



The Panacea Gilaboru Fruit (*Viburnum Opulus*) and its Use in Anatolia

* Muhabbet ÇELİK^a 

^a Yozgat Bozok University, Faculty of Tourism, Department of Gastronomy and Culinary Arts, Yozgat/Türkiye

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Abstract

Gilaboru (*Viburnum opulus*), a product frequently consumed in Central Anatolia and especially in and around Kayseri city. In Kayseri province, renowned for its distinctive local products in gastronomy tourism, the gilaboru fruit, a shrub-like plant that grows naturally, has been granted geographical indication registration. The traditional production techniques of Kayseri gilaboru, known as a panacea, should be passed on to future generations. However, studies investigating the importance of gilaboru as a gastronomic product are insufficient. In this context, the aim of the research is to determine the characteristics of gilaboru, which is frequently consumed in Kayseri region, and to examine the production stages. The research data were obtained through face-to-face interviews with six participants who prepared gilaboru juice on a domestic scale and had knowledge about the properties of gilaboru. In the research, it was determined that gilaboru is good for kidney disease, constipation and menstrual pain, preserved in brine and consumed as fruit juice in winter. Therefore, it is thought that gilaboru, which has a crucial place in Kayseri culinary culture, should be promoted as a gastronomic product and contribute to the regional economy.

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* Corresponding Author

E-mail: muhabbet.celik@bozok.edu.tr (M. Çelik)

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INTRODUCTION

Since ancient times, people have used plants as a treatment method to prevent diseases. Treatment with plants has been accepted as a very common method in Turkey as in other countries. Turkey is home to a large number of aromatic and medicinal plants with its rich flora. Thousands of years ago, people recognized the therapeutic power of plants through trial and error and used them to protect themselves from all kinds of diseases. In Anatolia, where folk medicine practices are common, folk remedies are practices that have survived to the present day as a result of long experiences (Faydaoğlu & Sürücüoğlu, 2011).

Edible wild herbs that grow depending on the climate and geographical structure of each region are used by local people within their own culinary culture. Information on how these herbs are cooked, which dishes they are used in, which parts of them are consumed for what purpose, and whether they are harmful or harmless has been formed as a result of the experiences transferred from past to present. Therefore, these herbs, which have been consumed for food purposes by people living in the region since ancient times, are very important in the formation of the culinary culture of the region (Alparslan, 2011).

Edible wild herbs are plants that usually grow spontaneously in rural areas. Central Anatolia has a very rich flora in terms of edible herbs. Gilaburu plant grows in almost the entire Central Anatolia Region, especially in Kayseri and its surroundings (Çelik, 2023). It has been stated by producers and researchers that soil characteristics affect the productivity of fruits in gilaburu production. The geography, climate and soil conditions of Kayseri are favorable for efficient gilaburu production. Soil analyzes conducted in the region show that it is rich in lime and minerals. It has been proven that gilaburu grown in soils rich in lime and minerals contains high amounts of calcium and zinc (Taşkın, Aşık & İzli, 2018).

Gilaburu, a product that reflects the traditional culinary culture in Anatolia in terms of production and consumption, is a geographically registered product belonging to Kayseri (Sabur & Güneş, 2023). In the relevant literature and especially in the social sciences field, there are no studies examining the gastronomic aspects of Gilaburu juice. In this direction, the aim of this study is to examine the production stages of Gilaburu in Kayseri, which has a large share in Gilaburu production, by determining the place and importance of Gilaburu in gastronomy tourism. In addition, this study seeks to identify the domestic-scale production processes of Gilaburu fruit widely recognized in the Kayseri region for its traditional use in promoting health as well as to explore its significance in terms of human health and its distinctive role within the local culinary culture. This study aims to highlight the value of Gilaburu within the context of gastronomy tourism, contributing to the preservation of local production and cultural heritage. Additionally, it is significant for providing insights into the sustainability of this local product, from both producer and consumer perspectives, by examining its production process.

