

Natural plants of the Sandras Mountain (Köyceğiz-Muğla) traditionally employed for therapeutic purposes

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Abstract: This study was carried out between 2022 and 2023 in Yayla, Çayhisar, Sazak and Otmanlar neighborhoods located at the foothills of Sanras Mountain (Köyceğiz-Muğla). The main material of the study consists of plants determined as a result of surveys conducted with people living in these neighborhoods. A total of 73 people were interviewed in the survey. 41 of them are men and 32 are women. As a result of the interviews, it was determined that the local people benefit from 46 plant taxa growing naturally in the environment for therapeutic purposes. Among all plants evaluated; *Salvia fruticosa* Mill. and *Origanum onites* L. are seen as the most preferred by the local people. They use these plants through infusion in village coffeehouses and homes. **Keywords:** Ethnobotany, Muğla, Natural plants, Traditional medicine

Sandras Dağı'nın (Köyceğiz-Muğla) geleneksel olarak tedavi amaçlı kullanılan doğal bitkileri

Özet: Bu çalışma 2022-2023 yılları arasında Sandras Dağı (Köyceğiz-Muğla) eteklerinde yer alan Yayla, Çayhisar, Sazak ve Otmanlar mahallelerinde gerçekleştirilmiştir. Araştırmanın ana materyalini bu mahallelerde yaşayan insanlarla yapılan anketler sonucunda belirlenen bitkiler oluşturmaktadır. Anket çalışması için toplam 73 kişiyle görüşüldü; bunların 41'i erkek, 32'si kadındır. Yapılan görüşmeler sonucunda yöre halkının çevrede doğal olarak yetişen 46 bitki taksonundan tedavi amaçlı yararlandığı belirlenmiştir. Değerlendirilen tüm bitkiler arasında; *Salvia fruticosa* Mill. ve *Origanum onites* L. yöre halkının en çok tercih ettiği türler olarak görülmektedir. Bu bitkiler köy kahvelerinde ve evlerde, infüzyon yoluyla kullanılmaktadır. **Anahtar kelimeler:** Etnobotanik, Muğla, Doğal bitkiler, Geleneksel tıp

1. Introduction

Plants have been used for healing purposes for centuries, and the intensity of their use has been increasing since ancient times. Medicines derived from herbal products form an important part of the traditions of rural people in developing countries. In times when modern medicine was not developed, people collected and used plants that grew naturally in natüre (Berber et al., 2013). Plants have been used in the treatment of many diseases throughout human history, thanks to the specific or broadly effective compounds they contain. For this reason, approximately 3.5-4 billion of the world's population receives support from therapeutic plants. Most of the people, especially those living in rural areas, benefit from local plants in the treatment and prevention of diseases (Sargın, 2021). Local people use medicinal plants for many system diseases. Main; in cardiovascular diseases (blood pressure, cholesterol, blood thinners); in endocrine system disorders (such as goiter, diabetes); in urinary system diseases (kidney and urinary tract inflammations, prostate, sand and stone abortus); In respiratory system diseases such as lung diseases (asthma and bronchitis, breath-opening) and upper respiratory tract diseases (cold, flu, sore throat, cough); internal diseases such as stomach disorders (gastritis, reflux, ulcer); In digestive

system diseases such as intestinal diseases (abdominal pain, diarrhea, constipation); in dermatological diseases (wounds, burns); Plants are used in muscle and joint diseases (joint pain, rheumatism, arthritis) and cancer (Bak and Çifci, 2020).

Today, as in the past, we see that plants are used mostly for medicinal purposes. In addition, their use for food purposes also attracts attention. When we look at other uses of plants; the wood of some plants is used in furniture making, the construction industry, the paper industry, and to obtain substances such as glue and resin. Dyes are obtained from different parts of some plants such as roots, stems and flowers. Some plants, their trunks and branches are shaped to make items such as brooms, spoons, ladles, baskets, amulets and mats. Some of them are used to decorate parks, gardens and places. Plants are not only used in these ways; They are given various meanings and values specific to our culture, beliefs or place of residence. It is believed that some of them protect against the evil eye and bad events and bring good luck and abundance (Sayar et al., 1995).

