Ethnobotanic Survey of Işıklı (Çarpın), Dağdancık and Tokdemir in Gaziantep, Turkey

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Abstract

An ethnobotanical study was performed in Işıklı (Çarpın), Dağdancık and Tokdemir in Gaziantep, Turkey. Sixty plant species belonging to 29 families and 57 different genera were collected. According to information on traditional uses of these species; 48 are used for medicine, 19 species are used for food and drink, 9 species are used for fuel, 4 species are used for dye and 14 species are used for other purposes. For the 113 plant samples, 67 uses were related to medicine (%59), 19 uses were related to food and drink (%17), 9 uses were related to fuel (%8), 4 uses were related to dye (%4) and 14 uses did not fit in any of these categories (%12). For each plant species, family names, botanical names, local names, part(s) used, manner of use, usefulness, purpose of usage and number of informants are described.

Keywords: Ethnobotany, Economical Plants, Medicinal Plants, Gaziantep .
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Introduction

Turkey is extremely rich in terms of plant variation in the world, since there are 9160 vascular plants, 3022 of this total are endemic, and this number becomes 11000 if subspecies, varieties and hybrids are included (Özhatay. 2006). Turkey also has indigenous plants which are used by humans for various purposes (Şener et al. 1998). One of the sources of this variation was plant migration from Europe, the Balkans and the Caucasus during the Tersier and ice ages (Seçmen et al. 2004). Another reason for the variation is the geographic location of Turkey between Asia and Europe. As a result, the country has a great variety of flora elements such as European-Siberian, Mediterranean, Irano-Turanian, Saharo-Arabian, Sudan, and Tropical-Subtropical (Seçmen et al. 2004).

Gaziantep is located in the South-East Anatolia region of Turkey at an altitude 850 m. above sea level (Fig. 1). The South-East Anatolia region is characterized by dry, hot summers and cold, wet winters and for that reason, it has many different plant species and subspecies adapted to these extreme weather conditions. Besides, this region includes Irano-Turanian's endemic elements, some kserotropic Indo-Malesian elements and some kseric Europe-Sibirian elements. In this region, many plants are used by villagers as food, medicine, ornamentals, dye or fuel.

The aim of this study was to survey the plants, their usage, part(s) used and preparation of species grown in the Şehitkamil-Işıklı (Çarpın), Şehitkamil-Tokdemir and Araban-Dağdancık regions of Gaziantep.

Material and Methods

This study was conducted from June 2003 to September 2003 in Gaziantep Şehitkamil-Işıklı (Çarpın), Şehitkamil-Tokdemir and Araban-Dağdancık regions and all plants were identified at Ege University Botanical Garden & Herbarium Research and Application Center.

Two different criteria were employed for the selection of the localities: socio-economic condition and distance to city center. In this survey, information about plants was gathered from 33 persons (15 women, 18 men). Most of the informants were between 41–60 (12 people) ages. Eleven people were between ages 20–40, and 10 informants were between ages 61–75 (Fig. 2). After collecting the

information from inhabitants, the plant species were collected from the field with the informants. Some plants were photographed in their habitat. All plant information and inhabitants names were registered in the survey sheets.

The plant materials were pressed in their habitat for identification and they were identified at Aegean University Botanic Garden-Herbarium Research and Application Center in İzmir. During the identification of plants, the Flora of Turkey and East Aegean Island (Davis 1965-2008) and other related books were used. After identification, plants were categorized based on their family name.