Conceptual Framework

Gilaboru, General Characteristics

Gilaburu (*Viburnum opulus* L.) is the fruit of a shrub plant belonging to the Adoxaceae family, originating in Europe, North Africa and North Asia and used for decorative purposes almost all over the world. In Turkey, the plant, which is called gilaburu, gilaboru, gileboru, gileburu, girabolu, girebolu, grows spontaneously on the banks of streams in wetlands. Gilaboru, which grows in Bursa, Konya, Tokat, Sivas, Sivas, Çorum, Kırşehir, Samsun

provinces in Turkey, is consumed more in Kayseri province (Yapar, 2013).

Gilaboru, a plant that has been growing spontaneously in Turkey since time immemorial, has now been discovered for its positive health effects and cultivated. During the Ottoman Empire, this plant was called 'Gül Ebru' but the name was changed over time. Gilaboru (*Viburnum opulus* L.), a traditional drink in Kayseri province, belongs to the Caprifoliaceae family and is also known as Crampbark or Guelder Rose. This fruit grows spontaneously in nature and takes the form of an almost neat and upright shrub or small tree, reaching a height of 1.3 to 3.5 m. The bright red berries, about 8 mm in diameter, ripen in late summer. A single cluster consists of about 30-40 fruits with thin skin and a single seed (Altan, Kuş & Kaya, 2005). As they ripen, the water content in the fruit increases and the gilaboru fruits gain a drooping and weak umbrella appearance (Ekici & Velioglu, 2003). Gilaboru fresh fruit contains 7.81% water soluble solids, 5.83% reducing sugar, 6.71% crude protein, 19.86% crude cellulose, 560 mg/kg ascorbic acid, 2473.8 mg/kg potassium and 402.62 mg/kg sodium (Bolat & Özcan, 1995).

Gilaboru fruit and juice is very difficult to consume due to its bitter taste. Fruits collected in the fall are usually consumed by diluting and adding a little sugar. Generally, the fact that the bark and fruits of the gilaboru plant, which grows in wetlands and on the banks of water, have only been heard of in certain provinces makes it necessary to conduct research on the subject (Yapar, 2013).

The Importance of Gilabor for Health

Gilaboru, which is an important fruit in terms of its benefits for human health, is very important in landscaping because its flowers, fruits and leaves are decoratively valuable (Özmen, 2021). It is known to be used in the treatment of conditions such as asthma, strong spasms and cramps and abdominal pain or very painful menstruation. It is used to relieve all kinds of cramps and spasms such as asthma, hysteria, cramps in the limbs or other parts, especially in women during pregnancy. As a nervous tranquilizer, the bark contains antispasmodic astringent and sedative, the bark contains 'scopoletin', a coumarin that has a sedative effect on the uterus (Plant For A Nature, 2023).

Since the use of Gilaboru has increased compared to the past, scientific studies have been conducted on its medicinal effects in recent years. Its benefits have been scientifically proven in many studies such as colon cancer (Ulger at al., 2013), kidney stones (İlhan at al., 2014; Tuğlu at al., 2014), gynecological disorders (Saltan at al., 2016), alleviation of testicular and sperm damage (Sariözkan at al., 2017) and anticancer effect (Ceylan at al., 2018; Taşkın, Aşık, & İzli, 2019).

Gilaboru juice is nowadays consumed as a functional food, especially in and around Kayseri province, as it is thought to be good for kidney stones and beneficial for health.

The Historical and Cultural Background of the Traditional Turkish Beverage 'Gilaboru

Advancements in the field of gastronomy, fast-paced lifestyles, increasing prevalence of infectious diseases in recent years, and high energy requirements have led to growing health concerns in all food items, including beverages. With people shifting towards healthier drinks, traditional Turkish beverages have gained popularity. When prepared and stored under suitable conditions, traditional Turkish beverages pose no threat to health when consumed in sufficient quantities. Turkish cuisine boasts a rich culture not only in food but also in a variety of beverages such as Turkish coffee, tea, boza, salep, sherbet, and turnip juice. Alongside these, the Gilaboru fruit juice, known for its health benefits, is consumed as an alternative to commercially available beverages known to pose health risks (Süren

& Kızıleli, 2021).

