



The use of Buffalo Milk, Kaymak and Yogurt in Traditional Products of Afyonkarahisar Cuisine

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Abstract

The objective of this study is to introduce Afyonkarahisar, which was included in the UNESCO Creative Cities Network in 2019, to the whole world in terms of gastronomic tourism, to determine the usage areas of buffalo milk, kaymak and yogurt in traditional products of Afyonkarahisar cuisine past to present, to state the benefits of buffalo milk, to ensure its sustainability and to transfer it to future generations. As a data collection method, face-to-face interview technique, one of the qualitative research methods, was used. Within the scope of the research, interviews were conducted with 16 cooks and 1 manager working in different restaurants in Afyonkarahisar, 1 kaymak master, 1 Turkish delight master and 3 restaurant owners in Afyonkarahisar and 7 housewives living in Afyonkarahisar. In this study, it was determined that buffalo kaymak is used more than milk and yogurt in Afyonkarahisar and especially decorates desserts. In addition, it was determined that buffalo breeding decreased in Afyonkarahisar and this was reflected in the products.

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INTRODUCTION

The first settlement in the area, where today's Afyonkarahisar is located, is the village established on the skirts of Hapanova Castle, which was built by the Hittite Emperor 2th Murşil during the Arzava Expedition. The first name of this village is Akronium, came from the word Akron meaning high hill. Akronium, which gained importance owing to its castle during the Byzantine period, began to be known as Akreinos. The civilizations that dominated the region until the conquest of Afyonkarahisar by the Turks were Hittites, Phrygians, Lydians, Persians, Macedonians, Seleucids, Pergamons, Romans and Byzantines, respectively (Küpeli et al., 2000).

Afyonkarahisar is located in the middle of the Anatolian peninsula, close to the west, and in the inner part of the Aegean region. The province is surrounded by Eskişehir, Konya, Isparta, Denizli, Uşak and Kütahya (Kızıldemir, 2019).

Afyonkarahisar is one of the important gastronomy destinations of Turkey with its culinary culture, history and traditional food industry. In this way, within the scope of UNESCO Creative Cities Network, it was awarded the title of Gastronomy City in 2019 and became the 3rd Gastronomy City of Turkey after Gaziantep and Hatay (Çelik et al., 2021). Afyonkarahisar's most well-known products are sucuk doner kebab, Turkish delight, buffalo milk, poppy seed, cherry, potato and kaymak (Kızıldemir, 2019). Afyonkarahisar is making progress by taking geographical indications with Afyon buffalo kaymak, Afyon bükmesi, Afyon bread with potato, Afyon ağzıaçık, Afyon ekmek kadayıfı with kaymak, Afyon kebab, Afyon Turkish delight, Afyon pastırması, Afyon pathıcan böreği, Afyon sucuğu, Afyon velense hamur aşısı, Afyon çullama meatball, Emirdağ dolgulu meatball, Emirdağ güveci, Emirdağ yumurtalı pidesi, Şuhut keşkeği, Afyon buffalo yogurt, Sultandağı cherry, Afyon ılıbada sarması in the gastronomic meaning (Turkish Patent and Trademark Office, 2021). Boyraz (2019) developed suggestions for the role of these geographically marked products in increasing the touristic demand.

There are three main types of buffaloes in the world. These are riverine buffaloes (*Bubalus bubalis*), swamp buffaloes (*B. carabaneis*) and Mediterranean buffaloes (*B. murrensis*). The riverine buffaloes are found in South Asia and Southwest Asia. The swamp buffaloes are found in East Asia and Southeast Asia. The Mediterranean buffaloes are found in Italy, the Balkan states, Turkey and some parts of Russia. The best buffaloes of the world are present in the Indian subcontinent (Khedkar et al., 2016).

