



## Evaluation of University Students' Chicken Meat Consumption Preferences and Knowledge of Chicken Production

Ali Kepezkaya<sup>1,a</sup>, Nasir Abdallah<sup>1,b,\*</sup>, Kadriye Kurşun<sup>1,c</sup>, Mikail Baylan<sup>1,d</sup>

<sup>1</sup>Cukurova University, Faculty of Agriculture, Department of Animal Science

\*Corresponding author

### ARTICLE INFO

### ABSTRACT

#### Research Article

Received : 04.07.2024  
Accepted : 23.10.2024

**Keywords:**  
Chicken meat  
Consumption  
Preference  
Student  
Türkiye

This study was conducted to evaluate university students' chicken meat consumption preferences and their level of knowledge about chicken production. The survey was conducted with 61 structured online questionnaires using the Kobo-collect Tool Box. The questionnaires were administered online via student WhatsApp groups. Chicken breast meat was the most consumed with cubed meat being the most preferred. The expiration date was the main factor affecting chicken meat purchasing decisions, and the majority of the respondents did not have any preferred cooking method. Heavier meat (>1 kg) and fresh chicken meat were the most preferred with the highest chicken meat consumption of 1-3 times per week. Chicken meat consumption was highest at dinner and in the winter season with viral diseases being perceived as the most dangerous chicken diseases. The Coronavirus outbreak affected the chicken meat consumption of the majority of the respondents and most of them bought meat from reliable sale points. Most of the respondents could differentiate between slow and fast-growing broiler hybrids with Ross 308 being the most recognized commercial broiler hybrid by the respondents. It was concluded that chicken meat consumption was higher among the respondents however, agriculture students should be motivated to improve their knowledge about chicken production.

<sup>a</sup> [alikipzky01@gmail.com](mailto:alikipzky01@gmail.com)

<sup>b</sup> <https://orcid.org/0009-0007-7795-141X>

<sup>b</sup> [nasirmayam@gmail.com](mailto:nasirmayam@gmail.com)

<sup>b</sup> <https://orcid.org/0000-0003-2701-6726>

<sup>c</sup> [kadriyehatipoglu01@gmail.com](mailto:kadriyehatipoglu01@gmail.com)

<sup>d</sup> <https://orcid.org/0000-0001-9533-7391>

<sup>d</sup> [mikailbaylan@gmail.com](mailto:mikailbaylan@gmail.com)

<sup>d</sup> <https://orcid.org/0000-0002-6299-5811>



This work is licensed under Creative Commons Attribution 4.0 International License

## Introduction

In underdeveloped and developing countries, chicken eggs (Abdallah et al., 2022) and meat serve as a cheaper source of protein compared to other protein sources, increasing global production, consumption, exports and imports of poultry meat, eggs and products. Pomaah et al. (2023) reported that the rise in income and standard of living has influenced the demand for poultry products. According to Uzundumlu and Dilli (2022), chicken meat accounted for 57% of total meat consumed and 118 million tons of chicken meat were produced worldwide, of which 17% was supplied by the US, 12.3% by Brazil, 11.5% by China, 4% by Russia and 3.5% by India. In the same period, 16.9 million tons of chicken meat were exported, of which 14.7 million tons were unprocessed and 2.2 million tons were processed, and 24% of this amount came from Brazil, 20.5% from the USA, 8.4% from the Netherlands, 6.2% from Poland, 3.5% from China, 3.1% from Belgium and 3% from Türkiye (Uzundumlu and Dilli, 2022). Furthermore, due to the lack of any religious restrictions or condemnation on poultry meat, it is an acceptable meat source all over the world (Barbut and Leishman, 2022; Uçar and Türkoğlu, 2018).

The global economic crisis and the rise in inflation have also changed the protein or food consumption pattern in the world and in the last decade, the increase in the prices of poultry meat, fish and red meat due to the economic crisis has completely changed the animal protein consumption pattern in the Republic of Türkiye (Kursun et al., 2024). Dierks (2024) reported that the total amount of poultry meat produced in Türkiye in 2023 was approximately 2.4 million tons, with the majority being obtained from chicken meat (2.33 million tons) and approximately 1.2 billion chickens were slaughtered in 2023. Furthermore, according to TUIK (2023), chicken meat production in Türkiye in 2023 was 202,143 tons, while chicken egg production was reported to be 1.80 billion eggs. According to Türkiye Nutrition and Health Survey (TDHS) 2019 data, the average total meat consumption per capita was 86.25 g, while poultry meat consumption per capita was 28.24 g (Turkey Nutrition and Health Survey, 2020). FAOSTAT (2023) also reported that poultry meat consumption per capita in Türkiye reached 20.1 kg in 2021, an increase of 0.05% compared to the previous year however, the all-time high per capita consumption of poultry meat in Türkiye

reached 21.4 kg in 2017 and the all-time low of 2.23 kg in 1964. This explains the significance of the poultry industry in contributing to sustainable protein consumption in Türkiye.

Therefore, this study was conducted to evaluate university students' chicken meat consumption preferences and their level of knowledge about chicken production.

## Materials and Method

### Survey Region and Target Group

This study was conducted in Çukurova University which is located in city of Adana in the Republic of Türkiye. Adana is located in the southern part of Türkiye and it is situated on the Seyhan River, 35 km (22 mi) inland from the Mediterranean Sea. The latitude and longitude of this city are 36.9914° N, 35.3308° E. Adana has a hot summer Mediterranean climate (Csa) according to Köppen classification and a dry summer subtropical climate (Cs) according to Trewartha classification. Winters are mild and rainy with frost at night, but snow is very rare. Summer months are hot, humid, dry and long, and temperatures often reach or exceed 40 °C (104.0 °F) during heat waves. The targeted group for this survey were the students (undergraduate and post-graduate) in the Faculty of Agriculture in Çukurova University.

