

## **EFFECTS OF AVIAN INFLUENZA ON CONSUMER PURCHASING BEHAVIOUR IN TEKIRDAG**

E. YILMAZ<sup>a</sup>, I. YILMAZ<sup>b\*</sup>, H. M. VELIOGLU<sup>b</sup>, H. URAN<sup>c</sup>

<sup>a</sup>*Agriculture Faculty, Department of Agricultural Economics, Namik Kemal University, Tekirdag, Turkey*

*E-mail: iyilmaz@nku.edu.tr*

<sup>b</sup>*Agriculture Faculty, Department of Food Engineering, Namik Kemal University, Tekirdag, Turkey*

<sup>c</sup>*Anadolu Bil College, Program of Food Technology, Aydin University, Istanbul, Turkey*

**Abstract.** In this research, the effects of avian flu on meat products consumption habits of public in Tekirdag city center were investigated. To this end, a questionnaire about this topic was used in a survey that has been performed with randomly selected 390 people. The surveys were made in Tekirdag province of Turkey in June, 2006. According to the results of the present study, the increase in the number of labourers in a family and the day-by-day improvement of the socioeconomic status result to higher income and so this situation results to the increase in food consumption and especially meat consumption. It was determined that 30 and 25% of the subscribers consumed meat products 3 times and 2 times in a week, respectively. And it was also determined that the 36% of the consumed meat products was chicken meat. However, there were significant changes in consumed meat products as the results of the news and broadcastings on media, especially after the avian influenza cases. The 39% of the subscribers who had been attended the survey in this period preferred beef meat and the 34% of them preferred fish. There was a significant decrease in the percentage of consumers who preferred chicken meat (20%). As a result, it was concluded that the people (56%) significantly cut down the consumption of chicken meat that is known as the primary source of avian influenza.

*Keywords:* avian influenza, chicken meat, meat consumption.

### **AIMS AND BACKGROUND**

In spite of the expeditious progression in economic, social and technical aspects in the world, starvation and malnutrition are still great concerns for humankind. By the improvement of technology, people have started to live in metropolises and this crowded life style has promoted the diseases and outbreaks. Also living in big cities has negatively affected the resistance of the human against infections<sup>1</sup>.

Avian influenza, known as chicken plague in public, is acute contagious disease caused by influenza A group viruses and develops with high morbidity and mortality in birds. Influenza viruses include A, B and C antigenic types and it is known

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\* For correspondence.

that B and C types are disease factors for human where the A type is responsible for avian influenza that is characterised with symptoms on respiratory and nervous systems of birds<sup>2</sup>. Although all birds are sensitive to infection, this disease causes outbreaks that quickly spread among the poultries. Wild birds generally have a carrier role for the disease and transport the infection between the continents. However they do not show any symptoms according to the infection.

Influenza, avian flu, has a great importance among the scientific world related to three big epidemics in the last century: Spanish flu in 1918 by H1N1 type, Asian flu in 1968 by H2N2 type and Honk Kong flu in 1975 by H3N2 type viruses which had resulted to deaths of more than million of people. Avian flu, started from the Far East and also covered our country, can contaminate human through birds now but has a potential risk to spread from human to human<sup>3,4</sup>. There is growing concern about the possibility of an avian flu pandemic and its implications for humans and the global economic and financial system<sup>5</sup>.

It had great international interest that avian influenza epidemia in Turkey started in the Marmara region in autumn of 2005 then spread in the East Anatolian region. In this term 12 cases were reported and approved by the World Health Organisation (WHO) and 4 of them ended with death<sup>6</sup>.

It is known that the poultry meat consuming habits of the public have changed according to the avian influenza. Consumers prefer to consume red meat or fish instead of poultry meat. The aim of the present study is to determine the changes of meat-consuming behaviour of the consumers in Tekirdag city and to find out what kind of meat products have been consumed by the consumers according to avian influenza.

## EXPERIMENTAL

The study had been carried out in completely random order with the involvement of 390 people who live in different districts of Tekirdag city center. The questionnaire, included 30 questions, was used and the subscribers were asked to reply these questions with face-to-face method. The surveys were made in Tekirdag province of Turkey in June, 2006. The responses were tabulated by using Microsoft® Word and Excel package programs and arithmetic means and percentage calculations were used for the conclusion of the study.

