



Özgün Araştırma/Research Article

Türk Tatlısı: Veganlar İçin Keşkül

Turkish Dessert: Keşkül for Vegans

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Özet

Amaç: Gerçekleştirilen bu çalışmada; Türk Mutfak Kültürü içerisinde önemli bir yere sahip olan keşkülün, vegan beslenme hassasiyetine uygun olarak hazırlanması amaçlanmıştır. Yöntem: Veganlar için hazırlanan keşkül reçetesinin, duyuşal değerlendirme alanında uzman sekiz panelist tarafından üç tekrarla tadımı gerçekleştirilmiştir. Gerçekleştirilen tadımlar sonucunda nihai ürüne ulaşılmıştır. Eğitimli panelistler tarafından onaylanan nihai ürün reçetesine uygun şekilde hazırlanan keşküle; vegan ve vejetaryen beslenme alışkanlığına sahip tüketiciler aracılığıyla, tüketici beğeni testi uygulanmıştır. Tüketici beğeni testinde katılımcılar, ölçüt örnekleme yöntemi aracılığıyla tesadüfi olarak seçilmiş ve toplamda 80 kişi ile gerçekleştirilmiştir. Bulgular: Katılımcıların değerlendirmeleri sonucunda üretilen vegan keşkülün genel beğeni düzeyi 5 üzerinden 4.35 gibi bir değerle yüksek olarak belirlenmiştir. Aynı zamanda katılımcıların ürünü satın alma niyeti düzeyleri %82.5'lik önemli bir seviyede belirlenmiştir. Sonuç: Bu veriler nedeniyle vegan beslenme tarzını benimseyen bireyler için alternatif ürünler geliştirilmesi önemlidir. Tüketicilerin badem sütü ile üretilmiş keşküle ilişkin değerlendirmeleri; görünüş, koku, doku ve tat açısından incelendiğinde beğeni seviyelerinin ve satın alma niyetlerinin yüksek olduğu görülmüştür.

Anahtar Kelimeler: vegan beslenme, keşkül, bitkisel yağ, vejetaryen, panelist.

Abstract

In this study carried out, Keşkül, which has an important place in Turkish Culinary Culture, is aimed to be prepared in accordance with vegan nutritional sensitivity. The recipe for keşkül prepared for vegans was tasted by eight panellists with three repetitions who are experts in the field of sensory evaluation. With three repetitions of taste of receipt of keşkül prepared for vegans by eight educated panellists have been realized in the field of sensory evaluation.. As a result of the tasting carried out, final product was reached. Keşkül prepared accordingly to the final product approved by trained panellists; consumer tastes were tested through consumers with vegan and vegetarian eating habits. The participants in consumer tasting questionnaire were chosen randomly via criterion sampling method and were conducted with a total of 80 individuals". The general appreciation test level of vegan keşkül produced as a result of the participants' evaluations was determined as high with a value of 4.35 out of 5. At the same time, the participants' intention to purchase the product was determined at a significant level of 82.5%. Due to these data, it is important to develop alternative products for individuals who adopt the vegan diet. When it was examined in terms of appearance, smell, texture and taste regarding consumers' evaluations for keşkül produced with almond milk, it is seen that levels of taste and intention to purchase it were high. a¹

Key words: vegan diet, keşkül, vegetable oil, vegetarian, panellist

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INTRODUCTION

While vegetarianism is a nourishment preference in consuming limited animal products or never consumed, we can say that veganism is stricter than vegetarianism; it is a kind that veganism never consume meat (red meat, chicken, sea products), such products gained from honey, milk, egg, yogurt, kephir by no means. During 1940, veganism that showed itself gradually and defended itself as an alternative consumption style, it gained an identity with the foundation of Vegan Association in 1944. Not only veganism has gained an understanding for changing dietary habit but also it has become an understanding for animal exploitation against every kind of animal product consumption. In parallel with this, those people do not wear clothes made of animal products/livestock such as wool, silk and leather, do not use soaps containing animal fat, they never use any kind of product that has been tested on animals, never go the circuses and they do not watch any movies where the animals are made use of. It is mentioned that apart from being a nutritional habit, this is also seen as a life style that has become a perspective for bioethics. According to this perspective, indeed, it is emphasized that vegans defend their ideas for creature equality (Tunçay, 2016; Tunçay and Bulut, 2016; Anonymous 1).