For foreign trade, Adana's exports have increased by 38% in the last 5 years and reached 2.5 billion dollars. The 2021 import figure is 3.6 billion dollars and the total foreign trade volume reached 6.1 billion dollars. 35% of Adana's exports are made to European countries and 30% to Middle Eastern countries. Iraq, Germany, Spain, USA and Italy are the top 5 countries in Adana exports. Chemical, food and textile sectors are in the top 3 in exports. On product basis, minibuses, and buses, polyethylene terephthalate, polyester, wheat flour, chemically pure fructose, uncut and frozen meat, cotton trousers, shorts, milling machines, corn starch, synthetic non-continuous fibres from polyesters, steel wires, mandarins, sunflower seeds and oil stand out.

However, job opportunities and income levels are extremely low among the inhabitants of Adana, with some of the parents, elderly or the youth either struggling between jobs or being unemployed. As a result, the majority of the inhabitants are not able to afford some animal proteins such as fish, and red meat. This has created a huge dependence on chicken meat, with an exponential rise in its consumption due to its cheaper price.

### Questionnaire Design

The questionnaires for this study were prepared online using Kobo-Toolbox software and consisted of 3 main sections. The first section of the questionnaire included questions about the demographic characteristics of the participants (age, gender, beliefs, etc.), the second section included questions about chicken meat consumption preferences (do you consume chicken meat? preferred parts of chicken meat, cooking methods of chicken meat, etc.) and the third section included questions about broiler chicken production (chicken diseases, breeding systems, broiler hybrids, etc.).

### Sample Size

Based on the 2023 data, the total number of students in Çukurova University and in the Faculty of Agriculture, of Çukurova University were 50455 and 2078 respectively. The total population of Çukurova University was subjected to a software called Raosoft program with 99% confidence level and 5% margin of error and the sample size for the entire Çukurova University was generated as 655. The sample size for only Faculty of Agriculture of Çukurova University was calculated using the formula below (Abive-Bortsi et al. (2022):

$$\frac{PS}{PE} \times 655 = \frac{2078}{50455} \times 655 = 27$$

PS: Population of students in the faculty of agriculture in Çukurova University

PE: Population of the entire students in Çukurova University

According to the formula above, the sample size for only the Faculty of Agriculture is 27 for this study. A sample of 61 participants was used instead of the 27 generated using the above formula. This is because larger sample sizes can provide greater precision in estimation, greater statistical power, generalizability of results and confidence in the results. It also reduces the effect of random variability and increases the chances of obtaining statistically significant results.

### Data Collection

Online questionnaire designed using the Kobo-collect Toolbox website were administered to the students of the Faculty of Agriculture of Çukurova University (all departments) using the questionnaire's link. The questionnaires were shared in the student WhatsApp groups of the various departments in the Faculty of Agriculture for one week in May 2024. After the data collection period, incomplete or partially completed data were deleted and only the data with all the responses completed by the participants were used in this study.

### Statistical Analysis

The data in the current study were sorted using the Kobo-collect toolbox. Uncompleted responses were deleted from the study and only responses that were fully completed by the participants were used for statistical analyses. Both Microsoft Excell 2013 and the Kobo-collect Toolbox were used for descriptive analyses of the results. The results of the statistical analyses were presented as either tables, bar or pie charts.

## Results and Discussion

The respondents' gender, age, religion, marital and employment status and monthly salary are given in Table 1. It was revealed that the majority (60.66%) of the respondents were male and 39.34% were female. The higher percentage of males than females could be attributed to the fact that agriculture as a major demands more physical work from students such as cleaning and managing livestock and poultry, making the Faculty of Agriculture more suitable for men than women. Similar to

our study, several survey studies conducted at the university or in the agricultural department have also confirmed a higher number of male students than female students (Kursun et al., 2024; Kara et al., 2020; Avcılar et al., 2023; Akin et al., 2019).

The majority (77.05%) of the respondents were single and 22.95% were married. The reason why the proportion of single respondents was higher than the proportion of married respondents is that students are not considered to be of marriageable age in modern Turkish ideology, or they are simply continuing their education and may prefer to get married when they graduate or start to have a stable source of income for married life. Similar to our findings, other authors (Avcılar et al., 2023; Kursun et al., 2024) reported lower rates of marriage status in survey studies with university students as the target population.

In the current study, the vast majority (91.8%) of the respondents were Muslims which is due to the fact that the current survey was conducted in a Muslim-majority country. According to USDSOIRF (2022) data, the Muslim population in Türkiye is reported to be around 99%, which explains the high proportion of Muslims observed in the current survey, while Dyvik (2023) also reported that the proportion of Muslims living in Türkiye is 83.23%. This may explain the gradual increase in the number of people with no religious affiliation observed in the current study.

The majority (44.26%) of the participants were  $\geq 26$ , while 42.62% and 13.11% were between 21-25 and 17-20 age groups, respectively. Similar to our findings, some survey studies conducted at universities revealed that the majority of participants were over the age of 25 (Kursun et al., 2024). In contrast to the findings of the current study, several authors (Kara et al., 2020; Avcılar et al., 2023) reported that the average age of the participants in their university-based survey was between 20-22 years. It is likely that the majority of the students participating in the current survey are master's and doctoral students whose age are generally 26 and above.

