

## TRADITIONAL MEDICINAL PLANTS USED in PINARBAŞI AREA (KAYSERİ–TURKEY)

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### Abstract

*In this study, therapeutic uses and methods of administration of 44 plant species belonging to 25 families in Pınarbaşı are documented. Some of the medicinal plants dealt with in this report were not cited previously in ethnobotanical literature of Turkey, while others turn out to have an original therapeutic use. Data presented is first-hand and based on field interviews of local people and materials collected in the area surveyed. All collected folk drug species were identified and prepared voucher specimens were deposited in the Ankara University Faculty of Pharmacy (AEF) Herbarium.*

**Keywords:** Traditional, Medicinal Plants, Pınarbaşı, Turkey

### Pınarbaşı (Kayseri) Yöresinde Geleneksel Halk İlacı Olarak Kullanılan Bitkiler

*Bu çalışmada, Pınarbaşı'nda geleneksel halk ilacı olarak kullanılan 25 familyaya ait, 44 bitki türünün kullanılış nedenleri, uygulanış şekilleri araştırılmış ve kaydedilmiştir. Bu raporda ele alınan tıbbi bitkilerin bazıları Türkiye'nin etnobotanik literatüründe daha önce kayıtlı değilken, bazılarının da özgün terapötik kullanımlara sahip oldukları belirlenmiştir. Veriler, yapılan alan çalışmalarında doğrudan yerli halk ile yapılan mülakatlar sonucu ve çalışma alanından toplanan bitkisel materyalin teşhisi ile derlenmiştir. Halk ilacı olduğu belirlenerek toplanan bitkilerin tümü teşhis edilmiş ve hazırlanan herbaryum örnekleri Ankara Üniversitesi Eczacılık Fakültesi Herbaryumu'na (AEF) kaldırılmıştır.*

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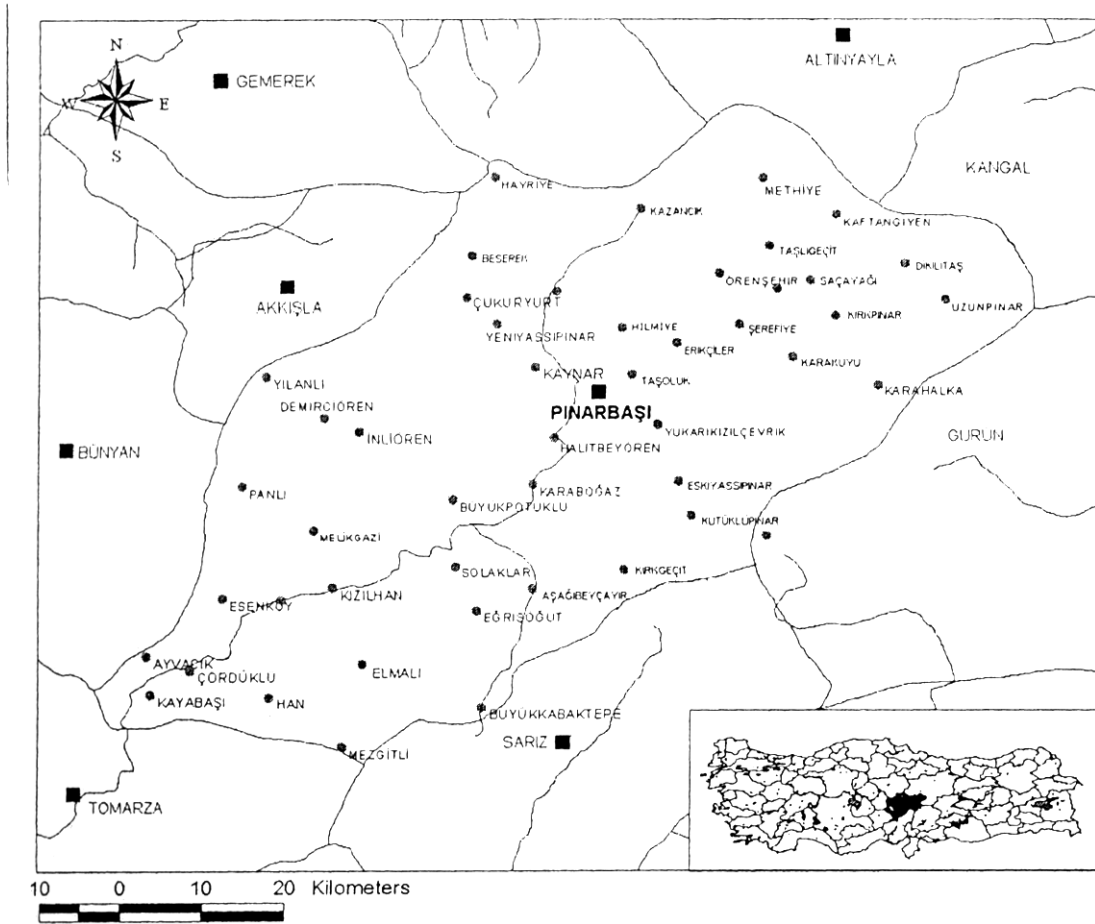
## INTRODUCTION

