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Studies on Ottoman Sherbets from the Past to Present

Geçmişten Günümüze Osmanlı Şerbetleri Üzerine Yapılan Çalışmalar

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Sorumlu yazar:
Corresponding author:

Hasan Cankurt
Kayseri Üniversitesi
hcankurt@kayseri.edu.tr

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Abstract

Sherbet, a beverage with a rich historical significance in Turkish culinary culture, traces its origins to the Turks of Central Asia. However, its popularity experienced a significant decline during the 1960s with the rise of the beverage industry. This traditional drink, once widely consumed in the Ottoman Empire, has since been overshadowed by carbonated beverages and tea. Factors such as the enhanced refreshing sensation of carbonated beverages, their constant availability, extended shelf life, and consistent flavor contribute to this shift. This study underscores the ancient origins of sherbet and its considerable impact on cultural life, particularly during the Ottoman Empire. Additionally, it examines sherbets made during the Ottoman period from a food technology perspective, incorporating production recipes for 25 different sherbets for potential contemporary commercial use. Moreover, the study compiles recent scientific investigations on newly produced sherbets, including their production techniques and bioactive properties. The primary aim of this study is to contribute to reproducing the most popular sherbets consumed during the Ottoman period using modern production and preservation techniques, making them accessible to the public.

Keywords: Ottoman, sherbet, food technology, culinary culture, tea.

Öz

Türklerinyemek kültürü içerisinde, Orta Asya Türklerine kadar uzun bir geçmişe sahip olanve gıda teknolojisi açısından önemli bir çeşitliliği ve ticaret hacmi olan şerbet, 1960'lı yıllarda içecek sanayisinin kurulup genişlemesiyle revaçtaki yerini kaybetmiştir.Özellikle Osmanlı dönemindefazlaca tüketilen bu kültür içeceği, günümüzde gazlı içecekler ve çaya yenik düşmüştür.Bunun arka planında gazlı içeceklerin ferahlatıcı etkisinin daha yüksek olması, her an bulunabiliyor olması, uzun ömürlü olması ve standart lezzette olması gibi faktörler sayılabilir. Bu çalışmada aslında şerbetin kadim bir geçmişinin olduğu, özellikle Osmanlı döneminde bir tüketim maddesi olmakla birlikte yaşam kültürü üzerinde ne kadar derin izler bıraktığı vurgulanmıştır. Bundan ayrı olarak Osmanlı döneminde üretilen şerbetlere gıda teknolojisi açısından bakılmış ve günümüzde de ticarete konu edilmesi amacıyla 25 tanesinin üretim tariflerine yer verilmiştir. Ayrıca yeni geliştirilen şerbetler, şerbet üretim prosesleri ve şerbetin biyoaktif özelliklerini konu alan güncel bazı bilimsel çalışmalar derlenmiştir. Bu çalışma ile özellikle Osmanlı döneminde en çok tüketilen şerbetlerin günümüz üretim ve muhafaza teknolojisi ile yeniden üretilip halkın beğenisine sunulmasına katkı verilmesi amaçlanmıştır.

Anahtar kelimeler: Osmanlı, şerbet, gıda teknolojisi, mutfak kültürü, çay.

Introduction

This chapter offers a historical overview of the beverage and sherbet culture of the Turks, followed by a discussion of the sherbet culture throughout the Ottoman period. The discussion focuses on various aspects of sherbet production and consumption by the public and the palace. These aspects include the sourcing of raw materials, the presentation styles of the sherbets, and the methods employed for their preservation.

1. Drink and Sherbet Culture in Turks from a Historical Perspective

In this section, the sherbet production and consumption culture among the Central Asian Turks and during the Seljuk period, before the Ottoman era, is discussed to provide a historical perspective on sherbet production. Subsequently, specific literature related to the Ottoman period is presented.

The tradition of sherbet, which dates back to Central Asia, has consistently been an essential symbol in Turkish beverage culture. Furthermore, examining the Central Asian, Seljuk, and Ottoman regions reveals the existence and richness of a wide range of food and beverages, encompassing various food groups, soups, desserts, and beverages.[1]

The drinks accompanying the nomadic lifestyle of the Turks include koumiss, ayran, beer, boza, fuka[2], mîzab[3], cüleybin[4], gülâp/cülab[5], süçik/çakır/wine/fruit juice, kızıl süçik[6], ugut[7], agartgu[8], begni[9], buhsum[10], kumlak[11], uhak[12], çifşeng çakır[13], vinegar, and syrup. Among these beverages, koumiss, and ayran particularly stand out. Ice-cold ayran, which is preferred to quench thirst on hot summer days or during horseback expeditions, is the preferred beverage for Turks. Koumiss is a sour, watery drink obtained by fermenting mare's milk.[14]

Usually consumed by the wealthy, koumiss is also considered a sign of power. With the adoption of Islam, the consumption of koumiss has decreased because, according to Islam, alcoholic beverages are considered haram. The Turks of Central Asia consumed animal-based beverages such as milk, mare's milk, and wine. Additionally, their beverage culture included ugut, agartgu, begni,

[1] Seher Çelik, "19. ve 20. Yüzyılın Türk Kültür Hayatında Şerbet" (yüksek lisans tezi, Eskişehir Anadolu Üniversitesi, 2020), 180.
[2] Arpa suyu. Yusuf Has Hacib, *Kutadgu Bilig*, çev., Ayşegül Çakan (İstanbul: Türkiye İş Bankası Kültür Yayınları, 2019). 348.
[3] Sofra suyu. Yusuf Has Hacib, *a.g.e.,* 348.
[4] Bal şerbeti. Yusuf Has Hacib, *a.g.e.,* 348.
[5] Gül suyu ile yapılan şeker şerbeti. M. Zeki Oral, *Selçuklu Devri Yemekleri ve Ekmekleri*, Yemek kitabı tarih- halkbilimi-edebiyat. haz., M. Sabri Koz (İstanbul: Kitabevi Yayınları, 2002). 31.
[6] Kırmızı şarap. Reşat Genç, *XI. Yüzyılda Türk Mutfağı*. Yemek kitabı tarih-halkbilimi-edebiyat., haz., M. Sabri Koz (İstanbul: Kitabevi Yayınları, 2002). 15.
[7] Hamurdan elde edilen şarap. Genç, *a.g.e*., 15.
[8] Buğdaydan elde edilen şarap. Genç, *a.g.e*., 15.
[9] Bir tür bozaya benzeyen ve buğday, darı ve arpadan elde edilen içecek. Genç, *a.g.e*., 15.
[10] Darıdan elde edilen ve bir tür biraya benzeyen içecek. Genç, *a.g.e*., 15.
[11] Kumlak bitkisinin bal ile karıştırılmasıyla elde edilen şarap. Genç, *a.g.e*., 15.
[12] Kayısı suyundan elde edilen meyve suyu/içecek. Genç, *a.g.e*., 16.
[13] Ekşi meyve suyu. Genç, *a.g.e*., 16.
[14] Çelik, *a.g.e*., 180.

buhsum, kumlak, boza, beer, vinegar, and fruit juices or musts made from various fruits. Grape juice and must were among the most consumed fruit juices.[15]

Drinks such as sherbet[16], ayran, hoşaf, boza/bezni, sirkencübin, grape wine, date wine, pomegranate wine, and araki/rakı were among the most popular beverages of this period. Sherbets were particularly preferred with or after meals. The recognition of honey as an essential source of health made honey sherbet a frequently chosen drink. Sherbets made from rose water, pomegranate, figs, and grapes were among the most popular. These sherbets were often enriched with various spices. Sherbets sold in glasses on the streets could also be found in sherbet shops.