When we look at the latest studies on our country's flora, there are approximately 12 000 plant taxa in species and subspecies categories. Approximately 1 000 of these plant taxa are used for therapeutic purposes (Yıldırımlı, 2004). Muğla is one of the leading regions of our country in terms of plant diversity, with approximately 1 500 taxa (Gül et al.,

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- Received (Geliş tarihi): 24.10.2023, Accepted (Kabul tarihi): 09.01.2024



Citation (Atıf): Akbaş, K., Çıtakoğlu, M., Davran, S., 2024. Natural plants of the Sandras Mountain (Köyceğiz-Muğla) traditionally employed for therapeutic purposes. Turkish Journal of Forestry, 25(1): 32-40. DOI: <u>10.18182/tjf.1380456</u> 2023). Therefore, many studies have been conducted to identify medicinal and aromatic plants in Muğla (Ertuğ, 2004; Kazan, 2007; Uysal, 2008; Gürdal and Kültür, 2013; Sağıroğlu et al., 2013; Sıcak et al., 2013; Akan et al., 2018, Kıncal et al., 2021; Güneri et al., 2023).

With the ethnobotanical studies that have been carried out and will be carried out, it is tried to ensure that this traditional knowledge is preserved and transferred unchanged from generation to generation.

2. Material and methods

2.1. Research area

Sandras Mountain, which was determined as the research area, is located in Köyceğiz district of Muğla province. Four neighborhoods at the foothills of Sandras Mountain and its surroundings were determined as the study area. These neighborhoods; Yayla (Ağla), Sazak, Çayhisar and Otmanlar. The dominant vegetation consists of Red Pine (*Pinus brutia* Ten.), Black Pine (*Pinus nigra* J.F.Arnold) and maquis communities. There are also phrygana communities settled in the area as a result of the destruction of maquis communities (Figure 1).

Traditions of local uses of plants inherited from the past cannot be kept alive due to developing medicine and industry. Information about the uses of plants is known by a limited number of people, and the number of these resource people is decreasing day by day.

With this study we carried out in four neighborhoods located on Sandras Mountain and its immediate surroundings in Köyceğiz district of Muğla province, it was determined for what purposes and in what way the local people living in the surrounding neighborhoods benefit from the medicin al plants found in the natural flora of the region.

Figure 1. Satellite image of the study area

2.2. Survey study

Face to face interviews were held with people of different ages, cultures and educational backgrounds in order to determine the plant species with medicinal and aromatic values that grow naturally in the research area and how these plant species are used by the local people. The sample survey used in the interviews is given in "Appendix-A". Since the danger of the COVID-19 continued during the study, the decisions of the Provincial Hygiene Board regarding the application of the survey were strictly followed. The survey was carried out in open areas and the survey duration didn't exceed 10 minutes (Figure 2).

In addition to the questions asked in the content of the surveys, data such as the purpose and use of the plants used, the local name of the plant, the location where the plant sample was obtained, characteristics of the person surveyed such as age, gender, educational status and occupation information were also determined.

2.3. Field study

The plants whose use was determined as a result of the surveys were collected from their natural habitats, pressed, and herbarium samples were prepared, in accordance with the information received from the surveyed people, markets, herbalists, or local people, and it was determined which species they belonged to.

The materials we used in the field work for the plants to be collected from their natural areas as a result of the surveys; hoes and similar digging tools, altimeter for height measurement, bags of various sizes, press boards for pressing plants, compression belts, drying cardboards and papers, GPS and camera. During the field study, color pictures were taken to determine the vegetation types of the research area. These pictures were also used in naming the families and some genera of plants.

Plant samples were collected in the research area at different times and from different localities throughout the project. While collecting the plants, the characteristics required for determination were taken into consideration, and the points to be taken into consideration for each family and the parts that must be removed were collected without damaging them. Collected plant samples are recorded in the field notebook; It was recorded by writing down its number, date, morphological features, altitude where it was collected, locality and habitat features.



