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Full Length Research Paper

Ethnobotanical Assessment of Medicinal Flora in Izmir Province, Turkey: A Quantitative Approach

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In this paper, 108 traditional medicinal plants from Izmir Province in Turkey have been reported. One hundred eight plant species belonging to 54 families and among them 94 species were wild and 14 species were cultivated plants. The informant consensus factor (F_{ic}) and the fidelity level (FL) of the species were determined. The category that has the highest F_{ic} value is Cold and Influenza (0.82) followed by Cough (0.73). The lowest is Hemorrhoids and Enteritis (0.33). *Allium cepa* and *Urtica dioica* (100%) has the highest fidelity level and *Nigella segetalis* (33%) has the lowest. Most used families were Lamiaceae, Asteraceae, Fabaceae, Rosaceae, Apiaceae. The traditional medicinal plants have been mostly used for the treatment of kidney ailments (43,5%), stomach (31.4%), cough (17.6%), wounds (17.4%), hemorrhoids and enteritis (15.7), cold and influenza (13,8%), gall bladder ailments (10,2).

Key words: Informant consensus factor, fidelity level, therapeutic plants, izmir.

INTRODUCTION

Since ancient times humans have used various natural materials as sources of medicines (Ghorbani, 2005). More than 25% of medicines used by humans are extrac-ted from tropical plants (Yorek et al., 2008). The use of plants to cure diseases and relieve physical sufferings has started from the earliest times of mankind's history (Hill, 1989). Nowadays, the use of plants as a way of treatment is still very important for human beings (Kultur, 2007). Many researches have been done on plants which provide humans with extensive and fundamental uses (Kargıoglu et al., 2008).

Turkey has a very extraordinary rich flora and a great knowledge of folkloric medicines, and consequently represents a potential resource for such studies (Hudson et al., 2000). About 800.000 plant species are found in the world, with about 10.000 of them found in Turkey (Ozgokce and Ozcelik, 2004). 30% of 10.000 plant spe-cies of Turkey are endemic (Davis, 1988; Guner et al., 2001). Endemism is one of the most important indicators to evaluate environmental value of an area. In Turkey, the rate of endemism in plant species is relatively high when compared with other European countries (Ugulu et al., 2008) . Nevertheless, medicinal plants constitute an important component of flora and are widely distributed in different floristic regions of Turkey because of its geogra-phic location, climate, and the presence of nearly 10,000 native plant species (Baytop, 1999; Ates and Erdogrul, 2003).

The traditional use of medicinal plants has played an important role in Turkey (Baytop, 1999). The large num-ber of research studies we found on medicinal plants is proof of the interest in this type of work. Several studies have been published on the ethnomedicine of Turkey (Kultur, 2007; Ozgen et al., 2004; Sezik et al., 1991; Sezik et al., 1997; Simsek et al., 2004; Tabata et al., 1994; Tuzlacı and Erol, 1999; Yesilada, 2001). Recently, a number of ethnomedicinal and ethnobotanical studies are being carried out realizing the benefit of traditional medication to promote the health care services. The out-comes of these researches are greatly playing roles in attitudinal changes. In this reason, many more detailed studies are needed to obtain a comprehensive picture of plant-human interactions in the World and also in Turkey.

This study aimed to look into medicinal plants that are used by Izmir people for curing various ailments. Objec-tives of the study were: (1) to identify and document medicinal plant species usage by Izmir people, (2) to record traditional knowledge of the use of these plants

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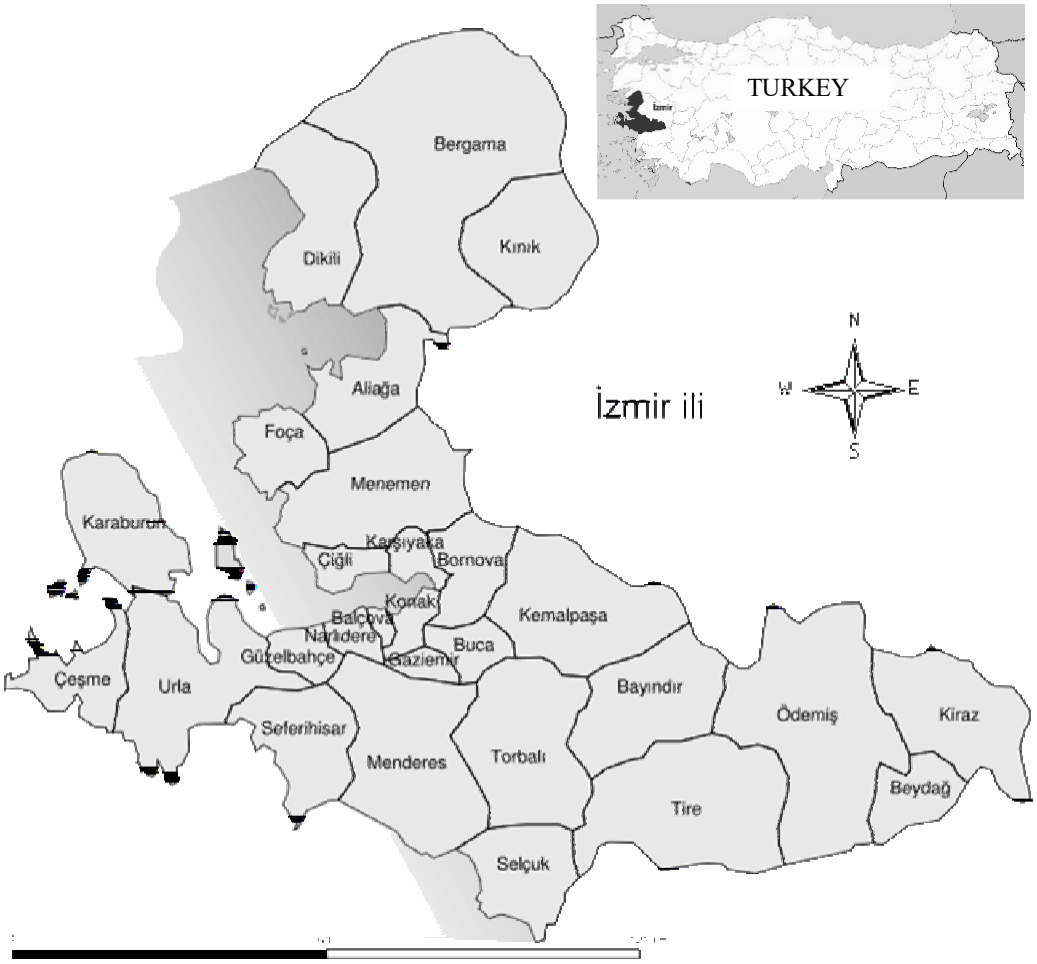

Figure 1. Province of Izmir, Turkey.

and (3) to evaluate traditional knowledge of Izmir people with quantitative ethnobotanical point view. It is important to document the valuable information because the transmission of knowledge from the old to the new generation is declining.

MATERIALS AND METHODS

The study area

Izmir Province, which is located (26° 15' - 28° 20' E and 37° 45' - 39° 15' N) in the Aegean subdivision (one of seven subdivisions of Turkey) is comprised of 28 districts (Table 5). Turkey's third largest city of Izmir's population is 3.370.866 persons and the country's largest port after Istanbul. Izmir city has approximately 11.973 km^2 space located in the West Anatolian part of Turkey (Figure 1). The city is surrounded by Aegean Sea in the West, Balıkesir in the North, Manisa in the East and Aydın in the South.