Buffalo milk is more valuable than cow milk because of its high fat content (Coroian et al., 2019). Buffalo milk has higher contents of fat, lactose, protein and minerals (calcium, magnesium and inorganic phosphate) compared to cow milk (Ahmad et al., 2008). It has also higher vitamins A and C and lower tocopherol, riboflavin and cholesterol, an absence of carotene and the presence of the blue-green pigment (biliverdin), a bioactive pent saccharide and gangliosides not found in cow milk (El-Salam et al., 2011). Buffalo milk includes a higher percentage of linolenic acid which is considered anti-carcinogen compound and has beneficial effects on health problems such as obesity, arteriosclerosis and diabetes (Lopes Oliveira, 2004). Other difference between buffalo and cow milk is the diameter of fat globules which are 5.0 µm in buffalo milk and 3.5 µm in cow milk (Menard et al., 2010). Buffalo milk has higher viscosity, curding strength and pH (Ganguli, 1992). Garau et al. (2021) investigated the compositional, the healthy and functional characteristics of Mediterranean buffalo milk and whey obtained during production of mozzarella cheese and reported that buffalo milk includes beneficial compounds such as gangliosides which can provide antioxidant and neuronal protection and can improve heart, bone and gastrointestinal health in humans.

Buffalo milk and whey mix is used at some infant formulas.

The products of buffalo milk are yogurt, cheese, butter, kaymak and ghee. Yogurt and cheese are generally found in Australia, while kaymak, butter and ghee are most common in India (Bindal & Wadhwa 1993). The set-type buffalo yogurt is normally produced with unhomogenised milk. This yogurt is produced without milk solids fortification because of high solids content of the milk (Addeo et al. 2007). Conversely, cow milk requires fortification with skimmed milk powder for increasing the solid content (Gün & Işikli, 2006; Tamime & Robinson, 1999). Besides, cow milk is often homogenised, producing a homogenous product which prevents the formation of a kaymak layer (Hanh et al., 2014).

The products of buffalo milk are frescal cheese (Argentina, Venezuela, Brazil), butter and yogurt (Bulgaria), mozzarella and provola (Italy) and cheddar, karnal, brick, surati and melted (India) (Zava and Sansiñena, 2017). In Bulgaria, Rumania and Albania, dahi yogurt is produced from buffalo milk and has greater consistency and texture (Borghese, 2005). In India, khoa is a coagulated dairy product obtained by milk dehydration. Khoa is used as ingredient for the production of some sweets and candy. In Europe, the cottage cheese is prepared by acid coagulation (Ganguli, 1979). In Turkey, buffalo milk is used for production of the famous qeymac, keimak or kaimak: a type of ghee (Aleksiev, 1998). In Iran, ghee-type product, called qeymac, keimak, kaimak in Turkish, or sarshir in Persian, is very popular and there is salty yogurt, a traditional product made from buffalo milk, which is called mast in Persia. In Brazil, mozzarella cheese is most traditional buffalo milk product and others are frescal, ricotta, provolone cheese, caramel, curd, yogurt (Bernardes, 2006). In Argentina, Greece and Venezuela, mozzarella cheese is produced from buffalo milk (Zava, 2011). In Italy, mozzarella cheese is made from buffalo milk and used in formulation of pizza and caprese salad. Storage causes softening of cheese. The firmer cheese is obtained with high calcium content milk. Calcium content is also important in pizza production due to decreasing the acidity of the tomato sauce. The amount of residual sugar (galactose) in mozzarella cheese is important because galactose in cheese is responsible for undesirable browning of cheese during baking of pizza. This process can be prevented by starter culture containing lactic acid bacteria which convert galactose to lactic acid (Addeo et al., 2007).

Meshram et al. (2018) investigated the effect of fat levels in buffalo milk (5- 6 %) on the sensory quality of milk cake and reported that the flavor, texture, color, appearance, sweetness and overall acceptability score increased significantly with increasing of the fat level in buffalo milk. The sensory score of 8.5 for overall acceptability was observed for the milk cake produced from buffalo milk including 6 % fat while score for overall acceptability for the milk cake produced from buffalo milk including 5 % fat was 7.5. It was concluded that buffalo milk including 6 % fat can be used for the production of milk cake. Bekiroğlu & Özdemir (2020) studied physical, chemical and organoleptic properties of the ice creams produced from buffalo milk, cow milk, and their mix during storage for 21 days. Ice cream produced from buffalo and cow milk mix has the highest overrun value in samples. Longer first melting time was observed for ice cream produced from buffalo milk compared to ice cream produced from cow milk. The highest L color value was determined at ice cream produced from buffalo milk. The highest scores were obtained by ice cream produced from buffalo milk. It can be concluded that the use of buffalo milk in ice cream develops physical, chemical and sensory properties of the product. Mahmood et al. (2008) demonstrated that the using of plain, apple and banana fruit pulp in stirred yogurt made from buffalo milk improved yogurt quality. Aydın & Güneşer (2021) reported that Afyon kaymak and kömüş yogurt produced from buffalo milk in Turkey have