The Turkish flora is estimated to contain more than 11 000 species of higher plants of which about 3000 are endemic (1, 2). This exceeds the total number of endemic species found in Europe (2500) and underscores the ecological importance of the country. Turkey is well known for its wide variation in topography and climate in favor of the formation of different habitat and vegetation zones. Besides, ecological factors change greatly over very short distances and for these reasons, living things have evolved and diversified richly and created a wealth of species.

Additionally, during many historical periods, Anatolia (Asiatic part of Turkey) served as a passageway between the continents of Europe, Asia and Africa. A number of human races and tribes have settled in Turkey from various lands bringing their cultures, religions and customs for many centuries. This cultural heritage and richness of the flora have contributed to high diversity of traditional knowledge and practices of people to use the plants in their daily lives. In Anatolia, plants have been used as a source of food, remedy, animal fodder, tinder and some utensils from time immemorial. Unfortunately, this experience, which passed on from generation to generation, is rapidly being lost with modernization of society, especially by the development of road communication, the migration of people from villages to cities and the accessibility of modern medicine. But it is reported that Turkish people -mostly the people live in rural areas- still use traditional medicine for their health care practices (3).

The aim of this ethnobotanical study is to collect systematic information about the remaining ethnobotanical practices in Pınarbaşı before it is completely lost. A literature survey revealed no previous research on this region, however some other papers concerning the ethnobotanical potential of nearby regions (4-7) gives important insights.

Pınarbaşı is the largest and the easternmost district of Kayseri province in Central Anatolia (Figure 1), covering an area of 3328 km<sup>2</sup> with an altitudinal variation from 1500 m to 2500 m. It comprises 115 villages and has a population of about 40 000 inhabitants mainly employed in agriculture, fishing and stock-rearing. Some tribes still practice seasonal migration for finding pastures for their herds. Since the area is far away from the moderating effect of the sea breeze, the winters are usually cold and long, precipitation generally occurs as snow which lasts for several months. After a very short and rainy spring, a hot and dry summer follows. The flora is mainly of the steppe character -and comprises high percentages of Irano-Turanian elements- with natural pastures, scattered and disturbed forests.



**Figure 1.** Study area: Pınarbaşı District (Inset: Map showing the location of Kayseri in Turkey).

After the development of the roads in the last decades the local economy underwent a gradual transformation. Nevertheless, the daily life style of the local people is still not changed much and they continue their own practices. The area includes some ethnic groups (namely Avshars, Turcomans, Circassian) each with its own diverse cultural and social traditions. To record this diversity of folk medicinal practices would be very valuable from the point of local heritage and for the future generations.