The proportion of non-working participants was 62.3% and the proportion of working participants was 37.7%. Similar to the findings of the current study, Kursun et al. (2024) also reported that the proportion of non-working participants was 57.31% in their university-based survey study. In the current study, the majority of the participants were not working and this may be attributed to the continuity of the educational studies, which may have prevented most of the students from having additional time for either part-time or full-time jobs.

Among the working respondents, 86.96% had an income of  $>17000$  TL, while 8.69% and 4.35% had an income of 11000-17000 TL and  $<10000$  TL respectively. The majority of participants earned more than 17000 TL per month and it is speculated that these participants may be master's or doctoral students working full-time or part-time in addition to being students. Kursun et al. (2024) also found that most working students in their survey study earned the highest income value set for the survey ( $>10000$  TL).

The answers of the participants regarding chicken meat consumption, chicken carcass and chicken meat form preferences, factors affecting chicken meat purchasing decisions, cooking method preferences and chicken meat sources are given in Table 2.

Table 1. Demographic characteristics of respondents

	Outcomes	Percentage %
Gender	Male	60.66
	Female	39.34
Religion	Muslim	91.8
	Christian	6.56
	No affiliation	1.64
Employment history	Employed	37.7
	Unemployed	62.3
Income (TL)	$<10000$	4.35
	11000-17000	8.69
	$>17000$	86.96
Age	17-20	13.11
	21-25	42.62
	$\geq 26$	44.26
Marital status	Single	77.05
	Married	22.95

Most (98.36%) of the participants consumed chicken meat, while (1.64%) did not consume chicken meat. Durmuş et al. (2012) also reported that in their study, 98.26% of the participants consumed chicken meat, similar to the results of the current study. In recent years, the economic crisis and the increase in unemployment in Türkiye has led to an increase in the purchase and consumption of chicken meat due to its cheaper prices compared to other animal protein sources. Furthermore, the target group in this study are students, the majority of whom are not working and therefore have limited ability to purchase expensive animal proteins such as mutton or beef. This may explain the increase in the number of participants consuming chicken meat observed in the current study. In some studies, the majority of participants reported that chicken meat was the most affordable compared to mutton and beef, and some studies have reported that the affordability of poultry meat is one of the reasons for increased global poultry meat consumption (Roeningk 1999; Aral et al., 2013; Wadud, 2006).

While 40% of the participants preferred breast meat, 25% did not have any chicken meat part preference. 18.33%, 8.33% and 8.33% of the participants had preferences for the thigh, wing and whole chicken meat, respectively. Similar to the findings of the present study, several studies (İskender et al., 2015; Kara et al., 2020; Adamski et al., 2017) have also reported that most of the participants in their study had a higher preference for chicken breast meat. However, in some studies, most of the participants had a higher preference for whole chicken meat or chicken thighs (Durmuş et al., 2012; Dokuzlu et al., 2013; Jayaraman et al., 2012; Memon et al., 2009). Due to the higher number of young male participants in the present study, it was speculated that the higher preference for chicken breast meat may be related to the fact that young men in Türkiye participate more in sports and fitness activities and have the perception that chicken meat, especially chicken breast meat, has a higher protein content than other parts of chicken meat and therefore this may have accounted for the higher preference for chicken breast meat than other parts observed in this current study.

While 51.67% of the participants in the current study preferred cubed chicken meat, 1.67% preferred minced meat. However, the form of chicken meat did not affect the

purchasing decision of 46.67% of the respondents. It can be explained that the reason for the preference for cubed chicken meat may be due to the fact that the meat is cooked faster and is more delicious. Also, in Türkiye, there is a higher interest in barbecues among friends and family during vacations and other family gatherings. Because of this many people may prefer to buy cubed meat which is readily available and suitable for barbecue and this may explain the higher preference for cubed meat than minced meat observed in this study.

The expiration date affected the purchasing decisions of the majority of the participants (66.67%), while 11.67% paid attention to the nutritional content when purchasing chicken meat. Moreover, 11.67% of the respondents paid attention to the production company and 10% stated that the weight of meat was the most important factor affecting purchasing decisions. In line with the findings of the current study, several studies (Durmuş et al., 2012; İskender et al., 2015; Kara et al., 2020) have also identified that the purchasing decision of the majority of the participants was influenced by the expiration date. However, in a study conducted by Adamski et al (2017), it was revealed that while the purchasing decision of the majority of the participants was influenced by the freshness of the product, the expiration date was the third most influential factor affecting the chicken meat purchasing decision. It is evaluated that university students who participated in this survey are aware of food poisoning due to expiration date related problems and may prefer fresh products even if food items with a close expiration date are cheaper. In addition, students are also aware of the lower nutritional value of food items with closer expiration dates, and this may be the reason why the majority of the respondents preferred the expiration date compared to other factors.

While 38.33% of the participants did not have any preferred cooking method, 35% preferred the frying method, and 13.33% preferred the oven-roasting method,

and 13.33% preferred cooking the oven roasting method. The preference for barbecue and boiling methods were 8.33% and 5% respectively. In contrast to the findings of the present study, Memon et al. (2009) reported that 47% of the participants preferred the frying method. In addition, in other studies (Durmuş et al., 2012; Dokuzlu et al., 2013; İskender et al., 2015), most of the participants had a higher preference for the boiling or oven method.