superior sensory properties. Yılmaz et al. (2017) demonstrated that yogurt produced from buffalo milk exhibited higher textural and sensorial properties compared to mixed milk yogurts. Sarker et al. (2016) reported that 40% egg and 4% constant corn flour provided better quality to buffalo milk pudding.

The aim of this study is to introduce Afyonkarahisar, which was included in the UNESCO Creative Cities Network in 2019, to the whole world in terms of gastronomic tourism, to promote the use of buffalo milk products, to state the benefits of buffalo milk, to ensure its sustainability and to transfer it to future generations. Thus, the products within Afyonkarahisar will be able to be made in other countries of the world where buffalo is grown. In addition, resources are recommended for healthy nutrition towards which the world is headed.

Material and Method

In this study, the usage areas of buffalo milk in Afyonkarahisar cuisine were investigated in Afyonkarahisar, where buffalo breeding and by-products obtained from buffalo milk are high. In this study, interviews were conducted with participants, using the interview method, one of the qualitative research methods, to collect data (Çavuş & Eker, 2022). The questions are; What are the foods that contain buffalo milk, kaymak and yogurt in Afyonkarahisar from the past to the present. What do you know about buffalo milk, kaymak and yogurt? Participants consist of 16 cooks, 1 kaymak master, 1 Turkish delight master, 3 restaurant owners, 1 restaurant manager and 7 housewives living in Afyonkarahisar (total 29 participants).

The ethics committee permission document required for the collection of data used in this study was obtained from Afyon Kocatepe University, social and human sciences scientific research and publishing ethics committee with the date of 26.10.2022 and the decision/number 136506.

All of the interviews conducted within the scope of the research were carried out face to face by the researcher between 27.10.2022 and 09.11.2022. In order to record the statements of the participants, voice recording and note taking methods were used together with the permission of the participants. Participants are coded as Cook 1 (C1), Cook 2 (C2), Cook 3 (C3), Cook 4 (C4), Cook 5 (C5), Cook 6 (C6), Cook 7 (C7), Cook 8 (C8), Cook 9 (C9), Cook 10 (C10), Cook 11 (C11), Cook 12 (C12), Cook 13 (C13), Cook 14 (C14), Cook 15 (C15), Cook 16 (C16), Kaymak master 1 (M1), Turkish delight master 2 (M2), Restaurant owner 1 (O1), Restaurant owner 2 (O2), Restaurant owner 3 (O3), Restaurant manager 1 (R1), Housewife 1 (H1), Housewife 2 (H2), Housewife 3 (H3), Housewife 4 (H4), Housewife 5 (H5), Housewife 6 (H6) and Housewife 7 (H7). Coding was done according to the initial letter of the job.

C1: Lokman Akbudak, Afyonkarahisar Özdilek resting facilities (opened in 1996 and still standing) head chef (his experience is 24 years)

C2: İsmail Akdoğan, Afyonkarahisar Özdilek resting facilities cook (his experience is 9 years)

C3: Ahmet Akdemir, İkbâl resting facilities (opened in 1960 and still standing) head chef (his experience is 25 years)

C4: Mehmet Çınar, Nur restaurant old cook (his experience is 50 years)

C5: Hazım Kayaevren, Kadayıfçıoğlu (a restaurant that was opened in 1960 and still standing, one of the oldest restaurants in Afyonkarahisar) restaurant head chef (his experience is 32 years)