### Methodology

The field work was carried out in the spring and summer seasons of the years 2001-2002 by means of direct interviews with healers and villagers who know/practice herbal medicine. The authors adopted ‘techniques for compiling folkloric information’ (8) for field survey without making use of questionnaires and structured interview schedules but instead, relying more on unstructured, personal interviews with the native informants. Furthermore, efforts were made to double check any information by asking the opinion of people in neighboring villages. For the collection of plant materials, informants were asked to bring the drug or herbal preparations they use, or the dried materials stored in their houses. Then, they were requested to accompany

us in the field and help in recognizing and collecting the desired herbal material from their respective localities. The obtained fresh material were numbered and kept as samples for botanical identification. Detailed notes were taken about the therapeutic applications, modes of preparation and administration. The information and the plants collected were reviewed and the data were recorded on field labels and in preset forms. The data collected were further cross-checked at different villages with different practitioners and patients.

Taxonomical determination of all plants mentioned was performed with the help of 'Flora of Turkey and the East Aegean Islands' (1, 2) and also by comparing with the identified specimens in herbaria in Ankara. A voucher specimen of each species is preserved at the Herbarium of Ankara University, Faculty of Pharmacy, (AEF).

## RESULTS AND DISCUSSION

Information on 44 plant species belonging to 25 families used by local people for treating different ailments are presented in Table 1. Among them, 40 species are wild and 4 species are cultivated plants. Only those species quoted by at least three informants were included and uncertain or equivocal data were eliminated. Plants are listed in alphabetical order of their botanical name, followed by family names and herbarium numbers. In the respective columns; the local name, the parts used as medicine, the therapeutic uses, methods of preparation and administration are given. In the last column, the therapeutic uses reported for the same species in previous ethnobotanical works carried out in different territories of Turkey are listed.

Most of the informants stated that they have learned the usage of these medicinal plants from their parents and elderly relatives so this proved the ancestral origin of the folk medicinal knowledge. In some cases medicinal plants play an important role in the relationships between the rural people in Pınarbaşı. The herb is recommended to the

**Table 1.** Medicinal plants used in Pınarbaşı area (Kayseri-Turkey)

Scientific name Family (Voucher specimen)	Local names	Plant parts used	Medicinal uses, preparation and Administration	Other traditional uses reported earlier in Turkish ethnobotanical literature (References)
<i>Achillea biebersteinii</i> Afan. Asteraceae (AEF 22785)	Sarıçiçek	Capitulum	To invigorate the body, for skin care and as a deodorant; added to the bath water	For wound healing, jaundice, pain in ear, stomachache, dermatosis of children (9,10)
<i>Achillea setacea</i> Waldst. & Kit. Asteraceae (AEF 22120)	Sarıçiotu	Capitulum	For stomachache; infusion, as tea	-
<i>Achillea wilhelmsii</i> C. Koch Asteraceae (AEF 22122)	-	Aerial part	Against herpes infections in mouth and toothache; cigarette prepared from the dried material is smoked	For bronchitis (9)
<i>Allium cepa</i> L. Liliaceae (cultivated)	Soğan	Bulb  Young shoot	For promoting maturation of abscess; whole bulb is cooked in ember, warmed up, peeled and applied on the abscess  For stomachache; the same preparation as above but digested on an empty stomach.  For abscess: young shoots pounded with fresh <i>Scrophularia libanotica</i> subsp. <i>libanotica</i> var. <i>cappadocica</i> to prepare a paste then applied on the abscess	For gastric ulcers, scabies, bee stings, fractured bones, dysmenorrhea, uterus inflammation, dysuria, muscular and rheumatic pain, as abortifacient (7, 11, 12)

