctuate as severely as wild product. Both of these users were actively purchasing aquacultured species (salmon, trout and tilapia) and were promoting the products as being farmed raised. The price fluctuations in these species categories may be attributable to the number of suppliers.

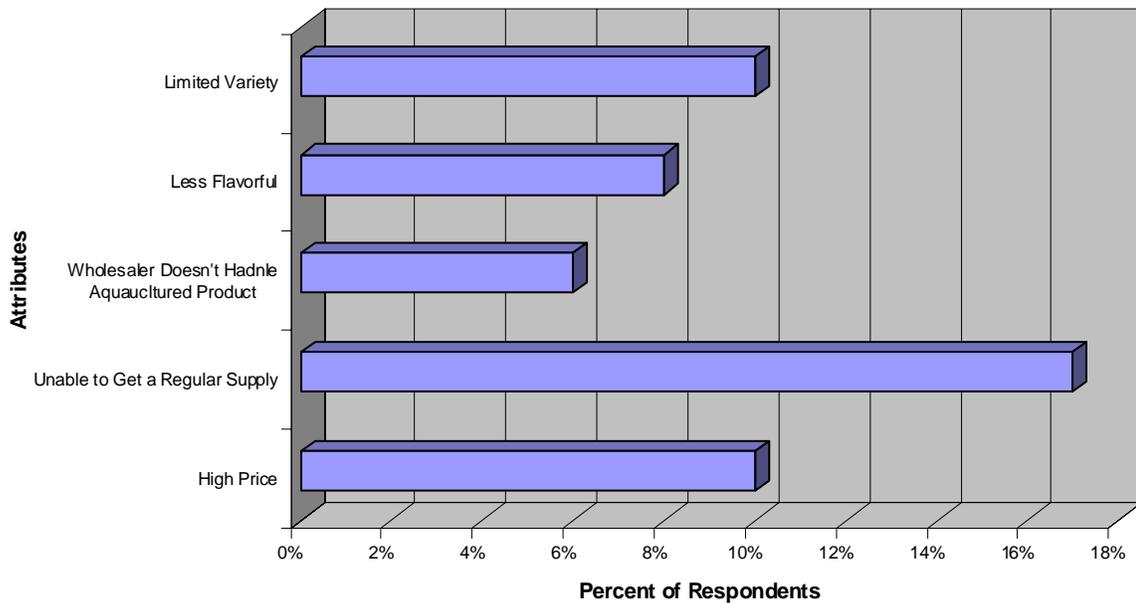
One individual indicated that consistent size was an advantage. This may be a slight difference from portion control since it may be whole fish that are being purchased. Only one respondent indicated that an advantage was to “ensure the longevity of the species.”

One individual indicated “really like the flavor of cultured mussels. Also I feel the texture is superior to regular or Chinese mussels.” According to one respondent, “Chilean salmon has a better taste profile.”

Perceived Advantages by Entrée Price Category

Under \$10	\$10-\$15	\$15-\$20	\$20-\$25	Over \$25
Consistent Quality (70%)	Consistent Quality (82%)	Consistent Quality (88%)	Consistent Quality (71%)	Consistent Quality (100%)
Consistent Price (52%)	Consistent Supply (80%)	Consistent Supply (69%)	Consistent Supply (57%)	Consistent Supply (87%)
Consistent Supply (30%)	Consistent Price (55%)	Consistent Price (62%)	Consistent Price (50%)	Consistent Price (62%)
Consumer Perception of Quality (26%)	Safety (33%)	Safety (50%)	Consumer Perception of Quality (43%)	Portion Control (12%)
Safety (20%)	Portion Control (28%)	Better Shelf Life (31%)	Safety (29%)	Safety (9%)
Shelf Life (18%)	Lower Cost (25%)	Better Portion Control (31%)	Lower Cost (14%)	Shelf Life (5%)
Portion Control (23%)	Better Shelf Life (6%)	Consumer Perception of Quality (25%)	Portion Control (7%)	Consumer Perception of Quality (2%)
Lower Cost (7%)	Consumer Perception of Quality (0%)	Lower Cost (19%)	Better Shelf Life (5%)	Lower cost (0%)

Perceived Disadvantages



Very few respondents listed disadvantages. This can be attributable to their lack of knowledge and familiarity with the products. It might also be a factor of reticence to be negative about the products. One individual did raise a concern about water quality.