C6: Hüseyin Alkın, NG Afyon Hotel (opened in 2012 and still standing) executive chef (his experience is 35 years)

C7: Yusuf Çınar, Nur restaurant (a restaurant that was opened in 1992 and still standing) cook (his experience is 49 years)

C8: Abdulrahman Gelep, Afyonkarahisar Korel Thermal Resort Clinic & SPA (opened in 2006 and still standing) sous chef (his experience is 17 years)

C9: Ali Özgür Anıl, Akrones Thermal SPA Convention Sport Hotel (opened in 2016 and still standing) head chef (his experience is 28 years)

C10: Şahin Aktaş, retired nursing home cook (his experience is 25 years)

C11: İbrahim Demiralay, cook in a private company (his experience is 15 years)

C12: Hüseyin Yalvaç, cook in his own company (his experience is 30 years)

C13: Zeki Yalvaç, retired university social facility cook (his experience is 40 years)

C14: İbrahim Malkoç, cook in his own company (his experience is 22 years)

C15: Hasan Yılmaz, cook in a private company (his experience is 20 years)

C16: Oktay Akyol, pastry chef at NG Afyon hotel (his experience is 18 years)

M1: Hakan Palalı, confectioner and kaymak master (his experience is 37 years)

M2: Yaşar Bekki, Afyonkarahisar Özdilek resting facilities Turkish delight master (his experience is 27 years)

O1: Ayşe Safkurşun (women entrepreneur), Musakka restaurant (a restaurant that was opened in 2020 and still standing) owner (his experience is 10 years)

O2: Burak Köse, Hidayet restaurant (a restaurant that was opened in 1960 and still standing, one of the oldest restaurants in Afyonkarahisar) owner (his experience is 11 years)

O3: Mustafa Baykara, old restaurant owner (his experience is 8 years)

R1: Mehmet Pancar, Historical İkbal restaurant (a restaurant that was opened in 1922 and still standing, one of the oldest restaurants in Afyonkarahisar) manager (his experience is 38 years)

H1: Azize Yalçın, housewife living in the center of Afyonkarahisar (70 years old)

H2: Fatma Erençil, housewife living in the center of Afyonkarahisar (69 years old)

H3: Mediha Akar, housewife living in the center of Afyonkarahisar (60 years old)

H4: Münevver Yeğit, housewife living in the center of Afyonkarahisar (75 years old)

H5: Cemile Dalgıç, housewife living in the center of Afyonkarahisar (45 years old)

H6: Birgül Kaya, housewife living in the center of Afyonkarahisar (54 years old)

H7: Fatma Dalgıç, housewife living in Şuhut, district of Afyonkarahisar (38 years old)

Result and Discussion

Usage areas of buffalo milk, kaymak and yogurt are as follows;

C1:

Mr. Akbudak stated that;

- buffalo kaymak is served with ekmek kadayıfı (Figure 1) and pumpkin dessert in the restaurant.

C2:

Mr. Akdoğan stated that buffalo breeding was very common in Afyonkarahisar in the past to benefit from its milk and therefore, buffalo milk, kaymak and yogurt obtained from buffalo milk were used in many dishes and desserts in the past. He stated that today, buffalo breeding has decreased and cattle breeding such as cow is more common, so buffalo milk is not available at the desired rate. Moreover, buffalo milk is more expensive and has more fat. For these reasons, cow's milk is preferred rather than buffalo milk.

When he was asked about the names of dishes and desserts including buffalo milk, kaymak and yogurt, he gave the following answers. He said that;

- first of all, buffalo kaymak and buffalo yogurt were obtained from buffalo milk,
- buffalo milk was used in making non-starchy sütlaç,
- buffalo milk and kaymak were used in the production of hoşmerim dessert,
- tarhana was made from buffalo yogurt in the past,
- in the present, buffalo kaymak is served with ekmek kadayıfı and pumpkin dessert.