<i>Arnebia densiflora</i> (Nordm.) Ledeb. Boraginaceae (AEF 21467)	Havacıva otu	Root	For fissures on hand and foot, for rash; grated roots are cooked in a pan with butter, beeswax and pine resin to prepare a reddish ointment and applied on skin  For wound healing; milled roots are cooked with butter and beeswax to prepare a reddish ointment and applied  To treat pressure wounds suffered by bedridden patients; cut into small pieces mixed with powdered basal leaves of <i>Circium libanoticum</i> subsp. <i>lycaonicum</i> and boiled in melted beeswax to get an ointment and applied	For diarrhea (3)
<i>Arum dentruncatum</i> C.A. Meyer ex Schott var. <i>dentruncatum</i> (Nordm.) Ledeb. Araceae (AEF 21386)	Gavur pancarı	Leaf  Root	For sore throat; boiled to obtain a poultice and while still warm applied on the neck  For common colds; boiled in water and vapour is inhaled through the nose  To treat rheumatism; decoction prepared by greated roots, as tea	For maturation of abscess, wound healing (3)
<i>Asphodeline taurica</i> (Pallas) Kunth Liliaceae (AEF 22409)	Kılçiriş	Stem sap	To remove warts; applied directly on the wart	-
<i>Berberis crataegina</i> DC. Berberidaceae (AEF 21393)	Karamuk	Shoot Leaf	For wound healing; spongy parts under the bark dried and applied to the affected area  For diabetes; ingested	As appetite stimulant, tonic, diuretic, expectorant; for jaundice, fever, gastro-intestinal and gynecological ailments, anal fistulas, cough (3, 11, 13, 14, 15)



<i>Daphne oleoides</i> Schreber subsp. <i>oleoides</i> Thymelaceae (AEF 21833)	Develik	Aerial part	For gynecological ailments and infertility in woman; boiled in a cauldron, warmed up, patient sits directly on this water after the menstruation	For malaria, rheumatism, edema, lumbago (13, 16)
<i>Eryngium campestre</i> L. var. <i>virens</i> Link Apiaceae (AEF 22316)	Boğadikeni	Flower head	For abscess; decoction is mixed with flour to obtain poultice, warmed up and applied to promote suppuration To remove kidney stones; decoction, as tea	For cough, jaundice, flatulence, urinary infections; as appetite stimulant, diuretic, tonic, aphrodisiac (3, 17, 18)
<i>Erysimum thyrsoideum</i> Boiss. Brassicaceae (AEF 21630)	Çekemotu	Aerial part	For abscess; decoction is mixed with flour to obtain poultice, warmed up and applied to promote suppuration	-
<i>Helichrysum arenarium</i> (L.) Moench subsp. <i>aucheri</i> (Boiss.) Davis & Kupicha Asteraceae (AEF 21718)	Çınrağ çiçeği	Aerial part	For sore throat; decoction, as tea For gynecological and abdominal pain; decoction, as tea For pain in ear; infusion, the ear is exposed to the vapor	For jaundice, wound healing, stomachache, removing stones and sand-like plugs from urinary system; as diuretic, cholagogue (5, 13, 16, 19)
<i>Hordeum vulgare</i> L. Poaceae (Cultivated)	Arpa	Seed	For abdominal pain; decoction, as tea For fever; decoction, as tea Against warts; fixed oil obtained from the seeds roasted on a hot horseshoe applied externally	For common cold, rheumatic pain, abscess, cough in pneumonia, dermatophytes, facial paralysis (7)
<i>Hyoscyamus niger</i> L. Solanaceae (AEF 21830)	Kumacık otu	Aerial part (with mature fruits)	To expel worms from eyes and mouth; put in ember, fume is inhaled through mouth, or eyes are exposed to it to expel small worms	For toothache, pain in ear (19, 20)