The origins of the sherbet culture in the streets, frequently mentioned during the Ottoman period, are believed to be traced back to the Seljuks and were likely a legacy passed from the Seljuks to the Ottomans. These drinks were typically served in containers, with ice from surrounding lakes used to cool them. Sherbet held particular importance for Mevlâna, who is said to have emphasized its significance by stating, "We have chosen three things in the world: semai, sherbet, and hammam."[17] Apart from sherbet, other standard drinks included ayran and hoşaf. Additionally, boza/bezni, made from millet, wheat, and barley, was a popular drink. Boza was kept in a jug to ripen, and when ready, it was poured from the jug and consumed. Another of Mevlâna's favorites was sirkencübin[18], which is made by mixing honey and vinegar in equal proportions. It was also a popular beverage.

"As vinegar increases its sourness, sugar should increase. Kahır (feeling deep sorrow about a subject) is like vinegar, and favor is like honey. The basis of sirkencübin is these two. If the honey is less than the vinegar, the sirkencübin will not be good."[19] Wine, consumed in Central Asia and whose consumption decreased with the adoption of Islam, remained a popular beverage around the palace and among the people. Grape wine was especially favored due to the abundance of vineyards. However, date and pomegranate wines, known for their sharper flavors, were less commonly consumed. Wine drinking was frowned upon in Sufi circles. Date wine is typically referred to as 'nebiz.'

In some menakıpnamas, wine is also depicted as a symbol of the drinking Sufi's power. For instance, in the story of Geyikli Baba, it is narrated that he transformed the raki and wine sent by Orhangazi into oil and honey. Similarly, Abdal Musa is said to have converted the tulum wine brought by a non-Muslim into strained honey, leading to the non-Muslim's conversion to Islam.[20]

[15] Genç, *a.g.e.*, 16.

[16] Genç, *a.g.e.*, 16.

[17] Haşim Şahin, *Türkiye Selçukluları ve Beylikler Dönemi Mutfağı, Türk Mutfağı*, haz., A. Bilgin - Ö. Samancı (Ankara: T.C. Kültür ve Turizm Bakanlığı Yayınları, 2008). 51.

[18] Nevin Halıcı, *Selçuklu Dönemi Mutfağı*, (Konya: Selçuklu Belediyesi Kültür Yayınları, 2015). 216.

[19] Mevlânâ Celâleddîn-i Rûmî, *Mesnevi, Cilt: 1,2,3,4,5,6*, haz., V. İzbudak - A. Gölpınarlı (İstanbul: Şark İslam Klasikleri, 1990). 4.

[20] Şahin, *a.g.e.*, 55.

When examining the beverages of the Seljuk period, we observe that new beverages emerged alongside those such as ayran and wine, consumed in Central Asia. Seljuk rulers mainly consumed wine made from dates, pomegranates, and grapes. Ibn-i Bibi notes that there was a winery in the palace and that garlic tutmac was consumed to alleviate intoxication. Up to this point, the beverage culture among the Central Asian Turks and the Turks of the Seljuk period has been briefly explained. Following this, the sherbet culture during the Ottoman period will be examined in more detail. In the subsequent sections of this study, production recipes for 25 types of sherbet known and produced since the Ottoman period will be presented from a food technology perspective. The final section will include a review of scientific studies and theses conducted on sherbet from the recent past to the present.[21]

In the 15th century, popular beverages included sherbet, boza, ayran, wine, koumiss, and water, consumed with meals. Sherbets made from dates, pomegranates, apples, pears, quince, citrus, lemon, and lotus were particularly popular during this period. Sirkencübin, which was also consumed during the Seljuk period, remained favored. The Turks had been consuming koumiss since their time in Central Asia, and it was widely consumed in the early Ottoman period. However, its consumption decreased over time.[22] With the spread of Islam, the consumption of koumiss, due to its intoxicating properties, understandably declined.

Boza was preferred as a nutritious drink for soldiers during this period, as it contains ample vitamins, proteins, minerals, and other nutritional elements. Simultaneously, it was also a popular beverage within the palace circles. Due to its alcohol content, two different types of boza were consumed: sweet boza, which has a low alcohol content, and sour boza, which has a high alcohol content.[23] Another alcoholic beverage of the period was wine. Wine, especially preferred by Jews and Christians, was also consumed to a lesser extent by Muslims.[24]

Among beverages such as sugar molasses (mi'ad sugar), coffee, salep, sherbet, and water, sherbet was a favorite drink consumed by the people in the 16th century. Honey sherbet, in particular, was the most frequently consumed among these drinks. Additionally, there were sherbets made from ribas, amberbaris, rose-lemon, hummas (citron), lotus, tamarind, cherry, and other seasonal fruits.[25] Coffee was first brought to Istanbul around 1550 and gained a significant place in the Ottoman beverage repertoire.[26]

Quickly adapted to Ottoman daily life, coffee became a favorite beverage. After breakfast, the first meal of the day, drinking a cup of coffee became a tradition. Coffee became so popular that gathering places called coffeehouses emerged. These establishments were venues for people to chat, play games, and exchange ideas. However, coffeehouses were banned in the 16th and 17th centuries

[21] Priscilla Mary Işın, *Avcılıktan Gurmeliğe Yemeğin Kültürel Tarihi* (İstanbul: Yapı Kredi Yayınları, 2019). 207.

[22] Işın, *a.g.e*., 207.

[23] Muhammed bin Mahmûd Şirvani, *15. Yüzyıl Osmanlı Mutfağı*, haz., M. Argunşah - M. Çakır (İstanbul: Gökkubbe Yayınevi, 2018). 142.

[24] Işın, *a.g.e*., 243.

[25] Arif Bilgin, *Seçkin Mekânda Seçkin Damaklar: Osmanlı Sarayında Beslenme Alışkanlıkları (15.-17.Yüzyıl)*, Yemek Kitabı Tarih-Halkbilim-Edebiyat, haz., M. S. Koz (İstanbul: Kitabevi Yayınları, 2002).

[26] Ahmet Yaşar, *Kahvehane, TDV İslam Ansiklopedisi, Cilt: 2*, (İstanbul: TDV İslam Araştırmaları Merkezi, 2016). 3-5.

due to the belief that they caused people to move away from religious life and were seen as a threat to the sultan because they facilitated the organization of dissenting ideas. Despite these measures, coffee remained a popular and widely consumed beverage. Compared to previous centuries, the tea tradition, which began in the 18th century, continued into the 19th century.[27]

The beverage culture of the Ottoman period has been discussed until this section. The following section will focus specifically on sherbet culture during the Ottoman period.