Figure 2. Survey study at Ağla (Yayla) neighborhood

2.4. Laboratory study

The plant samples, which were placed in separate bags in the field, were brought to the laboratory and pressed appropriately so that all parts could be examined easily during determination. Drying cartons were changed regularly to prevent the plants from rotting and infesting insects.

The collected and dried plant samples were classified first at the family level, then at the genus and species level. Trinocular light microscope, forceps, dissection needles and ruler were used to examine the samples. After these samples were separated into their families, Davis (1 965-1 988)'s work named "Flora of Turkey and the East Aegean Island" and the works named Illustrated Flora of Turkey Volume 2 and 3-a (Güner et al., 2018; Güner et al., 2022) was identified using. The work called "English-Turkish Botanical Guide" was also used to find the meanings of some Latin words (Baytop, 1998).

3. Result and discussion

A survey was conducted with 73 people in 4 neighborhoods included in the research area. In the survey study, 41 of the interviews were conducted with men and 32 with women. The proportion of men is slightly higher because the work is mostly done in public areas such as coffeehouses and squares (Figure 3).

Among the people interviewed, 21 people are between the ages of 21-40, 36 people are between the ages of 41-60, 12 people are between the ages of 61-80 and 4 people are between the ages of 81 and over. The rate of individuals over the age of 40 is 71% (Figure 4).



Man Woman

Figure 3. Gender distribution of survey participants



Figure 4. Age distribution of survey participants

Among the people interviewed, 8 people (11%) did not receive any education, 53 people (73%) were primary school graduates, 5 people were high school (7%) and 7 (9%) people were educated at university level (Figure 5).

As a result of surveys conducted with local people, 46 plant taxa were identified and 2 of these plants are endemic to Turkey; *Sideritis albiflora* Hub.-Mor. and *Teucrium sandrasicum* O. Schwarz (Appendix-B).

Plant families with the most taxa used by the local people are Lamiaceae; (13 taxa), Apiaceae (4 taxa), Asteraceae (2 taxa), Pinaceae (2 taxa) and Rosaceae (2 taxa) (Figure 6).

Consistent with our study, in other studies conducted in Muğla, the plant family with the most used taxa by the local people is Lamiaceae (Kazan, 2007; Uysal, 2008; Gürdal and Kültür, 2013; Sağıroğlu et al., 2013; Sıcak et al., 2013; Akan et al., 2018, Kıncal et al., 2021; Güneri et al., 2023). This is a natural consequence of the Lamiaceae family being the second largest family with the most taxa in our country and containing many species with medicinal value.

Origanum onites L. and *Salvia fruticosa* Mill. are often used to keep in the cold and in the stomach. Consistent with our study, in other studies conducted in Muğla, the plant taxon most used by local people is *Origanum onites* L. (Kazan, 2007; Uysal, 2008; Gürdal and Kültür, 2013; Sağıroğlu et al., 2013; Sıcak et al., 2013; Akan et al., 2018, Kıncal et al., 2021; Güneri et al., 2023). Similar uses have been reported from other regions of Turkey (Ertuğ, 2004; Honda et al., 1996; Tuzlacı, 2005; Uysal, 2008). At the same time, local people consume these plants daily in coffeehouses and homes.







Figure 6. Plant families with the most taxa used for medicinal purposes in the Sandras mountain

One of the most used plants in the research area is *Sideritis libanotica* subsp. *linearis* (Benth.) Bornm. Local people use this plant for colds and stomach ache. Same uses of the it for stomach protection and colds are recorded in the literature (Fakir et al., 2009).

While the traditional uses of plants in the research area are significantly similar to other studies, information about the medicinal use of the *Teucrium sandrasicum* O. Schwarz taxon has been revealed for the first time. Local people prepare tea by infusion from the flower and leaf parts of this plant and use it for prostate and stomach pain (Figure 7).