<i>Hypericum scabrum</i> L. Hypericaceae (AEF 22049)	Mayasıl otu	Aerial part	For hemorrhoids; decoction, as tea For stomachache; decoction, as tea	For peptic ulcer (19)
<i>Juniperus oxycedrus</i> L. Cupressaceae (AEF 21339)	Cicamuk, menengiç, çitımık	Fruit	For shortness of breath; pounded fruits are boiled and concentrated then filtered through a muslin to obtain a thick extract, taken orally For common cold; roasted fruits are pounded in a mortar and mixed with honey, ingested on an empty stomach To ease cough; ingested	For eczema, lung ailments, hemorrhoids, rheumatism, removing kidney stones, infections of respiratory and urinary systems, joint calcification, scabies, bee and snake bite, animal parasites; as an appetizer and diuretic (5, 11, 16, 18, 21, 22)
<i>Malus communis</i> Poir. Rosaceae (cultivated)	Elma	Fruit	To ease cough; peels are mixed with aerial parts of <i>Malva neglecta</i> , decocted and used as tea	For mumps, dyspepsia, scorpion bite (7, 13, 16)
<i>Malva neglecta</i> Wallr. Malvaceae (AEF 22117)	Ebegümeçi, ebemgümeçi, çobanyatağı	Aerial part or leaf	For swellings; decoction mixed with flour to obtain poultice, warmed up and applied to the affected area For rheumatic pain; decoction mixed with barley bran to obtain poultice, warmed up and applied to the affected area For stomachache and abdominal pain; decoction, as tea on an empty stomach For abscess; boiled in water and applied to promote suppuration To ease cough; mixed with the peels of apple and decocted, as tea	For hemorrhoids, wounds, female sterility, peptic ulcer, pain in mouth, bruises; as choleric (7, 11, 16, 19)

				For throat infection; decoction is mixed with flour to obtain poultice, warmed up and applied externally on neck wrapped in warm clothes; decoction is also employed as a gargle For renal diseases; decoction, as tea			
<i>Mentha longifolia</i> (L.) Hudson subsp. <i>typhoides</i> (Briq.) Harley var. <i>typhoides</i> Lamiaceae (AEF 21360)	Yarpuz	Aerial part		For sore throat, tonsillitis; decoction is mixed with flour to obtain poultice, warmed up and applied externally on neck and wrapped in warm cloth; decoction is also employed as a gargle and tea For stomachache and abdominal pain; decoction, as tea For rash and other skin ailments; added to the bath water For hemorrhoids; mixed with aerial parts of <i>Urtica dioica</i> , decoction prepared, taken as tea also poached herbs applied externally.			For nausea, headache, sunstroke, diarrhea, common cold, palpitation, bleeding, kidney stones, abdominal pain and cough; as diuretic and anthelmintic (4, 11, 12, 20, 21)
<i>Peganum harmala</i> L. Zygophyllaceae (AEF 22814)	Üzerlik	Aerial part (with mature fruits)		For hemorrhoids; burned, ash is mixed with barley flour and olive oil, applied externally			For prostatitis, skin ailments, dysuria, abdominal pain; as sedative, anthelmintic and sudorific (4, 5, 11, 19, 23)
<i>Pinus sylvestris</i> L. Pinaceae (AEF 22237)	Çam	Unmatured cone Resin		For soothing cough; cones are boiled, drained water is drunk To treat wounds; applied directly to the affected area (if the wound is dry, it is mixed with tail fat before application)			For bronchitis, rheumatic pain, peptic ulcers, common cold, tuberculosis (3, 12, 13)