In the current study, 65% of the participants purchased chicken meat from the market and 35% from the butcher. In line with the findings of the present study, other studies (Kara et al., 2020; Vukasovič, 2014; Büyüknisan, 2008) have also confirmed that the majority of their participants purchased chicken meat from markets. In contrast to our findings, in several studies (Neima et al., 2021; Parlakay et al., 2022; Adamski et al., 2017; Ahmed and Mustapha, 2020), most of the participants purchased chicken meat from trusted chicken outlets, chicken product dealers, street vendors and butchers.

Respondents' preferences for different chicken meat weights are given in Fig. 1. Most (58.33%) of the respondents preferred chicken carcasses weighing >1 kg, while the preference for carcasses weight of 0.900-1kg, 0.400-0.800kg and <0.400kg was 21.67%, 16.67% and 3.33%, respectively. Similar to the present study, in a study by Neima et al. (2021), most of the participants had a higher preference for chicken meat that weighs more than 1 kg. In contrast to our results, in a study by Memon et al. (2009), the majority of the participants preferred 1 kg of chicken meat. In other studies, the majority of the participants also reported that they consumed 1 kg or 3-5 kg of chicken meat (Parlakay et al., 2022; Gurram et al., 2018). The preference for a carcass weight of more than 1 kg may be attributed to the recent economic crisis in Türkiye, which caused many people to increase their consumption of chicken meat due to its lower price compared to other types of meat (red meat and fish).

Table 2. Respondents' answers to chicken meat consumption, chicken carcass and meat form preferences, factors affecting chicken meat purchasing decision, cooking method preferences and sources of chicken meat

	Outcomes	Percentage (%)
Do you consume chicken meat?	Yes	98.36
	No	1.64
Chicken carcass part preferences	Breast	40
	Indifferent	25
	Thigh	18.33
	Wing	8.33
	Whole chicken	8.33
Preferences for different forms of chicken meat	Cubed	51.67
	Indifferent	46.67
	Minced	1.67
What do you pay attention to when buying chicken meat?	Expiration date	66.67
	Nutritional content	11.67
	Meat processing company	11.67
	Meat packaged weight	10
Respondents cooking method preferences	Indifferent	38.33
	Frying	35
	Roasting	13.33
	Barbecue	8.33
	Boiling	5
Sources of chicken meat	Butcher shop	35
	Market	65

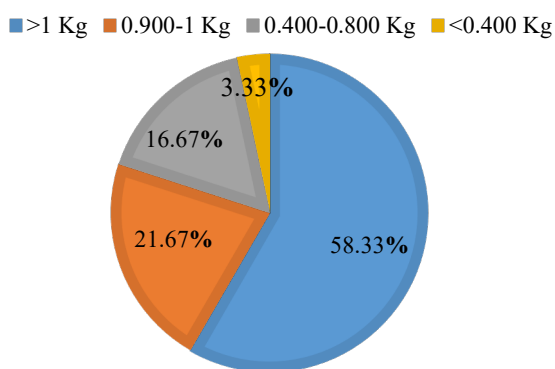


Figure 1. Respondents preference for different chicken carcass weight

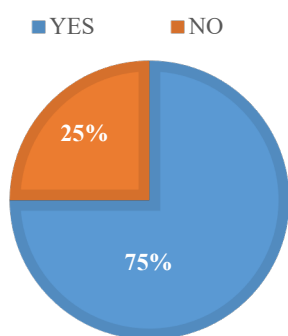


Figure 2. Do you participants pay attention to TSE when purchasing chicken meat?

It is also speculated that the survey target group of young men and women (students) engage in more sports activities and are aware of the higher protein content of chicken meat for muscle production and therefore prefer to buy heavier chicken meat compared to lighter ones.

The answers of the participants on whether they pay attention to the Turkish Standards Institute (TSE) label when purchasing chicken meat are shown in Figure 2. 75% of the participants paid attention to the (TSE) label, while 25% did not. The reasons why the respondents pay attention to the TSE label can be explained by the fact that it proves that a quality and healthy service is provided by facilitating the circulation of quality products in accordance with the standards of the Turkish Government and this brings some form of confidence and trust to consumers as well as ensuring customer satisfaction.

Participants' chicken meat preferences, weekly chicken meat consumption, chicken meat consumption at different meals and seasonal effect on chicken meat consumption are given in Table 3. In the present study, 56.67% and 25% of the participants preferred fresh and frozen chicken meat, respectively, while 18.33% of the participants did not have any chicken meat purchasing preference. Similar to the findings of the current study, other studies (Yıldız and Duru, 2019; Adamski et al., 2017; Büyüknisan, 2008; Parlakay et al., 2022) also revealed that most of the participants preferred fresh chicken meat. The participants' preference for fresh meat may be associated with the better taste or nutritional content of fresh meat.

While 63.33% of the participants consumed chicken meat 1-3 times a week, 31.67% and 5% consumed chicken meat more than 4-6 times and >6 times per week,

respectively. Similar to the findings of the current study, Adamski et al. (2017) also found that most of the participants consumed chicken meat 2-3 times a week in their study. In addition, in a study conducted by Yıldız and Duru (2019), the total weekly chicken meat consumption of the group consuming chicken meat once a week was observed to be higher. Memon et al. (2009) also observed that weekly chicken meat consumption was higher in their study. However, Gurram et al. (2018) reported that the proportion of participants who consumed chicken meat monthly was higher. In addition, Asante-Addo and Weible (2020) also reported that the proportion of participants consuming chicken meat 2-3 times a month was higher. The target audience for this survey group is students, most of whom are unemployed and mostly live in dormitories or at home with their families and are therefore mainly dependent on the food provided to them by their parents or dormitories. Although chicken meat is the cheapest meat compared to red meat or fish, the economic crisis in Türkiye has increased the prices of foodstuffs, making it difficult for the average Turkish family to afford regular chicken meat or for dormitories to provide regular chicken meat to students. This has forced many families or organizations (dormitories) to reduce their budgets or cut their regular supply of animal protein, or rather replace animal protein with vegetable protein. This may explain why the majority of respondents consumed chicken meat 1-3 times a week.

