



Journal of Applied Sciences

ISSN 1812-5654

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Turkish Consumers' Responses to Organically Farmed Seafood

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Abstract: This study investigates the relationship between consumers' willingness to pay (WTP) for organically farmed seabass and socio-demographic variables. Although the majority of (73.1%) surveyed consumers reported that they had no knowledge of organic seabass, their attitudes toward this product were generally positive. Almost 64% of the respondents would pay a premium between 11 and 30%. Only 10% of the respondents were not willing to pay a premium for organically farmed seabass. The findings show that there is a potential market for organically farmed seafood in Turkey.

Key words: Aquaculture, organic seafood, seabass, willingness to pay

INTRODUCTION

The commercial fish industry in Turkey has great importance in national production and food supply, contributing to quality of human nutrition, providing raw materials for the industrial sector and creating possibilities for employment and export. Turkey has significant potential for capture fishery and aquaculture because of its favourable geographic position between the Black Sea and the Mediterranean Sea, with 8,333 km of coast line and rich inland waters and river systems^[1-3]. In 2002, total fishery production of Turkey, including aquaculture, was 627,847 tonnes^[4].

Aquaculture is newly established sector in Turkish commercial fish industry, started in 1980's and performed a rapid growth in 1990's^[5]. The share of aquaculture in total fishery production has increased from 1.99% in 1992 to 9.74% in 2002. In 2002, the production reached 61.165 tonnes, rising from 9,185 tonnes in 1992 which corresponds more than 6 fold increases in ten years. Among aquaculture products, the fastest growth rate has been the seabass increasing from 808 tonnes in 1992 to 14,339 tonnes in 2002^[4].

Aquaculture is a very important activity in the Mediterranean region and Turkey has made an important contribution to the field of aquaculture. In the Mediterranean countries aquaculture production is dominated by six countries: Egypt, Spain, France, Italy, Greece and Turkey, which together supply 96% of the total production in the region^[6].

Despite this trend, the aquaculture sector is facing series problems, mainly related to market constrains and

environmental concerns such as fluctuation of the market prices, food safety, quality control problems, image of the aquaculture products, location of farms and their impact on surrounding environment, etc.^[6].

One of the solutions to eliminate these problems could be organic aquaculture. Over the past decade, rising consumer concern about food safety issues has resulted in increase in demand for organic foods. Lately, there has also been substantial interest in marketing for more environment friendly seafood. Organic salmon has featured as a pioneer of this market innovation in Europe^[7]. The global production of certified organic aquaculture products was estimated only about 5,000 tonnes in 2000, mainly from European countries and projected to increase to 1.2 million tonnes by 2030^[8]. At this time the organically farmed seafood market was not available in Turkey.

This study presents the preliminary findings of a survey, which seeks to obtain the consumers' willingness to pay for organically farmed seafood, notably seabass in Turkey. The findings of this survey also provide information to identify potential markets for organically farmed seafood in Turkey.

MATERIALS AND METHODS

Consumer survey was pre-tested and conducted by the research team in late summer 2004 in supermarkets located in Adana which is the largest province in the Mediterranean coast of Turkey. Consumers were randomly selected for interview. In order to obtain a representative sample, the survey was conducted in six

supermarkets of three different chains which hold fresh seafood section. Total of 253 consumers were interviewed during both weekdays and weekend.

A self-designed questionnaire is used. The first part of the questionnaire addressed information regarding respondents' purchasing behavior, seafood consumption and habits. The second part elicited consumers' willingness to pay for organically farmed seabass. Respondents were asked to indicate how much more, if any, the regular price of farmed seabass they would pay for organically farmed seabass, choosing from a payment card that contains an ordered set of five classes of price premiums in percentage of the regular price of farmed seabass. Questions related to socio-demographic characteristics were placed in the last part of the questionnaire.

After gathering data, descriptive statistics were generated. Related mean scores were computed and compared using one-way Analysis of Variance (ANOVA) to see if respondents' willingness to pay was related to their socio-demographic characteristics, fish consumption amount and frequency and organic seabass knowledge. Post hoc comparisons using Scheffe procedure were conducted to evaluate pairwise differences, if the overall F test was significant.

RESULTS

A total of 253 people answered a self administered questionnaire. Female and male respondents accounted for 47 and 53% of total survey sample, respectively. The age group of 31 to 45 had the greatest representation (46.2%), followed by the age group of 30 or less (36.0%). The majority of respondents (47.4%) have a university or higher degree while 32.0% of respondents have high school diplomas. Almost 16% of the respondents live in one or two-person household, while little over 19% of the households consist of five or more members (Table 1).