Beverages that contribute to maintaining a healthier lifestyle vary in their processing methods, consumption styles, and origins. In Turkish cuisine, sugary and salty beverages hold a distinct place. Fermented beverages are also highly beneficial for health. Among these, those based on fermentation, such as Gilaburu fruit juice, can be consumed when the fermentation process is complete. Due to its highly acidic taste, Gilaburu can be consumed in small quantities or utilized in making jelly (Canbaş & Fenercioğlu, 1984; Plant For A Future, 2023). Traditional preparations of jam and marmalade are made from its fruits, and it is consumed as pickles by brining (Rop at al., 2010; Moldovan at al., 2012). The fruit is used to make compotes or syrups, either alone or mixed with other fruits (Karadeniz at al., 2003). Additionally, known as "kartopu" in landscaping areas, Gilaburu attracts bees with its attractive round white flowers and serves as a pollen source (Çolak & Mertoğlu, 2022).

Gilaburu has a long history of recognition in Anatolia. Discovered in swampy areas in 1980 by American scientists, the plant with the Latin name *Viburnum Opulus* was noted for making fruit liqueur or syrup (Bünyan Belediyesi, 2023). Due to the beauty of its red fruits when in bloom, Gilaburu was referred to as "Gül Ebru" during the Seljuk and Ottoman periods. This name evolved over time to become "Gilaburu" (Ersoy at al., 2017). In the Ottoman era, syrups were believed to be good for health, often consumed under the recommendation of physicians. While some were consumed to alleviate fever and aid digestion, others were used as medicinal syrups to alleviate various ailments (Süren & Kızıleli, 2021; Tezcan, 2023).

During various periods of Ottoman rule, the consumption of alcoholic beverages and coffee houses was prohibited, with heavy penalties imposed on offenders. Traditional beverages consumed as fruit juices, such as Gilaburu, became more preferred during this time. Various fruit juices in Turkish culinary culture were traditionally referred to as "sherbet," such as rose sherbet and sour cherry sherbet. In the 9th century, fruit juices were called "Çakır" or "Süçik." Fruit juices were used as "Soğukluk" or "Meşrubat" on dining tables. In the past, fruit juices were served to women giving birth and guests on special occasions. Commercial fruit juices have replaced these traditions today (Süren & Kızıleli, 2021; Tezcan, 2023). However, the tradition of consuming Gilaburu fruit juice, especially in the Inner Anatolia region, particularly around Kayseri, still continues.

Some information about the Gilaburu fruit appears in Hittite myths. According to mythology, rituals involved constructing doors from the trunk of the Gilaburu tree, with white flowers and red fruits. The fruit mixed with water was used as a calming and soothing agent. The plant was described as thorny and found in valleys and riverbanks, particularly in the Inner Anatolia region where the cultivated Gilaburu (also known as Dağdağan tree, Geleboru, Gildar) is grown (Baytop, 2007; Ünar, 2019). According to another legend, Gilaburu is associated with the birth of the universe in the triad of Kalyna, the symbol of the sun, moon, and stars. Gilaburu fruits symbolize one's home, homeland, blood, and family roots. Kalyna is often depicted in traditional Ukrainian embroidery on clothing and shirts (Bozhsko, 2012; Kuzmenko, 2012).

Methodology

The aim of this research is to determine the production of Gilaburu fruit, which is known especially in Kayseri region and is a cure for many diseases, on a domestic scale, its importance in terms of health and its characteristics in culinary culture. In the research, the opinions of the participants who know Gilaburu fruit in the region and provide