Figure 1. Ekmek Kadayıfı with Buffalo Kaymak (photographed by İsmet Yalçın)

C3:

Mr. Akdemir stated that buffalo milk is only used for production of kaymak and yogurt, not used frequently in meals and desserts today due to lack of buffalo breeding and buffalo milk and being expensive, but in the past it was used in Afyonkarahisar cuisine;

- in the making of bulgur pilavı, buffalo milk was used instead of bone broth,
- buffalo milk was used extensively in making semolina dessert,
- buffalo milk was used in the production of hoşmerim dessert and buffalo kaymak was put on the dessert,
- buffalo yogurt was added to risoni pasta soup,
- after the bulgur pilavı was cooked, it was mixed with buffalo yogurt.

C4:

Mr. Çınar said that buffalo milk was more abundant in the past. Today, with the decrease of buffaloes and their areas, the evaluation of buffalo milk has been limited to only buffalo kaymak and yoghurt. He emphasized that kaymak took the first priority in the field of use of buffalo milk. He then stated that yoghurt took the second place.

The buffalo milk products served in the restaurant are;

- buffalo kaymak is put on ekmek kadayıfı,
- buffalo yoghurt is used in the preparation of the most preferred tripe soup.

He stated the usage areas of buffalo milk in Afyonkarahisar in the past as follows:

- buffalo milk was used in making cheese,
- buffalo milk was used in making flour halva, sütlaç and pudding,
- during making güllaç, buffalo milk was used for wetting the leaves of güllaç and buffalo kaymak was put between leaves,
- buffalo kaymak was used with honey for breakfast,
- buffalo kaymak was put on ekmek kadayıfı,
- buffalo kaymak was used as an accompaniment to all fruit desserts (pumpkin, apple, quince, etc.)
- buffalo milk fat was used in making ice cream due to increasing of the flavor and consistency,
- buffalo yogurt was used in the preparation of all kinds of seasoned soups such as tandoori, tripe and yayla soup.

C5:

Mr. Kayaevren said that;

- buffalo kaymak is served with honey for breakfast in the restaurant.
- ekmek kadayıfı and pumpkin dessert are also accompanied by buffalo kaymak.

He also stated that;

- buffalo yogurt was made from buffalo milk in all homes in the past,
- ice cream was widely made from buffalo milk in the past.

He pointed out that the distinctive features of buffalo milk add a distinct flavor and feature to products made from buffalo milk. These features are due to the geographical features, pastures and their feeding with poppy pulp peculiar to Afyonkarahisar.

C6:

Mr. Alkın said that;

- buffalo kaymak is served with ekmek kadayıfı and honey in the restaurant.

C7:

Mr. Çınar stated that;

- buffalo kaymak is put on revani, kalburabastı, nurpare, güllaç, pumpkin dessert, ekmek kadayıfı without additives, ekmek kadayıfı with cherry and ekmek kadayıfı with coffee in the restaurant.

C8:

Mr. Gelep stated that;

- buffalo milk is used in making kaymak, yogurt, cheese with black cumin, tiramisu, kazandibi, sütlaç and keskül,
- buffalo kaymak is put on baklava, pumpkin dessert and ekmek kadayıfı,
- buffalo kaymak is served with honey for breakfast,
- buffalo yogurt is used to season soups (yayla soup, wedding soup, kelle paça soup),
- buffalo yogurt is served in a la carte.

C9:

Mr. Anıl stated that;

- buffalo milk is used in making kaymak, yogurt, cheese, kazandibi, sütlaç and keskül,
- buffalo kaymak is put on keşkek, baklava, pumpkin dessert, ekmek kadayıfı and katmer,
- buffalo yogurt is used to season soups.

C10:

Mr. Aktaş mentioned that;

- buffalo kaymak is served with honey for breakfast,
- buffalo kaymak is put on ekmek kadayıfı due to reducing sweet taste,
- buffalo kaymak is applied to the top of bazlama and gözleme during baking on the sac to increase the flavor.

C11:

Mr. Demiralay said that;

- buffalo milk is used for production of yoghurt,
- buffalo kaymak is also served with jams for breakfast,
- buffalo kaymak is put on ekmek kadayıfı,
- bazlama was fried by applying buffalo kaymak on the top of it.