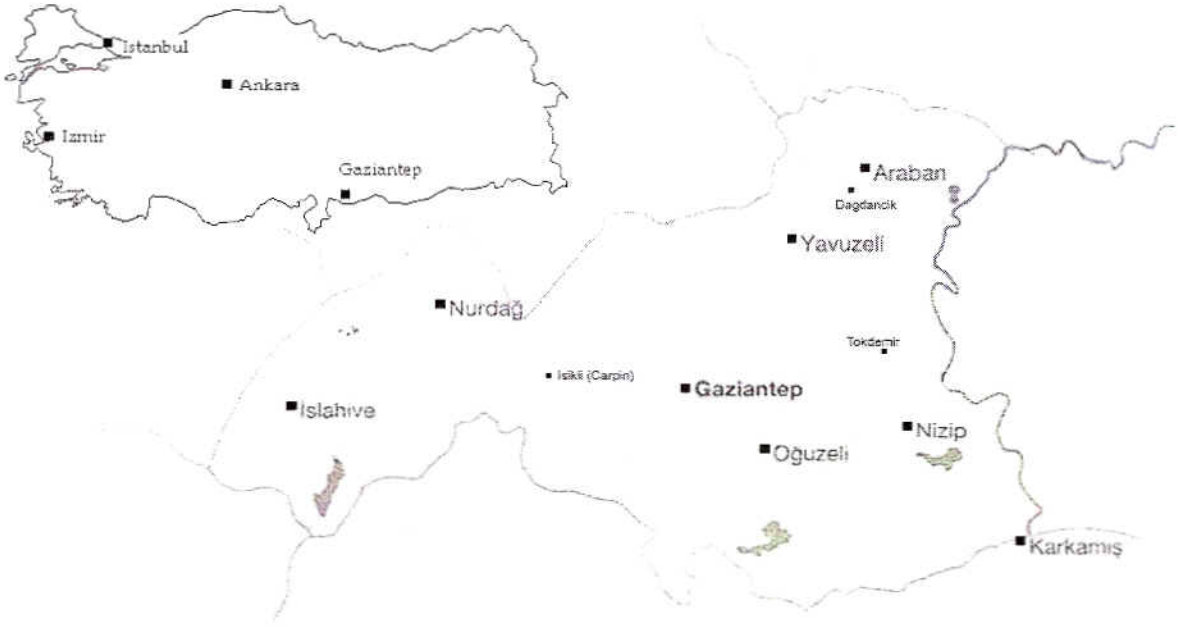

Figure 1. Map of Gaziantep Işıklı (Çarpın), Dağdancık and Tokdemir.

Table 1. Number of species collected from different plant families and % frequency for samples collected from Gaziantep Şehitkamil-Işıklı (Çapın), Şehitkamil-Tokdemir and Araban-Dağdancık regions.

Family name	Number of species	% Frequency	Family name	Number of species	% Frequency
Asteraceae	12	20,0	Cucurbitaceae	1	1,7
Lamiaceae	9	15,0	Euphorbiaceae	1	1,7
Anacardiaceae	3	5,0	Gentianaceae	1	1,7
Scrophulariaceae	3	5,0	Moraceae	1	1,7
Apiaceae	2	3,3	Pinaceae	1	1,7
Boraginaceae	2	3,3	Plantaginaceae	1	1,7
Fabaceae	2	3,3	Platanaceae	1	1,7
Fagaceae	2	3,3	Plumbaginaceae	1	1,7
Malvaceae	2	3,3	Poaceae	1	1,7
Oleaceae	2	3,3	Portulacaceae	1	1,7
Rosaceae	2	3,3	Rhamnaceae	1	1,7
Zygophyllaceae	2	3,3	Salicaceae	1	1,7
Capparaceae	1	1,7	Urticaceae	1	1,7
Caryophyllaceae	1	1,7	Verbenaceae	1	1,7
Clubiaceae	1	1,7			

