



Consumer Attitudes Towards Goat Milk and Goat Milk Products: A Pilot Survey in South East of Turkey

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ARTICLE INFO	ABSTRACT
<p><i>Research Article</i></p> <p>Received : 18/10/2018 Accepted : 14/11/2018</p> <p>Keywords: Consumer behaviour Goat milk Goat milk products Purchase decision Attitudes</p>	<p>Recent years, the increased consumer awareness on healthy food consumption and interest on traditional foods has affected goat milk and goat milk products demand positively. In this study it is aimed to identified the consumer behaviour and consumption tendencies on goat milk and goat milk products. In this context, it was designed a face-to-face survey and conducted to 518 individuals in the two south-east located cities of Turkey, Adana and Mersin. The results show that, almost 50% of the customers are consuming goat milk and its products in different forms. It is also determined that, price, health, nutrition value, digestion convenience and availability are the most effective factors on goat milk and its products consumption and purchase behaviour. Within the goat milk products, consumers are mostly preferring to consume goat cheese and they are mainly using supermarkets as the place of purchase.</p>



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Introduction

Under the competitive, saturated and conscious market structures, it is very important to know consumer's behavior and their consumption patterns and understand what is important on their decision-making processes (Raju and Xardel, 2004). Consumer behavior discipline aims to examine all selection and utilization processes in meeting needs and preferences and examine the effects of these processes on consumer and the society by focusing on how consumers are affected by different factors in the purchasing process (Kurajdova and Petrovicova, 2015). Since profits from satisfied consumers are at the focus of modern marketing, marketers are much more sensitive on consumer behavior topics even for the agro-food sector (Rugimbana, 2007). Although food and agriculture sector have a conservative structure, changes in the consumer preferences also seen on this sector. To develop or improve agro-food products, desire and expectations of the consumers must be evaluated in order to ensure product success (Pinto et al., 2016).

Milk and milk products have been an important component of the human diet since 8000 years and part of nutritional advices in many countries around the world. Dairy products provide important nutrients like calcium, protein, magnesium, vitamins, potassium and phosphorus which cannot totally be found in other animal or plant based foods. The benefits of dairy products to the bone health, obesity, arthritis and cardiovascular disease have been accepted in many scientific studies (Givens, 2018; Rangan et al., 2012; Rozenberg et al., 2016).

Globally, dairy sector is a huge industry and demand for dairy products is expected to be continued in the future due to the population and income increases and urbanization. In this context, dairy products will be find more places in the markets especially due to the nutritional and medical values that they comprise (Jerop et al., 2014). Besides, dairy sector has important socio-economic effects with high capability of creating employment and income in agri-business systems, especially in the marginal areas. (Pinto et al., 2016).

Change in consumer preferences towards healthy food consumption, depletion of natural resources due to the rapid growth of the population, increases in income and urbanization, non-agricultural use of farm land and the impact of climate change increases the importance of dairy goat farming especially for the rural development (Utami, 2014; Jerop et al., 2014; Narrod et al., 2011). Goats have adaptation capability even for harsh environment conditions with no large space requirements. Moreover, they can also be fed relatively few and varied substances and breeding rates are high. These advantages encourage farmers to practice dairy goat farming globally instead of breeding other farm animals. Besides, comparing with cow milk, goat milk and its products has the advantage of lower allergy risk and digestive side effects which provides this product being preferred by more consumers as an alternative source of protein (Jerop et al., 2014; Ali et al., 2010).

In some part of the Turkey although goat milk and its products are traditionally consumed by the individuals, especially the side effects of cow milk (allergic reaction and digestion problems) increases the consumption of goat milk and its products. Moreover, the consumption of goat milk and goat milk products are perceived as a part of the healthy life and intellectual lifestyle which shows that the consumption is not only about the nutrition intake but also for social situation (Kaymakçı and Engindeniz, 2010).

In Turkey, although goat breeding spreads throughout the country, it is especially common in the eastern and western mountain areas of the Mediterranean region (Daşkıran and Koluman, 2014). Çukurova region, which is in the south east part of the Turkey covers two big cities, Adana and Mersin and these cities have one of the biggest goat population in Turkey with 1.2 million goats. Therefore, goat breeding has an important role on the socio-economic and cultural structure of this region from past to now (TÜİK, 2016).

In this study it is aimed to determine the consumption structure and factors effecting consumption and purchase activities of goat milk and goat milk products in the south east part of the Turkey. Moreover, different attributes of the consumers on goat milk and its products for additional features as organic, lactose-free and probiotic was investigated.

Materials and Methods

Main material of the research is the data obtained from face to face consumer questionnaire designed by the authors. The survey was conducted between the period May-August 2016 in the two cities, Adana and Mersin which are located at the south-east part of the of Turkey.