2. Sherbet Culture in the Ottoman Period

In the Ottoman period, the production of sherbets, prepared by sherbet makers under the direction of the sherbet maker, took place in the Helvahane.[28] Established in the first quarter of the 16th century, the Helvahane was administratively subordinate to the Matbah-ı Âmire. Here, the palace household's sweet and sour foods and beverages were produced. In addition to culinary dishes, various foods including jams, halvahs, marmalades (murabbâ, rubb), sherbets and syrups, pleasantries, jellies, pickles, and multiple confectioneries were produced. Sherbets, which held a special place among these, were under the supervision and responsibility of the sherbet maker.[29]

In the 19th-century Ottoman palace cuisine, dried and fresh fruits were used for sherbets and pleasantries. Fresh fruits were used in their season, while dried fruits were used mainly in winter when fresh fruits were unavailable.[30]

Sherbet, originating from Central Asia, along with sour-tasting vegetable juices, boiled plant juices generally used for medicinal purposes, and milk-based beverages, can be counted among the oldest pleasure drinks consumed during the Ottoman period. However, the most commonly consumed beverage with meals and at other times was sherbet, which consisted of fruit and water as its main ingredients. It was enhanced with sugar, rose water, spices, and other flavored substances according to taste.[31]

Since there were no soft drinks such as soda and cola in Ottoman society and alcoholic drinks were considered haram, sherbet held great importance. Sherbet, which occupied a significant place in the Ottoman palace, was always prepared to be available. Due to its short shelf life, durable versions were made or quickly prepared from dried fruits.[32]

Sometimes, hard candies flavored with fruits were produced for use in sherbet production, which was made by diluting these candies when necessary. Friedrich Unger, a famous confectioner in the 1830s, mentioned these hard candies and reported that confectioners in Istanbul made hard candies for sherbet using flavors such as orange, cinnamon, rose, lemon, vanilla, salep, pistachio,

[27] Ahmet Yaşar, *a.g.e.,* 3-5.

[28] Arif Bilgin, *Osmanlı Saray Mutfağı*, (İstanbul: Kitabevi Yayınları, 2004). 64-65.

[29] Bilgin, *a.g.e*., 61.

[30] Özge Samancı, *İmparatorluğu'nun Son Döneminde İstanbul ve Osmanlı Saray Mutfak Kültürü*. Türk Mutfağı. haz., Arif Bilgin-Özge Samancı (Ankara: T.C. Kültür ve Turizm Bakanlığı Yayınları, 2008).

[31] Kemalettin Kuzucu, *Osmanlı İçecek Kültüründe Yeni Bir Tat Olarak Çay*, Türk Mutfağı, haz., A. Bilgin - Ö. Samancı (Ankara: T.C. Kültür ve Turizm Bakanlığı Yayınları, 2008). 243.

[32] Priscilla Mary Işın, *Gülbeşeker Türk Tatlıları Tarihi*, (İstanbul: Yapı Kredi Yayınları, 2008). 111.

bitter almond, violet, jasmine, lovage flower, opium, amberbaris, strawberry, pineapple, cherry, pomegranate, coruk, apricot, peach, plum, date, and chocolate.[33]

Lemon juice, which is similar to lemonade and perhaps one of the most common sherbet drinks today, could be prepared in the Ottoman palace kitchen, or it could be imported from Kos Island, Chios Island, or Alanya, which were important citrus cultivation centers of that period.[34] It is also known that oranges and pineapples used in the production of sherbets are products of the 19th century.[35]

We learn about the shopkeepers and pedestrian sherbet artisans in the Ottoman Empire from Evliya Çelebi. Evliya Çelebi reported that the number of people working in the sherbet business in Istanbul in the 1600s was 500, spread across 300 shops. When those who sold rose water on foot (cüllâb), and those who sold spicy hot sherbet were included, this number reached 1100. The significant number of people engaged in the sherbet business at that time, solely in Istanbul, indicates that the sherbet culture in Ottoman society was highly developed. So much so that sherbet makers were included under the name 'şerbetçiyan' in Ahi unions. Sherbets were produced year-round, served cold in summer and hot in winter. In winter, the sherbet makers kept a fire burning underneath the barrels to ensure that the sherbet always stayed hot, making hot and spicy sherbets widely consumed. In summer, sherbets and pleasantries were cooled with snow in places where it was accessible.[36]

In the Ottoman Empire, confectioners were found on nearly every street corner, and each confectioner also sold sherbet. It can be compared to today's fizzy drink culture and market to describe that period's sherbet culture and market. However, it is imperative to state that the sherbets of that period were more natural and healthier than today's fizzy drinks. During the Ottoman period, sherbets were especially consumed to cool down. They were cooled with ice and snow and were usually consumed in glass bottles or dispensers. It is known that the best sherbets of that period were produced at the Hacıbekir establishment in Bahçekapı, Istanbul.[37]

During the Ottoman period, legal regulations were made to prevent the public from buying products at fraudulent and exorbitant prices. One law stated that "sherbet sellers will be monitored; when an ounce of grapes is bought for one akça, two ounces of sherbet will be bought for one akça. It must be musky and rose-scented, not sour and not too watery. The sherbets should be made of snow and ice, and their bowls and pouches should be clean." This regulation aimed to protect both sherbet shopkeepers and the public. In 1755, it was reported that there were a total of 182-foot vendors in Istanbul, 91 of whom were Muslims, 71 Christians, and 19 Jews, selling honey, grape sherbet, and melon seed sorbet (sübye) in bowls and cups. Necessary precautions were taken to prevent others from infiltrating among them. In another instance, during the reign of Selim III, the

[33] Friedrich Unger, *Doğu'da Tatlıcılık*, haz., F. Halıcı (Konya: Konya Kültür ve Turizm Derneği, 1987). 91-92.

[34] Arif Bilgin, *Klasik Dönem Osmanlı Saray Mutfağı*, Türk Mutfağı, haz., A. Bilgin – Ö. Samancı (Ankara: Kültür ve Turizm Bakanlığı Yayınları, 2008). 90.

[35] Arif Bilgin, Osmanlılarda Şerbet Kültürü ve Tatlıhâne-i Amire'de Üretilen Şerbetler, *Yemek ve Kültür Dergisi*, (İstanbul: Çiya Yayınları, Yaz, 2012). 51.

[36] Özge Samancı, Kar, Şerbet ve Dondurma, *Yemek ve Kültür Dergisi*, (İstanbul: Çiya Yayınları, 2007). 146-150.

[37] Çelik, *a.g.e.*, 180.

kadi of Istanbul issued a fatwa, and the Ottoman administration allocated all the sugar in the possession of the sugar sellers to the sherbet sellers based on this fatwa.[38]

Sherbet, which held an essential place in the Ottoman palace, was also widely produced at home and served to guests. The ranks of the guests and visitors to the palace could often be inferred from the type of sherbet served. Sherbet, indispensable at palace tables, was also served at every table during banqueting ceremonies.[39] There is information about this in the 1675, 1720, and 1834 surnâmes. Surnâmesare written works about Ottoman palace ceremonies. These surnâmes indicate that guests were served rose sugar, sherbet, various desserts, and coffee before the banquet.[40]

The Helvahane served in the Ottoman Palace until the 19th century, producing all the palace sherbets, jams, and pleasantries. Almost all fruits were used in their production. However, in the 19th century, the Helvahane was replaced by the newly established Tatlıhane for sherbet production.[41]

Regarding the variety of sherbets produced during the relevant period, Seher Çelik's master's thesis, based on the state archives of the Presidency of the Republic, provides valuable information. According to her research, the syrups produced in the palace dessert house on 1 March 1919 included pineapple, bergamot, poppy flower, violet, fulia, pomegranate, mandarin, cranberry, strawberry, sour cherry, black cherry, rose, orange, blackberry, blackcurrant, and tree strawberry.[42]

Some of the flowers and fruits used in the sherbets made in the newly established dessert house were grown in the gardens of the Ottoman Palace, while others were procured from abroad. Fruits were a source of sugar, sourness, and flavor, while flowers were primarily used to color the sherbets. Foreigners who came for official services such as embassies and touristic visits were favorably impressed by the sherbet offered to them.[43] The indispensable duo of the Ottoman banquets were pleasantries and sherbets. Western observers who attended these banquets reported that sherbet was served to high-ranking pashas and important guests.[44]

In the 19th and 20th centuries, Turks consumed coffee and sherbets the most. For example, in 1893, Georgina Max Müller, the wife of a British MP, visited her son, who was serving at the British Embassy in Istanbul. During her visit to Topkapı Palace, she was offered sherbet and coffee. When presented to the Chief Cabinet Secretary, she was again offered coffee and iced almond sherbet. She also reported drinking the same iced almond sherbet in the house of a Turkish officer, noting that it was similar to those made in Sweden.[45]

[38] Çelik, *a.g.e.*, 180.