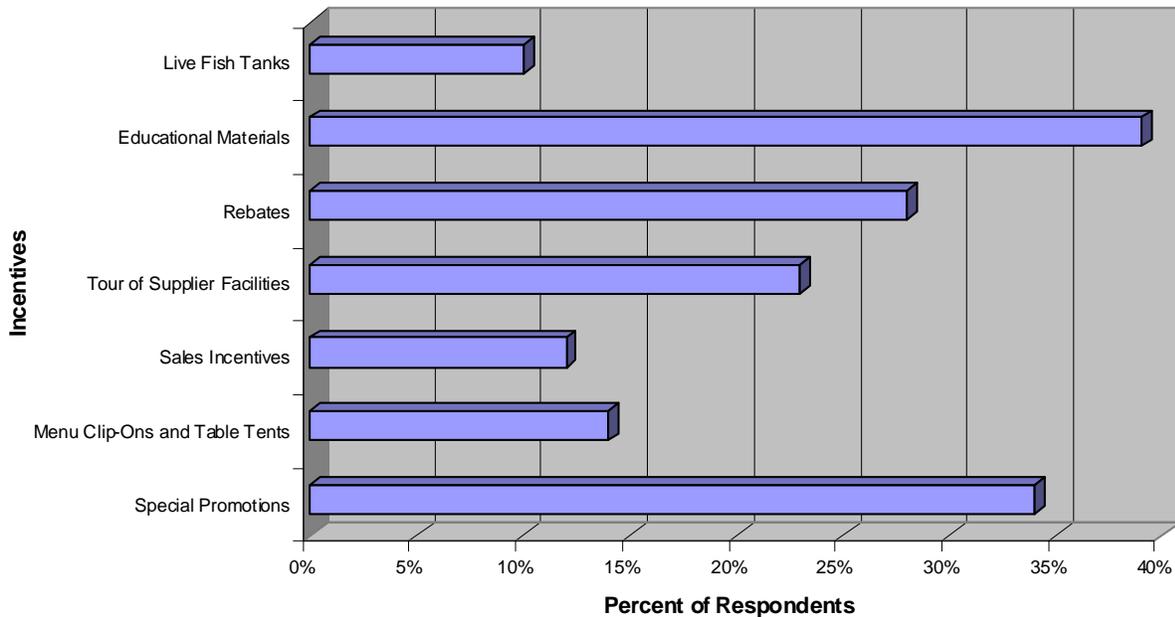
According to one chef, “the largest drawback is the lack of high quality flavor, eg., farmed trout vs. stream trout.” Another major disadvantage was the lack of availability.

Incentives

One individual in the over \$25 entrée price category indicated, “make the species more like wild—stop feeding pellets, give them bigger tanks, feed them things they would more likely eat in nature. Anything that would make them more like wild.” There was a significant amount of interest in educational materials and this interest in reinforced by the response to the direct mail survey in which there was a 23% return rate. Three individuals called as a result of the survey to ask more questions. As a result of that interest, a brief power point presentation was developed.

As was anticipated, rebates also scored high as an incentive. Special promotions were rated high. This might be an opportunity for a small farmer to work with a local restaurant or for a large supplier to do a concentrated promotion, i.e. national catfish month. Such promotions might appeal to “sometimes” users.

Incentives to Include More Aquacultured Product on the Menu



IMPACTS

The overall project impact was, and continues to be, the development of a cadre of institutional/restaurant buyers and chefs that possess a greater understanding of the attributes of aquacultured products and the important contribution of these products to successful and profitable menu development. It is hoped that these efforts will result in increased market opportunities and sales for Northeast U.S.A. aquaculture producers. The production of the publication provides a strategy to continue to reach the audience beyond the scope of the initial project.

The survey did not attempt to segregate institutional food service versus restaurant use but some inferences can be made based upon the price categories reported with prices less than \$10 being most likely representative of the institutional setting. Use in some institutional settings such as cafeterias provides a very viable way to provide educational materials to the consumer to encourage future retail purchase. Efforts should be made to introduce aquacultured products to other food service outlets

especially school lunch programs that can help to develop life-longer fish and seafood eaters.

One of the important issues uncovered by the survey was that food service suppliers were not actively promoting aquacultured products. The suppliers who responded to the survey indicated that the only aquacultured product that they were handling was salmon. Only one of the food service suppliers actively promoted the product as being farm-raised. Educating the food service supplier can be a significant multiplier since that knowledge may flow down to the individual restaurant and ultimately to the retail consumer.

An important marketing channel for aquacultured products is an increase in the array of products being offered by foodservice suppliers. A large number of respondents indicated that they were unable to get a regular supply of product. This is most likely a factor of the low level of production in the region and the presence of many small farmers. Many foreign nations can easily access our domestic markets because of the large volume of product that is being

produced, the low cost and the government-supported effort to generate hard currency.

SUMMARY ACTIONS

- The major disadvantage identified by foodservice professionals was the lack of a regular supply of product. This is most likely a function of the low level of production in the region and the industry profile consisting largely of small farmers.
- Low production levels preclude sales through major foodservice distributors.
- The most effective marketing channel for the small grower is most likely individual restaurants and/or small distributors/wholesalers.
- If sufficient supplies can be developed, it is important to work closely with the foodservice supply network to promote the advantages of aquacultured product and counteract the misinformation and disinformation that is sometimes put forth about American aquaculture.
- Based on the interest sparked by the project, an effective marketing channel would be greater participation in foodservice related meetings, events and small trade shows where growers can interface with buyers on a one to one basis.
- Since several large corporate foodservice providers indicated that they use catfish and tilapia, this might be a good opportunity to distribute consumer cookbooks to help generate retail sales. Some corporate cafeterias regularly do employee promotions.
- Supply was identified as a major impediment to using aquacultured products. To address this issue, it might be beneficial to form marketing groups so that supply can be increased.
- One of the disadvantages cited by several of the upscale restaurants is the lack of flavor compared to wild stocks. It would be beneficial to do some blind taste tests with this audience.
- A possible mechanism to counteract the sporadic supply, might be special promotions such as

“oysters R here”. Promotions were regarded as an important incentive by the respondents.