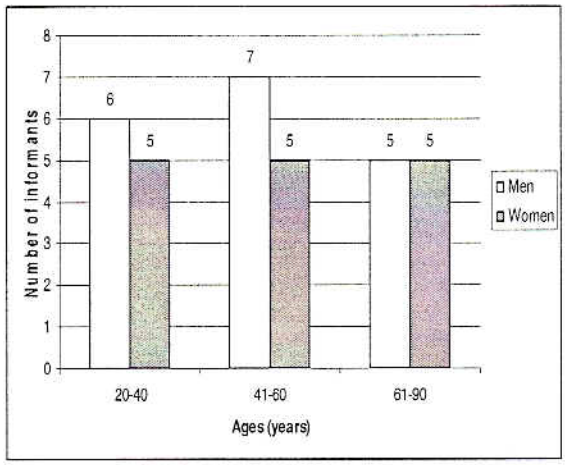

Figure 2. Number of informants according to ages in Gaziantep Şehitkamil - Işıklı (Çapın), Şehitkamil-Tokdemir and Araban-Dağdancık.

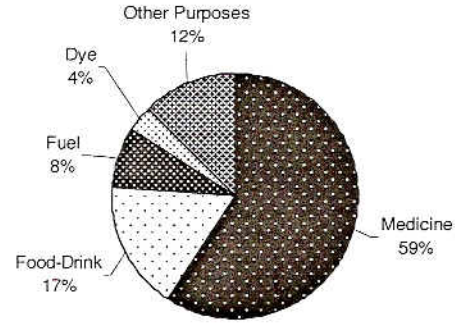

Figure 3. Percentage of the ethnobotanical uses of the plant species in Gaziantep Şehitkamil-Işıklı (Çapın), Şehitkamil-Tokdemir and Araban-Dağdancık regions.

Results

In this work, 113 ethnobotanical samples from 57 genera and 60 species belonging to 29 families were collected in Gaziantep Şehitkamil-Işıklı (Çarpın), Şehitkamil-Tokdemir and Araban-Dağdancık. Twelve plant species were members of the Asteraceae (% 20,0), 9 species were members of the Lamiaceae (%15,0), 3 species were members of the Anacardiaceae and Scrophulariaceae each (%5,0). The other species were members of 25 other plant families (Table 1).

All data pertaining to the plant materials are listed based on their respective families, and are ordered alphabetically together with their botanical and local names, part(s) used, manner of use, usefulness, purpose of usage and number of informants (Table 4). Manner of use and usefulness are related to medicinal plants. These results are summarized in Fig. 3.

In this study, it was found that the women of the Gaziantep Şehitkamil-Işıklı (Çarpın), Şehitkamil-Tokdemir and Araban-Dağdancık regions know more information about plants than males (535 pieces of data were collected from women and 438 pieces of data were collected from men about economic plants in Gaziantep province). It was also observed that informants between 50 and 75 years old knew more plants (37 species per male and 38 species per female) than the younger informants (21 species per male and 23 species per female) in this study (Table 2). These results support previous ethnobotanical studies (Seçmen, et al. 1999, 2004, that found that factors such as the sex, age, professional occupation, individual experience and locality of an informant are important determinants of his or her knowledge of economic plant species. For example, inhabitants who live in the village have more knowledge about economic plants than those who live in the city perhaps because insufficient medical facilities results in a greater reliance on plant-based remedies.

Table 2. Amount of data collected according to age and gender of informants in Gaziantep Şehitkamil-Işıklı (Çapın), Şehitkamil-Tokdemir and Araban-Dağdancık regions.

	Older (50-75)			Younger (20-49)		
	Number of informants	Number of information	Average information per informant	Number of informants	Number of information	Average information per informant
Women	9	346	38,44	6	129	21,50
Men	6	225	37,50	12	498	22,75

The most common health problems with plant-based remedies in Gaziantep Şehitkamil-Işıklı (Çarpın), Şehitkamil-Tokdemir and Araban-Dağdancık were respiratory system disorders such as dypsnea, asthma, tuberculosis, throat, cold or chest spasms

(25,4%), skin disorders such as wounds, fungal ailments, burns, acne or blains (19,4%) and gastrointestinal disorders such as indigestion, peptic ulcer, hemorrhoid, stomach ache or diarrhea (19,4%). The relative importance of each category of medicinal use in terms of the amount of information and frequency are shown in Table 3. Compared to some ethnobotanical surveys in Turkey, this study showed similar ratios of these ailments (Yeşilada et al. 1998; Sezik et al. 2000). Table 4 summarizes all of the information about the plant specimens collected in this research.