[39] Artun Ünsal, *Siyasi Güç, Statü, Meşruiyet, İtaat ve Otorite Mücadelesinin Göstergesi Olarak Yemeğin Sembolizmi*. Türk Mutfağı. haz., A. Bilgin-Ö. Samancı (Ankara: T.C. Kültür ve Turizm Bakanlığı Yayınları, 2008).

[40] Çelik, *a.g.e.*, 180.

[41] Bilgin, *a.g.e.*, 62.

[42] Çelik, *a.g.e.*, 180.

[43] Çelik, *a.g.e.*, 180.

[44] Marianna Yerasimos, *Evliya Çelebi Seyahatnamesinde Yemek Kültürü Yorumlar ve Sistematik Dizin*, (İstanbul: Yapı Kredi Yayınları, 2019). 202.

[45] M. Bülent Varlık, Kadınların Gözüyle İstanbul Sofraları. *Yemek ve Kültür Dergisi*, (İstanbul: Çiya Yayınları, sayı: 37, 2014). 70.

Important Western personalities who visited the Ottoman Empire at various times were fond of the sherbets served to them. Among these visitors were Miss Julia Pardoe, 16th-century British Ambassador Sir Edward Barton, traveler Hans Bernschwam, 16th-century British Ambassador William Harborn, Roman-Germanic Embassy Secretary Adam Werner, Seyüzyılah Güneş Moryson, Ambassador Baron W. Wratislaw, the Parisian traveler French Ubucini, Father John Covel, the Spaniard Seyüzyılah Sanz, Seyüzyılah Henry Christmast, 18th-century Swedish Ambassador M. D'Ohsson, and 19th-century British Consul Fenny Blult.[46] M. D'Ohsson, the 18th-century Swedish Ambassador, provided detailed accounts of the sherbet culture. He noted that Muslims were sensitive about what they drank as well as what they ate. The wealthy drank an elaborate sweet drink called sherbet, while middling people drank simpler versions. Simple sherbet contained only honey or sugar, whereas elaborate sherbet included ingredients like lemon or orange juice, citron, violet, rose, saffron, linden juice, and more. Important personalities had people preparing various sherbets kept in crystal jugs. According to his testimony, these concentrated sherbets were diluted with water and enhanced with multiple scented substances such as musk, amber, and sarısabır. They were consumed throughout the day, especially in summer, and after meals, particularly with pastries.[47]

3. Ottoman Sherbets Preparation Recipes

This section presents recipes for sherbets produced during the Ottoman period. Due to the limited preservation methods, packaging technology, and logistics facilities of that time, these sherbets were produced in quantities sufficient for immediate consumption rather than intercity trade. Consequently, the recipes below are based on sufficient amounts for a few people. There are more than seventy sherbet recipes, all of which can be found in Seher Çelik's master's thesis titled "Sherbet in Turkish Cultural Life of the 19th and 20th Century." However, 25 of today's most popular and frequently produced sherbets are included here.

Woodberry (Raspberry) Sherbet

To make this syrup, 1.5 kg of raspberries, 2.1 kg of sugar, and four tablespoons of lemon juice are used. Raspberries are separated from the stems, bruised berries are removed, and they are washed and cleaned. The berries are then crushed by hand in a pot, the pulp is removed by straining, and the juice is transferred back to the pot. After adding sugar and lemon juice to this juice, it is heated over an intense fire and left to cool after boiling for 7-8 minutes. This syrup, dense in sugar and fruit juice, is then transferred into bottles to be mixed with water when desired for consumption.[48]

Acacia Sherbet

To make this syrup, 10 kg of acacia flowers in bunches, 2.5 kg of locally filtered acacia honey, 15 liters of water, and six lemons are used. Place the acacia flower clusters into a large container and add the honey and sliced lemons. After adding the specified amount of water, mix well with a

[46] Çelik, *a.g.e.*, 180.

[47] Çelik, *a.g.e.*, 180.

[48] Ayşe Fahriye, *Ev Kadını 1883*, haz., T. Kut (İstanbul: Çiya Yayınları, 2018).

wooden spoon and cover with acacia branches and flowers. The recipe can be adjusted according to personal preference. It can be consumed after waiting for two days.[49]

Honey Sherbet

To make this syrup, 6 cups of water and four teaspoons of pure honey are used. The honey, filtered from pollen and honeycombs and not subjected to high temperatures, is mixed with water until dissolved and then kept in a cool place. It can be consumed when desired.[50]

Honey Milk Sherbet

In producing honey milk sherbet, 4 cups of milk and four teaspoons of honey are used. As in honey sherbet, pure honey filtered from honeycomb and pollen is added to the milk. The mixture is stirred well until the honey is fully dissolved. It is then kept cold until consumed. Due to its milk content, this sherbet has no long shelf life and should be consumed quickly.[51]

Blackberry Sherbet

Crushed blackberries, sugar, and water are used to make this syrup. For this purpose, one cup of crushed blackberries, one cup of sugar, and four cups of water are mixed. After thoroughly dissolving the sugar, the mixture is filtered through a cheesecloth-like material. It is then kept in a cold place until consumed. The quantities of the ingredients in all sherbets can be adjusted according to the consumer's preferences.[52]

Strawberry Sherbet

The preparation of this sherbet is similar to that of modern strawberry marmalade. First, the strawberries are hulled and thoroughly washed, and any bruised parts are removed. The strawberries are then crushed thoroughly in a container and filtered. Sugar and lemon juice are added to the strained juice. After the mixture boils, it is kept on the fire for an additional 7-8 minutes before it cools down. It can be consumed when desired by diluting it with the required water. To prevent spoilage by mold and yeast, the prepared sherbet should not be left open. For this sherbet, 1.5 kg of strawberries, 2.1 kg of sugar, and four tablespoons of lemon juice are used.[53]

Tamarind Sherbet

Tamarind is a sweet and sour fruit belonging to the legume family. This syrup is made with 1 kg of tamarind, 1.5 kg of sugar, and 3 liters of water. The skins and seeds of the tamarind fruit are separated. The fruit is then crushed in a mortar with sugar until it becomes a paste. Water is added, and the mixture is shaken for a while, similar to the process of making buttermilk. Other flavoring substances can be added to diversify the aroma. After being filtered through cheesecloth three times, the syrup is cooled and ready for consumption.[54]

[49] Musa Dağdeviren, Unutulmuş Halk Yemeklerinden Yedi Tarif. *Yemek ve Kültür Dergisi*, (İstanbul: Çiya Yayınları, İlkbahar sayı: 40, 2015). 45.
[50] Nevin Halıcı, *Mevlevi Mutfağı* (İstanbul: Metro Kültür Yayınları, 2007). 192.
[51] Halıcı, *a.g.e.*, 193.
[52] Nevin Halıcı, *Türk Mutfağı* (İstanbul: Oğlak Yayıncılık, 2009). 290.
[53] Çelik, *a.g.e.*, 180.
[54] Çelik, *a.g.e.*, 180.