Izmir Province is subject to the influence of the Mediterranean climate, characterized by hot, dry summers and mild, rainy winters. According to the data of the State Meteorology Department, July and August are the hottest and driest, while January and February are the coldest months. Most of the annual precipitation occurs in December and January in the form of rain. According to long-term climate data for Izmir, average annual precipitation is 950 mm and 77% of that falls during the winter. The average maximum temperatures during the winter months vary between 12-14°C, the sum-mer months, June through September, bring average daytime temperatures of 28°C degrees or higher (Akman, 1990) and relative humidity 58% (Regional Directorate of Meteorology 1990).

Data collection

The study was carried out by interviewing resource persons in different villages under various districts of Izmir between the periods 2007 - 2008. In this reason, semi-structred interviews were applied to 574 informants to gather information about medicinal plants around Izmir Province. The information, including the various data such as local names, ailments and diseases treated, therapeutic effects, parts of plants used, methods of preparation, methods of administration, doses, duration of the treatment were obtained from local people through individual interviews. Two inhabitants were selected every villages based on one of the following criteria: that they have been living in the region for more than 10 years, use plants as the main medicine or identified as medicinal plant extrac-tors or traditional healers. The information was checked with other areas, neighboring villages, to verify the accuracy. Informants were asked how, when, in which cases, both the harmful and useful effects of the used plants in detailed questions.

All settlements (28 districts, including 287 villages) were visited in different seasons of the year. Districts and villages are listed Table 5 and shown on the Figure 1. The recorded species were collected and taxonomically identified according to 'Flora of Turkey and the East Aegean Islands' (Davis, 1965 - 1985; Davis et al., 1988; Guner et al., 2001) and compared to the specimens kept in the Herbarium of Buca Educational Faculty, Dokuz Eylul University (DEBB). Vou-cher herbarium specimens were deposited in the DEBB Herbarium.

Data analysis and quantitative ethnobotany

The level of homogeneity between information provided by different informants was calculated using the Informants' Consensus Factor, F_{ic} (Trotter and Logan 1986). It is calculated as

$$F_{ic} = N_{ur} - N_t / (N_{ur} - 1)$$

where N_{ur} is the number of use reports from informants for a particular plant-usage category and N_t is the number of taxa or species that are used for that plant usage category for all informants. Values range between 0 and 1, where ''1'' indicates the highest level of informant consent. For instance, if few taxa are used by informants, then a high degree of consensus is reached and medi-cinal tradition is thus viewed as well-defined (Heinrich, 2000).
The fidelity level (FL), the percentage of informants claiming the use of a certain plant species for the same major purpose, was calculated for the most frequently reported diseases or ailments as:

$$FL (\%) = (Np / N) \times 100$$

where N_p is the number of informants that claim a use of a plant species to treat a particular disease, and N is the number of informants that use the plants as a medicine to treat any given disease (Alexiades, 1996).

RESULTS

Five hundred seventy four people were interviewed in this study and 783 voucher specimens were collected in the research area. The plants used for medicinal purposes in Izmir are presented in Table 1 arranged in alphabetical order of their family and botanical names, with the relevant information. According to the results of the identification, 108 taxa are being used for medicinal purposes in Izmir. Among them, 94 taxa are wild and 14 taxa are cultivated species. As a result of this study, medicinal uses against 125 different diseases of the 108 taxa have been recorded.

The traditional medicinal plants have been mostly used for the treatment of kidney ailments (43.5%), stomach (31.4%), cough (17.6%), wounds (17.4%), hemorrhoids and enteritis (15.7%), cold and influenza (13.8%), gall bladder ailments (10.2%).

Further analysis on the families has shown that family Lamiaceae is represented by highest number of species (11 species). Asteraceae and Fabaceae are represented by ten and seven species, respectively. These are followed by Rosaceae and Apiaceae, each represented by six species. Liliaceae is represented by four and Rhamnaceae and Scrophulariceae are represented by three species each. The rest are represented by two species each (12 families) and one species each (34 families).

Informant consensus of medicinal plant usage with the Izmir resulted in informant consensus factor (F_{IC}) values between 0.30 and 0.82 per illness category. The category that has the highest F_{IC} value is Cold and Influenza (0.82) followed by cough (0.73). The lowest is *Hemorrhoids* and *Enteritis* (0.30) (Table 2). *Allium cepa* and *Urtica dioica* had the highest fidelity level (100%) and *Nigella segetalis* (33%) had the lowest (Table 3).

All parts of various plant species are used in the traditional medication of different diseases, however, the most frequently used parts are leaves (Table 4). Sometimes, local people also used other ingredients, such as sugar, honey, oil to prepare the remedies. Decoction and infusion are the methods mostly used for the preparation of the remedies.

Among the recorded species, *Artemisia absinthium, Calendula officinalis, Matricaria chamomilla, Scolymus hispanicus, Borago officinalis, Lepidium sativum, Sambucus nigra, Juniperus oxycedrus* L. *subsp. oxycedrus, Lavandula stoechas, Thymus vulgaris, Ocimum basilicum, Paeonia mascula, Urtica dioica, Viola tricolor* are the most popular plants used in the treatment of many ailments. For example, *Matricaria chamomilla* (15 different usages), *Thymus vulgaris* (13 different usages), *Lepidium sativum* (12 different usages). Generally these plants are commonly distributed in the area and all of these plants are wild harvested. A big threat for some of these medi-cinal plants collected from wild is the tread of these plants in large scale. Some medicinal plants in the area are collected from wild for sale in markets. *Ecballium elaterium*, *Scolymus hispanicus*, *Capparis spinosa* and *Peganum harmala* are widely and in high amounts collected from wild and this could be a big threat for these species. It is revealed that some of the plants are collected for commercial purposes by local people: *Apium graveolens, Juglans regia, Mentha piperita, Salvia officinalis, Allium cepa, Malva sylvestris, Ficus carica, Zea mays, Cerasus avium, Rosa canina* and *Rosa damescena* are largely cultivated for harvesting. These plants have great economic importance in Turkey and *Ficus carica, Malva sylvestris* and *Cerasus avium* are also exported abroad. *Anethum graveolens, Foeniculum vulgare, Pimpinella anisum, Lepidium sativum, Ceratonia siliqua, Hypericum perforatum, Elaeagnus angustifolia, Thymus vulgaris, Morus nigra, Eugenia caryophllata, Nigella segetalis, Rubus canescens, Rubus idaeus, Tilia rubra, Scolymus hispanicus* and *Urtica dioica* are wild harvested and these plants are sold bazaars and markets.

D SCUSS ON

In the present study, the data provided from our informants and analyzed in the present paper clearly show that the elder people of the study area are knowledgeable about the plants that provide remedies to humans and

Table 1. Medicinal plants of Izmir province.