C12:

Mr. Yalvaç stated that;

- buffalo milk is used for production of yoghurt,
- buffalo kaymak is also served with jams for breakfast,
- buffalo kaymak is put on ekmek kadayıfı,
- buffalo kaymak is added to seasoned or white soups at the last stage for both consistency and flavor (tandoori soup, mushroom soup, seasoned noodle soup, yayla soup).

He stated that today, the usage areas of buffalo milk have decreased due to economic reasons.

C13:

Mr. Yalvaç said that;

- buffalo milk is used in making kaymak and cheese,
- buffalo kaymak is put on ekmek kadayıfı,
- buffalo kaymak is used as an accompaniment to all desserts such as apple, quince and fig desserts.

C14:

Mr. Malkoç mentioned that;

buffalo milk was used in making kaymak, yogurt and cheese in the past.

He emphasized that the flavor, texture and consistency of the ice cream made from buffalo kaymak in her childhood was much different. He stated that today, the production of yogurt and cheese from buffalo milk has decreased due to economic reasons.

C15:

Mr. Yılmaz said that;

- buffalo milk is mostly used for production of kaymak today,
- buffalo kaymak is also served with honey and jams for breakfast,
- buffalo kaymak is very good beside all fruit desserts, completing the dessert.

He stated that buffalo yoghurt has a different consistency than other yoghurts.

C16:

Mr. Akyol mentioned that;

- buffalo kaymak is served with all fruit desserts,
- buffalo kaymak is served beside pastry desserts such as hanımğöbeği, vezirparmağı kalburabastı,
- buffalo kaymak is very good for the special desserts prepared at the hotel (innovative creative works),
- buffalo kaymak is served as an accompaniment to the flavors in the dessert buffet,
- in order to promote Afyonkarahisar's local products, buffalo kaymak is especially served to local and foreign tourists along with desserts.

He stated that buffalo milk makes a difference compared to other milks (ice cream, sütlaç, kazandibi), but for economic reasons, this milk is only used as kaymak.

M1:

Mr. Palalı said that;

- buffalo milk is used in making sahlep,
- buffalo milk is used in making güllaç,
- buffalo milk is used in making milk desserts such as sütlaç, cauldron, keşkül, pudding and ice cream,
- buffalo kaymak is used in making keşkek,
- buffalo kaymak is used in making Turkish delight with kaymak,
- figs are cooked in buffalo milk and decorated with buffalo kaymak in the production of fig dessert,
- buffalo kaymak is put on quince in making quince dessert,
- buffalo kaymak is put on baklava,
- buffalo kaymak is used in making kaymak candy and stuffed cream,
- buffalo yogurt is used in making tarhana.

M2:

Mr. Bekki said that;

- buffalo kaymak is used in making Turkish delight with kaymak (Figure 2).

He stated that; compared to cow kaymak, buffalo kaymak stays white for a long time in Turkish delight and provides softness to Turkish delight. Turkish delight with buffalo kaymak has a better flavor and a longer shelf life. In addition, Turkish delight with buffalo kaymak is more preferred than other varieties.



Figure 2. Turkish Delight with Buffalo Kaymak (photographed by İsmet Yalçın)

O1:

Referring to the products made from buffalo milk by Afyonkarahisar people at home, Mrs. Safkurşun gave the information as follows:

- in order to increase the milk of the postpartum woman and for healing, kaymak is added to the pudding, which is prepared from a mixture of starch, buffalo milk and sugar (this dessert is called paluze in the local language). The feature that distinguishes this creamy pudding from its counterparts is that it is creamy and has the consistency of sahlep,
- ice cream is also made from buffalo milk. The consistency is gummier. Due to its components and high fat content, it has a different texture than other ice creams,
- buffalo kaymak is placed in the dough of kalburabastı or firma baklava dessert made during holidays and special days,
- flour halva is served with buffalo kaymak,
- traditionally, especially in the Şuhut region, buffalo kaymak is poured into the keşkek while it is being beaten,
- buffalo kaymak, which symbolizes Afyonkarahisar, is also used in the production of Turkish delight. In the region, Turkish delight with kaymak is among the products preferred and liked by domestic and foreign tourists.