Plum Sherbet

The main ingredients of this sherbet are damson plums and red plums. Approximately 20 damson plums and four red plums are used, along with ten cinnamon sticks, 15 cardamom pods, 200 g of sugar, 1 liter of water, and two lemons. Flower water and nuts such as almonds and hazelnuts can be added for additional flavor. The fruits and peeled lemons are chopped and placed in a pot, along with the other ingredients and water. The mixture is brought to a boil. Once the fruits soften, the mixture is strained through a sieve. This sherbet can be consumed either cold or hot.[55]

Blackcurrant Sherbet

To make this syrup, 1.5 kg of blackcurrants, 2.1 kg of sugar, and four tablespoons of lemon juice are used. The stems and any bruised parts are removed from the blackcurrants. The fruit is then washed and crushed well in a pot. After straining, lemon juice and sugar are added. The mixture is boiled for 7-8 minutes over an intense fire, then allowed to cool. The syrup can be diluted to taste and consumed.[56]

Rose Sherbet

To make this syrup, 1 kg of pink roses not exposed to sunlight, 2 kg of granulated sugar, three lemons, and 5 liters of water are used. If present, the stems and any whiteness on the tips of the roses are removed by hand. The petals are washed with cold water to remove dust, soil, and similar substances without damaging the roses. The washed rose petals are then kneaded with sliced lemons, which should be seedless but retain their rinds. Leave this mixture covered for a day. Afterward, add the sugar and let it sit for another day. Finally, add 5 liters of water to this mixture and strain it several times through cheesecloth. The syrup is then cooled and ready to be consumed.[57]

Hardaliye Sherbet

Although the mustard used in the production of this sherbet gives it its name, the primary raw material is grapes. This recipe uses 5 kg of fresh white grapes, 5 kg of fresh black grapes, 250 g of barley, and 100 g of mustard herb, placed in cheesecloth. The grapes, washed with their stems intact, are placed in a large pot along with the barley and mustard. Enough water is added to cover the grapes, and the pot is then covered with grape leaves. The pot is buried in a hole in the shade of a tree to keep the hardaliye cool. Depending on the grape variety, it is kept there for 3 to 10 days. This process, known as "establishing" or "keeping the hardaliye," varies in duration. It becomes tangy if it waits a little; it turns bitter if it waits too long. Foaming in the product indicates the formation of alcohol, meaning the hardaliye has failed and can be turned into vinegar.[58]

Carob Sherbet

1 kg of carob and 3 liters of water are used to prepare this molasses. The carob seeds are removed, and the pods are chopped and crushed in a mortar. Water is added, and the mixture is

[55] Çelik, *a.g.e.*, 180.

[56] Çelik, *a.g.e.*, 180.

[57] Çelik, *a.g.e.*, 180.

[58] Musa Dağdeviren, Unutulmuş Halk Yemeklerinden Yedi Tarif. *Yemek ve Kültür Dergisi*, (İstanbul: Çiya Yayınları, Sonbahar sayı: 3, 2005). 30.

boiled. It is then strained, and the remaining juice from the pulp is squeezed and added to the molasses. When approximately one-third of the water evaporates, boiling is stopped, and the mixture is cooled. It can be diluted and consumed as desired.[59]

Quince Sherbet

To make this sherbet, 5 kg of cleaned quince, including the peels and seeds, are crushed. Fifteen liters of water are added, and the mixture is boiled in a copper cauldron for about one and a half hours. Any foam formed during this process is removed. A pinch of saffron or dried rose petals is added and mixed with a wooden spoon. The mixture is then left to cool slightly to retain the natural properties of the added honey. Afterward, 3 kg of strained flower honey and 1 liter of homemade apple cider vinegar are added and mixed. The sherbet can be stored in a glazed container, and it is advisable to consume approximately one week later.[60]

Fig Sherbet

To prepare fig sherbet, 4 figs are boiled with 4 cups of water for 30-40 minutes. Four teaspoons of sugar are then added and boiled. The mixture is strained through a sieve. If the liquid has reduced, it is topped up with water and boiled again. Half a tea glass of molasses is added and boiled once more. The sherbet is cooled and served.[61]

Koruk Sherbet

The main ingredient in making koruk sherbet is unripe grapes (sumac). This recipe uses 5 kg of unripe grapes, 8 liters of water, and 2 kg of sugar. The unripe grapes are washed and crushed using a sumac millstone with the seeds. Half of the water is added, and the mixture is boiled. It is then strained, and the liquid is set aside. Sugar is added to the remaining pulp and rubbed for about half an hour. The remaining water is added and mixed well, then strained. Both strains are mixed and boiled again. Any foam formed on the surface is removed. The sherbet is strained and stored for about two days. During this time, the presence of sumac stone prevents it from turning into wine or vinegar. It can be consumed afterward.[62]

Raisin Sherbet

In making this sherbet, 1.5 kg of raisins, 7.5 liters of water, and 200-250 g of molasses soil are used. The raisins are quickly washed to remove dust, as prolonged washing can cause them to lose sugar. They are then crushed into a paste in a mortar, with molasses soil added during the crushing process. The resulting paste is kept for 5-10 days. Afterward, it is mixed with water three times, each 5-10 hours, and then filtered. All filtrates can be combined and offered for consumption.[63]

[59] Çelik, *a.g.e.,*180.

[60] Musa Dağdeviren, Unutulmuş Halk Yemeklerinden Yedi Tarif. *Yemek ve Kültür Dergisi*. (İstanbul: Çiya Yayınları, Sonbahar sayı: 45, 2016). 121.

[61] Nevin Halıcı, *Selçuklu Dönemi Mutfağı*, (Konya: Selçuklu Belediyesi Kültür Yayınları, 2015). 208.

[62] Çelik, *a.g.e*., 180.

[63] Ayşe Fahriye, *a.g.e*., 164.

Likapa (Blueberry) Sherbet

Although the main ingredient of this sherbet is likapa (blueberries), 1 kg of tangerines, 1.5 kg of lemons, 5 liters of water, and 750 g of honey are also used for 5 kg of likapa. The likapas are washed and placed in a bowl along with the seeded and chopped tangerines and lemons, including their peels. All ingredients are kneaded together. Boiling water is then added to the mixture, followed by honey. The mixture is stirred well, and the lemon and tangerine peels are separated at this stage. The sherbet is poured into a jar without straining and kept in a cool place. It can be consumed with or without straining after about three days.[64]

Lemon Sherbet (Lemonade)

For this sherbet, commonly known as lemonade, one glass of lemon juice, four glasses of water, one glass of sugar, and five lemon peels are used. Bergamot zest can be used instead of lemon peel, and a few fresh mint leaves can also be added if in season. The water, sugar, lemon juice, and grated lemon peel are mixed and allowed to sit for half an hour. Afterwards, the mixture is filtered and consumed. If not filtered or the peel and fibers remain in the syrup for a long time, the lemonade will taste bitter.[65]

Licorice Sherbet

This sherbet is made with fresh licorice root. For this recipe, 2 kg of licorice root is washed, pounded, and made into fibers. Two liters of water are added to the fibers, then covered and left to sit for 10 hours. Afterward, the mixture is tossed in a bowl, similar to buttermilk, for about an hour. The sherbet's color will range from black to dark brown. An additional 3 liters of water is added, and the mixture is filtered five times through cheesecloth. The taste will be sweet and slightly bitter. Lastly, three cloves are added, and the sherbet is allowed to cool. It must be consumed on the same day, as it will develop an unpleasant taste if left for longer.[66]

Mishmish Sherbet

Apricots are used in the preparation of this sherbet. The apricots are halved, their seeds removed and placed in a container with the cut sides facing up. Sprinkle one-fourth of the sugar over the apricots and let them sit in a sunny place for two days. Then, mix water equal to the total amount of apricots with a quarter of the sugar and boil. Pour this mixture over the apricots and let it sit for another day. During this period, the apricots will absorb the water. The apricots are then kneaded, squeezed through cheesecloth, placed in bottles, kept in a sunny place for five days, and finally cooled and consumed.[67]

[64] Musa Dağdeviren, Unutulmuş Halk Yemeklerinden Yedi Tarif. *Yemek ve Kültür Dergisi*, (İstanbul: Çiya Yayınları, Sonbahar sayı: 38, 2014). 33.