Consumption habits vary from cultural or regional, in fact it is indicated that among the people's preferences about vegan dietary habit differentiate, who share the same culture or region. It is remarked that many number of factors such as ecologic, cultural, religious, taste/flavour and respect for animals have an effect in this difference (Thomas, 2016).

Food and beverage habits of people are shaped by being affected by both the family and the society they live in. Although the reasons in the vegan diet preferences are different, the traditional consumption habits of that person's own culture are determinant in these preferences (Dhont and Stoeber, 2020). In this sense, vegans are traditionally heading for the foods that might be an alternative to the established palate. Especially many products that can be an alternative to consumption of animal products are preferred in vegan diets. There are three main consumer motivations as for health, environmental and animal welfare in the preference of these products (Ruby, 2012;

Fox, 2017; Soule and Sekhon, 2019). In order not to consume meat or to consume alternatives to traditional meat; they incline to sustainable meat products or food and beverage appealing to taste (Le, 2019). Plant derived from animal products such as sausages, hamburger meatballs, vegan chicken, meat, cheese and butter are preferred by vegans as an alternative to animal products (Fox, 2017).

Findings from countries with high vegetarian and vegan ratios which are more likely to western-style eating habits, emphasize that lifestyle choices and cuisine habits can be as important as avoiding meat consumption. So that, the consumption of processed or fried foods and refined carbohydrates that pose a risk in nutrition is increasing (Norman and Klaus, 2020). Especially in the diets of people, whose health rationale is not as prominent as veganism, this circumstance shows itself (Aksürmeli ve Beşirli, 2019).

All around the world, though the exact number of vegans is not known, researches show that the number of vegans has been raising up especially in prosperous countries. The reason for this interest, there are several different studies explaining the benefits of vegan dietary for the health. It is indicated this research has a great impact on people who consume vegan food have lower cholesterol level, low risk for cardiovascular-disease and diabetic illnesses, low capture ratio of being caught gastric cancer and colon cancer (Radnitz et al., 2015). Vegan diet is shown as a choice that is based on both a regular vegetable diet and a sustainable diet in accordance with food of animal origin such as egg, milk and cheese (Baroni et al., 2007).

On behalf of meeting the differences in parallel with the rise in the preferences for vegan diet, a good many of alternative products have been offered. According to one of the market Survey company's report on institutional food and drink, it has been represented that one of the biggest tendencies in 6 is vegetable-based nutrient in 2017. Since the period in 2010-2011 when the research was done, it is mentioned that the demand for vegetable based products has been boosted %257 percentage. Especially it is predicted that the market for alternatives like meat, milk and egg will grow and it is stated that there will be various alternative food production. For

example, with the increase for demand of vegetable-based milk, various vegetarian based milk products which can be alternative are manufactured. In addition to almond, wheat, rice, cashew and coconut milk, lastly, banana milk has been added as an alternative. Again, that Indian researchers produced yoghurt in which peanut was used having applied only one cultivated probiotics is an alternative for the people who consume vegan diet while mushroom that was enriched in regard to D2 vitamin is put on market for people who consume vegan food (Arıman, 2016).

In Turkey, the demand for vegan products has risen up showing parallelism to the world. Especially, food companies, which export to European countries, register that their products have vegan standards in V-Level. V-Label stepped inside Turkey at the end of 2014. V-Label is a developed licenced symbol by European Vegetarian Union to register vegan food products' convenience which is independent from complicated codes on the package and ingredients, easily understood and only one type of etiquette with controlled reliability. During last 1 year, the demand for V-Label has soared (Anonymous 2).

The first vegan festival was held in 08-09 April 2017 in Turkey. The festival organized by Didim municipality that is a vegan-friendly one drew attention by many number of vegans. By creating awareness about vegans, the restaurants and cafes for diet preferences have started to be in service in Turkey, as well (Arıman, 2016). So the festival continued in the following years. While 60 thousand visitors attended the festival within 2 days, which was organized for the first time in 2017 (DidimVegFest,2020).