<i>Plantago lanceolata</i> L. Plantaginaceae (AEF 22241)	İtdili, beşparmak otu	Leaf	For hemorrhoids; dried, milled and mixed with honey, ingested For shortness of breath; dried, milled and mixed with honey, ingested For diabetes; decoction, as tea For stomachache; dried, milled and mixed with honey, ingested on an empty stomach	For abscess to promote suppuration, wound healing, eczema, abdominal pain; as diuretic (5, 7, 13, 14, 18, 20, 22, 24)
<i>Plantago major</i> L. subsp. <i>intermedia</i> Plantaginaceae (AEF 22242)	Kırksinir otu, damarlı ot, nasırlı yaprak, sinirli yaprak	Leaf	For abscess; decoction is mixed with barley flour to obtain poultice, warmed up and applied externally to promote suppuration For abscess; Fresh leaves pounded with wheat grains and mixed thoroughly to obtain a paste, applied and wrapped in a cloth For abscess; Fresh leaf (or moistened dried leaf) is applied to abscess For toothache; fresh leaf is put onto the tooth	For sunstroke, stomachache, sore throat, infections of respiratory tract, eczema (7, 12, 19, 22)
<i>Potentilla anserina</i> L. subsp. <i>anserina</i> Rosaceae (AEF 21256)	Sarı çiçek	Aerial part	For cough and bronchitis; decoction, as tea	-
<i>Potentilla reptans</i> L. Rosaceae (AEF 22284)	Reşatın otu	Leaf	For stomachache and hemorrhoids; infusion, as tea To drain the pus out of a wound; fresh leaf is put onto affected area	For diarrhea, rheumatic pain, as tonic (5, 13, 24)

<i>Quercus libani</i> Olivier Fagaceae (AEF 22459)	Meşe	Acorn	For hemorrhoids; flour obtained by milling the roasted acorns is mixed with water, cooked and taken orally	-
<i>Ranunculus repens</i> L. Ranunculaceae (AEF 22246)	Mayıs çiçeği	Leaf Flower	To drain the pus out of a wound; fresh leaf is directly applied For rheumatism; pounded flowers are applied externally on affected area for 15 minutes then flux is started by piercing the swelling	-
<i>Rosa canina</i> L. Rosaceae (AEF 21222)	Kuşburnu, itburnu	Fruit	For hemorrhoids; decoction, as tea For diabetes; decoction, as tea For stomachache; fruits are boiled and sieved through a muslin to obtain a paste, ingested on an empty stomach To treat cardiac disorders; cut into small pieces and mixed with leaves of <i>Viscum album</i> , branches of <i>Crataegus meyeri</i> and herbs of <i>Thymus siphyleus</i> subsp. <i>siphyleus</i> var. <i>siphyleus</i> , decocted, one cup taken every morning before breakfast as tea	For renal ailments, wounds, abdominal pain, asthma, removing warts, rheumatism; as tonic, diuretic (7, 17, 24, 25)
<i>Rumex patientia</i> L. Polygonaceae (AEF 21938)	Ebelik, kalmuk çayı, yılmakulak	Aerial part Leaf	Against fissures on hand; chopped herb mixed with flowers of <i>Verbascum cheiranthifolium</i> var. <i>cheiranthifolium</i> , hands are washed with decoction prepared. For constipation; decoction, as tea; fresh leaf is also ingested	As tonic, digestive (3)

<i>Sanguisorba minor</i> Scop. subsp. <i>muricata</i> (Spach) Briq. Rosaceae (AEF 21219)	Yanikotu, mideotu	Fruit	For stomachache and abdominal pain; decoction, as tea; decoction is mixed with milk, boiled and is drunken on an empty stomach	For diarrhea, ischuria; as appetite stimulant, diuretic (3, 21)		
<i>Scrophularia libanotica</i> Boiss. subsp. <i>libanotica</i> var. <i>cappadocica</i> R. Mill Scrophulariaceae (AEF 21781)	Kayaçekemi	Aerial part	For abscess; fresh herb is pounded with the young shoots of onion to prepare a paste then applied to on the abscess	For vesicles on the skin (7)		
<i>Sideritis caesarea</i> Duman,Aytaç & Başer Lamiaceae (AEF 22296)	Dağçayı	Aerial part	As sedative; decoction, as tea For stomachache or intestinal spasms; decoction, as tea	-		
<i>Solanum tuberosum</i> L. Solanaceae (cultivated)	Patates	Tuber	For headache; tubers cut into thin slices are on the forehead For eczema; cooked and mashed tubers mixed with ground aspirine and applied to the affected area	For burns, pain in eyes, bloodshot eyes, fever (7, 11)		
<i>Stachys lavandulifolia</i> Vahl. var. <i>lavandulifolia</i> Lamiaceae (AEF 21886)	Dağçayı	Aerial part	As sedative; infusion, as tea As tonic; infusion, as tea	For abdominal pain (21)		