[65] Çelik, *a.g.e.*, 180.

[66] Musa Dağdeviren, Unutulmuş Halk Yemeklerinden Yedi Tarif. *Yemek ve Kültür Dergisi*, (İstanbul: Çiya Yayınları, Yaz sayı: 17, 2009). 30.

[67] Musa Dağdeviren, Unutulmuş Halk Yemeklerinden Yedi Tarif. *Yemek ve Kültür Dergisi*, (İstanbul: Çiya Yayınları, Yaz sayı: 21, 2010). 46.

Mint Sherbet

Although snow is traditionally used in the production of this sherbet, ice can be substituted as snow is not always available. To make mint sherbet, boil two liters of water, then add 250 g of honey and mix until dissolved. Once cooled, add the juice of 6 lemons. Two bunches of mint leaves, separated from their branches, are crushed into a paste with ice/snow in a mortar. Add this paste to the water with honey and lemon. Mix well, strain, and serve. It is reported that a more delicious sherbet is obtained by letting the mixture sit for a day without straining it and then straining it before serving.[68]

Pomegranate Sherbet

To make pomegranate sherbet, use 3 kg of granulated tart pomegranates, one teaspoon of powdered ginger, one glass of pomegranate vinegar, and two glasses of flower honey. The amount of water needed is 2 liters. Boil the prepared water in a pot with the lid covered. Add the pomegranate seeds, ginger, and honey, then mix. Finally, add the vinegar and keep the lid closed for a day. The next day, crush the pomegranate seeds by hand. If vinegar is not used, extending this period to two days is recommended. After filtering through cheesecloth, cool and consume the sherbet.[69]

Orange Sherbet

To make orange sherbet, use 5 kg of oranges, five lemons, 1 kg of granulated sugar, 10 g of powdered ginger, and a tea glass of orange flower hydrosol (orange flower water). The amount of water added is 5 liters. Peel the oranges and lemons and extract their juice. Grate the peels. Add sugar and ginger to the grated peels, knead for 5 minutes, and leave for a day. Add the orange juice, lemon juice, and orange flower water, then mix well. After filtering the mixture through cheesecloth, keep it in bottles in a sunny place for a week. The resulting syrup is mixed with 5 liters of previously boiled and cooled water and consumed cold.[70]

Basil Sherbet

Place 2 bunches of basil, 1 cup of sugar, and a teaspoon of lemon salt (citric acid) into a deep bowl. Add 6 cups of boiling water and let it steep. Once it has cooled, strain the mixture. The prepared sherbet can be cooled and served with basil leaves. The amount of basil used in the production of this sherbet can be adjusted according to consumer preference.[71]

Sour Cherry Sherbet

5 kg of local cherries are cleaned and placed in a basin to prepare sour cherry sherbet. One lemon is chopped with its peel and seeds removed and kneaded together with the cherries. Add 2 kg of granulated sugar and four cinnamon sticks to the mixture, and knead it at least four times every half hour, similar to kneading raw meatballs. The pits of the cherries are left intact. Add water equal

[68] Musa Dağdeviren, Unutulmuş Halk Yemeklerinden Yedi Tarif. *Yemek ve Kültür Dergisi*, (İstanbul: Çiya Yayınları, Kış sayı: 50, 2018). 107.
[69] Çelik, *a.g.e.,* 180.
[70] Musa Dağdeviren, Unutulmuş Halk Yemeklerinden Yedi Tarif. *Yemek ve Kültür Dergisi*, (İstanbul: Çiya Yayınları, Yaz sayı: 52, 2018). 71.
[71] Muhammed Ömür Akkor – Alper Tuğrul Ünlütürk, *Zennup 1844*. (İstanbul: Pelikan Basım, 2020). 240.

to the mixture and leave it unfiltered in a sunny place for approximately 20 days. After this period, the mixture can be filtered and consumed.[72]

4. Studies on Ottoman Sherbets

This section includes studies on sherbet. After providing information about the title, subject, and purpose of these studies, the data obtained are briefly summarized.

The bioactive and physicochemical properties of some traditional sherbets (rose, cherry, evil eye, nevruz, engagement, and sirkencubin) and their concentrates (62±1° Brix in an open boiler) were determined by Kafadar (2016). This thesis study was carried out in two separate parts. First, it investigated the physicochemical, color, bioactive, and sensory properties of sherbet samples in their natural Brix. Additionally, phenolic contents were determined using the LC-MS/MS (High-Performance Liquid and Chromatography and Mass Spectrometry) method. The study reported that the highest total phenolic substance content (649.39 mg gallic acid equivalent/liter (GAE/L)) and antiradical activity (93.92%) were found in grapevine sherbet. Regarding antioxidant activity, engagement sherbet had the highest amount (31.19 mg ascorbic acid equivalent/litre(AAE/L)). It was noted that no anthocyanins were detected in the sherbets of koruk, nazar, nevruz, and sirkencubin.

LC-MS/MS analysis revealed that the most common compound in nevruz, rose, vinegar, and evil eye sherbets, as well as in concentrated sherbets, was quinic acid. In contrast, malic acid was the most common compound in grapevine and engagement sherbets, as well as their concentrates. The same sherbets were concentrated by heat treatment in an open boiler and stored at temperatures (4, 20, and 37ºC) for 90 days. During this period, the bioactivity and color properties of the concentrated sherbets were analyzed. Rose sherbet exhibited the highest phenolic substance content and antioxidant activity, with 3790.91 mg GAE/kg and 134.57 mg AAE/kg, respectively, while grape sherbet had the highest antiradical activity, with 95.78%. The study concluded that the phenolic substance, antioxidant, and antiradical activity properties tend to decrease with storage. It was also reported that increasing storage temperature and prolonging storage time negatively affect concentrated sherbets' bioactivity and color properties. Therefore, it is recommended that sherbet concentrates be stored at low temperatures. Bioactivity refers to the positive effects of naturally occurring or added biologically active food compounds on human health. Antioxidant activity refers to the properties of compounds present in or added to foods that prevent cellular damage by reducing oxidative stress.[73]

In his master's thesis, Kaya (2023) investigated the properties of five Ottoman sherbets produced using different sweeteners. The sherbets of rose, grapefruit, black mulberry, carob, and lavender were made with various sweeteners, including sucrose, stevia, agave syrup, maple syrup, and honey. The chemical and sensory properties of the resulting sherbets were examined. After the analysis, it was reported that the color, smell, aroma, sweetness rate, and general taste level of the sherbets aroused a desire to purchase. The sherbets' total phenolic substance content and antioxidant capacity were chemically tested. The results indicated that the highest antioxidant capacity and

[72] Çelik, *a.g.e.*, 180.