The main target group of the research was the current and potential consumers of goat milk and its products at households (Jerop et al., 2014). In order to investigate current behaviours and tendencies of the consumer on goat milk and its products the sample size was determined as 518 consumers among which 270 was from Adana and 248 from Mersin cities. Sample size is determined by the formula given below (İslamoğlu, 2008).

$$n = \frac{p \cdot (1-p)}{(e/Z)^2} \quad (1)$$

In this formula, n is the sample volume, p is the frequency of the examined event, e is the error rate, and Z is the confidence interval. On the basis of the highest value of p (1-p), the margin of error was e = 5%, Z value is 1.96 and the confidence interval was 95%.

The questionnaire was formed by 2 parts. The first part is consisted of questions covering the goat milk and its products consumption and purchase attributes and the second part is about the socio-economic and demographic situation of the individuals. To determine the consumption and purchase preference the participant evaluation was designed with 4 and 5-point Likert type scale to express how much they agree or disagree with the statements.

Socio-demographic characteristics of the individuals participated to survey were given in Table 1. The surveyed individuals were nearly equal in gender situation (53.9% male and 46.1% female) and 64.4% are over 35 years old. It was found that 87.8% of them are primary school and high school graduates and 74.9% of them are composed of individuals with income between 1000-3000 TL and have family size is mainly more than 4. The majority of the individuals participating in the survey are originally Mediterranean (93.6%).

Table 1 Socio-demographic characteristics of the sample.

	Frequency	Percent
Gender		
Male	279	53.9
Female	239	46.1
Age		
25<	82	15.8
35-44	126	24.3
45-54	141	27.2
54>	67	12.9
Homeland		
Mediterranean	485	93.6
Black Sea	4	0.8
East Anatolia	4	0.8
South-east Anatolia	15	2.9
Central Anatolia	8	1.5
Household Numbers		
1	12	2.3
2-3	98	18.9
4-5	224	43.2
5>	184	35.5
Education		
Literate	14	2.7
Elementary school	295	56.9
University	46	8.9
Graduate	3	0.6
Income (Turkish Lira)		
none	8	1.5
1001-2000	281	54.2
2001-3000	107	20.7
3001-4000	41	7.9
4000>	15	2.9
Occupation		
Worker	32	6.2
Tradesman-Craftsman	52	10.0
Self-employment	152	29.3
Private sector	30	5.8
Student	45	8.7
Housewife	155	29.9
Unemployed	10	1.9

The categorical data obtained from the respondents were tested with chi square test ($P < 0.01$) by SPSS 21. software. Data for consumer and purchasing behavior patterns include primary and secondary data. Primary data of the consumer survey was focused on determining the factors associated with consumer behavior and buying patterns toward goat milk and goat milk products. Secondary data covered the socio-economic conditions of the surveyed individuals.

Results and Discussion

Among the 518 surveyed individuals, 263 were consuming goat milk and/or goat milk products where 140 from Adana and 123 from Mersin cities. Goat milk and its products consumption structure was given in Table 2.

According to the results, the most preferred goat milk product was goat cheese and it is followed by goat butter. In their studies Ozawa et al (2009); Akbay et al. (2016); Utami (2014); Güney an Ocak (2013) and Savran et al. (2016); Ribeiro and Ribeiro (2010); Mowlem (2005) also found that goat cheese and butter as the most preferred goat milk product. Comparing to cheese and butter the consumption of the other products were quite low.

The results showed high usage of food retailers and dairies for goat milk and its products purchase. This is similar with the results of Mowlem (2005); Petrovska et al. (2017) and Bhattarai (2012). Internet was not using anymore for the purchase of these products like other dairy products in Turkey.

In Table 4, factors affecting consumption of goat milk and goat's milk products were given. Within these factors, health, nutritional value and easy digestion had been identified as the most important on consumption. Savran et al. (2011); Utami (2014); Bhattarai (2012) also determined the same factors as affecting the goat milk and its products consumption.

In Table 5, effect levels of some factors for goat milk and its products purchase were given and within these factors' availability, process type and expiration date were determined as the most effective on purchase of these products. This result shows similarity with the results of Mowlem (2005) and Ozawa et al (2009).

In Table 6, it was shown the factors effecting barriers to consume goat milk and milk products and according to the results the most effective factor for barrier to consume these products were determined as price, lack of habit and availability problem.

Results on consumer's willingness to pay for organic, pro-biotic enhanced and lactose-free goat milk and its products were given in Table 7. Results showed that 20.2% of the consumers were willing to pay 10% and 6.5% of the consumers were willing to pay 20% more for organic goat milk and goat milk products. Similarly, 14.8% of the consumers were willing to pay 10% and 5.7% of the consumers were willing to pay 20% more for pro-biotic (enhanced) goat milk and goat milk products. However, consumers were not willing to pay more for lactose free goat milk and goat milk products.