While 58.33% of the participants prefer chicken meat at dinner, 8.33% prefer chicken meat at lunch. However, the meal time or period did not affect the consumption pattern of 33.33% of the participants in the current study. In Turkish food culture, chicken meat is generally consumed as a main diet at dinner. Since the target survey group are students and the majority of them are unemployed, it is speculated that most of them live in dormitories or with families who provide them with food, and in these places chicken meat is usually consumed as the main diet at dinner.

Seasons had no effect on the chicken consumption of 35% of the respondents, while 65% of the respondents' chicken meat consumption was affected by the seasons. In general, differences in the various seasons of the year (from moderate cold to severe cold and from moderate heat to high heat) lead to various physical and hormonal imbalances, which can have a positive or negative impact on food consumption habits. This may explain why the consumption of chicken meat by the majority of participants in the present study was affected by the seasons.

While the majority of participants (79.49%) consumed chicken meat in winter, the consumption of chicken meat in summer and spring were 12.82% and 7.69% respectively. The fact that the representation of the autumn season is zero (0%) means that this season has no effect on the participants' chicken meat consumption habits, which is the main reason why the Excel spreadsheet application excluded the autumn season and its percentage representation from the graphic representation.

It was therefore speculated that higher consumption of chicken meat in winter may be related to higher energy requirements to maintain thermoregulation (body heat/temperature) during the cold months.

Table 3. Respondents' chicken meat preference, chicken meat consumption per week, chicken meat consumption at different meals and seasonal effect on chicken meat consumption

	Outcomes (%)	
What type of chicken meat do you prefer?	Fresh meat	56.67
	Frozen meat	25
Chicken meat consumption per week	Indifferent	18.33
	1-3	63.33
	4-6	31.67
Chicken meat consumption at different meals	>6	5
	Dinner	58.33
	Indifferent	33.33
Does season affect your chicken meat consumption pattern?	Lunch	8.33
	Yes	65
Chicken meat consumption per season	No	35
	Winter	79.49
	Summer	12.82
	Spring	7.69
	Autumn	0

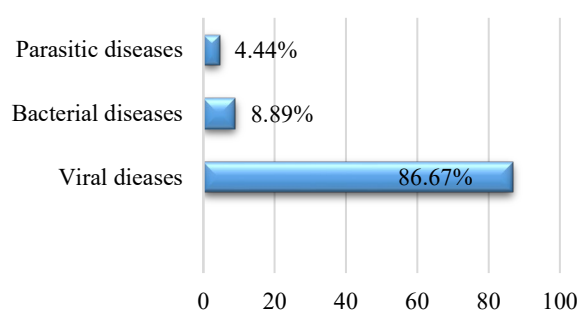


Figure 3. Respondents answers on dangerous chicken diseases

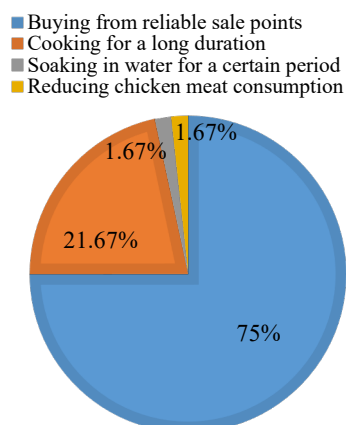


Figure 4. Safety measures taking by respondents to prevent disease spread from chicken meat

Consistent with the findings of the current study, other authors (Kara et al., 2020; Memon et al., 2009) also reported higher consumption of chicken meat during winter months among survey participants. Contrary to our findings, Lee et al. (2017) reported that in their study, 57.3% of the participants consumed chicken meat in the summer.

Participants' evaluation of chicken diseases based on the degree of mortality is given in Figure 3. While the majority of participants (86.67%) evaluated viral diseases as the most dangerous chicken disease, 8.89% and 4.44%

evaluated bacterial and parasitic diseases as the most dangerous diseases respectively. Rahman and Samad (2005) revealed that Newcastle disease is the most common chicken disease and viral diseases such as Newcastle and Avian Influenza are considered the most dangerous poultry diseases with high mortality rates. Since the target audience of the survey are agricultural students taking courses related to livestock and poultry diseases, it is expected that most of these students will be knowledgeable about the effective nature of viral diseases and their impact on poultry production worldwide. This explains the reasons for a higher number of participants who evaluated viral diseases as the most dangerous poultry disease however, Talukdar et al. (2017) reported bacterial diseases as the most common chicken diseases in their study.

Different methods used by the participants to protect themselves from poultry diseases are given in Figure 4. While 75% of the participants buy chicken meat from reliable sales points, 21.67% cook it (chicken meat) for a long time before consumption. Additionally, 1.67% of the participants keep chicken meat in water for a certain period of time before cooking, and 1.67% do not consume chicken meat regularly. Durmuş et al. (2012) also reported that 41.01% of the respondents in their survey did not consume chicken meat to avoid contracting the disease, while 5.63% purchased poultry meat and products from well-known producers.