[73] Affet Demet Kafadar, "Bazı Geleneksel Şerbetlerimizin ve Konsantrelerinin Biyoaktif ve Fizikokimsal Özelliklerinin Belirlenmesi'' (yüksek lisans tezi, Erciyes Üniversitesi, 2016), 183.

phenolic substance amount were found in rose sherbet, with values of 17.16±1.56 (TE=Trolox equivalent)/0.1 mL sample and 15.11±1.21 (GAE)/0.1 mL sample, respectively.[74]

In a study investigating the optimization and bioactive components of poppy sherbet, a sherbet widely produced in the Ottoman Empire (Aydoğdu, 2023), the best poppy sherbet was found to contain 0.26 g of dried poppy flower, 4.29 g of sucrose, and 0.15 g of citric acid. However, the amount of water used was not reported. It was noted that sensory values weaken with storage. The evaluation of TPC (Total Phenolic Content), TFC (Total Flavonoid Content), DPPH (2,2-Diphenyl-1-picrylhydrazyl), CUPRAC (Cupric Reducing and Antioxidant Capacity), and TAC (Total Antioxidant Capacity) values indicated a decrease with increasing storage time.[75]

Ünal (2023) analyzed the sensory acceptability and some physicochemical properties of sherbets produced from cucumber, pumpkin, and purple carrot peels with the addition of honey, molasses, and sugar. The study reported that the average dry matter value of the sherbets was 6.03%, the L* value was 48.82, the a* value was 19.45, and the average b* value was 16.9. The average pH (acidity indicator) value of the sherbets was found to be 5.80. Sensory evaluation concluded that the most liked samples were Purple Carrot Sherbet with Honey, Pumpkin Sherbet with Sugar, Pumpkin Sherbet with Honey, and Purple Carrot Sherbet with Sugar.[76]

Salkım (2022), in his study on the usability of cuttlefish sübye (melon seed sherbet) in kefir production, produced kefir by mixing pure cow milk, pure cuttlefish sübye, and cow milk with cuttlefish sübye in different proportions as an alternative to milk. He stored the kefirs at refrigerator temperature for 14 days and analyzed them at one-week intervals. On analysis days, pH, dry matter, moisture, protein, serum separation, and water retention capacity were tested. Sensory testing was also conducted on the kefir samples. The study found that the highest serum separation occurred in kefir made from pure cuttlefish sübye. The product with the highest water retention capacity was kefir made from pure milk, while the lowest capacity was measured in kefir made from pure cuttlefish sübye. Sensory tests indicated that sensory acceptability decreased as the proportion of cuttlefish sübye in the composition increased.[77]

Özaltın (2016), in his master's thesis, concentrated tamarind sherbet using different methods and determined its bioactivities. He prepared the sherbet using an appropriate recipe and concentrated it in an open cauldron, in the microwave, and under vacuum. The sherbet was preserved at different temperatures (4, 20, and 37 ºC) for three months and analyzed monthly. Total phenolic substance, total flavonoid, antiradical, and antioxidant activities, which are bioactivity properties, were measured. The main components of tamarind syrup were quinic acid, malic acid, and vanillin. Sherbet concentrates produced by the vacuum method had a higher composition of phenolic compounds than those made by other methods, even with the same recipe. The amount of

[74] [74]Semran Kaya, ‘‘Kültürel Özellikleriyle Beş Osmanlı Şerbetinin Araştırılması, Farklı Tatlandırıcılarla Hazırlanarak Duyusal ve Antioksidan Özelliklerinin İncelenmesi’’ (yüksek lisans tezi, İstanbul Okan Üniversitesi, 2023), 88.

[75] Behiye İncisu Aydoğdu, ‘‘Gelincik Şerbetinin Tüketici Beğenilirliğinin Optimizasyonu ve Biyoaktif Bileşenlerinin Belirlenmesi’’ (yüksek lisans tezi, Tekirdağ Namık Kemal Üniversitesi, 2023), 71.

[76] Dilara Ceren Ünal, ‘‘Sürdürülebilir Gastronomi Kapsamında Gıda Atıklarından Şerbet Üretimi’’ (yüksek Lisans Tezi, İstanbul Gelişim Üniversitesi, 2023), 65.

[77] Osman Salkım, ‘’Kavun Çekirdeği Şerbetinin (Sübye) Kefir Yapımında Kullanım Olanaklarının Araştırılması’’ (yüksek lisans tezi, Hamdullah Emin Paşa Üniversitesi, 2022), 102.

phenolic substances was found to be 1384.85 mg GAE/kg in the vacuum method, 1354.55 mg GAE/kg in the microwave method, and 1300 mg GAE/kg in the open boiler method. The highest antioxidant activity value was obtained in the vacuum method, while the highest antiradical activity was obtained in the microwave-concentrated method. It was reported that bioactivity values generally decreased with storage, but the vacuum method was the most suitable for overall bioactivity values.[78]

In a study (Tanrıverdi, 2022) investigating the effects of pulsed electric field and ultraviolet processes on extending the shelf life of licorice sherbet, whose consumption is limited due to sensory damage caused by heat treatment, it was found that these processes did not cause significant changes in the physical, chemical, and sensory properties of licorice sherbet. The study reported a reduction of approximately 3 log cfu/ml in the number of total mesophilic aerobic bacteria and total yeast and mold. It was noted that samples treated with pulsed electric field and ultraviolet light, when stored at cold temperatures (4°C), started deteriorating after the 40th day. In comparison, those stored at room temperature (22°C) began deteriorating after the 30th day. According to these results, these procedures can be successfully applied to extend the shelf life of licorice sherbet.[79]

In a doctoral thesis study conducted by Aday (2018) on licorice sherbet, attempts were made to improve its sensory properties and increase its shelf life through acidification and high-pressure applications. The study concluded that acidification and high-pressure applications significantly reduced microbial load, did not considerably affect bioactivity values, and resulted in sensory values similar to control samples. It was reported that high-pressure application preserves both licorice sherbets and acidified sherbets for four weeks at refrigerator temperature.[80]

Gürlek (2021) investigated the microbiological quality of licorice sherbet offered for consumption in Şanlıurfa regarding public health. It was determined that most of the samples had a microbial load that would threaten public health, including Coliform group bacteria, Salmonella, S. aureus, and aerobic spore-forming bacteria.[81]

In another study on licorice sherbet, Başyiğit (2017) produced microencapsulated instant licorice sherbet and examined the effect of storage on quality. The study reported no significant decrease in the bioactive properties of the instant sherbets during a six-month storage period, and even after this period, the instant sherbets produced had high sensory values.[82]

In a study on the production possibilities of Arapgir purple basil tea and sherbet (Yiğitvar, 2017), quality analyses of the sherbet and teas were obtained after optimization studies. The study

[78] Behiye Özaltın, "Farklı Yöntemlerle Konsantre Edilen Demirhindi Şerbetinin Biyoaktivitesinin Belirlenmesi'' (yüksek lisans tezi, Erciyes Üniversitesi, 2016), 120.

[79] Hakan Tanrıverdi, "Atımlı Elektrik Alanı ve Ultraviyole Proseslerinin Meyan Kökü Şerbetinde Kalite Özellikleri, Mikrobiyel İnaktivasyon ve Raf Ömrü Üzerine Etkisi'' (Yüksek lisans tezi, Bolu Abant İzzet Baysal Üniversitesi, 2022), 200.

[80] Serpil Aday, "Meyan Kökü (Glycyrrhiza glabra L.) Şerbetinin Asitlendirme ve Yüksek Basınç Teknolojisi ile Raf Ömrünün Arttırılması'' (doktora tezi, Çanakkale Onsekiz Mart Üniversitesi, 2018), 122.

[81] Hava Gürlek, ''Şanlıurfa'da Tüketime Sunulan Meyan Şerbeti'nin Mikrobiyolojik Kalitesinin Araştırılması'' (yüksek lisans tezi, Harran Üniversitesi, 2021), 81.