Table 2 Consumption form preferences of goat milk and its products.

Products		Never	Rarely	Sometimes	Always	Total	Df	Chi-Square
Pasteurized milk	f	236	4	12	11	263	3	588.36***
	%	89.7	1.5	4.6	4.2	100		
Uht milk	f	216	3	18	26	263	3	461.94***
	%	82.1	1.1	6.8	9.9	100		
Cheese	f	4	10	62	187	263	3	329.08***
	%	1.5	3.8	23.6	71.1	100		
Yogurt	f	163	24	45	31	263	3	195.27***
	%	62.0	9.1	17.1	11.8	100		
Ice cream	f	167	28	42	26	263	3	210.20***
	%	63.5	10.6	16.0	9.9	100		
Butter	f	196	14	18	35	263	3	347.81***
	%	74.5	5.3	6.8	13.3	100		

***: $P < 0.001$

Table 3 Place of purchase preferences for goat milk and its products.

Place of Purchase		Never	Rarely	Sometimes	Always	Total	Df	Chi-Square
Local Market	f	234	12	15	2	263	3	575.46***
	%	89.0	4.6	5.7	0.8	100		
Local grocery	f	250	8	5	-	263	2	450.94***
	%	95.1	3.0	1.9	-	100		
Food retailers	f	82	11	74	96	263	3	64.56***
	%	31.2	4.2	28.1	36.5	100		
Dairy	f	147	7	51	58	263	3	157.12***
	%	55.9	2.7	19.4	22.1	100		
Deli	f	174	13	33	43	263	3	244.73***
	%	66.2	4.9	12.5	16.3	100		

***: $P < 0.001$

Table 4 Factors affecting the goat milk and its products consumption.

		1	2	3	4	5	Total	Df	Chi-Square
Taste	f	-	1	16	130	116	263	3	202.597***
	%	-	0.4	6.1	49.4	44.1	100		
Health	f	-	1	2	55	205	263	3	422.247***
	%	-	0.4	0.8	20.9	77.9	100		
Gourmet	f	2	15	76	87	83	263	4	126.030***
	%	0.8	5.7	28.9	33.1	31.6	100		
Habit	f	2	44	71	72	74	263	4	72.380***
	%	0.8	16.7	27.4	27.4	28.1	100		
Life-style	f	7	53	62	72	69	263	4	53.483***
	%	2.7	20.2	23.6	27.4	26.2	100		
Nutrition value	f	-	2	8	65	188	263	3	339.844***
	%	-	0.8	3.0	24.7	71.5	100		
Prestige	f	6	8	71	106	72	263	4	146.905***
	%	2.3	3.0	27.0	40.3	27.4	100		
Fat value	f	-	1	8	153	101	263	3	249.167***
	%	-	0.4	3.0	58.2	38.4	100		
Easy to digest	f	-	1	7	73	182	263	3	322.597***
	%	-	0.4	2.7	27.8	69.2	100		
Allergic effect	f	8	13	10	46	186	263	4	441.278***
	%	3.0	4.9	3.8	17.5	70.7	100		

1: Ineffective, 2: Very least effective, 3: Less effective, 4: Effective, 5: Very efficient, ***: P<0.001

Table 5 Factors effecting goat milk and its products purchase.

		1	2	3	4	5	Total	Df	Chi-Square
Price	f	24	59	39	61	80	263	4	35.460***
	%	9.1	22.4	14.8	23.2	30.4	100		
Odour	f	1	2	14	140	106	263	4	327.057***
	%	0.4	0.8	5.3	53.2	40.3	100		
Colour	f	-	4	16	148	95	263	3	211.540***
	%	-	1.5	6.1	56.3	36.1	100		
Shelf life	f	7	3	12	88	153	263	4	333.103***
	%	2.7	1.1	4.6	33.5	58.2	100		
Brand	f	10	5	36	134	78	263	4	221.049***
	%	3.8	1.9	13.7	51.0	29.7	100		
Promotion	f	38	65	46	60	54	263	4	8.882
	%	14.4	24.7	17.5	22.80	20.5	100		
Packaging	f	10	4	27	130	92	263	4	235.270***
	%	3.8	1.5	10.3	49.4	35.0	100		
Expiration time	f	8	1	1	63	190	263	4	500.023***
	%	3.0	0.4	0.4	24.0	72.2	100		
Process type	f	8	2	6	67	180	263	4	440.289***
	%	3.0	0.8	2.3	25.5	68.4	100		
Availability	f	1	1	4	52	205	263	4	587.703***
	%	0.4	0.4	1.5	19.8	77.9	100		

1: Ineffective, 2: Very least effective, 3: Less effective, 4: Effective, 5: Very efficient, ***: P<0.001

Table 6 Frequency tables and chi-square test results for barriers to consume goat milk and its products.

