

## Knowledge and Awareness Levels of Agricultural Faculty Students Regarding Organic Agricultural Products

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### Abstract

People are turning to more eco-friendly options as the usage of chemical items rises and harms the environment. People are more interested in organic farming now since it protects the environment and encourages biodiversity. The organic product industry in Turkey is growing very quickly since more people are getting educated and have more money to spend. This study aims to determine the organic food consumption habits of students within the agricultural faculty. In March 2024, an online survey was performed with 341 students using the basic random sample method. Students were judged based on the amount of money they made each month, including scholarships and student loans. The results show that most students correctly what organic products are and what their logotype looks like. Also, 63.4% of students said that they get organic food. The most popular organic foods are fresh fruits, vegetables, and nuts. Red meat and fowl are less popular. Increased health knowledge, trust in inspections, and easy access to sales sites are the main factors that affect people's decisions to buy organic food. Students' purchasing habits for organic food and the reasons they buy it stay the same no matter how much money they make each month. As a result, it has been determined that students in agricultural faculties, who are seen as future experts in the field of agriculture, have a significant awareness and tendency towards organic products. Contrary to popular beliefs, wealth level does not greatly influence agriculture faculty students, indicating that knowledge and awareness are more essential in purchasing behavior. It is essential to put awareness-raising programs first and develop plans that include cheaper and more compactly packed items to make it easier for people on a budget, like students, to buy things.

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## 1. Introduction

The negative impacts on the environment and the health risks of using a lot of chemical fertilizers and pesticides are making people prefer safer and more sustainable farming methods (Doğan & Karpuzcu, 2019; Eryılmaz et al., 2019). Global environmental problems and the rise of healthy eating have greatly increased the demand for organic agricultural products. Organic farming is a way of producing food that doesn't use chemicals at any stage of the process (Öztürk, 2012). Organic farming is a way to keep the land fertile over time while also protecting biodiversity. This approach uses biological control methods to get rid of pests and organic fertilization methods to feed plants (Çetiner, 2005). This strategy helps protect the current ecology and makes the environment stronger for future generations.

Like in other parts of the world, the market for organic goods in Turkey is growing quickly. The improvement of customers' education and buying power is a big part of this growth. Modern consumers consider not just the price and quality of goods, but also how the way they are made affects the environment and their social duty (Turhan et al., 2017).

Consumer trends include how people choose, buy, and use things to meet their needs and wants (Kılıç & Göksel, 2004). Studies show that socioeconomic factors have a big role in what buyers choose when they buy organic items. Income level, educational achievement, and lifestyle significantly affect the purchasing behavior of organic products (Gündüz & Kaya, 2007; Kekeç & Seğer, 2021; Şahin & Yercan, 2022). Rising domestic demand is leading university students to demonstrate heightened interest in organic food consumption, thereby promoting higher awareness of organic farming techniques (Demirbaş & Yılmaz, 2021). Understanding consumers' evaluations of organic agricultural products, the factors that encourage purchases, the reasons for avoiding organic products, and the knowledge and awareness of agricultural faculty students on this subject is essential for grasping the perspectives of future agricultural professionals.

The main goal of this study is to find out if students at Ankara University's (AU) Faculty of Agriculture eat organic foods differently depending on how much money they make each month. The study aims to ascertain whether organic food purchasing behaviors, determinants influencing organic food acquisitions, motivations for refraining from organic food, and critical evaluations of organic food vary according to monthly income levels.

## 2. Material and Methods

The main data for the study come from students at Ankara University's Faculty of Agriculture who were enrolled in the 2023-2024 academic year. There are 3001 students enrolled in the Faculty of Agriculture for the 2023-2024 school year. To determine the ideal sample size for effectively reflecting the consumer population, 341 surveys were collected using a simple random sampling method, as outlined in Equation 1 (Oğuz & Karakayacı, 2017).

$$n = (N \cdot p \cdot q) / [(N - 1) \cdot (D^2 / 4) + p \cdot q] \quad \text{Equation 1}$$

In the equation,  $n$  is the sample size,  $N$  is the population size,  $D^2 = (d / t)^2$ ,  $q = 0.5 - p = 0.5$ ,  $d$  is the maximum error allowed by the researcher (0.05), and  $t$  is the confidence interval (1.96).