Family	Botanical Name	Local Name	Plant Part Used	Preparation	Ailments treated, Therapeutic Effect	Route of Administration, Dosage, Duration of Treatment
Anacardiaceae	*Pistacia terebinthus* L. subsp. terebinthus	Menengiç	Leaves	Decoction	Stomach Ache	O., drink one teacup three times a day for 1 week
	(DEBB. 451)		Leaves	Decoction	Antifungal	Ext., twice a day for 1 week
Apiaceae	*Anethum graveolens* L. (DEBB. 439)	Dereotu	Seeds	Decoction	Stomachache, Digestive, Enteritis, Carminative	O., drink one teacup three times a day for 6 days
			Seeds	Decoction	Antihypertensive	O., drink one teacup three times a day for 7-8 days
Apiaceae	*Apium graveolens* L. (DEBB. 359)	Kereviz	Seeds	Decoction	Nephritis, Urinary Diseases	O., drink one teacup 2-3 times a day for 8-10 days
Apiaceae	*Conium maculatum* L. (DEBB. 456)	Baldıran	Aerial Parts	Poultice	Rheumatism	Ext., applied twice a day until recovery
				Decoction	Diuretic, Cholagogue, Expectorant	O., drink one teacup 1-2 times a day for 6 days
Apiaceae	*Coriandrum sativum* L. (DEBB. 419)	Ki ni	Seeds	Infusion	Appetizer, Digestive, Carminative	O., drink one teacup three times a day before meals for 5-6 days
Apiaceae	*Foeniculum vulgare* Miller	Rezene, Arapsaçı	Leaves	Infusion	Stomachache, Appetizer, Digestive, Carminative	O., drink one teacup three times a day for 8 days
	(DEBB. 459)		Seeds	Decoction	Bronchitis, Cough, Cold	O., drink one teacup three times a day for 5-6 days
Apiaceae	*Pimpinella anisum* L. (DEBB. 370)	Anason	Seeds	Powdered, decoction	Stomachache, Cough, Flu	O., drink one teacup 3-4 times a day for 8-10 days
			Fruits	Decoction	Sedative, Insomnia	O., drink one teacup everynight
Araliaceae	*Hedera helix* L. (DEBB. 458)	Duvar sarma ı ı	Leaves	Decoction	Splenitis, Stomachic Ulcer	O., drink one teacup 3 times a day before meals for 5-6 days
			Leaves	Decoction	Diabetes, Blood Depurative	O., drink one teacup twice a day for 7–8 days
			Leaves	Decoction	Cold, Flu, Pharyngitis	O., drink one teacup twice a day for 1 week
			Leaves	Decoction	Insomnia	O., drink one teacup twice a day for 6 days

Table 1. Contd

Asteraceae	*Achillea millefolium* L. Subsp. millefolium (DEBB. 432)	Civan perçemi	Flowers	Decoction	Diuretic, Urinary Antiseptic, Menstrual Regulari, Dizziness	O., drink one teacup twice a day for 6 days
			Flowers	Decoction	Hemorrhoids	O., drink one teacup twice a day for 6-7 days
			Leaves	Salve	Wounds, Furuncle	Ext.
Asteraceae	*Arctium tomentosum* Miller (DEBB. 341)	Dulavrat otu	Seeds	Infusion	Blood Depurative, Diuretic, Laxative, Digestive, Cholagogue	O., drink one teacup three times a day for 9-10 days
			Leaves	Poultice	Wounds, Eczema, Psoriasis	Ext., wrapping once a day until recovery
Asteraceae	*Artemisia absinthium* L. (DEBB. 366)	Pelin otu	Aerial Parts	Decoction	Appetizer, Digestive, Stomachache, Gall Bladder Ailments	O., drink one teacup 2-3 times a day for 15 days
			Aerial Parts	Decoction	Antipyretic, Infections, Vasodilator, Rheumatism, Gout, Diabetes	O., drink one teacup 2-3 times a day for 15 days
Asteraceae	*Calendula officinalis* L.[c] (DEBB. 438)	Aynısafa	Aerial Parts	Decoction	Blood Depurative, Antihypertensive	O., drink one teacup 2-3 times a day for 5-6 days
			Aerial Parts	Decoction	Diuretic, Stimulant, Cholagogue, Antiseptic	O., drink one teacup 2-3 times a day for 6 days
			Aerial Parts	Infusion	Cancer	O., drink one teacup 2-3 times a day for 6 days
			Aerial Parts	Salve	Wounds, Eczema, Psoriasis	Ext., applied twice a day for 1 week
Asteraceae	*Cichorium intybus* L. (DEBB. 386)	Hindiba	Peduncle	Fresh	Gall Bladder Ailments, Hepatitis, Stomach Ailments	Chew, 5-6 peduncle a day
			Roots	Decoction	Appetizer, Diuretic, Laxative	O., drink one teacup twice a day for 6 days
Asteraceae	*Doronicum orientale* Hoffm. (DEBB. 342)	Sari papatya	Aerial Parts	Decoction	Diuretic	O., drink one teacup twice a day for 7-8 days
Araliaceae	*Hedera helix* L. (DEBB. 458)	Duvar sarmaıı	Leaves	Decoction	Splenitis, Stomachic Ulcer	O., drink one teacup 3 times a day before meals for 5-6 days
			Leaves	Decoction	Diabetes, Blood Depurative	O., drink one teacup twice a day for 7–8 days
			Leaves	Decoction	Cold, Flu, Pharyngitis	O., drink one teacup twice a day for 1 week
			Leaves	Decoction	Insomnia	O., drink one teacup twice a day for 6 days

Table 1. Contd

Asteraceae	*Scolymus hispanicus* L. (DEBB. 358)	evketibostan	Seeds	Decoction	Nephritis, Diuretic, Digestive, Choleretic	O., drink one teacup 3 times a day for 8-9 days
			Seeds	Decoction	Stomachache, , Hemorrhoids, Diarrhea, Appetizer	O., drink one teacup 3 times a day for 6-7 days
			Seeds	Decoction	Hemostatic	Ext.
Asteraceae	*Tanacetum vulgare* L. (DEBB. 362)	Solucan otu	Aerial Parts	Infusion	Appetizer, Digestive	O., drink one teacup 1-2 times a day for 10 days
			Aerial Parts	Infusion	Menstruation Facilitative, Tonic	O., drink one teacup twice a day for 1 week
Asteraceae	*Tussilago farfara* L. (DEBB. 387)	Öksürük otu	Leaves	Decoction	Cough, Asthma, Expectorant, Bronchitis	O., drink one teacup 3-4 times a day for 6-7 days
			Leaves	Decoction	Tonic, Diuretic	O., drink one teacup twice a day for 1 week
			Leaves	Poultice	Furuncles, Paniculas	Ext., applied once a day until recovery
Boraginaceae	*Borago officinalis* L. (DEBB. 347)	Hodan	Leaves And Flowers	Infusion	Blood Depurative, Diuretic, Sudofiric, Antipyretic, Sedative	O., drink one teacup 3 times a day for 6 days
			Leaves	Infusion	Expectorant, Laxative	O., drink one teacup 3 times a day for 6 days
			Leaves	Poultice	Wounds, Burns	Ext., applied once a day until recovery
Brassicaceae	*Capsella bursapastoris* Medik. (DEBB. 371)	Çoban çantası	Leaves	Decoction	Disturbance Of Blood Circulation, Antihypertensive, Menstrual Regulari	O., drink one teacup 3 times a day for 8 days
			Leaves	Poultice	Hemorrhoids, Wounds	Ext.
Brassicaceae	*Lepidium sativum* L. (DEBB. 365)	Tere	Leaves	Infusion	Anemia	O., drink one teacup twice a day for 1 week
			Leaves	Infusion	Cold, Flu, Cough, Pharyngitis	O., drink one teacup 2-3 times a day for 4-5 days
			Leaves	Infusion	Appetizer, Digestive	O., drink one teacup twice a day for 6-7 days
			Leaves	Infusion	Blood Depurative, Diuretic, Nephritis, Urinary Diseases, Hepatitis	O., drink one teacup three times a day for 10 days