[82] Bülent Başyiğit, "Mikroenkapsüle Meyan Kökü (Glycyrrhiza glabra L.) Şerbeti (Çayı) Üretimi ve Depolamanın Kalite Üzerine Etkisi'' (yüksek lisans tezi, Harran Üniversitesi, 2017), 86.

reported that while the drying process negatively affected the color values, it positively influenced the polyphenol content and volatile component profile. Basil sherbet was superior to basil tea in color and polyphenol content. After sensory evaluations, it was reported that most of the prepared basil teas and sherbets were well-liked. The most famous example was basil tea containing pomegranate flowers and cloves, with increased acidity using lemon salt (citric acid). The researcher concluded that basil tea from dried basil and basil sherbet from fresh basil can be transferred to the industry and produced commercially.[83]

Güdül (2024) aimed to make Ottoman sherbets more attractive by producing them using the spherification technique, a method from molecular gastronomy. He analyzed the sensory aspects of the products he created. The panelists rated all sherbets with at least 6 points or above, indicating that they found them at least good in terms of overall appreciation. Güdül concluded that spherification, one of the molecular gastronomy techniques, enhances the attractiveness of the products.[84]

Alparslan (2021) investigated the approaches of food and beverage businesses in Istanbul towards Ottoman palace cuisine. The study evaluated the impact of COVID-19 before and after the pandemic through interviews and menu analysis. The study considered whether the dishes on the menus were authentic palace dishes from the Ottoman period. The data obtained were compared with the food and beverages from the Ottoman palace cuisine. The research observed that food and beverage establishments in Istanbul tried to imitate Ottoman palace cuisine and were willing to adapt and popularize it in contemporary times. Some establishments were found to reflect recipes used during the Ottoman period in their dishes.[85]

Toprak (2019) studied the production of probiotic sherbets and their functional properties. For this purpose, carob sherbet and Ramadan sherbet were produced and divided into two groups, with probiotic bacteria added to one group. L. rhamnosus GG was added as probiotic bacteria at 1×10^8 cfu/mL concentration. Those without added probiotic bacteria served as the control group. The sherbets were stored at refrigerator temperature for 28 days. The physicochemical, bioactive properties and probiotic bacteria count were measured weekly. The study found that the phenolic substance content of Ramadan sherbets was higher than that of carob sherbets. In both groups, the values of probiotic sherbets were lower than the control samples in terms of flavonoid and anthocyanin content, though anthocyanins were not detected in carob sherbets. The addition of L. rhamnosus GG increased antiradical activity in the samples but showed the opposite effect on antioxidant capacity measurements. It was observed that the L. rhamnosus GG count in carob sherbets decreased below 10^6 cfu/mL after one week but did not fall below this level during storage

[83] İsra Yiğitvar, ‘‘Arapgir Mor Reyhan Çayı ve Şerbetinin Üretim Olanaklarının Araştırılması’’ (yüksek lisans tezi, İnönü Üniversitesi, 2017), 85.

[84] Halime Güdül, ‘‘Osmanlı Şerbetlerinin Moleküler Mutfak Sentezi ile Yenilikçi Uygulamaları’’ (yüksek lisans tezi, Kocaeli Üniversitesi, 2024), 104.

[85] Aslı Alparslan, ‘‘Osmanlı Saray Mutfağı ve Yiyecek-İçecek İşletmelerindeki Uygulamalarına Yönelik Bir Araştırma İstanbul Örneği’’ (yüksek lisans tezi, Sakarya Uygulamalı Bilimler Üniversitesi, 2021), 98.

in Ramadan sherbets, indicating that Ramadan sherbets preserved their probiotic properties throughout the storage period.[86]

In his thesis study, Acaroğlu (2017) discussed the production of Ravanda sherbet and analyzed the properties of the sherbets obtained. Ravanda is a food product derived from overripe but intact grapes that remain on the Ravanda branch. These grape grains are filtered and poured into cloth bags to separate the water, which is then concentrated in the sun for two days. Before consumption, it is diluted. This drink, unique to Kahramanmaraş, is enjoyed by the local population. The researcher produced Ravanda from the bubble grape variety and measured the ash, dry matter and sugar ratio, pH, HMF (hydroxymethylfurfural), mineral content, and titratable acidity values. Thus, scientific data about Ravanda were generated for the literature. The data obtained can be accessed in the relevant thesis.[87]

Öztürk (2019), in his study measuring the effect of thermosensation on the quality of licorice sherbet, aimed to extend the shelf life of this sherbet. He determined and applied the appropriate time and temperature norms to the sherbets. At the end of the storage period, it was found that the thermosensation process (combination of low temperature and ultrasound) did not adversely affect the physicochemical properties except for turbidity. Additionally, there was no loss of bioactive substance content. This study revealed that thermosensation can be applied alongside heat treatment to produce longer-lasting licorice sherbet.[88]

Bakay (2019) explored the use of ultrasonication and high hydrostatic pressure applications in his study, examining the effect of innovative process technologies on pasteurization and shelf life in the production of licorice sherbet. He analyzed the physicochemical, microbiological, and sensory properties of the samples. Both applications significantly decreased the samples' total mesophilic bacteria count and the total yeast mold count. It was observed that all untreated sherbets ceased to be consumable on the 15th day, while ultrasonicated samples stored at 4°C began to deteriorate on the 17th day. In contrast, samples treated with high hydrostatic pressure and stored at 4°C remained sensory acceptable even on the 20th day.[89]

[86] Tuğba Toprak, ‘’Probiyotik Şerbet Üretimi ve Bazı Fonksiyonel Özelliklerinin Belirlenmesi’’ (yüksek lisans tezi, Erciyes Üniversitesi, 2019), 112.

[87] Serap Acaroğlu, “Geleneksel Bir Gıda olan Ravanda Şerbetinin Bazı Özelliklerinin Belirlenmesi’’ (yüksek lisans tezi, Kahramanmaraş Sütçü İmam Üniversitesi, 2017), 48.

[88] Metin Öztürk, “Termosonikasyon Uygulamasının Meyan Kökü Şerbetinin Kalitesi Üzerine Etkisi’’ (yüksek lisans tezi, Osmaniye Korkut Ata Üniversitesi, 2019), 72.

[89] Şahin Bakay, “Yenilikçi Proses Teknolojilerinin Meyan Kökü Şerbetinin Pastörizasyonu ve Raf Ömrü Üzerine Etkisi’’ (yüksek lisans tezi, Bolu Abant İzzet Baysal Üniversitesi, 2019), 319.

Conclusion

It has been understood that sherbet held an important place in Ottoman culinary culture with its dozens of varieties and thousands of years of history. It was often consumed as a medicine, and syrups and hard candies were prepared to be consumed in all seasons. Nearly a hundred registered varieties were actively prepared and consumed during the Ottoman period. However, in recent times, the emergence of carbonated drinks has replaced sherbets due to their year-round availability, relative affordability, standard properties, and long shelf life. Sherbets produced during the Ottoman period were made on small scales using home methods, were not transported from city to city, and were produced according to seasonally available materials as desired by the consumer. Consequently, the recipes provided in this study are all homemade. When examining contemporary scientific studies, it is evident that most research aims to standardize the sherbet production method and extend the shelf life of sherbet, with a significant focus on licorice sherbet. Another area of research is the bioactive properties of sherbets. However, there is a lack of studies on how to increase the production and consumption of Ottoman sherbets, which is one of the aims of this study. For Ottoman sherbets to regain popularity over carbonated drinks, scientific studies, and promotional activities are needed to reduce costs, extend shelf life, and increase their appeal.

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