4. Conclusions

Traditional uses of 46 plant taxa belonging to 27 families were revealed in the research area. Traditional uses in our study area were also compared with other ethnobotanical studies in our country.

Among all plants evaluated; *Salvia fruticosa* Mill. and *Origanum onites* L. are seen as the most preferred by the local people. They use these plants through infusion in village coffeehouses and homes. *Lavandula stoechas* L. subsp. *stoechas, Mentha pulegium* L., *Hypericum perforatum* subsp. *veronense* (Schrank) H.Linb., *Thymbra spicata* L. subsp. *spicata, Sideritis libanotica* subsp. *linearis* (Benth.) Bornm. is also widely used.

The most common preparation of plants among the local people is infusion and decoction. Other uses include; Chewing, external application, grinding into powder, adding to food, soaking in olive oil, poultice and poultice. Parts of plants used in treatment; leaves, flowers, seeds, fruits, resin, roots and bulbs.

Local use traditions of plants inherited from the past cannot be kept alive due to developing medicine and industry. The aim of ethnobotany is to bring to light information about the plants used by the people living in a certain region, the local names of these plants, the purposes for which they use the plants and the ways in which they are used.

With this study, information about the traditional uses of medicinal plants in the research region was revealed. As a result of our interviews with the local people, we see that plants are still widely used for medicinal purposes in their daily lives. However, we believe that there is a gradual loss of this traditional knowledge. Therefore, it is of great importance to transfer information about the traditions of these regions to written sources before they are lost.



Figure 7. Teucrium sandrasicum O. Schwarz

Acknowledgement

A part of this work was presented at the "5th International Non-Wood Forest Products Symposium". This study was supported by TÜBİTAK 2209-A University Students Research Projects Support Program with the project code "1919B012109764".

References

- Akan, H., Öz, A. ve Pekmez, H., 2018. Ortaca (Muğla) yöresinde halk arasında kullanılan bazı bitkiler. Türk Tarım-Gıda Bilim ve Teknoloji Dergisi, 6(9): 1168-1174.
- Bak, F.E., Çifci, K., 2020. Artvin'in merkez köylerinde bazı tıbbi bitkilerin yöresel kullanımları. Artvin Çoruh Üniversitesi Orman Fakültesi Dergisi, 21(2): 318-329.
- Baytop, T., 1998. İngilizce Türkçe Botanik Kılavuzu. Eczacılık Fakültesi Yayınları, İstanbul.
- Berber, İ., Avşar, C., Çine, N., Bozkurt, N., Elmas, E., 2013. Determination of antibacterial and antifungal activities of methanolic extracts of some plants growing in Sinop Karaelmas. Science And Engineering Journal, 3(1): 10-16.
- Davis, P.H., 1965-1985. Flora of Turkey and East Aegean Islands. Vol. 1-9, Edinburgh University Press, Edinburgh.
- Davis, P.H., Mill, R.R., Tan, K., 1988. Flora of Turkey and East Aegean Islands. Vol. 10 (suppl. 1), Edinburgh University Press, Edinburgh.
- Ertuğ, F., 2004. Wild edible plants of the Bodrum area (Muğla, Turkey). Turkish Journal of Botany, 28(1-2): 161-174.
- Fakir, H., Korkmaz, M., Güller, B., 2009. Medicinal plant diversity of western Mediterrenean regionin Turkey. Journal of Applied Biological Sciences, 3(2): 30-40.
- Gül, R., Akbaş, K., Elmas, B., Özdemir, R., Topçuoğlu, B., 2023. Muğla'nın Nadir ve Endemik Bitkileri. Alternatif Yayıncılık, İstanbul.
- Güner, A., Kandemir, A., Menemen, Y., Yıldırım, H., Aslan, S., Ekşi, G., Güner, I., Çimen, A.Ö., (edlr.) 2018. Resimli Türkiye Florası. Cilt 2. ANG Vakfı Nezahat Gökyiğit Botanik Bahçesi Yayınları, İstanbul.
- Güner, A., Kandemir, A., Menemen, Y., Yıldırım, H., Aslan, S., Çimen, A.Ö., Güner, I., Ekşi Bona, G., Şen Gökmen, F., (edlr.) 2022. Resimli Türkiye Florası. Cilt 3a. ANG Vakfı Nezahat Gökyiğit Botanik Bahçesi Yayınları, İstanbul.