Table 3. Medicinal uses in terms of amount of information and frequency in Gaziantep Şehitkamil-Işıklı (Çapın), Şehitkamil-Tokdemir and Araban-Dağdancık regions.

Disorders	Amount of Information	Frequency (%)
Respiratory disorders	17	25,37
Skin disorders	13	19,40
Gastrointestinal disorders	13	19,40
Endocrine disorders	5	7,46
Gynaecoligal disorders	4	5,97
Cardiovascular disorders	2	2,98
Malignant disorders	2	2,98
Rheumatic disorders	2	2,98
Urological disorders	1	1,49
Other disorders	8	11,94

Discussion

Compared to other ethnobotanic studies in Turkey, the current research revealed some unique uses of certain plants. For example, although, *Jasminum fruticans* L. is located in several regions in Turkey, it is only used by villagers in Gaziantep as dye. The villagers collect ripe fruits from this plant and squeeze the juice into a bottle. After squeezing, the juice is used directly as ink for writing or for dyeing rope. For dyeing rope, juice is collected in a big container. The rope is put in the container for 1-2 days. The rope is then removed and put in cold water to remove the excess dye. After this procedure, the rope is spread on a wooden bench in the shade to dry. Another example of a plant with unique uses in Gaziantep is *Alkanna tinctoria* L. This plant is generally located in the Aegean, Mediterranean and south-east Anatolia regions in Turkey. Although, it is known worldwide as a dye plant because of its dark purple roots. *A. tinctoria* is used for several ailments such as tuberculosis, ulcer, wounds and burns in Gaziantep province. During this study, many villagers told about this plant's use as a burn remedy. cleaned and completely dried in the shade. After drying, the roots are peeled and powdered by hand and mixed with equal proportions of pine resin and special yellow sheep fat to make a paste. Every morning, this paste is applied to the wound or burn. In the future, these plants may be studied further as sources of precious drugs or natural rope dye.

A species may have different names in different regions. In this respect, some species that have the same vernacular name, have different botanic names while others have different vernacular names and the same botanic name. For instance; *Malva sylvestris* is called ebegümeci in Afyonkarahisar and Denizli, on the other hand, it is called gömeç, ebegömeci or ebegümeci in Gaziantep (Öztürk and Arslan 1993; Seçmen and Yılmaz 1999). *Urtica dioica* is known as ısırgan in Afyonkarahisar, Denizli and Gaziantep, nonetheless, it is called çekirgen in Zonguldak (Öztürk and Arslan 1993; Seçmen et al. 2004). *Trogopogon buphtalmoides* in Gaziantep, *Scrozonera pseudolanata* in Denizli and *Trogopogon longirastris* in Afyonkarahisar have the same vernacular name, yemlik

Table 4. Plants used in Gaziantep Şehitkamil-Işıklı (Çapın), Şehitkamil-Tokdemir and Araban-Dağdancık.