Along with these kind of activities, guidance from the point of body-literature is dramatically important. In the research that Cömert ve Özkaya (Cömert and Durlu-Özkaya, 2014). did by drawing attention to create special menus for different dietary groups, emphasized that creating special menus for vegans is important for both competing in business and meeting the costumers' expectation. In the research that Sünnetçioğlu et al. (Sünnetçioğlu et al., 2017). did provided various solutions referring to the problems that vegans encountered in the restaurants. The researches that have been done before like that one or the

other one, the importance of the people who have sensibility and have an increase in vegan diet and managements that provide services have been highlighted.

With this research, making the traditional dessert keşkül suitable for the people who have sensibility in vegan dieting and measuring their sensory perception are aimed. Sensory evaluation is a discipline that measures, analyses and explains the reactions for sight, taste, smell or/and auditory (Onoğur and Elmacı, 2015; Özkaya et al., 2017). In this context, almond milk as an alternative for vegetable-based milk and vegan oil that was prepared with vegetable-based ingredients have been developed as a new product. While this developed product was being evaluated by trained panellists in terms of sensory, tasting test was applied on the consumers. The tasting test which was applied for the consumers has been restricted with the people who live on vegetarian or vegan diet. The level of tasting test associated with general appreciation level produced as an alternative, the suitability for dietary style and the percentage of request for purchasing are aimed to reveal.

MATERIALS and METHODS

The product description was prepared considering vegans' sensibility and ingredients were chosen paying regard to this. The ingredients used in the product description: almond milk (Alpro®, Belgium), sugared vanilla (Kenton®, Turkey), vegetable oil (the developed product was specialized, added to the original recipe to lustre it).

The preparation of vegan vegetable oil: The reason why the vegan vegetable oil is not a ready product in the industry, it is prepared by using almond oil, olive oil, coconut butter, vinegar, salt and xanthan gum. Almond oil is shaken and curdled with vinegar, added salt, xanthan gum and frozen by giving volume with a mixer.

Recipe and preparation of vegan keşkül: In the research, the products were tested with different formulas using almond milk, sugar, flour, almond, vanilla and vegetable oil. In the consequence of the first prescription of sensory evaluation, lacking or inappropriate conditions modified and second and third prescriptions were formed.

Table 1: K1, K2 and K3 products content

Product Code	Almond Milk	Sugar	Flour	Vegan Vegetable Oil	Almond	Sugared Vanilla
K1	500 ml	100 g	60 g	65 g	90 g	2.5 g
K2	500 ml	60 g	45 g	65 g	60 g	2.5 g
K3	500 ml	50 g	60 g	65 g	60 g	2.5 g

While making Keşkül, all of the ingredients were taken into the saucepan except for vanilla and almond. It was cooked for ten minutes until it was consistent. After having added sugary vanilla and ground almond, cooking process was finalized and portioned. Along with the panel's eight trained members' evaluation and recommendations, the testing lasted till the final product was made.

Within the scope of the research, keşkül was coded as K1, K2 and K3. This was made in parallel with K1 standardized prescription's substitutions. K1 product; according to the results of the research that has been done by the trained panellists, it was produced with the ingredients specified, consistency, sugar and the percentage of almond was found high and that leded change. K2 product; according to the results of the research that has been done by the trained panellists, produced with the ingredients grammage specified, less consistency was found and the percentage of sugar was found high. With respect to these results, there has been alteration by increasing the amount of flour and decreasing the level of sugar. The grammage fixed to the K3 product has been produced two times more to make certain of sustainability of the prescription and approved by trained panellists.

Sensory analysis of the products:

The products prepared for vegan consumers were tested by 8 trained members of panellists. The members of the panel consist of the people who received education for 54 hours in Gastronomy and Culinary Arts Department and they continue master training in that department. The group that consists of trained panellists used the profile analysis method within the identification assessment from sensory analysis technic related to the products. Within the scope of the research according to the results of sensory analysis, three different

recipes were prepared. In the sensory analysis scale that was asked from the panellists to fill: 1: "awful" 2: "poor" 3: "average" 4: "good" 5: "excellent" in form of likert scale and "soft-hard", "homogen-not homogen", "liquid-thick", "like-dislike" as the scale of semantic differences were used. There are four different sections related to appearance, smell, texture and taste of the product. The appearance concerning its colour, glitter and shape, homogeneity level and softness concerning texture, whether it has smell of almond and flour and taste of almond, sugar and flour's lack of existence have been investigated.