the condition of having information about its production were included. For this reason, purposeful sampling technique was preferred in the research (Büyüköztürk et al., 2009). Interview techniques are classified by Patton (2002) into conversational interviews, interviews using a guide, and standardized open-ended interviews. Semi-structured interviews consist of a series of questions and responses administered within a pre-prepared guide (Kozak, 2014). This technique allows the interviewer to ask pre-prepared questions while also having the flexibility to pose additional questions based on the flow of the conversation (Yıldırım & Şimşek, 2013). The draft interview guide was developed based on preliminary findings from document analysis, content analysis of documents, and relevant literature. The draft guide was reviewed by five field experts, and necessary revisions were made in line with their suggestions. In the interview form used to collect data in the research, answers were sought to the questions of how long you have been making Gilaburu juice, from whom you learned how to make it, which diseases you know it is good for, and are there any other products you make from Gilaburu fruit. The data of the research were obtained through face-to-face interviews with six participants who know the production stages of Gilaburu juice in the region and make it at home. At the same time, informed consent forms have been obtained from the 6 volunteers who agreed to participate in the research. In semi-structured interviews, a sample of six participants is considered sufficient, and the point at which responses become repetitive indicates that the saturation point has been reached, signaling that the study can be concluded (Creswell & Creswell, 2018: 298).

In order to conduct interviews with the participants, ethics committee permission was obtained at the meeting of Yozgat Bozok University, Social and Human Sciences Publication Ethics Board on February 28, 2023. In content analysis, interviews are conducted systematically and objectively to obtain equivalent results (Keskin & Çilingir, 2010). In this direction, content analysis was conducted in the research by recording the answers of the participants to the questions in the interview form. In order to maintain the confidentiality of participants' identities during data analysis, participants from different age and gender groups have been coded as P1, P2, ..., P6. The statements of participants with this coding have been directly quoted.

Findings

Demographic Information on Research Participants

The demographic characteristics of the participant individuals who met the condition of having information regarding the production of Gilaboru juice and its characteristics in the local culinary culture are given in Table 2.

Table 2. Demographic characteristics of the participants

Participants	P1	P2	P3	P4	P5	P6
Gender	Female	Female	Female	Female	Male	Female
Age	43	35	30	63	65	70
Education	Undergraduate	Undergraduate	Primary School	Primary School	Primary School	Uneducated
Profession	Not employed	Housewife	Housewife	Housewife	Retired	Housewife

It is seen that most of the participants are female, between the ages of 30-70, primary school graduates and housewives. When participants are asked about their educational background, participant coded as P6 claims that he/she did not attend any school.

Table 3. Opinions of the Participants on Gilaboru Water

Participants	How long have you been making it?	Who taught you how to make it?	What diseases do you think Gilaboru juice is good for?	Is there any other product you have made with Gilaboru?
P1	I have been making it since I came to Kayseri	From my mother-in-law	Kidney stones and gynecological diseases	We only make the juice
P2	I learned how to do it after I got married	From my mother-in-law	My mother-in-law passed a kidney stone after drinking Gilaboru	We consume it as juice
P3	We have been doing it for as long as I can remember.	I learned from my grandmother	Good for children with constipation and kidney patients	We drink it as juice.
P4	I have been doing it since I was little.	I learned it from my mother	Reduces kidney stones, good for pain	We drink it as juice
P5	I have known since I was little	My mom used to make it, I learned from her.	Dissolve kidney stones	We squeeze the juice out of it
P6	I have known from an early age	I learned it from my family elders	Good for menstrual pain, reduces kidney stones	We squeeze the juice through a sieve and drink it, we eat the fruit

Table 3 shows the participant opinions about Gilaboru. This section presents participant perspectives on Gilaboru. Following interviews with participants, it was determined that all participants identified their family elders as the primary source of information regarding the stages of Gilaboru fruit juice production, and they have been preparing Gilaboru fruit juice at home since a young age. All participants expressed that Gilaboru fruit juice is beneficial for kidney health. Additionally, participants coded as P1 and P6 mentioned its benefits for women's health, while participant P3 indicated its usefulness for children experiencing constipation.

These commonly held beliefs in the public are supported by research studies. In their study (Cesoniene at al., 2010; Crissan at al., 2013) it was demonstrated that Gilaboru has therapeutic effects on conditions such as cramps, epilepsy seizures, heart diseases, menstrual pains, postpartum pains, sleep disorders, and neurological disorders, as well as skin conditions like eczema. Furthermore, scientific evidence supports the traditional medicinal use of Gilaboru in the treatment of kidney stones (İlhan at al., 2014).