Participants' answers regarding whether the Coronavirus outbreak affected their chicken meat consumption habits are given in Figure 5. While 61.67% of the participants stated that the coronavirus affected their consumption of chicken meat, the chicken meat consumption pattern of 38.33% of the respondents was not affected by the coronavirus outbreak. Ganesh et al. (2021) reported a 5% decrease in poultry meat consumption in the Tamil Nadu region of India due to the coronavirus outbreak. Additionally, Tzimitra-Kalogianni (2022) reported that a 14.2% decrease in poultry meat imports in Greece between 2019 and 2020 indicates the possible effects of the COVID-19 pandemic on poultry meat consumption and possibly chicken meat consumption. Similarly, Yılmaz et al. (2020) reported that the food consumption and purchasing habits of students at Gümüşhane University were affected by the COVID-19 pandemic. In a study conducted by Jia et al. (2021) at different education levels (high school, university, and graduate) in China, the authors reported that the Coronavirus pandemic caused a decrease in the consumption of poultry meat among female participants compared to male participants. However, Mikail and Kaplan (2021) reported that the coronavirus epidemic in Türkiye did not affect the meat consumption of 64.4% of the respondents.

Participants' information about commercial broiler hybrids is given in Table 4. In the current study, 65.57% of the participants had knowledge of commercial broiler hybrids, while 34.43% of the participants had no information about broiler hybrids. The higher proportion of participants with high knowledge of commercial broiler hybrids may be directly proportional to the fact that agriculture students, who take poultry and animal husbandry courses, and topics related to poultry species and hybrids are an integral part of the poultry breeding courses they take.

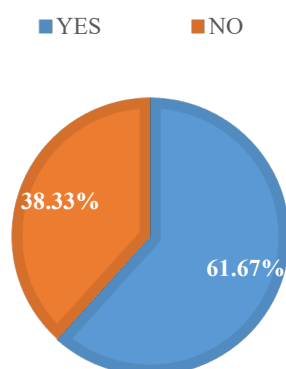


Figure 5. Respondents answers to whether Corona virus affected their chicken meat consumption patterns

Table 4. Respondents knowledge about commercial broiler hybrids

	Outcomes	(%)
Are you familiar with commercial broiler hybrids?	Yes	65.57
	No	34.43
If yes which hybrids are you very familiar with?	Ross	75
	Anadolu T	25
	Cobb	0
Are you familiar with fast and slow-growing commercial broiler hybrids?	Yes	57.38
	No	42.62
If yes which of the following is a fast-growing hybrid?	Ross	80
	Sussex	11.43
	Hubbard	8.57
If yes which of the following is a slow-growing hybrid?	Hubbard	60
	Sussex	31.43
	Ross	8.57

In the current study, 75% of the participants were familiar with the Ross commercial hybrid, while the rate of participants who were familiar with Anadolu T was 25%. It was observed that none of the participants (0%) were familiar with Cobb commercial broiler hybrids. Most of the commercial broiler farms and companies in Türkiye use Ross 308 for production because those hybrids are more resistant to the local environmental conditions and perform better than other commercial broiler hybrids. This reason has increased the rate of Ross 308 in the Turkish market compared to other hybrids, and the fact that the target survey group is more exposed to broiler chickens in school farms, that uses Ross 308 may be the reason why most of the students are familiar Ross 308 better than other hybrids.

In this study, 57.38% of the participants had knowledge of slow and fast-growing commercial broiler hybrids, while the percentage of participants who did not have any knowledge of slow and fast-growing hybrids was 42.62%. The majority of the participants (80%) chose the correct answer by choosing Ross 308 as fast-growing hybrid. However, some of the participants chose either Sussex (11.43%) or Hubbard (8.57%) as fast-growing broiler strains, which was a wrong answer. Additionally, while 60% of the participants chose the right response by choosing Hubbard as the slow-growing hybrid, 31.43% of the participants chose Sussex and 8.57% chose Ross as slow-growing boiler strain, which was a wrong answer. The higher number of participants who were knowledgeable about commercial broiler hybrids, as well as participants who chose correct answers for fast- and slow-growing hybrids, may be

related to the courses they took as agricultural students because an integral part of these courses are theoretical and applied poultry science courses.

## Conclusion

It was concluded that the rise in the economic crisis has increased chicken meat consumption preferences and chicken breast meat as well as the expiration date are some of the most influential factors affecting purchasing decisions. Chicken meat consumption was lower among the respondents triggering an emergent situation to ensure sustainable poultry production in Türkiye. It is encouraged that the government should help subsidize poultry farmers in terms of provision of or resources such as chicks, feeds and other production equipment to ensure lower production costs which could also lead to lower market prices of chicken meat. This could help increase the average chicken meat consumption per week/ per capita.

## Declarations

### Funding

This research did not receive any external fund source

### Ethic Report

The ethic report for this survey with the ethic report number E-74009925-604.01-1004777 was granted by the ethic committee of Çukurova University, Adana, Türkiye.