LITERATURE CONSULTED

- Consumer Expenditure Survey, 1990-1992. 1993. US Department of Labor Statistics, Washington, DC 20202
- Fisheries of the United States, 1999. National Marine Fisheries Service, Washington, D.C.
- Gall, K and L. O’Dierno, “Aquaculture Marketing Survey”, Northeast Regional Aquaculture Center, No. Dartmouth, MA, 1994.
- Goldberg, R. and T. Triplett, 1997. “Murky Waters—Environmental Effects of Aquaculture in the United States” Environmental Defense Fund, New York.
- Fisheries of the United States, 1999. National Marine Fisheries Service, Washington, D.C.

The Full Report with all the data, graphs and tables is available at the NRAC office upon request.

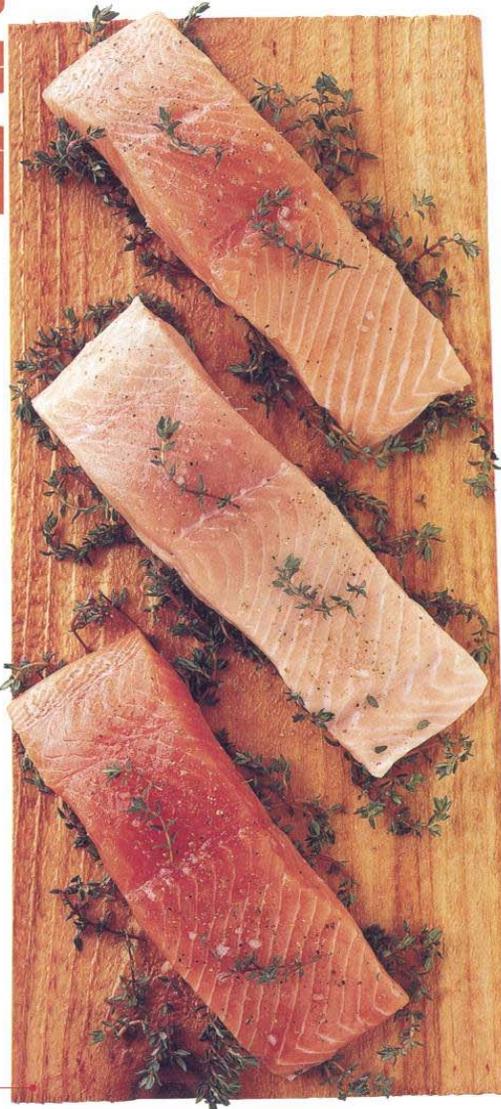
APPENDIX

Examples of popular food press focusing on perceived negatives of farm raised fish and seafood

LARDER

How to tame a wild salmon by Lora Zarubin

From strawberries to pheasant, food from the wild always tastes better, and salmon is no different. In this country, wild salmon—caught in river or ocean—comes from the West Coast. Now is the time to try some, when my favorites like Sockeye and King salmon are in season. These Pacific breeds have a wider range of flavor than their bland Atlantic cousins, which are almost all farm-raised. What a catch.



Wild Pacific salmon flavors vary, depending on where and when the fish were caught. From Seattle's University Seafood & Poultry Co. (206-632-3900) come, from top, an elegant **steelhead** (\$8 per lb.), a subtle **Alaskan white king** (\$13 per lb.), and a robust **red king** (\$13 per lb.). For effortless grilling, I cook my fish on an **Oregon cedar plank** (\$18 for three) from Outdoor Gourmet Company (877-297-8729).

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Give me a crisp green salad, a hunk of sourdough bread, and a piece of sweet, flaky **Wine Maple Cold Smoked Chinook Salmon** (\$32 per lb.) from Josephson's Smokehouse (800-772-3474; josephsons.com) and I'm in heaven.



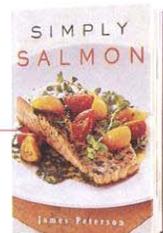
I love cooking salmon at home, but hate the fishy smell. **Chinook Planks** (\$39.95; 800-765-4408) are a genius solution. I just season a filet with dill and lemon on a traditional board and put it in the oven. I get a moist, flavorful meal, and my house is perfumed with sweet cedar.



The hearty taste and full body of **cold smoked Chinook salmon** (\$19 per lb.) from Newman's Fish Company (in OR, 503-386-5950) is perfectly complemented by a nice slice of dense rye and creamy sweet butter.



Before grilling, I partially cure my salmon with Charlie Trotter's magical **Citrus-Cured Salmon Cure** (\$55, plus shipping; in Chicago, 773-868-6510).



James Peterson's **Simply Salmon** cookbook (Stewart, Tabori & Chang, \$19.95) will see you through the summer, swimmingly.

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