It was observed that the frequency distribution of responses in three categories was not quite dispersed (Table 2). Slightly over than half of the respondents indicated that they eat seafood at least every two weeks. The majority of respondents prefer to buy fresh products. Respondents indicated that they often purchase seafood either from supermarkets or fish markets where generally fresh products are sold. Respondents were asked to indicate where they most frequently consume their seafood? They responded that seafood was mostly consumed at their home because consuming seafood at restaurants was too costly.

Almost 10% of the consumers were not willing to pay a premium for organically farmed seabass, while 34.4% of respondents were willing to pay a premium between

Table 1: Profile of the respondents (n=253)

	Description	Percentage (%)
Age	≤ 30	36.0
	31-45	46.2
	>46	17.8
Education	Elementary	15.0
	High school	32.0
	2 years collage	5.5
	University or higher	47.4
Gender	Female	47.0
	Male	53.0
Family size	1-2	15.8
	3-4	64.8
	5 or more	19.4
Marital status	Married	75.1
	Single	24.9
Child under 10 years	Yes	48.4
	No	51.6
Main Shopper in the household	Yes	66.8
	No	33.2
Annual household income in YTL	≤ 12,000	39.9
	12,001-24,000	34.4
	24,001-36,000	13.0
	> 36,0001	12.6

Table 2: Summary statistics for consumer attitudes and preferences

Monthly seafood consumption (kg)	≤ 1	34.4
	1.1-2.0	47.4
	2.1-3.0	14.6
	3.1-4.0	3.2
	> 4.1	0.4
Frequency of consumption	Once a week	28.1
	Twice a month	28.1
	Once a month	30.4
	Rarely	12.6
	Don't know	0.8
Type of seafood*	Fresh	98.0
	Canned	9.1
	Frozen	2.0
	Processed	1.6
Place to purchase*	Market-supermarket	54.9
	Fish market	45.8
	Producer bazaar	11.1
	Peddler	4.0
	Capture by own	6.7
Place to consume (all the time)	Home	60.1
	Restaurant	1.2
Knowledge about organically farmed seafood	No	73.1
	Little	17.8
	Enough	7.9
	High	1.2
Knowledge about distinction between farmed wild fish	No	40.7
	Yes	59.3