Consumer Tasting Questionnaire:

In the scope of the research, while composing the target mass, people, who have sensibility for vegan and vegetarian diet, have been chosen randomly and they have been carried out on tasting test. Criterion sampling method has been benefited to be able to assign sample. It has been aimed to reach vegans and vegetarians with the help of criterion sampling. Between the dates 1st December 2017- 10th December 2017, 48 vegetarians and 32 vegans have been reached via Ankara Veganka Cafe, Ankara Kakule Kahve, Eskişehir Bachçe Sanat Akademisi, Eskişehir Hey Joe Café. Research sample group is composed of 80 consumers. The questionnaire has two parts that has been prepared for the consumers. In the first part, demographic feature is included. In the second part, though, with the questionnaire prepared as 5 likert scale, product appearance, smell, texture, taste and general tasting level and intention for purchasing have been asked.

Analysis of the Data:

The evaluation of the products have been done with averaging the data gained from trained panellists. According to the determined purposes, descriptive statistics were benefited

to analyse the data that had been before. According to the purposes, consumer tasting scale's value of Cronbach Alpha was found 0,72 and it was monitored that the data showed normal distribution.

RESULTS

In the scope of research, the final product was evaluated with the results that was gained about the products' sensory features' evaluations and expert view in the process of trained panel members developing the product. The final product that gained has acceptable features and tasting questionnaire was applied to the customers who have sensitivity for vegan diet to specify the targets' view about the product.

While target group having been created to be able to apply the tasting test, individuals, who were chosen randomly and has sensibility in vegan and vegetarian diet, are shown in Table 3 according to demographic features. The group that has been applied the tasting test is composed of women with a majority at the rate of 60%. When examined in terms of age, the ages between 25-34 are predominated. With the range of 66,3%, consumers are highly composed of individuals who have graduate degrees. In addition to this information, it is seen that 60% has vegetarian sensibility and 40% has vegan sensibility. It is established that while attendants compose of 35% whose income states are 3000TL and above, the rest of the consumers' income states are 1000TL and under and 26% is composed of students.

Table 2. Demographics of consumers

Gender	n	%	Educational Status	n	%
Male	32	40	Secondary Education	2	2,5
Female	48	60	College	1	1,3
Age	n	%	University Degree	53	66,3
18-24	27	33,8	Master Degree	24	30,0
25-34	37	46,3	Level of Income	n	%
35-44	14	17,5	1000 TL and under	21	26,3
45 and above	2	2,5	1001-2000 TL	19	23,8
Diet	n	%	2001-3000 TL	12	15,0
Vegan	32	40	3001-4000 TL	10	12,5
Vegetarian	48	60	4000 TL and above	18	22,5
Total	80	100	Total	80	100

While developing vegan keşkül, Keşkül recipe was used that based on the standard product as the original one used in Ottoman Cuisine. There has been changes in the products that the target group could not consume due to their sensitivity. With the results of this product's sensory analysis, K2 and K3 products were prepared by following the process steps mentioned in the method.

Developed Vegan keşkül's evaluation criterions are appearance, smell, texture and taste. In this scope, 8 trained panellists' evaluations' were averaged and for each product (K1, K2, K3), the data, which was gained, are shown in table 2.

Figure 1: K3 product (Vegan Keşkül)



Table 3: Sensory analysis results of products

	Sensory Properties	K1	K2	K3*
<i>Appearance</i>	First Impression ³	3,75	3,50	4,37
	Color ²	2,50	2,87	2,99
	Lustre ²	2,87	3,25	3,08
	Shape ²	2,50	3,25	3,08
<i>Texture</i>	Softness ²	3,75	4,25	2,62
	Homogeneity ³	3,50	4,12	4,29
<i>Smell</i>	Almond ²	2,25	2,37	2,62
	Flour ¹	1,37	2,62	2,16
<i>Taste</i>	Almond ²	3,75	3,12	3,37
	Almond ²	3,00	2,87	2,62
	Flour ¹		1,37	1,49
	General Appreciation ³	3,5	3,75	4,33

*: All results are the result of panelists' evaluations. The values given for the K3 product represent the mean of three replications.