Table 1. Contd

Caesalpiniaceae	*Ceratonia siliqua* L.[c] (DEBB. 418)	Keçiboynuzu, harnup	Fruits	Fresh	Lung Edema, Expectorant, Asthma	O., eaten twice a day before meal for 1 week
			Fruits	Fresh	Impotence, Prostatitis	O., eaten twice a day before meal for 10-15 days
Capparaceae	*Capparis spinosa* L. (DEBB. 393)	Kebere, gebreotu	Buds	Decoction	Splenitis, Hepatitis	O., drink one teacup three times a day for 7-8 days
			Buds	Decoction	Diarrhea	O., drink one teacup three times a day for 1 week
			Buds	Decoction	Appetizer, Gastric Ulcer	O., drink one teacup three times a day for 1 week
Caprifoliaceae	*Sambucus nigra* L. (DEBB. 380)	Mürver, Kara mürver	Leaves And Flowers	Infusion	Diuretic, Expectorant, Sedative, Laxative	O., drink one teacup three times a day for 6 days
			Leaves And Flowers	Infusion	Sudofiric, Flu, Cold	O., drink one teacup three times a day for 4-5 days
			Stem Bark	Decoction	Laxative, Diuretic, Antiemetic	O., drink one teacup three times a day for 6 days
Caryophyllaceae	*Saponaria officinalis* L. (DEBB. 389)	Sabun otu	Leaves	Decoction	Diuretic, Bronchitis, Expectorant, Sudofiric	O., drink one teacup 2-3 times a day for 5 days
Clusiaceae	*Hypericum perforatum* L. (DEBB. 340)	Kantaron otu	Leaves	Keeped in olive oil	Wounds	Ext., applied twice a day until recovery
			Leaves	Decoction	Gastric Ulcer, Stomachic	O., drink one teacup twice a day for 8 days
			Leaves	Decoction	Soporific, Depression	O., drink one teacup twice a day for 10-12 days
Crassulaceae	*Sedum album* L. (DEBB. 360)	Damkoru u	Aerial Parts	Poultice	Corn	Ext., applied once a day until recovery
			Aerial Parts	Salve	Hemorrhoids	Ext.
Cucurbitaceae	*Ecballium elaterium* (L.) A. Rich. (DEBB. 348)	E ek hıyarı	Fruits' Juice + Water	Snuffing	Sinusitis	Dropped into the nostrils, 1–2 drop(s)
			Fruits' Juice + Water	Snuffing	Hepatitis	Dropped into the nostrils, 1–2 drop(s)
			Fruits' Juice + Water	Drop	Earache	Dropped into ear, 1–2 drop(s)

Table 1. Contd

Cucurbitaceae	*Momardica charantia* L.[c] (DEBB. 372)	Kudret narı	Fruits	Keeped in Olive oil	Gastric Ulcer, Colitis, Hepatitis	O.,drink once a day one spoonful for before meal 7 days
			Fruits	Crushed with Olive oil	Wounds, Burns, Cuts	Ext., applied once a day until recovery
Cupressaceae	*Juniperus oxycedrus* L. subsp. oxycedrus (DEBB. 388)	Ardıç	Fruits	Infusion	Blood Depurative , Diuretic	O., drink one teacup four times a day before meals for 12 days
			Fruits	Infusion	Stomachic, Enteralgia	O., drink one teacup four times a day before meals for 12 days
			Fruits	Infusion	Menstrual Regulari	O., drink one teacup three times a day before meals for 7-8 days
			Fruits	Infusion	Cough, Sudofiric, Antiseptic, Expectorant	O., drink one teacup three times a day before meals for 7-8 days
Elaeagnaceae	*Elaeagnus angustifolia* L.[c] (DEBB. 357)	de	Fruits	Decoction	Kidney Stones	O., drink one teacup twice a day for 15 days
Fabaceae	*Lupinus angistifolius* L. (DEBB. 336)	Yahudi baklası	Fruits	Roasted and crushed + hot water	Diabetes	O., drink one teacup twice a day for 5-6 days
			Fruits	Infusion	Diuretic, Urinary Antiseptic	O., drink one teacup twice a day for 8 days
Fabaceae	*Ononis spinosa* L. (DEBB. 395)	Kayı kıran	Roots	Infusion	Kidney Stones, Nephritis, Urinary Diseases	O., drink one teacup three times a day for 10 days
			Roots	Infusion	Rheumatism	O., drink one teacup three times a day for 8 days
			Roots	Infusion	Gout, Tonsillitis	O., drink one teacup three times a day for 10 days
Fabaceae	*Robinia pseudoacacia* L.[c] (DEBB. 381)	Yalancı akasya	Leaves	Decoction	Antiseptic, Sedative	O., drink one teacup twice a day for 5-6 days
			Leaves	Decoction	Cholagogue	O., drink one teacup twice a day for 1 week
			Flowers	Infusion	Stomachic	O., drink one teacup three times a day for 10 days

Table 1. Contd

Fabaceae	*Spartium junceum* L. (DEBB. 443)	Katırtırna ı	Leaves	Decoction	Expectorant, Digestive	O., drink one teacup with honey three times a day before meals for 7-8 days
			Leaves	Decoction	Rheumatism	O., drink one teacup three times a day for 20 days
			Leaves	Decoction	Cardiac Diseases	O., drink one teacup three times a day for 20 days
			Leaves	Decoction	Nephritis, Kidney Stones, Diuretic, Urinary Diseases	O., drink one teacup with honey three times a day before meals for 15 days
Fabaceae	*Trigonella foenum-graecum* L.	Çemenotu, boyotu	Seeds	Decoction	Bronchitis, Expectorant, Stomachic	O., drink one teacup three times a day for 6 days
	(DEBB. 436)		Seeds	Poultice	Wounds, Furuncle	Ext., applied once a day until recovery
Fabaceae	Vici aervilia Rafin L. (DEBB. 383)	Burçak	Seeds	Powdered + hot water	Blood Pressure, Diabetes	O., drink one teacup twice a day for 6 days
Fumariaceae	*Fumaria officinalis* L.	ahtere	Aerial	Decoction	Gall Bladder Ailments, Bile	O., drink one teacup four times a
	(DEBB. 452)		Parts		Stone, Hepatitis	day before meals for 8-10 days
			Aerial Parts	Decoction	Psoriasis	Ext., applied once a day until recovery
Hamamelidaceae	*Liquidambar orientalis* Mill. (DEBB. 390)	Sı la A acı	Gum	Chew	Enurezis Nocturna	O., chewed once a day
Hippocastanaceae	*Aesculus hippocastanum* L.[c]	At kestanesi	Leaves	Infusion	Antitussive, Sedative	O., drink one teacup four times a
	(DEBB. 373)					day for 6 days
			Fruits	Decoction	Hemorrhoids, Cold, Diarrhea	O., drink one teacup four times a day for 6 days
			Seeds	Decoction	Rheumatism	O., drink one teacup four times a day for 8-9 days
			Seed Bark	Decoction	Digestive, Cold	O., drink one teacup four times a day for 7-9 days
Juglandaceae	*Juglans regia* L.[c]	Ceviz	Leaves	Decoction	Astringent, Tonic, Anthelminthic	O., drink one teacup 2-3 times a
	(DEBB. 361)					day for 6-7 days
			Leaves	Infusion	Syphilis	Ext.
			Leaves	Infusion	Eczema, Herpes, Pimples	Ext.
			Fruits	Fresh	Hemorrhoids	O., Eaten with honey 3-5 fruits a day for 1 week