		1	2	3	4	5	Total	Df	Chi-Square
Not like the taste	f	94	63	28	32	38	255	4	8.55
	%	36.9	24.7	11	12.5	14.9	100		
High price	f	38	14	35	55	113	255	4	110.87***
	%	14.9	5.5	13.7	21.6	44.3	100		
Availability problem	f	14	20	37	68	116	255	4	138.04***
	%	5.5	7.8	14.5	26.7	45.5	100		
Taste	f	45	35	74	67	34	255	4	26.78***
	%	17.6	13.7	29.0	26.3	13.3	100		
Odour	f	35	22	46	72	80	255	4	47.14***
	%	13.7	8.6	18.0	28.2	31.4	100		
No habit	f	27	28	35	51	114	225	4	104.51***
	%	10.6	11.0	13.7	20.0	44.7	100		
Allergic facts	f	94	63	28	32	38	255	4	60.61***
	%	36.9	24.7	11.0	12.5	14.9	100		

1: Ineffective, 2: Very least effective, 3: Less effective, 4: Effective, 5: Very efficient, ***: P<0.001

Table 7 Willingness to pay for some types of goat milk and its products.

Willingness to pay	Organic		Pro-biotic		Lactose free	
	f	%	f	%	f	%
-20%	39	14.8	54	20,5	-	-
-10%	64	24.3	57	21,7	-	-
0	90	34.2	98	37,3	222	84,5
10%	53	20.2	39	14,8	33	12,5
20%	17	6.5	15	5,7	8	3,0
Total	263	100.0	263	100,0	263	100,0
Chi-Square	56.68***		69.99***		311.78***	
Df	4		4		2	

***: P<0.001

Conclusions

Consumer behaviour which considers the mental, emotional and physical activities that people engage in when selecting, purchasing, using and disposing the certain set of products or services, represents one of the main component of human behaviour (Wilkie, 1994). The act of consumption is therefore an integral and intimate part of our daily existence (Statt, 1997). Understanding consumer behaviour on a certain product is crucial for effective marketing activities, helping managers identify appropriate people to target and design and communicate attractive offerings.

Results of the study shows that among the fresh goat milk consumers, about 50% of the customers are consuming goat milk and its products in different forms and levels. To understand the consumption behaviour and attributes for goat milk and its products first factor effecting consumption and purchase was investigated. For the consumption, the most effective factor motivate consumers is health. Healthy food consumption is a new concept spreading in recent years and it is believed by the consumers that these products can meet this concern. Therefore, it can be concluded that goat milk is desired or even needed by people of all income levels for the future. Other effective motivations as nutrition value and digestion convenience are also supporting to the first issue. Some personal factors like flavour, lifestyle, gourmet and complementary property, prestige and habitude also effecting especially the consumption of goat milk products like cheese.

The most effective factor in case of purchasing goat milk and its products identified as availability. Product related factors (odour, taste, colour processing method and shelf-life) are secondary factor affecting the product purchase. Marketing applications (brand, shelf-life, packaging and promotional activities) has less effects. But health issue can be used for the promotion of these products. Goat milk should not be promoted merely as a drink that is similar to cow milk, but should be positioned as a functional or healthy food product.

Within the goat milk products, consumers are mostly preferring the cheese. Because UHT (ultra-high temperature) or pasteurized process of goat milk is not so common and only few brand present in the market, in Turkey consumption as drinking milk of the goat milk is also limited. In that case availability is the most important factor for the form of drinking milk of the goat milk. In the consumption form of drinking milk between UHT and pasteurized consumption trends there is no big difference

is existing in demand but depending to the lower price, demand for UHT goat milk is higher than the pasteurized form. Besides depending on the short lactation period of the goats, in Turkey drinking milk as the raw/unprocessed form is also very low.

Goat milk and goat milk products customers purchasing the products mostly from the supermarkets and dairies. This choice is also depending on the case of niche products and availability. Because the low status of availability of goat milk and its products customers are referring these retailers. Consumers are supplying raw goat milk generally by their own facility under the lack of marketing chain for the raw form.

In the study reasons why customers are not consuming goat milk and its product are found as. The results show that the main reason for not consuming these products are price, lack of habits and availability problem respectively. Availability problem indicates that there are also potential consumers within the non-consumers and they will consume if they reach the products. For organic goat milk and goat milk products 25% and for pro-biotic goat milk and goat milk products 20% of the consumer are willing to pay more (Table 7). This situation shows that goat milk and its products consumers are willing to pay more for the health related features.

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