When asked if they have made any other products with Gilaboru, participants coded as P1, P2, P3, P4, and P5 mentioned consuming it as fruit juice, while participant P6 responded that they consume it in the form of berries. Participant P1 provided the following information regarding the production stages of Gilaboru: "In the fall months, we gather and pickle it. The younger generation doesn't bother much and doesn't consume it, but middle-aged and older individuals, especially those with diabetes, hypertension, and kidney problems, make sure to consume one glass every day."...

Participant P2 provided information about Gilaboru fruit juice as follows: 'We place the Gilaboru fruit in five-liter containers, add water, and let it sit in a cool, dark place for three months. If it stays in water, its bitter taste diminishes. Then, we squeeze the fruit through a strainer, add sugar to the juice, and consume it. Additionally, we consume the fruit as pickles.'

Furthermore, participant P5 mentioned purchasing Gilaburu fruit from village markets for those who do not know how to pickle it.



A



B

Figure 1. The Gilaburu fruit, A having undergone complete fermentation, is available for purchase at the village market, B matured and ready for consumption either in its fully ripened state or as pickled.

Preparation of Gilaboru Juice on a Domestic Scale

Gilaburu fruit, which has a unique bitter taste due to its high tannin and polyphenol content, is difficult to consume fresh. Therefore, Gilaburu fruit in the form of grape clusters cut with the help of scissors in the fall is consumed by pickling. After the collected Gilaburu fruit is washed, it is placed in canisters. When filling with tap water, it is necessary not to fill it too tightly or by applying pressure. Otherwise, the canister may burst during the fermentation period (İlhan, 2023). Only tap water is added to the Gilaburu fruit placed in the canisters and stored in a place out of the sun. Every two weeks, the water in the canister is poured and drinking water is added again. It can be kept in this way for 3-4 months. However, if it is desired to be consumed, the fruit is squeezed after a month and the juice is extracted and optionally sweetened with sugar or honey. It should be consumed within four days after squeezing. There is no harm in drinking one cup of water daily (Ergül, 2023).

Figure 3. Stages of Preparation of Gilaboru Juice on a Traditional Scale



Figure 3. The Gilaboru fruit harvested at the end of September (1), after being collected (2 and 3), undergoes washing. Subsequently, the washed Gilaboru fruit is placed in barrels with only tap water for a three-week fermentation period (4). After completing the fermentation process, the Gilaboru fruit is filtered through a sieve (5). Gilaboru Juice Ready for Consumption (6).

Conclusion and Recommendations

Gilaburu, which is a product that reflects the traditional cuisine culture in Anatolia in terms of consumption, is a geographically registered drink belonging to Kayseri. In this study, the current situation in Kayseri, which has an important place in the production and consumption of gilaburu juice, was examined regarding the stages of making gilaburu on a domestic scale, how long it has been made, how it is consumed, its importance in gastronomy and its health benefits. Based on these points, some suggestions have been developed.

The research results indicate that the tradition of making Gilaburu juice is made every autumn season in Kayseri and sold in neighborhood markets. In the research, it was determined that Gilaburu juice has been made since time immemorial, its preparation is learned from family elders, it is sweetened with sugar or honey, and it is good for kidney disease, constipation, blood pressure and diabetes. This result of the research is in parallel with the results of Çelik (2023) study to determine the consumption habits of edible plants and fruits (Çelik, 2023). According to the research findings, the region's edible plants and fruits are used for health purposes.