Family name	Botanical name	Local name	Plant part(s) used	Manner of use	Usefulness	Purpose of usage	Informants
Anacardiaceae	*Pistacia terebinthus* L.	Menengiç	Lf	Pomade	Wounds	Medicine	6
Anacardiaceae	*Pistacia vera* L.	Antep Fıstığı	Fr Lf Lf	Pomade	Wounds	Food Medicine Other	11 7 8
Anacardiaceae	*Rhus coriaria* L.	Sumak	Lf Fr St			Other Other Fuel	9 15 11
Apiaceae	*Echinophora tenuifolia* subsp. *sibthorpiana*	Çördük	Sh Lf	Direct Use	Indigestion	Medicine Food	8 5
Apiaceae	*Eringium campestra* L. var. *virens*	Kenger, Kangal	Sd	Paste	Peptic ulcer	Medicine	4
Asteraceae	*Achillea biebersteinii* Afan.	Yılan Çiçeği	Sh Fw	Pomade Pomade	Fungal ailments Hemorrhoid	Medicine Medicine	3 9
Asteraceae	*Anthemis tinctoria* L. var. *pallida*	Yoğurt Çiçeği	Sh Sh Sh	Infusion Infusion	Stomach ache Peptic ulcer	Medicine Medicine Dye	14 14 9
Asteraceae	*Carlina lanata* L.	Kuşkonmaz	Wp	Pomade	Wounds	Medicine	3
Asteraceae	*Carthamus tinctorius* L.	Haspir	Fw			Other	9
Asteraceae	*Centaurea comsanguinea* DC.	Acımık	Sd Sh	Pill	Tuberculosis	Medicine Other	6 6
Asteraceae	*Cirsium lappaceum* (Bieb.) subsp. *anatolicum*	Hebellaş Otu	Lf			Food	4
Asteraceae	*Helichrysum plicatum* DC. subsp. *plicatum*	Altın Otu	Sh Sh	Decoction Direct use	Kidney ailments Antiinflammatory	Medicine Medicine	7 6
Asteraceae	*Matricaria aurea* (L.) Schultz.	Koyungözü	Lf	Infusion	Asthma	Medicine	5
Asteraceae	*Onopordum carduchorum* Bornm.	Kocabaş Dikeni	Fw Fw and Lf	Decoction Decoction	Asthma Hepatitis	Medicine Medicine	6 5
Asteraceae	*Lactuca serriola* L.	Eşek Marulu	Lf			Food	4
Asteraceae	*Trogopogon buphthalmoides* (DC.) Boiss. var. *buphthalmoides*	Yemlik	Lf			Food	10
Asteraceae	*Xanthium strumarium* L. subsp. *cavanillesi* (Schouw) D. Löve	Bıtrak, Ptırak	Wp	Decoction	Kidney ailments	Medicine	4
Boraginaceae	*Alkanna tinctoria* (L.) Tausch. subsp. *anatolica*	Enlik Otu	Rb Rb	Paste Pomade	Peptic ulcer Wounds, burn	Medicine Medicine Dye	12 14 19
Boraginaceae	*Heliotropium circinatum* Griseb.	Sazcık Otu	Wp	Decoction	Kidney ailments	Medicine	4
Capparaceae	*Capparis spinosa* L. var. *spinosa*	Keber Gebere	Bd Bd			Food Other	2 10
Caryophyllaceae	*Telephium imperati* L. subsp. *orientale* (Boiss) Nyman, Consp.	Binbaşı Otu	Wp	Pomade	Wounds, acnes and blains	Medicine	5
Clubiaceae	*Hypericum triqutrifolium* Tura, Farsetia Nov.	Kızılcık Otu	Wp	Decoction	Diuretic	Medicine	6
Cucurbitaceae	*Echalium elaterium* L.	Cırtatan	Fr	Direct use	Sinusitis	Medicine	7
Euphorbiaceae	*Euphorbia gaillardoti* Boiss&Blanche in Boiss	Sütleğen	Fw			Other	5
Fabaceae	*Glycyrrhiza glabra* L. var. *glabra*	Meyan	Rt			Drink	8