The survey was conducted electronically in March 2024. Studies show that wealthy people are the most likely to buy organic products (Tosyalı, 2023; Turhan et al., 2019). The study divided students into three groups depending on their monthly income, which included scholarships and loans: low-income group (3999 ₺ and below/171 individuals), middle-income group (4000 ₺ to 5999 ₺/112 individuals), and high-income group (6000 ₺ and above/58 individuals). The collected data was examined by creating cross-tables. The students' comprehension of organic food, their purchasing patterns about organic agricultural products, and their perspectives were revealed.

## 3. Findings and Discussion

There is a link between students' economic status and their demographic traits and household behaviors. More than half of the students (51.1%) have a poor income. Their average monthly income, which includes scholarships and loans, is 4291 ₺. The income level affects the residential status and the people who do the grocery shopping in a home. Most of the students that live in dorms are from low and middle-income families. This means that students are responsible for getting their own meals. Students with higher incomes live in student housing. Because of this, housemates and the group as a whole go grocery shopping more often. Table 1 shows the student' socio-economic traits.

Table 1. Socio-economic characteristics of students

		Income Level			
		Low	Middle	High	Overall
Gender (%)	Female	64.9	65.2	62.1	64.6
	Male	35.1	34.8	37.9	35.4
Residence status (%)	Dormitory	57.3	42.9	8.6	44.5
	Student house	11.1	32.1	67.2	27.5
	Family/Relative	31.6	25.0	24.1	28.1
Monthly income including scholarship-loan (avg.- ₺)		2753.5	4588.4	8224.1	4291.2
Class (%)	1st year	19.3	6.3	3.4	12.3
	2nd year	25.1	36.6	25.9	28.9
	3rd year	38.0	35.7	37.9	37.1
	4th year	17.5	21.4	32.8	21.6
Person Doing Grocery Shopping in Household	Me	52.0	43.8	15.5	43.0
	A family member	16.4	14.3	17.2	15.8
	Roommate/dormmate	4.1	12.5	22.4	10.2
	All together	27.5	29.5	44.8	31.0
Total	frequency	171	112	58	341
	%	50.1	32.9	17.0	100.0

The study conducted in Istanbul indicated that consumers see organic food as a natural product (Özkan, 2019). Consumers sometimes mix up the terms “natural food” and “organic food.” To test this comprehension among students, we included a number of questions. The survey showed that 83.3% of students knew the difference between the two conceptions, and the students had a very good (55.7% + 20.2%) comprehension of organic products (Table 2). Hamilton and Hekmat (2018) found that how much people know about organic food affects how much they eat, while Çam and Karakaya (2018) found that 73.4% of consumers know a lot about organic products and Aral and Cufadar (2024) found that 29.4% of university students know a lot about organic products, with 63.2% having some knowledge.

*Table 2. Organic product awareness status (%)*

		Income Level			
		Low	Middle	High	Overall
Knowledge of the distinction between organic food and natural products	Same	11.1	4.5	5.2	7.9
	Different	79.5	88.4	84.5	83.3
	I don't know	9.4	7.1	10.3	8.8
Level of knowledge about organic products	I don't know	12.3	8.0	6.9	10.0
	I've only heard of it	15.8	13.4	10.3	14.1
	I know partially	52.0	55.4	65.5	55.7
	I have sufficient knowledge	19.9	23.2	17.2	20.2
Knowledge of organic product definition	Incorrect definitions	36.3	25.0	31.0	31.9
	Correct definition	63.7	75.0	69.0	68.1
Knowledge of organic product logo	Incorrect logos	33.3	24.1	20.7	28.1
	Correct logo	66.7	75.9	79.3	71.9

Studies show that consumers mix up different logos because they don't have enough information and don't trust the products (Diaz et al., 2012). The study provided numerous definitions and logos, indicating that a substantial majority of students correctly identified the concept of organic products (68.1%) and the organic product logo (71.9%) (Table 2). A similar survey found that 54.7% of students recognized the organic farming emblem (Akgül et al., 2020).

*Table 3. Importance level given to judgments about organic agricultural products (mean)\**

	Income Level			
	Low	Middle	High	Overall
Being fresh and tasty	4.4	4.6	4.7	4.5
Being natural and healthy	3.4	4.1	4.4	3.8
Being safe and certified	3.5	4.1	4.4	3.8
Not containing artificial chemicals	3.3	4.0	4.3	3.7
Being produced under environmentally friendly conditions	3.2	3.8	4.2	3.6
Being a food product unaffected by pollution	3.2	3.9	4.4	3.6
Being a product grown in natural conditions using traditional methods	3.0	3.8	4.3	3.5