She stated that buffalo milk products used in traditional foods made in the restaurant;

- buffalo kaymak made from buffalo milk is served with honey for breakfast.
- buffalo kaymak made from buffalo milk is especially served with desserts. These desserts are: baklava with kaymak, ekmek kadayıfı with kaymak, apple dessert with kaymak, pumpkin dessert with kaymak, quince dessert with kaymak,
- buffalo kaymak made from buffalo milk is served on top of keşkek,
- buffalo strained yogurt made from buffalo milk is used in göce meatballs,
- ılıbada leaf wrap, leaf wrap with meat and tandoori and tripe soup,
- buffalo pan yogurt made from buffalo milk is used on Afyon kebab.

O2:

Mr. Köse stated that;

- kaymak sugar was produced from soft buffalo kaymak,
- buffalo kaymak was used in making homemade biscuit,
- buffalo kaymak was used in making butter,
- buffalo butter was melted in a pan and poured over pasta and bulgur pilavı, in the past.

O3:

Mr. Baykara said that;

- wild spinach is roasted with buffalo kaymak oil,

R1:

Mr. Pancar stated that;

- buffalo milk is used in making sütlaç and pudding,
- buffalo milk and kaymak are used in making hoşmerim dessert,

- buffalo milk and kaymak are used in making bulgur pilavı.

H1:

Mrs. Yalçın stated that;

- buffalo milk is used in making poğaçı (Figure 3),
- buffalo milk and kaymak are used in making hoşmerim dessert (Figure 4),
- buffalo yogurt is used in making tarhana (Figure 5).



Figure 3. Poğaçı Made With Buffalo Milk (photographed by İsmet Yalçın)



Figure 4. Hoşmerim Made With Buffalo Milk and Kaymak (photographed by İsmet Yalçın)



Figure 5. Tarhana Made With Buffalo Yogurt (photographed by İsmet Yalçın)

H2:

Mrs. Erengil stated that;

- buffalo milk is used in making hoşmerim dessert,
- after heating the kaymak in the pan and it is poured over the noodles.

H3:

Mrs. Akar stated that:

- buffalo kaymak is served with honey for breakfast,
- buffalo kaymak is put on ekmek kadayıfı.

H4:

Mrs. Yeğit stated that;

- buffalo kaymak is served with honey for breakfast,
- buffalo kaymak is put on ekmek kadayıfı,
- buffalo yogurt is made from buffalo milk.

H5:

Mrs. Dalgıç stated that:

- buffalo kaymak is served with honey for breakfast,
- buffalo kaymak is used in and on keşkek,
- buffalo yogurt is made from buffalo milk.

H6:

Mrs. Kaya stated that;

- buffalo kaymak is used during frying of eggs,
- buffalo kaymak is used in making hoşmerim dessert,
- buffalo kaymak is used on homemade pasta and bulgur pilavı with lentils

H7:

Mrs. Dalgıç stated that;

- buffalo kaymak is served with honey for breakfast,
- buffalo kaymak is put on ekmek kadayıfı,
- buffalo yogurt is made from buffalo milk,
- buffalo cheese is made from buffalo milk.

In the conversations with the restaurant cooks, restaurant masters, restaurant owners, restaurant manager and housewives living in Afyonkarahisar, it was stated that buffalo milk is used in making kaymak, yogurt, cheese, sahlepe, paluze, hoşmerim dessert, ice cream, flour halva, semolina dessert, fig dessert, tiramisu, kazandibi, pudding, keşkül, sütlaç and poğaç, buffalo kaymak is used in making butter, stuffed cream, Turkish delight, kaymak sugar, hoşmerim dessert, homemade biscuits, pasta, wild spinach, noodles, egg, bulgur pilavı with lentils, keskek and bulgur pilavı, put on katmer, bazlama, gözleme, pumpkin dessert, apple dessert, fig dessert, quince dessert, baklava, hanımğöbeği, vezirparmağı, kalburabastı, revani, nurpare, güllaç, ekmek kadayıfı without additives, ekmek kadayıfı with cherry and ekmek kadayıfı with coffee, beside honey and jams and buffalo yogurt is used in making tarhana, risoni pasta soup, tandoori soup, yayla soup, tripe soup, wedding soup, kelle paça soup, put on ılıbada sarması, yaprak sarması with meat, bulgur pilavı, göce meatballs and Afyon kebab.