## RESULTS AND DISCUSSION

Demographic characteristics are given in Table 1. According to the survey, it was found that the education level distribution of the subscribers for university, high school, primary school and secondary school were 37, 33, 16 and 14%, respectively. Monthly incomes were 2001 TL and more for 23%, 751–1000 TL for 21%, 1751–2000 TL for 19%, 1251–1500 TL for 11% and other for 26%. Consumers

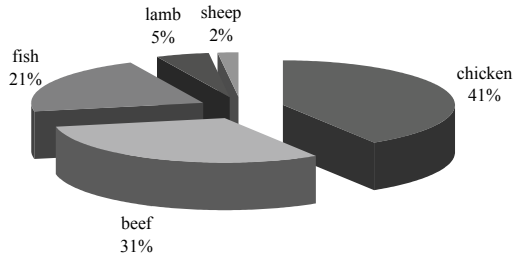
answered the question about their monthly budget for purchasing food products as follows; 18% of them spend 401–500 TL, 16% spend 751–1000 TL, 15% spend 301–400 TL, 15% spend 201–300 TL and 12% spend 100–200 TL monthly.

**Table 1.** Descriptive characteristic of the consumers

| Demographic characteristics |                    | Number |
|-----------------------------|--------------------|--------|
| Gender                      | male               | 175    |
|                             | female             | 215    |
| Age                         | 18–25              | 31     |
|                             | 26–35              | 137    |
|                             | 36–45              | 128    |
|                             | 46–55              | 55     |
|                             | 55+                | 39     |
| Marital status              | married            | 326    |
|                             | single             | 59     |
|                             | separated/divorced | 5      |
| Education                   | university         | 143    |
|                             | high school        | 127    |
|                             | secondary school   | 54     |
|                             | primary school     | 66     |
| Household size              | 2                  | 74     |
|                             | 3                  | 125    |
|                             | 4                  | 130    |
|                             | 5                  | 49     |
|                             | 6                  | 9      |
|                             | 6+                 | 3      |
| Working persons in family   | retired            | 19     |
|                             | 1                  | 159    |
|                             | 2                  | 176    |
|                             | 3                  | 29     |
|                             | 4                  | 6      |
|                             | 4+                 | 1      |

The question ‘How often do you consume meat in a week?’ was answered by 30% as 3 times, 25% as 2 times, 15% as one time and 13% as 4 times. In addition, when they were asked for their ‘meat type choice’, chicken meat was their first choice with 41%, beef meat followed this with 31% and fish meat was 21% (Fig. 1). According to the survey carried out by Yilmaz et al.<sup>7</sup> on meat consuming habits and amounts in Tekirdag city, it was determined that 36% of the consumers consume 4 kg, 22% consume 5 kg, 21% consume 3 kg and 18% consume 2 kg meat per month. In the similar study of Saygi et al.<sup>8</sup> on the fish consuming habits in Izmir, they found out that 44% of the subscribers prefer chicken meat and 21% of them prefer fish meat. Also in another survey carried out among the university

students by Yilmaz and Demirci<sup>9</sup> it was found that 51% of the students prefer chicken meat as mostly consumed meat product.



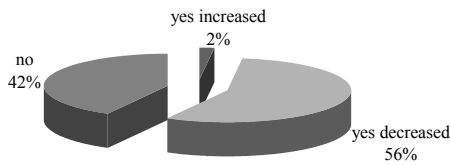
**Fig. 1.** Mostly consumed meat type

In our study, the question ‘Which meat product do you mostly consumed?’ was answered by the 46% of the subscribers as meatball, 32% as sucuk, 13% as salami, 7% as sausage and 2% as pastrami. The questionnaire stated that 41% of the consumers decision on the meat product selection is affected by the quality of product, 23% – by brand, 22% – by old experiences and 14% – by the price.