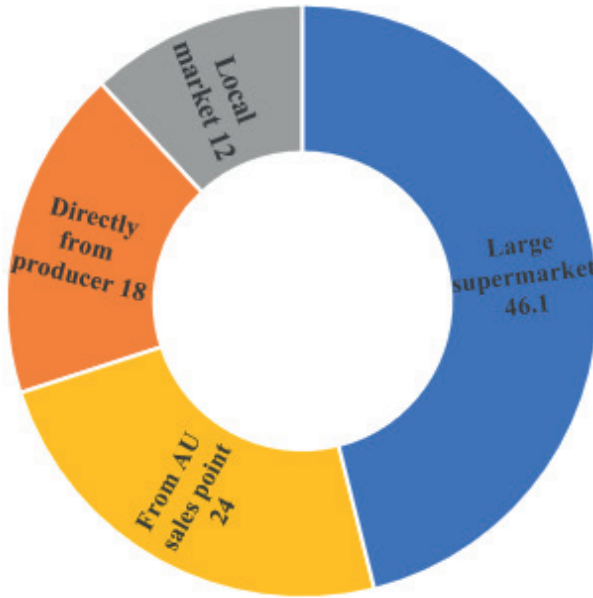
\* Data was collected based on importance level from 1 (very low importance) to 5 (very high importance).

Most students think that organic food is fresh and tasty. Next comes natural, healthy, safe, and certified food that doesn't have any artificial ingredients and is made in ways that don't harm the environment (Table 3). A survey conducted in Turkey revealed that students regard organic foods as safe, advantageous for human health, and effective in diminishing pesticide usage in agriculture (Akgül et al., 2020). Ayaşan et al. (2021) emphasized that health safety, naturalness, and ecological concerns are of utmost importance. In contrast, Aral and Cufadar (2024) highlighted health benefits, nutritional value, safety, and environmental friendliness as the principal justifications for the choice for organic products.

Table 4. Organic agricultural product purchasing behaviors (%)

		Income Level			
		Low	Middle	High	Overall
Organic agricultural product purchasing status	Yes	53.2	70.5	79.3	63.4
	No	19.9	13.4	12.1	16.4
	No, but I would like to	26.9	16.1	8.6	20.2
Attention to logo on organic agricultural products	Yes	49.6	47.1	50.3	49.1
	No	50.4	52.9	49.7	50.9

More over half of the students (63.4%) said they bought organic food. Sarica et al. (2023) discovered that 85.7% of students consumed organic food in their studies. 49.1% of students who buy organic farm products think about the emblem when they decide what to buy (Table 4). A similar study showed that 16.7% of students think about the logo when they buy organic products (Ayaşan et al., 2021). This issue stems from the differences in the academic disciplines of the individuals participating in the sampling.



*Figure 1. Place of purchase for organic agricultural products (%)*

The accessibility of organic food positively impacts its consumption (Karabaş & Gürler, 2012; Singh & Verma, 2017). The current study done in Ankara province demonstrated that access to organic products is commonly available (81.0%). Students obtain products from prominent marketplaces, the sales platforms of Ankara University, directly from manufacturers, and from local markets, as illustrated in Figure 1. Ayaşan et al. (2021) found that most organic items come from villages (57.7%) and supermarkets (28.2%). Merdan (2018) found that they come from a variety of online platforms (26%), organic product retail stores (17%), and directly from producers (17%).

People who don't buy organic agricultural products (16.4%) say they don't because they are too expensive, there aren't enough organic options, or they don't trust organic agricultural products. Akgül et al. (2020) stated in their study that students are doubtful about the execution of organic food inspections and believe that such goods are not stored under hygienic conditions post-harvest.

Table 5. Most frequently purchased organic agricultural products (%) \*

General Ranking	Product	Income Level			
		Low	Middle	High	Overall
1	Fresh vegetables/fruits	32.7	49.1	72.4	44.7
2	Dried fruits/nuts	32.2	47.3	58.6	41.5
3	Milk and dairy products (milk, butter)	26.9	38.4	39.7	32.7
4	Grains/legumes	15.8	30.4	29.3	22.8
5	Red meat and poultry	15.2	22.3	25.9	19.3

\* Totals exceed 100% as consumers made multiple choices..