### Conflict of Interest

The authors declare no conflict of interest

## References

- Abdallah, N., Boga, Y. E., & Kursun, K. (2022). Automation in layer hen production. *International Current Research on Agriculture and Food Technologies*, 22, 9.
- Adamski, M., Kuzniacka, J., & Milczewska, N. (2017). Preferences of consumers for choosing poultry meat. *Polish Journal of Natural Sciences*, 32(2), 261-271.
- Abive-Bortsi, M., Baidoo, S. T., & Amiteye, S. (2022). Assessment of consumers' Perception of chicken eggs consumption and associated health implications in the Volta region of Ghana. *Nutrition and Metabolic Insights*, 15, 11786388221118872.
- Ahmed, A. S., & Mustapha, A. L. (2020). Consumer preferences and willingness to pay for chicken meat traits: a discrete choice experiment approach. *Journal of Agricultural Economics, Environment and Social Sciences*, 6(1), 131-139.
- Akın, A. C., Çevrimli, M. B., Mat, B., Arıkan, M. S., & Tekindal, M. A. (2019). Veteriner fakültesi öğrencilerinin beyaz et tüketimi üzerine etki eden faktörlerin değerlendirilmesi. *Kocatepe Veterinary Journal*, 12(4), 456-462.
- Aral, Y., Aydın, E., Demir, P., Akin, A. C., Cevger, Y., Kuyululu, Ç. Y. K., & Arıkan, M. S. (2013). Consumer preferences and consumption situation of chicken meat in Ankara Province, Turkey. *Turkish Journal of Veterinary & Animal Sciences*, 37(5), 582-587. DOI:10.3906/vet-1210-36.
- Asante-Addo, C., & Weible, D. (2020). Imported versus domestic chicken consumption in Ghana: do attitudes and perceptions matter?. *Journal of International Food & Agribusiness Marketing*, 32(5), 503-526. <https://doi.org/10.1080/08974438.2020.1751767>
- Avçılar, Ö. V., Karataş, Y. F., & Yılmaz, E. (2023). Üniversite öğrencilerinde yumurta tüketim durumu ve tercihlerinin belirlenmesi. *Veteriner Hekimler Derneği Dergisi*, 94(1), 26-35. <https://doi.org/10.33188/vetheder.1125196>