- Güneri, E., Türkoğlu, T., Yıldıztekin, M., 2023. Köyceğiz-Dalyan özel çevre koruma bölgesinde geleneksel olarak kullanılan şifalı bitkilerin sürdürülebilirliğinin araştırılması. Journal of the Institute of Science and Technology, 13(1): 130-142.
- Gürdal, B., Kültür, Ş., 2013. An ethnobotanical study of medicinal plants in Marmaris (Muğla, Turkey). Journal of Ethnopharmacology, 146(1): 113-126.
- Honda, G., Yeşilada, E., Tabata, M., Sezik, E., Fujita, T., Takeda, Y., Takaishi, Y., Tanaka, T., 1996. Traditional medicine in Turkey VI. Folk medicine in west Anatolia: Afyon, Kütahya, Denizli, Muğla, Aydın provinces. Journal of Ethnopharmacology, 53(2): 75–87.
- Kazan, D., 2007. Ortaca (Muğla) ilçesinin etnobotaniği. Yüksek Lisans Tezi, Muğla Sıtkı Koçman Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Ana Bilim Dalı, Muğla.
- Kıncal, S., Ceylan, O., Görk, G., 2021. Ethnobotanical features of Ula (Muğla/Turkey) district. Biological Diversity and Conservation, 14(1): 69-81.
- Sağıroğlu, M., Dalgıccedil, S., Toksoy, S., 2013. Medicinal plants used in Dalaman (Muğla), Turkey. Journal of Medicinal Plants Research, 7(28): 2053-2066.
- Sargın, S.A., 2021. Plants used against obesity in Turkish folk medicine: A review. Journal of Ethnopharmacology, 270, 113841.
- Sayar, A., Öztürk, M., Güvensen, A., Özdemir, F., 1995. Muğla (Türkiye) ilindeki bazı türlerin tnobotanik özellikleri. Ot Sistematik Botanik Dergisi, 2(1): 151-160.
- Sıcak, Y., Çolak, Ö. F., İlhan, V., Sevindik, E., Alkan, N., 2013. Köyceğiz yöresinde halk arasında yaygın olarak kullanılan bazı tıbbi ve aromatik bitkiler. Anadolu Doğa Bilimleri Dergisi, 4(2): 70-77.
- Tuzlacı, E., 2005. Bodrum'da Bitkiler ve Yaşam. Güzel Sanatlar Matbaası, İstanbul.
- Uysal, G., 2008. Köyceğiz (Muğla) ilçesinin etnobotaniği. Yüksek Lisans Tezi, Muğla Sıtkı Koçman Üniversitesi, Fen Bilimleri Enstitüsü, Biyoloji Ana Bilim Dalı, Muğla.
- Yıldırımlı, Ş., 2004. Etnobotanik ve Türk etnobotaniği. Kekibeç, 17: 175-193.

Appendix-A. Survey form used in the study.

The study titled " Natural Plants of The Sandras Mountain (Köyceğiz-Muğla) Traditionally Employed for Therapeutic Purposes" was planned by Merve ÇITAKOĞLU to determine the plant species with medicinal and aromatic values that are used by the local people living in the neighborhoods determined at the foothills of Sandras Mountain.

Participating in this research is on a voluntary basis. Even if you have started filling out the data collection form after agreeing to participate in the study, you can give up participating in the study if you do not want to. Filling out the form completely and sending it to the researcher means that you are willing to participate in the research.

All this information obtained from you will be used in a scientific research. The research results will not contain any name or sign to identify you. All records kept about you in this investigation will remain confidential. Therefore, it is of great importance that you answer all the questions accurately and completely.