An examination of the organic agricultural bought by students indicated no variation in the leading three products among general and socioeconomic categories. After looking at everyone’s likinges as a whole, it was clear that fresh fruits and vegetables were the most popular goods, followed by dried fruits and nuts. People typically think of these items as organic farming products. Red meat and poultry were chosen as the least popular items, which is also shown by the fact that groups didn’t like them very much (Table 5). Research found that students predominantly consumed organic fresh fruits and vegetables at a rate of 54.6% (Ayaşan et al., 2021), while their intake of organic animal products included milk and dairy items (35.9%) and red or white meat (31.1%) (Aral & Cufadar, 2024). A study conducted in Diyarbakır revealed that customers preferred organic fresh fruits and vegetables (43%), milk and dairy products (23%), and meat (18%) (İnci et al., 2017).



*Table 6. Reasons for purchasing organic agricultural products (%) \**

		Income Level			
		Low	Middle	High	Overall
Increased health awareness	1	1.3	2.9	1.9	2.0
	2	4.7	1.9	1.9	3.3
	3	94.0	95.2	96.2	94.7
	$\bar{x} \pm ss$	4.6 $\pm$ 0.6	4.6 $\pm$ 0.8	4.8 $\pm$ 0.7	4.6 $\pm$ 0.7
Knowing that inspections are carried out correctly	1	9.3	8.7	1.9	7.9
	2	7.3	2.9	1.9	4.9
	3	83.4	88.4	96.2	87.2
	$\bar{x} \pm ss$	4.1 $\pm$ 0.9	4.4 $\pm$ 0.9	4.7 $\pm$ 0.7	4.3 $\pm$ 0.9
Well-known brands producing organic food	1	27.3	14.6	3.8	18.9
	2	12.0	3.9	3.7	7.8
	3	60.7	81.5	92.5	73.3
	$\bar{x} \pm ss$	3.7 $\pm$ 1.3	4.2 $\pm$ 1.1	4.6 $\pm$ 0.8	4.0 $\pm$ 1.2
Proximity of sales location to home	1	22.7	11.6	5.6	15.7
	2	4.0	2.9	7.4	4.2
	3	73.3	85.5	87.0	80.1
	$\bar{x} \pm ss$	3.9 $\pm$ 1.3	4.3 $\pm$ 1.1	4.6 $\pm$ 0.9	4.1 $\pm$ 1.2
Increased promotion and advertising	1	36.0	24.3	5.6	26.8
	2	4.0	3.9	1.9	3.6
	3	60.0	71.8	92.5	69.6
	$\bar{x} \pm ss$	3.5 $\pm$ 1.3	3.9 $\pm$ 1.3	4.6 $\pm$ 0.9	3.9 $\pm$ 1.3
Tasting at markets, fairs, etc.	1	25.3	16.5	11.2	19.9
	2	6.0	9.7	3.7	6.8
	3	68.7	73.8	85.1	73.3
	$\bar{x} \pm ss$	3.7 $\pm$ 1.2	4.0 $\pm$ 1.2	4.4 $\pm$ 1.1	3.9 $\pm$ 1.2

\* *Data was collected on a Likert scale from 1 (strongly disagree) to 5 (strongly agree).  
“ $\bar{x}$ ” represents the mean, “ss” represents the standard deviation.*

Table 6 shows how pupils feel about getting organic agricultural products. Increased health knowledge (94.7%), confidence in correct inspections (87.2%), and ease of access to sales places (80.1%) are all thought to be important factors that affect the buying of organic products. Additionally, it has been demonstrated that improving marketing and advertising, together with offering sampling, leads to greater awareness of organic agricultural products and significantly impacts purchasing decisions. Güner and Ulusoy (2024) found a positive link between how students think about their health and how much organic food they eat. They concluded that a higher health perception greatly increases the likelihood of eating organic food.

#### **4. Conclusion and Recommendations**

As a result of their studies, students in the agricultural faculty know a lot about and comprehend organic farming. This level of awareness lessens the consequences of differences in income and other socioeconomic factors. It has been determined that knowledge and attitude exert greater influence than income. The heightened awareness among agriculture faculty students emphasizes the importance of education. To spread and develop knowledge throughout society, it is important to include topics like organic farming and food safety in school curricula. Also, non-governmental organizations and public institutions should start programs to teach consumers about things to raise awareness in society.

The majority of students are purchasing organic food. Instead than seeing organic food as a luxury, students look at it as a health benefit. Students from low-income try to get organic food. Across all income levels, the most popular organic foods are fresh fruits and vegetables, while the least popular are red and white meat. This situation is happening because agricultural faculty students eat in similar ways. To attract more people to eat organic food, especially students who are on a tight budget, need to come up with cheaper, smaller products and marketing strategies that focus on students.

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