<i>Teucrium chamaedrys</i> L. subsp. <i>chamaedrys</i> Lamiaceae (AEF 21853)	Mayasilotu	Aerial part	For hemorrhoids; decoction, applied externally	-
<i>Teucrium polium</i> L. Lamiaceae (AEF 21852)	Peryavşan, tiskinik otu, kekik	Aerial part	For hemorrhoids; decoction is taken orally and also applied externally Appetite stimulant for children; decoction given orally for 7 days and also applied with massage to all body For stomachache; decoction as tea. To treat sunstroke; fresh herb is mixed with pounded garlic and yoghurt, spreaded on a cloth and applied on forehead. For inflamed wounds; herbs are boiled to obtain a poultice and mixed with flour, warmed up and applied externally.	For toothache, loosing weight, stimulating ovaries, easing breath, common cold, fever, diarrhea, hemorrhoids, bleedings, rheumatic pain; as tonic and digestive (3, 4, 5, 7, 11, 14, 16)
<i>Thymus sipyleus</i> Boiss. subsp. <i>sipyleus</i> var. <i>sipyleus</i> Lamiaceae (AEF 21762)	Kekik	Aerial part	To treat insomnia; decoction, as tea For urinary tract ailments; decoction, as tea For stomachache; decoction, as tea To treat cardiac disorders; cut into small pieces, mixed with leaves of <i>Viscum album</i> , rosehips and branches and flowers of <i>Crataegus meyeri</i> , decocted, one cup taken every morning before breakfast as tea	As calming, tonic (5, 9, 14)



		Leaf	For cough and shortness of breath; decoction as tea For joint pain; boiled to obtain a poultice and still warm applied to the affected area.	
<i>Viscum album</i> L. subsp. <i>austriacum</i> (Wiesb.) Vollman Loranthaceae (AEF 22053)	Göğceotu, çam üzümü	Leaf	To treat cardiac disorders; cut into small pieces and mixed with rosehips, branches of <i>Crataegus meyeri</i> and herbs of <i>Thymus sipyleus</i> subsp. <i>sipyleus</i> var. <i>sipyleus</i> decocted, one cup taken every morning before breakfast as tea	For diarrhea, asthma, prostatitis, hypertension, hemorrhoids, bronchitis, ulcer, eczema, renal infections, fungal infections, rheumatic pain, abdominal pain; as tonic, diuretic, analgesic (3, 5, 13, 16, 18)



patient by another patient who had a previous experience with it. People from the same village or from different villages exchange medicinal plants when it is necessary to treat an illness.

In local tradition, it is more common to use only one species in each remedy; however, there are a few remedies consisting of several plants mixed together- in order to have more effective action- known and used. The higher frequency of the use of green parts of plants in preparation of herbal remedies is largely due to the fact that they can be collected easily and they are readily available. Roots, and particularly seeds or barks, were used to a much smaller extent.

It is not possible to identify specific regions for wild plant gathering, as plants are gathered especially in the immediate environment of the villages or mountain pastures inhabitable in hot summers. As early as October, the frost starts limiting the collecting to the late spring and summer. During these seasons, local people gather large quantities of species they use, dry and store them for the winter. Species belonging to Lamiaceae, Asteraceae and Rosaceae are the most numerous among the herbs exploited by local people. *Malva neglecta*, *Teucrium polium*, *Urtica dioica*, *Verbascum cheiranthifolium* var. *cheiranthifolium* are the plants used in the treatment of many ailments. Two species of *Plantago* genus, *Sanguisorba minor* subsp. *muricata* and *Potentilla reptans* are the most widely used medicinal plants which have been quoted many of the villages visited with the same vernacular names and for the same uses.