Again, according to the findings of the research, it is among the findings of the research that those who make Gilaburu juice in the region are generally family elders and young people do not know how to make it on a domestic scale. From this point of view, it is thought that the knowledge about the production of Gilaburu juice, which is considered as a gastronomic product of Kayseri, should be passed down from generation to generation and its sustainability should be ensured. Gilaburu, which has different unique qualities and production stages, is a traditional culinary product that tourists will be interested in within the scope of gastronomy tourism. Based on this information, further efforts are needed to promote Gilaburu, which holds a geographical indication certification, as it remains insufficiently recognized nationwide (Sabur & Güneş, 2023). To increase its preference, tasting events could be organized. Data obtained from these events could be used to apply sensory analysis techniques to Gilaburu nectar, enhancing its appeal to consumers. A product favored by consumers could be more widely distributed in markets, similar to other beverages. Gilaburu juice, which is very important for human health, should be promoted and marketed by prioritizing this feature. Steps should be taken to brand the region with gilaburu juice by ensuring the participation of volunteer guests in both harvesting and production stages in national and international festivals organized during the gilaburu fruit harvest. Although scientific studies are limited, the effects of Gilaburu juice on constipation have long been observed and sustained through traditional knowledge and practices among the public. Based on this, Gilaburu fruit can be further researched in the health and pharmaceutical sector and can be marketed as a natural medicine.

After the COVID-19 pandemic and its aftermath, people became more conscious and turned to organic and functional foods. Gilaburu juice has been proven to be beneficial for health (Yıldız & Ekici, 2019; Özmen, 2021). Therefore, more production should be encouraged in the region and people should be informed about its consumption. As a result, if the products representing the local cuisine are protected and promotional and marketing activities are carried out effectively, they will provide great economic and social support to the producers and the region. In addition, by eliminating the deficiencies and supporting the gilaburu producer; it will be possible for the geographically registered Gilaburu to positively affect the destination attractiveness of Kayseri in terms of gastronomy tourism. Gilaburu fruit and its juice, with both functional properties and a distinctive tart flavor, represent a highly valuable raw material in the field of gastronomy. Future scientific studies could enhance its use as a

gastronomic product by integrating it into innovative applications, functional food development, or other product development areas.

Declaration

The ethics committee permission required for the study was obtained from Yozgat Bozok University Rectorate, Ethics Committee Presidency, Social Sciences Ethics Committee with the decision dated 23.11.2023 and numbered 08/57.

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Appendix 1. Ethics Committee Permission



T.C.
YOZGAT BOZOK ÜNİVERSİTESİ
SOSYAL VE BEŞERİ BİLİMLER ETİK KURULU
BAŞVURU DEĞERLENDİRME FORMU.

	ARAŞTIRMANIN ADI	Her Derde Deva ‘Gilaboru Meyvesi’ ve İç Anadolu Bölgesinde Kullanımı
	ARAŞTIRMANIN TÜRÜ	<input type="checkbox"/> Anket/Ölçek/Skala Çalışması <input type="checkbox"/> Gözlemsel Çalışma <input checked="" type="checkbox"/> Niteliksel Çalışma <input type="checkbox"/> Diğer
	GELEN EVRAK SAYISI ve TARİHİ	1461711-46961 sayılı ve 1.11.2023 tarihli dilekçe
	YÜRÜTÜCÜ/DANIŞMAN (Unvan, Ad-Soyad, Kurum, Bölüm)	Dr. Öğr. Üyesi Muhabbet ÇELİK Yozgat Bozok Üniversitesi – Turizm Fakültesi
	ARAŞTIRMACILAR (Unvan, Ad-Soyad, Kurum, Bölüm)	

KARAR BİLGİLERİ	KARAR NO: 08/57	TARİH: 23.11.2023
	Yukarıda bilgileri verilen Etik Kurulu başvuru dosyası ile ilgili belgeler araştırmanın gerekçe, amaç, yaklaşım ve yöntemleri dikkate alınarak incelenmiş çalışmanın başvuru dosyasında belirtilen merkezlerde gerçekleştirilmesinde etik sakınca bulunmadığına oybirliği ile karar verildi.	
	Değerlendirme Sonucu	
	<input checked="" type="checkbox"/>	Uygundur
<input type="checkbox"/>	Düzeltilme gereklidir (Açıklayınız)	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/> Düzeltmeleri görmek istiyoruz	<input type="checkbox"/> Düzeltmeleri görmemize gerek yok
<input type="checkbox"/>	Uygun değildir (Açıklayınız)	
Açıklama		

ÇALIŞMA ESASI	Yozgat Bozok Üniversitesi Sosyal ve Beşeri Bilimler Etik Kurulu Yönergesi
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