Fabaceae	*Melilotus elegans* Salzm.	Karaçayır, Sedef Otu	Wp	Decoction	Kidney ailments	Medicine	8
Fagaceae	*Quercus infectoria* Olivier. subsp. *boissieri*	Palıt	Fr St	Decoction	Diabetes	Medicine Fuel	7 8
Fagaceae	*Quercus robur* L. subsp. *robur*	Palıt Meşe	Fr Fr and St	Decoction	Diabetes	Medicine Fuel	6 9
Gentianaceae	*Gentiana olivieri* Griseb.	Afat	Fw	Infusion Infusion	Diabetes Regl regulation	Medicine Medicine	8 3
Lamiaceae	*Lavandula stoechas* L. subsp. *stoechas*	Kocabaşı, Karabaş	Wp	Infusion	Cold	Medicine	3
Lamiaceae	*Marrubium parviflorum* Fisch.&Mey. subsp. *parviflorum*	Dağ Çayı	Wp	Infusion	Cold	Medicine	10
Lamiaceae	*Mentha pulegium* L.	Yarpuz	Lf and Fw Lf	Pomade Direct use	Spasm Dypsnea	Medicine Medicine Food	13 13 20
Lamiaceae	*Micromeria dolichodonta* P.H. davis in Kew Bull.	Kaya Yarpuzu	Sh Sh	Direct use Pomade	Dyspnea Eye ailments	Medicine Medicine	8 8
Lamiaceae	*Salvia sclarea* L.	Kürt Reyhanı	Sh Lf	Decoction	Cold	Other Medicine	10 5
Lamiaceae	*Sideritis syriaca* L. subsp. *nusairiensis* (Post) Huh.-Mor.	Balbaşı	Sh Sh	Infusion Infusion	Cold Stomach ache	Medicine Medicine Other	4 11 9
Lamiaceae	*Stachys brantii* Bentham in DC.	İnme Otu	Sh	Pomade	Wounds	Medicine	8
Lamiaceae	*Teucrium polium* L.	Paryavşağı, Paryavşanı, Hameri	Fw and Lf Fw and Lf Wp Lf Fw	Decoction Decoction Pomade Decoction Pomade	Diabetes Cold Spasm Diarrhea Rheumatism	Medicine Medicine Medicine Medicine Medicine	30 12 11 17 18
Lamiaceae	*Thymbra spicata* L. var. *spicata*	Zahter	Lf Lf Lf	Decoction Decoction	Cold Stomach ache	Medicine Medicine Drink	15 11 21
Malvaceae	*Althea officinalis* L.	Hıra Otu, Hatmi	Fw	Decoction	Dypsnea	Medicine	8
Malvaceae	*Malva sylvestris* L.	Gömeç, Ebe Gömeci	Lf and Fr			Food	12
Moraceae	*Morus nigra* L.	Umru Dut	Fr Fr Wp	Direct Use	Throat spasm	Food Medicine Fuel	4 6 3
Oleaceae	*Jasminum fruticans* L.	Boruk	Fr			Dye	6
Oleaceae	*Olea europaea* L. var. *europaea* Zhukovsky	Zeytin	Lf St Wp	Direct Use	*	Medicine Food Fuel	5 12 11
Pinaceae	*Pinus brutia* Ten.	Çam	Cn and Bd Br Cn, Lf, St	Decoction Direct Use	Hemorrhoids Burn	Medicine Medicine Fuel	12 6 11
Plantaginaceae	*Plantago major* L. subsp. *major*	Tuğrak	Lf	Paste	Insect bites	Medicine	7
Platanaceae	*Platanus orientalis*	Çınar	Sb Wp	Infusion	Hepatitis	Medicine Fuel	7 9
Plumbaginaceae	*Plumbago europaea* L.	Hadıka	Wp			Other	11
Poaceae	*Phragmites australis* (Cav.) trin.	Saz, Kargı	Sh Wp			Other Fuel	6 4