- Barbut, S., & Leishman, E. M. (2022). *Quality and processability of modern poultry meat. Animals*, 12(20), 2766. <https://doi.org/10.3390/ani12202766>
- Büyüknisan, O. (2008). Adana ili kentsel alanda tavuk eti tüketim yapısı. *Yüksek lisans tezi, Çukurova Üniversitesi Fen Bilimleri Enstitüsü.*
- Dierks, Z. (2024). Poultry meat production in Turkey 2010-2023, by type. *Statista*. Turkey: poultry meat production by type 2023 | Statista.
- Dokuzlu, S., Barış, O., Hecer, C., & Güldaş, M. (2013). Türkiye'de tavuk eti tüketim alışkanlıkları ve marka tercihleri. *Uludağ Üniversitesi Ziraat Fakültesi Dergisi*, 27(2), 83-92.
- Durmüş, İ., Mızrak, C., Kamanlı, S., Demirtaş, Ş. E., Kalebaşı, S., Karademir, E., & Doğu, M. (2012). Poultry meat consumption and consumer trends in Turkey. *Bitlis Eren University Journal of Science and Technology*, 2(1), 10-14. <https://doi.org/10.17678/beuscitech.47145>
- Dyvik, EH. (2023). Countries with the largest Muslim population in 2022. *Statista*. <https://www.statista.com/statistics/374661/countries-with-the-largest-muslim-population/>
- Faostat (2023). Poultry meat consumption per capita in Turkey. *HelgiLibrary*. <https://www.helgilibrary.com/indicators/poultry-meat-consumption-per-capita/turkey/>
- Ganesh, J., Vijayashanthi, R., Marliya, M. S., Babu, R. P., Raman, M., Thilakar, P., Senthilkumar, T. M. A., & Azhahianambi, P. (2021). Impact of the COVID-19 lockdown on the consumer behaviour with special reference to Poultry Meat and Egg in Tamil Nadu, India. *Indian Journal of Poultry Science*, 56(1), 75–80. 10.5958/0974-8180.2021.00011.8
- İskender, H., Kanbay, Y., & Özçelik, E. (2015). Artvin Çoruh Üniversitesi öğrencilerinin tavuk eti tüketim tercihleri. *Firat Üniversitesi Sağlık Bilimleri Veteriner Dergisi*, 29(1), 09-13.
- Jayaraman, K., Munira, H., Chowdhury, D., & Iranmanesh, M. (2013). The preference and consumption of chicken lovers with race as a moderator-An empirical study in Malaysia. *International Food Research Journal*, 20(1), 165.
- Jia, P., Liu, L., Xie, X., Yuan, C., Chen, H., Guo, B., Zhou, J., & Yang, S. (2021). Changes in dietary patterns among youths in China during COVID-19 epidemic: The COVID-19 impact on lifestyle change survey (COINLICS). *Appetite*, 158, 105015. <https://doi.org/10.1016/j.appet.2020.105015>
- Kara, M. A., Tekeli, A., & Mikail, N. (2020). Üniversite öğrencilerinin tavuk eti tüketim alışkanlıkları: Siirt Üniversitesi örneği, Türkiye. *Türkiye Tarımsal Araştırmalar Dergisi*, 7(3), 327-336. 10.19159/tutad.794722
- Kursun, K., Abdallah, N., & Baylan, M. (2024). Evaluation of egg consumption preferences and the awareness of egg coding systems among university students. 11th *International zeugma conference on scientific research*. Gaziantep, Türkiye, 42-57. [www.zeugmakongresi.org](http://www.zeugmakongresi.org).
- Lee, M. A., Jung, Y., Jo, C., Park, J. Y., & Nam, K. C. (2017). Analysis of consumers' preferences and price sensitivity to native chickens. *Korean Journal for Food Science of Animal Resources*, 37(3), 469. <https://doi.org/10.5851/kosfa.2017.37.3.469>
- Memon, A., Malah, M. U., Rajput, N., Memon, A. S., Leghari, I. H., & Soomro, A. H. (2009). Consumption and cooking patterns of chicken meat in Hyderabad district. *Pakistan Journal of Nutrition*, 8(4), 327-331.
- Mikail, N., & Kaplan, M. Z. (2021). Effect of COVID-19 Pandemic on animal-source food consumption in Turkey. *ISPEC Journal of Agricultural Sciences*, 5(3), 616-626. <https://doi.org/10.46291/ISPECJASvol5iss3pp616-626>
- Neima, H. A., Sirwan, K., & Hameed, K. (2021, November). Consumers choice and preference for chicken meat in Sulaymaniyah. In IOP Conference Series: IOP Publishing, *Earth and Environmental Science*, 910(1), 012028. 10.1088/1755-1315/910/1/012028
- Önal, H. Y., Yüksel, A., Parmaksız, A., & Alpat, İ. (2022). Meat consumption and sustainability in Turkey. *Kahramanmaraş Sütçü İmam Üniversitesi Tarım ve Doğa Dergisi*, 25(6), 1423-1433. <https://doi.org/10.18016/ksutarimdog.vi.99237>
- Parlakay, O., Uçar, F., Ateş, M., Gönül, E., & Şukuf, M. E. (2022). Tüketicilerin tavuk eti satın alma ve tüketim tercihlerinin belirlenmesi: Hatay ili örneği. *Mustafa Kemal Üniversitesi Tarım Bilimleri Dergisi*, 27(3), 556-564. <https://doi.org/10.37908/mkutbd.1124623>
- Pomaah, A. N., Abdallah, N., Kurşun, K., & Baylan, M. (2023). Egg production and consumption; A case study in Teshie Municipality (Ghana). *Osmaniye Korkut Ata Üniversitesi Fen Bilimleri Enstitüsü Dergisi*, 6(Ek Sayı), 454-466.
- Rahman, M. A., & Samad, M. A. (2005). Important viral diseases associated with mortality of layer chickens in commercial poultry farms in Bangladesh. *Bangladesh Journal of Veterinary Medicine*, 3(1), 1-5
- Roenigk, W.P. (1999). World poultry consumption. *Poultry Science*, 1999, 78(5), 722-728. 10.1093/ps/78.5.722
- Srinivas Gurram, S. G., Preetam, V. C., & Swathi Bora, S. B. (2018). Patterns of chicken meat and egg consumption in rural house holds of Jagtial district of Telangana State. *Journal of Research Pjtsau*, 2018, 46 (4), 49-51.
- Stamatopoulou, M., & Tzimitra-Kalogianni, I. (2022). Consumers' profile analysis for chicken meat, during the first wave of COVID-19 pandemic: Case of Northern Greece. *Journal of Agricultural Science*, 33(1), 162-175.
- Talukdar, M. L., Zuhra, F. T., Islam, K. E., & Ahmed, M. S. (2017). Prevalence of infectious diseases in Sonali chickens at Bogra Sadar Upazila, Bogra, Bangladesh. *Journal of Advanced Veterinary and Animal Research*, 4 (1), 39-44. <http://doi.org/10.5455/javar.2017.d188>
- Turkey Nutrition and Health Survey, T.N.H.S. (2019) 2020. <https://hsgm.saglik.gov.tr/depo/ birimler/ saglikli-beslenme-hareketli-hayat>
- TÜİK (2024). <https://www.tuik.gov.tr/>
- Uçar, A., & Türkoğlu, M. (2018). Kaliteli ve dengeli beslenme açısından kanatlı üretiminin etkinliği. *Turkish Journal of Agriculture-food Science and Technology*, 6 (1), 69-72. <https://doi.org/10.24925/turjaf.v6i1.69-72.1739>
- United States Department of State, Office of International Religious Freedom (USDSOIRF), Turkey (Türkiye) 2022 international religious freedom report. Turkey (Türkiye) - United States Department of State. Turkey (Türkiye) - United States Department of State
- Uzundumlu, A. S., & Dilli, M. (2022). Estimating chicken meat productions of leader countries for 2019-2025 years. *Ciência Rural*, 53 (2), e20210477. <https://doi.org/10.1590/0103-8478cr20210477>
- Vukasović, T. (2014). European meat market trends and consumer preference for poultry meat in buying decision making process. *World's Poultry Science Journal*, 70 (2), 289-302. <https://doi.org/10.1017/S0043933914000300>
- Wadud, M. A. (2006). An analysis of meat demand in Bangladesh using the almost ideal demand system. *The Empirical Economics Letters*, 5(1), 29-35.
- Yıldız, A., & Duru, A. A. (2019). Investigation of chicken meat consumption habits in terms of improvement of broiler breeding: a case study of Uşak Province. *Turkish Journal of Agriculture-food Science and Technology*, 7(6), 833-839. <https://doi.org/10.24925/turjaf.v7i6.833-839.2180>
- Yılmaz, H. Ö., Aslan, R., & Unal, C. (2020). Effect of the COVID-19 pandemic on eating habits and food purchasing behaviors of university students. *Kesmas*, 15(3), 154-9.