The proportion of the consumers who buy the meat and meat products from butchery shops was 64% and those who buy from supermarkets was 36%. In addition, the question ‘Do you care about the ingredients of the meat products?’ was answered as ‘yes’ by 68% of the consumers and as ‘no’ by 32% of them. This result showed that the educated consumer proportion has been increasing day by day and most of the consumers pay enough attention in the consuming habits.

In the survey subscribers were asked for ‘What they think about the prices for meat and meat products’ and 48% of them answered as ‘expensive’. 40% of the consumers think that the prices are ‘normal’ while 10% of them said ‘too expensive’. Another question ‘What do you think about the meat products that include red meat and poultry meat together?’ was answered as ‘cheating’ by 67% of the subscribers. However 8% said ‘nutritional and nice’ and 13% said ‘cheap’.

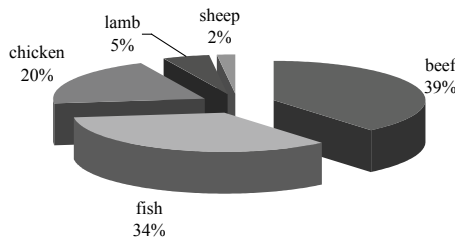
The question “Was there any difference occurred in your chicken meat consumption after the avian influenza outbreak?” was answered by more than half of the consumers (56%) as ‘yes, decreased’ while 42% of them responded as ‘no’ (Fig. 2). Especially in the term of avian influenza outbreak, there were significant differences in the chicken meat consumption according to news on media. Kantaroglu et al.<sup>5</sup> investigated the knowledge and conscious levels of the consumers about avian flu and they found out that 92% of the consumers use the radio and television programs as the information source for this disease. As stated by Beach et al.<sup>10</sup>, estimated poultry demand, as influenced by the volume of newspaper reports on bird flu, reveals the magnitude and duration of newspaper articles impacts on consumers food choices. Larger numbers of bird flu news reports led to larger reductions in poultry purchases.



**Fig. 2.** Was there any difference occurred in your chicken meat consumption after the avian flu outbreak?

In our country people can be affected easily and can change their choices according to media news. Yilmaz et al.<sup>11</sup> found out the same results about the effect of media news on the consumers decisions. Akben et al.<sup>12</sup> reported that based on their study, the negative impact of the pandemic on the poultry sector could have been alleviated by informing consumers about it and also they reported frequent users, older consumers, and females are derived to be more concerned about the pandemic.

Most of the subscribers (39%) in the present survey pointed out that they changed their meat consumption decision to the beef meat after the avian flu cases. 34% of the consumers preferred fish, 20% of them preferred chicken in this term. In addition 5% of the consumers said that they chose lamb meat while 2% of them chose sheep meat (Fig. 3).



**Fig. 3.** Meat type consumed in the term of avian influenza

Similar results were found by Kraiponsak<sup>13</sup> in a survey study carried out in Thailand that people changed their chicken consumption behaviour (63% of the people in the sample reduced or even stopped their chicken consumption). Some people turned their consumption from buying raw chicken to broiling chicken and many of them switched to have more pork, fish, and beef<sup>13</sup>.

Finally the question ‘Have you ever gotten food poisoning from meat or meat products?’ was answered by 91% of the subscribers as ‘no’.

## CONCLUSIONS

Although there has been a significant increase in the consumption of meat and meat products in last decades, its level still could not reach the consumption amounts in developed countries. It is thought that the most important reason for this situation is the socioeconomic status of consumers in Turkey. By the increase in income per capita, this consumption values will increase in the future.

There were 4 avian flu cases, approved by WHO, which ended with death of the patients. By the way official authorities took action immediately for this disease and a possible serious outbreak risk was prevented.

In the term of avian influenza there was significant difference in the meat consumption behaviour of the consumers. They changed their preferences from chicken meat to beef meat. The results of the present survey showed that chicken meat consumption has decreased from 41 to 20% just after the avian influenza cases in Turkey.

Radio, television and other media can seriously affect the consumer purchasing behaviours. Additionally these media telecast some informative programs and news about food consumption and for this reason they have serious duties in the meaning of informing consumers. Also they have to pay enough attention to prevent misunderstanding of the public about this kind of serious disease.

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