Table 1. Contd

Lamiaceae	*Lamium album* L. (DEBB. 382)	Ballıbaba	Leaves	Decoction	Vasodilator, Antipyretic, Diuretic	O., drink one teacup three times a day before meals for 5-7 days
			Leaves	Poultice	Mumps, Hemorrhoids	Ext., applied once a day until recovery
			Leaves	Salve	Burns	Ext., applied twice a day until recovery
Lamiaceae	*Lavandula angustifolia* Miller (DEBB. 335)	Lavanta	Dried Flowers	Infusion	Dyspepsia, Stomachic, Carminative, Diuretic	O., drink one teacup three times a day for 6-7 days
			Dried Flowers	Infusion	Insomnia, Stress	O., drink one teacup three times a day for 5-10 days
Lamiaceae	*Lavandula stoechas* L. (DEBB. 421)	Karaba otu	Leaves	Infusion	Cancer	O., drink one teacup 2-3 times a day for 15-30 days
			Leaves	Infusion	Expectorant, Pharyngitis	O., drink one teacup 2-3 times a day for 5 days
			Leaves	Infusion	Urinary Diseases, Antiseptic, Analgesic	O., drink one teacup three times a day for 5-7 days
			Leaves	Infusion	Disturbance Of Blood Circulation, Vasodilator, Cardiac Deficiency	O., drink one teacup three times a day for 15-20 days
Lamiaceae	*Mentha piperita* L. (DEBB. 356)	Nane	Leaves	Decoction	Nausea , Appetizer	O., drink one teacup 3-4 times a day for 5 days
			Leaves	Decoction	Gall Bladder Ailments	O., drink one teacup 3-4 times a day for 7-8 days
			Leaves	Decoction	Cough, Flu, Cold, Pharyngitis	O., drink one teacup 3-4 times a day for 3-5 days
Lamiaceae	*Mentha pulegium* L. (DEBB. 346)	Yarpuz, filiskin	Leaves	Infusion	Cardiac Diseases	O., drink one teacup three times a day for 10-15 days
			Leaves	Infusion	Stomachic, Herpes, Diuretic, Carminative	O., drink one teacup three times a day for 6-7 days
			Leaves	Infusion	Expectorant	O., drink one teacup three times a day for 6-7 days
			Leaves	Infusion	Menstruation Facilitative	O., drink one teacup three times a day for 1 week

Table 1. Contd

Lamiaceae	*Ocimum basilicum* L. (DEBB. 429)	Fesle en	Leaves	Infusion	Dyspepsia, Carminative, Diuretic	O., drink one teacup 2-3 times a day for 7-10 days
			Leaves	Infusion	Cough, Expectorant, Pharyngitis	O., drink one teacup 2-3 times a day for 3-5 days
			Seeds	Infusion	Insomnia, Depression, Stress	O., drink one teacup twice a day for 1 week
Lamiaceae	*Origanum onites* L. (DEBB. 384)	Izmir keki i	Aerial Parts	Decoction	Flu	O., drink one teacup 2-3 times a day for 6 days
Lamiaceae	*Rosmarinus officinalis* L. (DEBB. 415)	Ku dili, biberiye	Aerial Parts	Decoction	Digestive, Anemia, Palpitation, Dizziness	O., drink one teacup twice a day for 10 days
			Aerial Parts	Decoction	Bronchitis, Asthma	O., drink one teacup twice a day for 10 days
			Aerial Parts	Decoction	Digestive	O., drink one teacup twice a day for 1 week
			Aerial Parts	Decoction	Wounds	Ext., applied two times a day until recovery
Lamiaceae	*Salvia officinalis* L. (DEBB. 440)	Adaçayı	Leaves	Decoction	Cold, Bronchitis	O., drink one teacup 2-3 times a day for 3-5 days
			Leaves	Oil	Stomachic	O., drink one spoonful twice a day for 3-5 days
Lamiaceae	*Thymbra spicata* L. (DEBB. 461)	Zahter	Leaves	Decoction	Cardiac Diseases	O., drink one teacup 2-3 times a day for 7-9 days
			Leaves	Decoction	Hemorrhoids	O., drink one teacup 2-3 times a day for 6 days
			Leaves	Decoction	Eczema	Ext., applied once a day until recovery
Lamiaceae	*Thymus vulgaris* L. (DEBB. 337)	Kekik	Aerial Parts	Decoction	Analgesic, Stomachic	O., drink one teacup 2-3 times a day for 5 days
				Decoction	Anthelminthic, Appetizer, Antispasmodic	O., drink one teacup 2-3 times a day for 5 days
				Decoction	Bronchitis, Pertussis, Asthma, Cold, Sore Throat	O., drink one teacup 2-3 times a day for 5-7 days
				Oil	Toothache, Expectorant, Diuretic	O., drink one spoonful twice a day for 3 days

Table 1. Contd

Lauraceae	*Laurus nobilis* L. (DEBB. 444)	Defne	Leaves	Infusion	Antipyretic, Analgesic	O., drink one teacup 2-3 times a day for 3-5 days
			Leaves	Infusion	Hemorrhoids, Digestive	O., drink one teacup 2-3 times a day before meal for 5-7 days
			Fruits	Crushed	Antiseptic	Ext.
Liliaceae	*Allium cepa* L.[c] (DEBB. 396)	Mutfak So anı	Bulbus	Crushed + salt	Sprain, Edema, Bruise	Ext., applied once a day until recovery
Liliaceae	*Asphodelus aestivus* Brot. (DEBB. 350)	Çiri otu	Tuber	Powdered	Wounds	Ext.
			Tuber	Infusion	Hemorrhoids, Diuretic, Menstruation Facilitative	O., drink one teacup three times a day before meal with honey for 5-7 days
Liliaceae	Convallaria majalis L. (DEBB. 422)	nciçiçe i, Müge	Leaves And Flowers	Infusion	Cardiac Diseases	O., drink one teacup 2-3 times a day for 10-15 days
			Leaves And Flowers	Infusion	Diuretic, Laxative	O., drink one teacup 2-3 times a day for 5 days
Liliaceae	*Lilium candidum* L. (DEBB. 375)	Zambak	Leaves	Crushed with Olive oil	Wounds, Edema, Toothache	Ext., applied once a day until recovery
Linaceae	*Linum usitatissimum* L. (DEBB. 408)	Keten	Seeds	Roasted and crushed	Bronchitis	O., eaten 1–2 spoonful with honey two times a day for 15 days
			Seeds	Infusion	Hemorrhoids, Enteritis	O., drink one teacup twice a day for 10-12 days
			Seeds	Infusion	Colon Cancer	O., drink one teacup twice a day for 25-30 days
			Seeds	Infusion	Cholesterol Lowering, Diabetes, Inflamatory	O., drink one teacup twice a day for 8-15 days
Loranthaceae	*Viscum album* L. (DEBB. 397)	Ökse otu	Buds	Infusion	Bronchitis, Antihypertensive, Sedative	O., drink one teacup 2-3 times a day for 5-7 days
			Buds	Infusion	Metabolism Regulatory	O., drink one teacup 2-3 times a day for 5-7 days
			Buds	Infusion	Arteriosclerosis	O., drink one teacup 2-3 times a day for 15-20 days