The study form consists of 20 sections / questions. It will take approximately 10 minutes to complete the survey. If you have any questions about the study, you can contact the responsible researcher Merve CITAKOĞLU, whose contact information is given below, without hesitation. Thank you for your contribution to the world of science by sparing time for our study...

Responsible Investigator

Title, Name and Surname: Merve ÇITAKOĞLU

E-mail: zeynepceren2804@gmail.com

 Person from whom information was

 received:

 Name-Surname

 Address:

 Age:

 Gender:

 Education Status:

	Local name					
The plant used	Scientific name					
	Family					
Source from which the plant is obtained	Collection	Spice seller	Market			
Location or address where the plant was						
obtained						
Purpose of use of the plant						
Part used						
Explanation on usage						
What disease is it used against?						
Use of the plant	Solitary	Mixture				
	Direct					
	Infusion					
Usage-preparation method	Decocsion					
	Mush					
	Moxibustion					
	Other					
Explanation regarding preparation, if any						
How to use	Internally	Externally				
Usage time						
Dosage (how many times a day and in						
what quantity)						
From whom did she/he learn this information?	Family elders	Neighbor	Spice seller	Other		
Other explanations, if any						

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Appendix-B.	Medicinal uses of	plants in Sandras mountain	(Köyceğiz, Muğla, Turkey).