* Responses provided more than one choice

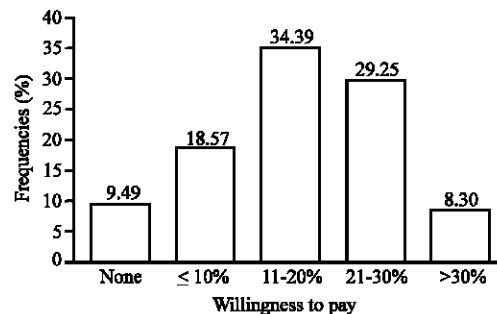


Fig. 1: Distribution of WTP

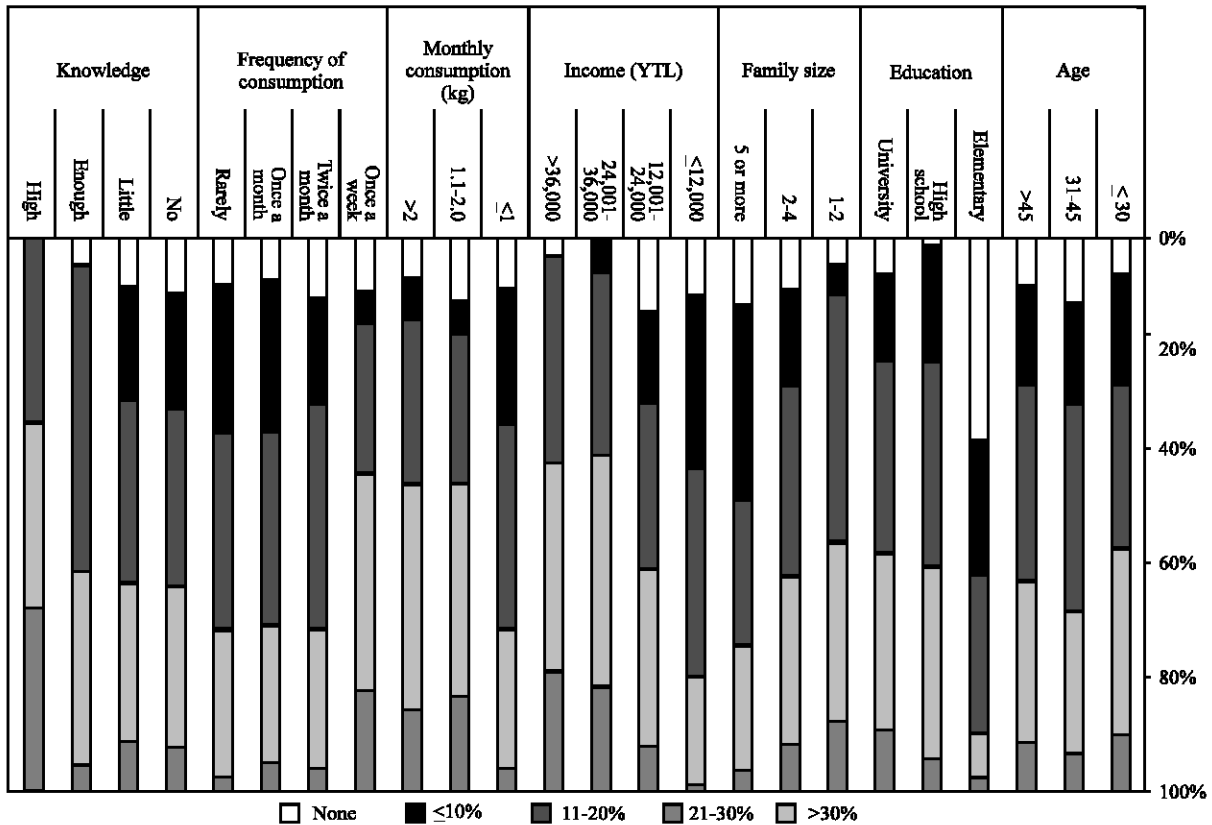


Fig. 2: WTP by socio-economic variables and consumption

11 and 20% of its regular price. It was determined that 37.6% of respondents were willing to pay a premium more than 20% (Fig. 1).

No significant differences were found between WTP with respondents age groups ($df=2, F=1.294, p>0.01$) (Fig. 2). It appears that age plays no significant positive role for WTP for organically farmed seabass among surveyed people. On the other hand education ($df=2, F=19.289, p<0.01$) and household income ($df=3, F=14.137, p<0.01$) had a positive and significant role on WTP. Those with some university degree appear to have higher WTP than those with elementary school degree. Not only education but also household income level increase respondents' WTP. On the other hand the highest level of family size is associated to lower amount of WTP because family size had a negative and significant effect on WTP ($df=2, F=4.933, p<0.01$). In this study, mean level of fish consumption was 1.09 kg per month with a 1.02 SD. Consumption level of fish was also found an important variable in willingness to pay a premium for organically farmed seabass. It was found that there was a positive relation between WTP and fish consumption amount ($df=2, F=5.458, p<0.01$). Also, WTP amount increases with

fish consumption frequency ($df=3, F=5.458, p<0.01$). Respondents who consume fish every week were willing to pay more for organically farmed seabass. In this study it is found that there was no relationship between respondents' knowledge about organically farmed seabass and WTP amount ($df=3, F=1.239, p>0.01$) (Fig. 2).

CONCLUSIONS

The survey results show that only 10% of the respondents were not willing to pay a premium for organically farmed seabass. On the other hand, almost 64% of the respondents would pay a premium between 11 and 30%. Only 8.3% of respondents were willing to pay a premium more than 30% of its' regular price.

The findings of the survey have implications for seafood producers, marketers, policy makers and consumers. The results imply that consumers accept organic seabass, generally for a premium between 11 and 30% of regular price. Therefore the price premium of organically farmed seabass which includes the increased production costs for organic practices should not exceed 30% of regular price of farmed seabass at supermarket

chains. To increase the success of the organic seafood production and marketing efforts the educational programs and promotional campaigns toward consumers through mass media, especially TV, are necessary. The survey results point out that the majority of surveyed consumers (73.1%) had no knowledge about organic seafood. The establishment of the organic aquaculture financial support system is also required to promote the organic seafood production practices and research activities. Furthermore, the insufficient standards for organic aquaculture in the existing regulation (Regulation for organic agriculture standards and applications 11.07.2002/24812) should be improved.

The domestic markets for organic products in Turkey are limited. However, domestic organic market demands are expected to increase due to consumer awareness about food safety and health issues along with growth in per capita income^[9]. So, it can be concluded that there is a potential market for organically farmed seafood in Turkey.

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