Table 1. Contd

Malvaceae	*Althaea officinalis* L. (DEBB. 343)	Hatmi, Tıbbi hatmi	Leaves	Decoction	Enteritis, Stomachic, Diuretic	O., drink one teacup three times a day for 1 week
				Decoction	Cold, Cough, Expectorant	O., drink one teacup three times a day for 3-5 days
				Infusion	Sedative	O.Ad., drink one teacup evenings
				Infusion	Mouth Diseases	Ext., as a gargle until recovery
Malvaceae	*Malva sylvestris* L. (DEBB. 364)	Ebegümeci	Leaves	Infusion	Astringent, Expectorant, Diuretic, Sedative	O., drink one teacup 2-3 times a day for 5-7 days
			Leaves	Poultice	Wounds, Furuncle	Ext., applied once a day until recovery
Moraceae	*Ficus carica* ssp. carica L. (DEBB. 410)	ncir	Latex	Crushed	Warts	Ext., applied once or twice a day until recovery
Moraceae	*Morus nigra* L.[c] (DEBB. 427)	Karadut	Fruit Juice	Crushed	Mouth Diseases	Ext., as a gargle until recovery
Myrtaceae	*Eugenia caryophllata* Thunb.[c] (DEBB. 409)	Karanfil a acı	Buds	Infusion	Antiseptic, Diuretic	O., drink one teacup 1-2 times a day as tepid for 4-7 days
			Buds	Infusion	Digestive, Inflamatory, Diarrhea	O., drink one teacup twice a day for 4-6 days
Myrtaceae	*Myrtus communis* L. (DEBB. 351)	Mersin	Dried Leaves	Infusion	Appetizer, Antiseptic, Hemostatic	O., drink one teacup twice a day for 8-10 days
			Dried Leaves	Infusion	Urinary Diseases	O., drink one teacup twice a day for 8-10 days
Orchidaceae	*Orchis* sp. L. (DEBB. 434)	Salep	Leaves	Decoction	Bronchitis, Diarrhea	O., drink one teacup 2-3 times a day for 5-7 days
			Tubers	Decoction	Cough, Bronchitis, Pharyngitis	O., drink one teacup 3-4 times a day for 5 days
			Tubers	Decoction	Laxative, Hemorrhoids, Anthelminthic	O., drink one teacup 3-4 times a day for 3-5 days
			Tubers	Decoction	Cardiac Deficiency	O., drink one teacup three times a day for 15-20 days
Oxalidaceae	*Oxalis acetosella* L. (DEBB. 345)	Ek iyonca	Leaves	Infusion	Heartburn, Digestion Diseases	O., drink one teacup twice a day as cold for 6-7 days
			Leaves	Infusion	Jaundice, Nephritis, Anthelminthic	O., drink one teacup twice a day as hot for 6-7 days

Table 1. Contd

Paeoniaceae	*Paeonia mascula* (L.) Miller (DEBB. 367)	akayık	Roots	Infusion	Antihemorrhagic, Nikris	O., drink one teacup twice a day as cold for 3-7 days
			Roots	Infusion	Antispasmodic, Epilepsy, Sedative	O., drink one teacup twice a day as cold for 10-30 days
			Roots	Infusion	Cough, Pertussis, Tuberculosis	O., drink one teacup twice a day as cold for 5-15 days
			Roots	Infusion	Sore Throat	Ext., as a gargle until recovery
Papaveraceae	*Chelidonum majus* L. (DEBB. 338)	Kırlangıçotu	Leaves	Infusion	Hepatitis, Gall Bladder Ailments, Bile Stone	O., drink one teacup twice a day as cold for 10-15 days
			Leaves	Infusion	Bronchitis, Antispasmodic	O., drink one teacup twice a day as cold for 5-10 days
Papaveraceae	*Papaver rhoeas* L. (DEBB. 353)	Gelincik	Flowers	Infusion	Cold, Flu, Bronchitis, Pharyngitis	O., drink one teacup three times a day for 3-5 days
			Aerial Parts	Infusion	Soporific, Sedative, Stress	O., drink one teacup three times a day for 3-5 days
			Aerial Parts	Poultice	Wounds	Ext., applied once a day until recovery
			Aerial Parts	Poultice with olive oil	Burns	Ext., applied twice a day until recovery
Passifloraceae	*Passiflora incarnate* L. (DEBB. 404)	Çarkıfelek	Leaves	Infusion	Soporific	O., drink one teacup a day before sleeping
			Leaves	Infusion	Sedative, Stress	O., drink one teacup twice a day as cold for 3-5 days
Pinaceae	*Pinus brutia* Ten. (DEBB. 426)	Kızıl Çam	Cones	Infusion	Stomachache	O., drink one teacup twice a day as cold for 7-8 days
			Leaves	Decoction	Asthma	O., drink one teacup twice a day for 8 days
Pinaceae	*Pinus pinea* L. (DEBB. 423)	Fıstık Çamı	Gum	Decoction	Wounds	Ext., applied once a day until recovery
Platanaceae	*Platanus orientalis* L. (DEBB. 376)	Çınar	Stem Bark	Decoction	Diüretic	O., drink one teacup 2-3 times a day for 8-10 days Ext.
			Leaves	Decoction	Edema	
Plantaginaceae	*Plantago lanceolata* L. (DEBB. 416)	Sinir otu	Leaves	Decoction	Cough, Bronchitis, Asthma, Chest Diseases, Tuberculosis	O., drink one teacup 2-3 times a day for 5-15 days
			Leaves	Poultice	Bee Bites, Heat Rash, Furuncle	Ext., applied once a day until recovery

Table 1. Contd

Poaceae	*Cynodon dactylon* L. (DEBB. 339)	Ayrık otu	Roots	Decoction	Diuretic, Blood Depurative	O., drink one teacup 2-3 times a day for 8-10 days
			Roots	Decoction	Sedative, Expectorant, Antipyretic	O., drink one teacup 2-3 times a day for 3-5 days
			Roots	Decoction	Anthelminthic, Choleretic	O., drink one teacup 2-3 times a day for 6-7 days
Poaceae	*Zea mays* L.[c] (DEBB. 403)	Mısır	Husks	Decoction	Diuretic	O., drink one teacup three times a day for 10-12 days
Polygonaceae	*Rumex crispus* L. (DEBB. 398)	Kuzu kula ı	Leaves	Crushed	Hemorrhoids	Ext., cleaning with decoction twice a day for 10 days
			Leaves	Crushed	Rheumatism	Ext., wrapping
			Roots	Decoction	Diuretic, Laxative, Cholagogue	O., drink one teacup 2-3 times a day for 1 week
Polygonaceae	*Rumex patientia* L. (DEBB. 441)	Labada	Leaves	Decoction	Blood Depurative, Appetizer, Tonic, Anthelminthic	O., drink one teacup 2-3 times a day for 5-7 days
			Leaves	Poultice	Wounds, Eczema, Furuncle	Ext., applied once a day until recovery
			Roots	Decoction	Laxative	O., drink one teacup twice a day for 2-3 days
Primulaceae	*Primula vulgaris* Huds. (DEBB. 462)	Çuha çiçe i	Roots	Infusion	Diüretic	O., drink one teacup 2-3 times a day for 7-10 days
			Flowers	Infusion	Pertussis, Bronchitis, Pneumonia	O., drink one teacup 2-3 times a day for 10-15 days
			Leaves	Poultice	Furuncle	Ext., applied once a day until recovery
Ranunculaceae	*Nigella segetalis* Bieb. (DEBB. 453)	Çörekotu	Shoot	Decoction	Diabetes, Ulcers	O., drink one teacup three times a day for 10-15 days
			Seeds	Crushed	Cough, Expectorant, Pharyngitis	O., eat one spoonful with honey twice a day for 5-7 days
Rhamnaceae	*Frangul alnus* Miller. (DEBB. 411)	Barut a acı	Stem Bark	Decoction	Diuretic, Laxative, Anthelminthic, Choleretic	O., drink one teacup twice a day before meal for 5 days
Rhamnaceae	*Paliurus spina-christi* Miller (DEBB. 445)	Karaçalı	Seeds	Decoction	Diarrhea, Gastritis, Diuretic	O., drink one teacup three times a day before meal for 5-7 days
			Leaves	Poultice	Wounds, Furuncle	Ext., applied once a day until recovery