1: It is expected that the criteria expressed by one need close to 1.

2: It is expected that the criteria expressed by two need close to 3.

3: It is expected that the criteria expressed by three need close to 5.

Consumers' tastes about keşkül produced with almond oil and their intention for purchasing it are stated in table 4. When the averages analysed, it is understood that it has a high range of like in terms of smell, taste and pattern. Their intention to buy the product also verifies this. It has been thought that as the variabilities of desserts for vegans and vegetarians in this area is highly low, those people who have sensibility in vegan and vegetarian diet has an effect on their taste level and yearning for desserts.

Table 4: Consumer Tasting Questionnaire

Consumers Average**	
Sensory Properties	
K3*	
Appearance	4,27
Smell	4,38
Texture	4,41
Taste	4,43
General Appreciation	4,35
Level of Intention to purchase	n=66

*K3: End product tested by trained panelists.

** : The scale questions were asked in 5 points likert. (1) means dislike, (5) means like.

DISCUSSION

In this study, considering the product demands of consumers who have adopted the vegan nutrition system, it is aimed to produce one of our traditional flavors according to the vegan diet. Although the nutritional preferences of individuals may change, eating and drinking habits are shaped by being influenced by both the society and the family. In this context, even

though their diet differs, the foods appealing to the palate shaped by the traditional consumption approaches of individuals in their cultures cannot be removed. Converting traditional flavors into the alternatives that are suitable for vegan diet is thought to increase the orientation of individuals to food of their culture.

There has been difference in preferences for a healthy diet since consumers' interests have increased including education status and increasing of income level. Along with those differences, there has been seen diversity in consumers' expectations. With the rise of individuals' sensibility for vegan diet, this consumer group's expectations and demands have been rising, as well. However, vegan consumers have encountered many different troubles in the low number of vegan restaurants, other people's unconsciousness and inadequate knowledge of vegan food.

In this study, a traditional dessert using herbal based milk instead of animal milk, keşkül is adapted to a vegan diet. In this regard, it is thought that it will serve as an example in terms of producing traditional foods with vegan nutrition or alternative adaptations for different culinary habits and has been presented to consumers. These products and similar ones developed have been found remarkable by the customers with different nutrition an sensitivity. It is thought that it can be used to make a difference in terms of food and beverage establishments that make alternative adaptations for different diets.

Even though their numbers are not known worldwide, individuals who adopt the vegan thinking system and whose numbers have been increasing since 1940s, have a plant-based diet. In addition to this, market research reports show that plant-based foods have an important place among food and beverage inclinations and it is seen that there is a high demand increasing in these foods. Due to these data, it is important to develop alternative products for individuals who adopt the vegan diet.

Almond milk was used within the research. Keşkül was produced from this milk and trained panellists' sensory perception was measured. Based on the sensory analysis results, keşkül was prepared in three different prescriptions. The final product accepted generally by trained panellists, was offered to the consumers with vegan and vegetarian sensitivity and consumer tasting questionnaire was applied, as well. When it was examined in terms of appearance, smell, texture and taste regarding consumers' evaluations for keşkül produced with almond milk, it is seen that levels of taste and intention to purchase it were high. Along with the tasting level is strongly high, consumers' intention

to buy the product is also positive and that leads to establish a ground for a couple of researches in economic sector. Given the sensitivity of vegans or vegetarians as well as individuals who prefer not to consume animal milk, the variety of products should be increased in order to ensure that their needs are met.

In the light of the current results, it shows that people, who have sensibility for vegan diet, are open-minded for innovations. Under this circumstance, the group expecting for innovation and servicing, it is a need that producers' awareness should be raised and they should get the necessary training. When we look for the demographic features, we can deduce that it consists of a young and high educated and income profile. It has been also thought this research is quite essential to set light to the further academic and sectoral works and for the events that will be done and food and beverage activities for that dynamic and young group of vegan consumers to contribute to that area with the help of this research by centring vegetarianism and veganism which are the most common dietary sensibilities all around the world.

KAYNAKLAR

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