Local people choose to use herbal remedies mainly for the treatment of gastro-intestinal complaints such as stomachache, abdominal pain, hemorrhoids and diarrhea. On the other hand, skin problems such as abscess, eczema, wounds fissures, warts and burns are also the most frequent complaints treated with herbal remedies. As is evident from the reported results, infusions and especially decoctions are generally chosen for internal administration, which can be prepared easily. For external application, either fresh or dried material can be applied directly or after being cooked in a poultice form. Powders, ointments, cigarettes are also used for the administration of folk medicines.

According to their experience passed down from their ancestors, patients and healers warned us about the adverse effects of two plants; *Arum dentruncatum* (overdosing causes fever), *Ranunculus repens* (extended duration- more than 15 minutes- of the treatment causes wounds).

There are also some interesting methods of herbal therapy which should be noted. For instance in the spring after weeding out, the creamy remnants of the herbs on the blade of scythe are mixed with ground blue vitriol, alum, salt and fresh butter and used to heal wounds. As another example; in one of the villages visited, a traditional healer who acquired the knowledge from her ancestors uses some rituals, illness-specific prayers and some plants that could not be identified fully, to treat psoriasis. The application of these unknown botanicals as ritual objects seems to be related with psychotherapeutic, instead of phytotherapeutic healing. In another village, walking on the lukewarm grains with bare feet just come out from the combine-harvester is believed to absorb the electricity from the body and have a calmative effect.

In our analysis, we have compared the folk phytotherapeutical data collected in the area examined with the remedies reported in the Turkish literature. The literature survey indicated

that most of the plants recorded here are well known to popular medicine in Turkey. Besides undocumented uses for commonly used plants or variations and differences in the plant parts used, methods of utilization and ailments treated; our data obtained from the area also showed some uses of plants newly introduced to the ethnobotanical literature of Turkey namely; *Chrysophthalmum montanum*, *Cirsium libanoticum* subsp. *lycaonicum*, *Tortula ruraliformis*.

Ballick and Cox (30) pointed out that many cultures do not make a clear distinction between food and medicine. There is also similar overlap between food and medicinal plants used by rural Anatolians. In the present study the species such as; *Allium cepa*, *Arum dentruncatum* var. *dentruncatum*, *Berberis crataegina*, *Crataegus meyeri*, *Hordeum vulgare*, *Malva neglecta*, *Malus sylvestris*, *Rosa canina*, *Solanum tuberosum*, *Urtica dioica* can be classified in this group.

Ethnic differences in utilization of medicinal plants is worth mentioning; while, native people of the region (Avshars, Turcomans) use folk medicines of the indigenous plants, Circassians—originate from the Northern Caucasus and settled in Turkey in 19<sup>th</sup> century- mostly use imported spices namely; cinnamon, galingale, ginger, nutmeg, black pepper, long pepper. Since the purpose of this study is limited to folk medicine of local plants, this information obtained has not been included in Table 1.

## CONCLUSION

The results of this study suggest that; although western medicine is accessible to the people in the area of study to a large extent, many of them still continue to depend, at least in part, on herbal remedies. Our work provided comparative data for the interpretation of this ethnobotanical treasure as well as a resource for ethnobotanists, pharmacologists and perhaps for the planners of local development projects. Although Baytop's intensive research (3) provided considerable information on folk medicinal plants and the increasing numbers of publications, many more detailed studies are needed to obtain a comprehensive picture of folk medicine in Turkey.

Despite its significant contribution to the society, ethnobotany has experienced very little attention in modern research and development. It is only recently that a new interest in documenting this precious knowledge—a knowledge which should be considered as part of the common heritage of humanity- has emerged. This experience, which passed on from generation to generation, should be recorded before it is completely lost. On the other hand, the application of the ethnobotanical documentation of plant use for sustainable development activities contributes to conservation efforts, also. For this reason, on the scientific level, ethnobotanical studies have to be included in wider interdisciplinary researches.

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