Portulacaceae	*Portulaca oleracea* L.	Pirpirim	Sh			Food	8
Rhamnaceae	*Paliurus spina-christi* Miller, Gard.	Karaçalı	Rt Br Rt	Pomade Other	Wound Fungal ailments	Medicine Medicine Dye	5 6 6
Rosaceae	*Crataegus aronia* (L.) Bosc. var.aronia	Alıç	Lf Lf Wp	Decoction	Heart diseaese Muscle spasm	Medicine Medicine Fuel	13 12 8
Rosaceae	*Rubus sanctus* Schreber, Icon.	Bük Dikeni	Rt Fr	Decoction	Barreness	Medicine Food	5 12
Salicaceae	*Populus nigra* L.subsp.caudina (Ten) Bugala in Arbor.	Kavak	St			Other	7
Scrophulariaceae	*Scrophularia canina* L. subsp. *bicolor* (Sm.) Greuter in Boissiera	İt Siyeği	Rb	Paste	*	Medicine	7
Scrophulariaceae	*Verbascum asperuloides* Hub.Mor.	Somuruk Otu	Sh	Pomade	Wounds	Medicine	6
Scrophulariaceae	*Verbascum splendidum* Boiss.	Calba	Fw Lf	Direct Use	Hemorrhoids	Medicine Other	8 9
Urticaceae	*Urtica dioica* L.	Isırgan Otu	Sd Lf, St Sh Lf Wp	Direct Use Infusion Direct Use Decoction	Cancer Rheumatism Hemorrhoids Diabetes	Medicine Medicine Medicine Medicine Food	24 8 9 5 14
Verbenaceae	*Verbena officinalis* L.	Sancı Otu	Wp Wp	Infusion Infusion	Analgesic Barreness	Medicine Medicine	4 4
Zygophyllaceae	*Peganum harmala* L.	Üzerlik	Ft and Sd			Other	8
Zygophyllaceae	*Tribulus terrestris* L.	Çoban Çökerten, Deve Çökerten	Sh		Heart ailment Atherosclerosis Cysts	Medicine Medicine Medicine	13 14 12

* There is no clear information about these ailments because they have only local names.
Sh: Shoots; Lf: Leaf, Fw: Flower; Fr Fruit; Rt: Root; Rb: Root bark, St: Stem; Sb: Stem bark; Seed: Sd; Whole plant: Wp Branch: Br; Cone: Cn; Bud:Bd

(Seçmen and Yılmaz N., 1999, Öztürk and Arslan Ü., 1993). Although *Mentha longifolia* is called yarpuz in Van, nevertheless, *Mentha pulegium* has the same name in Gaziantep (Seçmen Ö., Yılmaz 1999).

There are also examples of species that have different uses and preparations in different regions in Turkey. In accordance with some studies that were compared to this study, *Ecbalium elaterium* is used for rheumatism and sinusitis in Zonguldak, Bartın, Karabük and Kocaeli, on the other hand, this species is used only for sinusitis in Gaziantep (Seçmen et al. 2004). Interestingly, the bark of *Quercus infectoria* is used for skin, hair and eye ailments in Muğla, nonetheless, its fruits are used to treat diabetes and shoots are used as fuel in Gaziantep (Sayar et al. 1995). Although, the species *Teucrium polium* is used for hemorrhoids in Zonguldak, Bartın, Karabük and Kocaeli, it is used for diabetes, cold, spasms, diarrhea and rheumatism in Gaziantep (Yeşilada et al. 1998).

Interestingly, some species are named for their use. For example, *Malva sylvestris* is called ebegümeci, ebegömeci or gömeç and it is used for miscarriage. A local midwife who is generally an old woman in the region, rolls the leaves of this plant and puts the roll into the pregnant women's vagina to induce miscarriage. In Turkish, ebe means midwife and gömeç which comes from the verb gömmek, means to embed. Moreover, *Verbena officinalis* is named sancı otu and used as an analgesic. Sancı means pain in Turkish.

As a result of this work, some unique information related to inhabitants and their habitat in Gaziantep Şehitkamil-Işıklı (Çapın), Şehitkamil-Tokdemir and Araban-Dağdancık regions was collected. The inhabitants of these regions use many plants for several aims such as medicine, food, drink, dye, fuel and other uses such as as ornamental and cooling.

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