Table 1. Contd

Rhamnaceae	*Zizyphus jujuba* Miller (DEBB. 413)	Hünnap	Leaves	Decoction	Bronchitis, Asthma	O., drink one teacup 2-3 times a day for 8-10 days
			Leaves	Decoction	Stomachic, Enteritis	O., drink one teacup 2-3 times a day for 10 days
Rosaceae	*Cerasus avium* (L.) Moench.[c] (DEBB. 463)	Kiraz	Fruit Stem, Seeds	Decoction	Nephritis, Diuretic	O.Ad., drink one teacup twice a day for 7–10 days
Rosaceae	*Crataegus monogyna* Jacq. (DEBB. 464)	Alıç	Fruits	Fresh	Sedative	O., eaten
Rosaceae	*Rosa canina* L. (DEBB. 377)	Ku burnu	Fruits	Decoction	Cold , Bronchitis	O., drink one teacup 2-3 times a day for 5-15 days
			Fruits	Decoction	Diuretic, Stomachic	O., drink one teacup 2-3 times a day for 5-20 days
			Leaves	Decoction	Cold, Flu, Cough, Pharyngitis	O.Ad., drink one teacup two times a day for 5–10 days
Rosaceae	*Rosa damescena* L.[c] (DEBB. 368)	Gül	Petals	Infusion	Diarrhea, Enteritis, Stomachic	O., drink one teacup three times a day for 5 days
			Petals	Juice	Skin Care, Adolescence Acnes	Ext., cleaning with cotton two times a day
			Petals	Juice	Mouth Wounds, Bruise, Cuts	Ext.
Rosaceae	*Rubus canescens* DC. (DEBB. 352)	Bö ürtlen	Roots	Decoction	Diabetes, Cystitis	O., drink one teacup four times a day before meal for 7-10 days
			Leaves	Decoction	Diarrhea, Antihemorrhagic, Diuretic	O., drink one teacup three times a day before meal for 5-10 days
			Leaves	Decoction	Wounds, Burns	Ext., applied once a day until recovery
Rosaceae	*Rubus idaeus* L. (DEBB. 465)	A aç çile i , Ahududu	Fruits	Fresh	Diuretic, Antiseptic	O., eat 4-5 fruits twice a day for 5 days
			Fruits	Fresh	Digestive, Appetizer	O., eat 4-5 fruits twice a day for 5 days
			Fruit Juice	Fresh	Conjunctivopathy	Ext., cleaning with cotton twice a day for 7-10 days
			Leaves	Infusion	Sudofiric, Antipyretic, Sedative	O., drink one teacup 2-3 times a day for 3-5 days

Table 1. Contd

Rutaceae	*Citrus medica* L. var. bajoura	A aç kavunu	Fruit Bark	Fresh	to take away bad breath of mouth, Scurvy	O., chewed
	(DEBB. 401)		Fruits	Dried and crushed + hot water	Laxative	O., drink one teacup twice a day for 3-5 days
Rutaceae	*Ruta graveolens* L.[c]	Sedef otu	Aerial Parts	Infusion	Sedative, Antispasmodic	O., drink one teacup three times a day for 5 days
	(DEBB. 457)		Aerial Parts	Infusion	Sudofiric, Menstrual Regulari	O., drink one teacup three times a day for 5-10 days
			Aerial Parts	Infusion	Anthelminthic, Appetizer, Digestive, Carminative	O., drink one teacup three times a day for 5-6 days
Scrophulariaceae	*Euphrasia officinalis* L.	Gözlük otu	Aerial Parts	Decoction	Conjunctivopathy, Blepharitis	Ext., cleaning with cotton twice a day for 5-7 days
	(DEBB. 446)		Aerial Parts	Infusion	Sinusitis, Flu, Cold	O., drink one teacup three times a day for 5-10 days
Scrophulariaceae	*Verbascum thapsus* L. (DEBB. 466)	Sı ırkuyru u	Dried Leaves And Flowers	Decoction	Sore Throat, Expectorant, Abdominal Pain, Bronchitis, Sedative	O., drink one teacup 2-3 times a day for 3-10 days
			Leaves	Poultice	Wounds	Ext.
Scrophulariaceae	*Veronica officinalis* L.	Çıbanotu,	Leaves	Decoction	Cholesterol Lowering,	O., drink one teacup twice a day for
	(DEBB. 454)	Yav anotu			Appetizer, Forgetfulness	5-8 days
			Leaves	Poultice	Wounds, Furuncle	Ext., applied once a day until recovery
Solanacae	*Mandragora autumnalis* Bertol. (DEBB. 355)	Adamotu	Roots	Dried and Crushed + hot water	nflamatory	O., drink one teacup 1-2 times a day for 3 days
Solanacae	*Solanum nigrum* L.	tüzümü, kopek	Aerial Parts	Decoction	Antispasmodic, Antiallerjic,	O., drink one teacup 2-3 times a
	(DEBB. 378)	üzümü			Sedative	day for 5-7 days
			Aerial Parts	Poultice	Wounds, Rheumatism	Ext. wrapping
Tiliaceae	*Tilia rubra* DC.	Ihlamur	Flowers And Brakte	Decoction	Antispasmodic, Sedative, Sudofiric, Diuretic	O., drink one teacup three times a day for 3-5 days
	(DEBB. 363)		Flowers And Brakte	Decoction	Digestive, Expectorant	O., drink one teacup three times a day for 5-7 days
Ulmaceae	*Celtis australis* L.	Çitlembik	Leaves	Decoction	Stomachache, Diuretic, Cough	O., drink one teacup twice a day for
	(DEBB. 447)					5-8 days