Appendix D.	meanemai uses of p	nants in San	ur as mountain (ixe	ycesiz, mugia, ranke	<i>, , , , , , , , , ,</i>
Familia	Scientific name	Local name	Parts of plants used	Purpose of usage	Preparation
	Pistacia terebinthus	. ·	T •	G 11	The herbal part is thrown into boiling
Anacardiaceae	L. subsp. terebinthus	Menengıç	Fruit	Cold	water and left to brew for 5 minutes on
					The fruits of the plant are ground into
Anacardiaceae	Rhus coriaria L	Sumak	Fruit	Stomache ache	nowder. It is consumed with honey or
7 macardiaceae	Innas contanta E.	Buillar	1 fuit	Stomache dene	mixed with warm water.
-					The herbal part is thrown into boiling
Apiaceae	Conium maculatum	Baldıran otu	Aerial parts	Pain and spasm relief	water and left to brew for 5 minutes on
-	L.			-	low heat. It is then filtered and drunk.
	Ferula communis L			Calming the nerves and	The herbal part is thrown into boiling
Apiaceae	subsp. <i>communis</i>	Çakşır otu	Flowers and pedicels	Sedative	water and left to brew for 5 minutes on
	1				The low heat. It is then filtered and drunk.
Apiaceae	Pimpinella anisum L	. Yabani anason	Leaves	Stomache ache	directly
					The herbal part is thrown into boiling
Apiaceae	Scandix pecten-	Dağ sırası otu	Aerial parts	Stomache ache	water and left to brew for 5 minutes on
1	veneris L.	8	1		low heat. It is then filtered and drunk.
	Draounoulus vuloari				The fruits of the plant are crushed until
Araceae	Schott	Yılan bıçağı	Fruits	Hemorrhoid	they reach a paste consistency and
	Senou				applied to the affected area.
A - 4	A	Demotore	-	C - 1-4	The herbal part is thrown into boiling
Asteraceae	Anthemis chia L.	Papatya	Flowers	Sedative	water and left to brew for 5 minutes on
					The herbal part is thrown into boiling
Asteraceae	Helichrysum	Altın otu	Leaves	Passing kidney stones	water and left to brew for 5 minutes on
	orientale (L.) Gaertn.			and sand, knee pain	low heat. It is then filtered and drunk.
					The herbal part is thrown into cold water
Barbaridacaaa	Barbaris crotica I	Karamuk	Poots	Couch	and allowed to boil. After the water boils,
Derbendaceae	Derbens crencu L.	Karamuk	KOOUS	Cough	it is left to brew for another 5 minutes. It
					is then filtered and drunk.
	Microthlaspi				The herbal part is thrown into cold water
Brassicaceae	perfoliatum	Akça otu	Flowers	Stomache ache, prostat	it is left to brew for another 5 minutes. It
	(L.) F.K.Mey.				is then filtered and drunk.
-					The herbal part is thrown into cold water
Cistagooo	Ciatus anations I	Domulalu	Laavaa	Couch	and allowed to boil. After the water boils,
Cistaceae	Cistus creticus L.	Ратики	Leaves	Cougn	it is left to brew for another 5 minutes. It
					is then filtered and drunk.
Cornaceae	Cornus mas L.	Kızılcık	Fruits	Cold	Syrup is prepared by mixing the fruits of
	Eshallinn shataning				The first of the alert are aligned and
Cucurbitaceae	(L) A Rich	Eşek hıyarı	Fruits	Alopesi	applied to the area with ringworm
	(L.) A.Reil.				The herbal part is thrown into cold water
-		P	-	511	and allowed to boil. After the water boils.
Fagaceae	Quercus coccifera L.	Piynar	Leaves	Diabete	it is left to brew for another 5 minutes. It
					is then filtered and drunk.
	Hypericum		Oil is prepared with	Ulcer, Hemorrhoid and	St. John's wort flowers are placed in a
·	<i>perforatum</i> subsp.				bottle and enough olive oil is added to
Hypericaceae	veronense (Schrank)	Kantaron	flowers and leaves	wound treatment	cover the plant. The oil, which is kept in
	H.Linb.				ready for use after it turns red
	Lavandula stoechas				The herbal part is thrown into boiling
Lamiaceae	Lavanana sideenas	Karabas otu	Flowers and leaves	Cardiovascular diseases	water and left to brew for 5 minutes on
	subsp. stoechas	,		Curdio vusediur diseuses	low heat. It is then filtered and drunk.
	Maliana officinalia I				The herbal part is thrown into boiling
Lamiaceae	subsp officinalis	Oğul otu	Flowers and leaves	Sore throat	water and left to brew for 5 minutes on
	F <i>JJ</i>				low heat. It is then filtered and drunk.
т ·		Yarpuz	F 1 11		The herbal part is thrown into boiling
Lamaceae	Mentha pulegium L.	(narpuz)	Flowers and leaves	Cold, Stomacne ache	low heat. It is then filtered and drunk
					The herbal part is thrown into boiling
Lamiaceae	Origanum onites L	İzmir kekiği	Flowers and leaves	Cold, Stomache ache and	water and left to brew for 5 minutes on
Lannacoac				indigestion	low heat. It is then filtered and drunk.
	Dogura				The herbal part is thrown into boiling
Lamiaceae	officinalis I	Biberiye	Flowers and leaves	Stomache ache	water and left to brew for 5 minutes on
	officinatis L.				low heat. It is then filtered and drunk.
т ·		. 1			The herbal part is thrown into boiling
Lamiaceae	saivia jruticosa Mill.	Adaçayı	riowers and leaves	Colu, Stomacne acne	low heat. It is then filtered and drunk
					mean is is alon intered and arann.