Conclusion

Cooks use buffalo kaymak mostly on ekmek kadayıfı and pumpkin dessert, next to honey. Masters generally use kaymak in Turkish delight. Restaurant owners use kaymak in different places. The restaurant manager uses kaymak in desserts. Housewives use kaymak in the production of hoşmerim, on ekmek kadayıfı and next to honey. Housewives continue their past habits of food containing buffalo milk, cream and yogurt products.

As a result, in the interviews, it was determined that making kaymak took the first place in the evaluation of buffalo milk, followed by yogurt making. Among the buffalo milk, kaymak and yogurt, kaymak is mostly used in many products, especially desserts. Besides, buffalo milk was used more widely in the past due to high number of buffaloes in Afyonkarahisar.

The fact that buffalo breeding was very high in Afyonkarahisar in the past was reflected in Afyonkarahisar culinary culture and led to the creation of a rich variety of dishes containing buffalo milk products. Buffalo milk, kaymak and yogurt produced in Afyonkarahisar are different in terms of aroma compared to other cities and countries. The reason for this is that the buffaloes here are fed with the pulp of the poppy grown in Afyonkarahisar. This adds value to the products made from buffalo milk and to the local dishes where these products are used. Based on the findings obtained in this study, it is predicted that studies on food products including buffalo milk, kaymak and yogurt

in the culinary culture of Afyonkarahisar will contribute to the literature. Furthermore, tourists who will participate in gastronomic tourism will have prior knowledge of local dishes including buffalo milk, kaymak and yogurt belonging to Afyonkarahisar. It will contribute to the spread of gastronomy tourism in Afyonkarahisar, to increase the number of tourists from other countries and to socioeconomic development. Bringing in local products including Afyonkarahisar buffalo milk, kaymak and yogurt to world gastronomy tourism, increasing of recognition, sustainability, preservation and transfer of local cuisine culture to future generations will be realized. With this study, it is thought that the recognition of Afyonkarahisar, which is a brand city of Turkey in thermal tourism, will increase even more.

Our recommendations are: buffalo breeders should be supported, facilities that process buffalo milk should be established, international projects covering buffalo milk and its products should be developed and universities should provide project support to students in this regard, gastronomy festivals should be organized, international congresses on buffalo milk and its products should be realized and foreign academicians should be invited to these congresses, the public should be informed about this issue by experts in printed and visual media and industry and university should cooperate.

Declaration

The authors have no conflict of interest to declare.

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Annex-1: Ethics Committee Permission

Evrak Tarih ve Sayısı: 26.10.2022-136506

T.C. AFYON KOCATEPE ÜNİVERSİTESİ SOSYAL VE BEŞERİ BİLİMLERİ BİLİMSEL ARAŞTIRMA VE YAYIN ETİĞİ KURULU KARARLARI	
TOPLANTI SAYISI:10	KARAR TARİHİ: 26.10.2022
KARAR 2022/301	
<p>Üniversitemiz Afyon Meslek Yüksekokulu öğretim elemanı Dr. Öğr. Üyesi Erdal ÖZER tarafından yürütülen (Diğer Araştırmacılar: Tansu ÇELİK, Seda YALÇIN), "Afyonkarahisar Mutfağının Geleneksel Ürünlerinde Manda Sütü, Kaymak ve Yoğurt Kullanımı" başlıklı öğretim elemanı araştırması kapsamında kullanılacak veri toplama araçlarının, etik açıdan sakıncalı olmadığına, katılanların oy birliği ile karar verildi.</p>	
ASLI GİBİDİR	
e-imzalıdır Prof. Dr. İsa SAĞBAŞ Sosyal ve Beşeri Bilimleri Bilimsel Araştırma ve Yayın Etiği Kurul Başkanı	