Lamiaceae	Sideritis albiflora HubMor. Endemic	Akçay	Flowers and leaves	Liver and intestinal disorders, Cold	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Lamiaceae	Sideritis libanotica subsp. linearis (Benth.) Bornm.	Dağ çayı	Flowers and leaves	Cold, Stomache ache	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Lamiaceae	Teucrium divaricatum Sieber subsp. divaricatum	Bodur mahmut	Flowers and leaves ^a , Leaves ^b	Cough, Sore throat ^a , Stomache ache ^b	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk ^a , The leaves of the plant are chewed
Lamiaceae	<i>Teucrium polium</i> L. subsp. <i>polium</i>	Acı yavşan	Flowers and leaves	Stomache ache	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Lamiaceae	<i>Teucrium</i> sandrasicum O. Schwarz, Endemic	Akçaotu	Flowers and leaves	Stomache ache	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Lamiaceae	Thymbra spicata L. subsp. spicata	Karakekik, Zahter, Eşek kekiği	Flowers and leaves	Stomache ache, Cold	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Lamiaceae	Vitex agnus-castus L.	Hayıt	Seeds	Diarrhea, Stomache ache, urinary burning	The herbal part is thrown into cold water and allowed to boil. After the water boils it is left to brew for another 5 minutes. It is then filtered and drunk.
Malvaceae	Malva sylvestris L.	Ebe gümeci	Leaves	Stomache ache	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Moraceae	<i>Ficus carica</i> L. subsp. <i>carica</i>	İncir	Leaves	Snake and Scorpion bite	The leaves of the plant are boiled and turned into porridge and applied to the bite area.
Myrtaceae	<i>Myrtus communis</i> L. subsp. <i>communis</i>	Mersin	Yaprakları ^ª , Fruits and leaves ^b ,	Asthma- bronchitis ^a , Eye pain ^b	Tincture is made by keeping the leaves of the plant in alcohol or vinegar for a while ^a , It is consumed raw ^b
Oleaceae	Olea europaea L. subsp. europaea	Zeytin	Leaves	Diabetes	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Onagraceae	Epilobium angustifolium L.	Yakı otu	Leaves	Stomache ache, headache	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Pinaceae	<i>Pinus brutia</i> Ten. var. <i>brutia</i>	Kızılçam	Resin, Fresh shoots	Wound treatment ^a , Joint pain ^b	Pine resin is applied directly to the injured area ^a , The cone is crushed and boiled with water to make the decoction. It is
Pinaceae	<i>Pinus nigra</i> subsp. <i>pallasiana</i> var. <i>pallasiana</i> (Lamb.) Holmboe	Çam	Tar	Aches and pains	The tar obtained from its resin is applied directly to the painful area 1-2 times a day. The decoction prepared by crushing and boiling pine cones is consumed by drinking 1 tea glass in the morning and evening until the discomfort disappears.
Platanaceae	Platanus orientalis L.	Çınar	Leaves	Arthritis	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Polygonaceae	Rumex crispus L.	Labada	Seeds	Diarrhea	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Rosaceae	<i>Crataegus monogyna</i> Jacq. var. <i>monogyna</i>	Alıç	Fruits	Neck hernia	The herbal part is thrown into cold water and allowed to boil. After the water boils it is left to brew for another 5 minutes. It is then filtered and drunk
Rosaceae	Rosa canina L.	Kuşburnu	Fruits	Foot pain ^ª , vitamin C supplement ^b	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk ^a , The herbal part is thrown into cold water and allowed to boil. After the water boils it is left to brew for another 5 minutes. It is then filtered and drunk ^b

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Rubiaceae	Galium aparine L.	Epirci, yavşak otu	Flowers and leaves	Blood pressure, Diabete	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Santalaceae	<i>Viscum album</i> L. subsp. album	Ökse otu	Flowers and leaves	Cough and Cold	The herbal part is thrown into cold water and allowed to boil. After the water boils, it is left to brew for another 5 minutes. It is then filtered and drunk
Scrophulariaceae	Verbascum sp.	Sığır kuyruğu	Flowers and leaves	Wart	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.
Urticaceae	<i>Urtica membranacea</i> Poiret ex Savingy	Isırgan	Seeds	Stomache ache	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk or The seeds of the plant are boiled and consumed directly by adding them to meals.
Xanthorrhoeaceae	Asphodelus aestivus Brot.	Çiriş	Bulbs	Stomach bleeding	The herbal part is thrown into cold water and allowed to boil. After the water boils, it is left to brew for another 5 minutes. It is then filtered and drunk
Zygophyllaceae	Tribulus terrestris L.	Çoban çökerten	Aerial parts	Blood pressureon	The herbal part is thrown into boiling water and left to brew for 5 minutes on low heat. It is then filtered and drunk.