Table 1. Contd

Urticaceae	*Parietaria judaica* L. (DEBB. 417)	Duvar fesle eni, yapı kan otu	Leaves	Decoction	Urinary Diseases, Bile Stone	O., drink one teacup 2-3 times a day before meals for 5-10 days
			Leaves	Decoction	Cough, Sore Throat	O., drink one teacup three times a day for 3-5 days
			Leaves	Decoction	Rheumatism	O., drink one teacup three times a day for 5-7 days
			Leaves	Decoction	Goitre, Mouth Wounds	Ext., as a gargle until recovery
Urticaceae	*Urtica dioica* L. (DEBB. 455)	Isırgan	Leaves and seeds	Decoction	Cancer	O., drink one teacup twice a day for 30 days
			Leaves	Decoction	Rheumatism	Ext.
			Leaves	Decoction	Skin Diseases	Ext., wrapping
			Seeds	Fresh	Cancer	O., eat 1–2 spoonfuls twice a day with honey for 30 days
			Aerial Parts	Decoction	Bronchitis, Cough, Asthma, Pharyngitis	O., drink one teacup twice a day for 5–10 days
			Aerial Parts	Decoction	Kidney Stones	O., drink one teacup twice a day for 5–10 days
Verbenaceae	*Lantana camara* L. (DEBB. 448)	Mine	Aerial Parts	Infusion	Digestive, Cold, Flu, Expectorant	O., drink one teacup three times a day for 3-5 days
				Infusion	Menstrual Regulari	O., drink one teacup three times a day for 15-20 days
				Infusion	Scurvy, Tooth Decay	Ext., as a gargle until recovery
Verbenaceae	*Vitex agnus-castus* L. (DEBB. 344)	Hayıt	Fruits	Infusion	Antiinflamatory	O., drink one teacup 2-3 times a day for 5-7 days
			Fruits	Infusion	Menstrual Regulari	O., drink one teacup 2-3 times a day for 15-30 days
Violaceae	*Viola tricolor* L. (DEBB. 369)	Hercai menek e	Aerial Parts	Infusion	Diuretic, Cystitis	O., drink one teacup three times a day for 10-15 days
				Infusion	Blood Depurative	O., drink one teacup three times a day for 5-10 days
				Infusion	Eczema, Acne	Ext.
				Infusion	Pertussis, Bronchitis, Cough, Expectorant	O., drink one teacup three times a day for 5-15 days

Table 1. Contd

Violaceae	*Viola tricolor* L. (DEBB. 369)	Hercai menek e	Aerial Parts	Infusion	Diuretic, Cystitis	O., drink one teacup three times a day for 10-15 days
				Infusion	Blood Depurative	O., drink one teacup three times a day for 5-10 days
				Infusion	Eczema, Acne	Ext.
				Infusion	Pertussis, Bronchitis, Cough, Expectorant	O., drink one teacup three times a day for 5-15 days
Zingiberaceae	*Alpinia officinarum* Hance	Havlıcan	Roots	Infusion	Headache, Dizziness	O., drink one teacup 2-3 times a day for 5-7 days
	(DEBB. 385)		Roots	Infusion	Diuretic, Rheumatism	O., drink one teacup 2-3 times a day for 10 days
				Infusion	Stomachic, Expectorant	O., drink one teacup twice a day for 5–10 days
			Roots			
Zygophyllaceae	*Peganum harmala* L. (DEBB. 402)	Üzerlik	Roots	Decoction	Hemorrhoids	Ext.

O: Oral Administration Ext: External uses [c] : Cultivated plants

Table 2. Informant consensus factor rates of the medicinal plants used around Izmir provınce by diseases.

Diseases Category	Number of Species (N_t)	All Species (%)	Number of Use Reports (N_{ur})	F_{ic} *
Cold, Influenza	15	13.8	83	0.82
Cough	19	17.6	68	0.73
Stomach Ailments	34	31.4	105	0.68
Wounds	21	19.4	53	0.61
Kidney Ailments	47	43.5	97	0.51
Gall Bladder Ailments	11	10.2	18	0.44
Hemorrhoids, Enteritis	17	15.7	24	0.30

* Informant Consensus Factor, $F_{ic} = N_{ur} – N_t / (N_{ur} – 1)$, providing a value between 0 and 1, where ‘‘1’’ indicates the highest rate of informant consensus.

Table 3. Most commonly used medicinal plants and their major uses with their fidelity level, at Izmir province, Turkey (0 = the least, 100 = the highest efficiency) (N: 574).

Species and Family	Local Name	Uses	Fidelity Level (FL) (%)
Allium cepa L. Liliaceae	Mutfak so anı	Sprain, Edema, Bruise	100
Urtica dioica L. Urticaceae	Isırgan, Dalagan, Gidi gen	Cancer , Rheumatism, Skin Diseases, Bronchitis, Cough, Asthma, Pharyngitis, Kidney Stones	100
Salvia officinalis L. Lamiaceae	Adaçayı	Cold, Bronchitis, Stomachic	97
Thymus vulgaris L. Lamiaceae	Kekik	Analgesic, Stomachic, Anthelminthic, Appetizer, Antispasmodic, Bronchitis, Pertussis, Asthma, Cold, Sore Throat, Toothache, Expectorant, Diuretic	94
Hypericum perforatum L. Clusiaceae	Kantaron otu, Sarı kantaron, Mide otu	Gastric Ulcer, Stomachic, Soporific, Depression, Wounds	93
Mentha piperita L. Lamiaceae	Nane	Nausea , Appetizer, Gall Bladder Ailments, Cough, Flu, Cold, Pharyngitis	87
Ecballium elaterium (L.) A. Rich. Cucurbitaceae	E ek hıyarı, Cırtlak, eytan kele i, Acı dülek	Sinusitis, Hepatitis, Earache	79
Matricaria chamomilla L. Asteraceae	Papatya	Flu, Cough, Sore Throat, Pharyngitis, Gall Bladder Ailments, Duodenum Diseases, Anthelminthic, Laxative, Hemorrhoids, Kidney Stones Soporific, Sedative, Tonic, To become scurfy, Alopecia	76
Rosa canina L. Rosaceae	Ku burnu	Bronchitis, Diuretic, Stomachic, Cold, Flu, Cough, Pharyngitis	70
Lavandula stoechas L. Lamiaceae	Karaba otu	Cancer, Expectorant, Pharyngitis, Urinary Diseases, Antiseptic, Analgesic, Disturbance Of Blood Circulation, Vasodilator, Cardiac Deficiency	61
Glycyrrhiza glabra L. Fabaceae	Meyan, Biyan	Bronchitis, Cough, Expectorant, Hepatitis, Laxative, Digestive, Gastric Ulcer, Diuretic	52
Laurus nobilis L. Lauraceae	Defne	Antipyretic, Analgesic, Hemorrhoids, Digestive, Antiseptic	43
Pimpinella anisum L. Apiaceae	Anason	Stomachache, Cough, Flu, Sedative, Insomnia	42
Ocimum basilicum L. Lamiaceae	Fesle en	Dyspepsia, Carminative, Diuretic, Cough, Expectorant, Pharyngitis, Insomnia, Depression, Stress	37
Nigella segetalis Bieb. Ranunculaceae	Çörek otu	Diabetes, Ulcers, Cough, Expectorant, Pharyngitis	33

livestock health problems. It was found that most informant (67%) continue to use traditional systems of health care including medicinal plants alone or in combination with other ingredients, such as flour, honey, oil.

Information about usage of plants has always been passed on inter-generationally orally however in the opinion of contemporary elders, the younger generation has neither the same opportunity nor the desire to acquire this knowledge (Kargıoglu et al., 2008) . This is largely because rural out-migration of younger families prevents the transmission of local ethnobotanical information. Moreover, traditional medication has been ignored in the past by educated and modern societies. They are using large numbers of medicinal plants efficiently even though the plants used and the methods of preparation are often closely guarded secrets. Due to lack of interest by the modern society and the way elders transfer their knowledge, there were many misconceptions on the efficacy of medicinal plants (Wilson and Woldo, 1979).

The fidelity level (FL) calculated for each medicinal plant agrees with F_{ic} value. Obviously, the remedies for frequently reported aliments have the highest FL value

Table 4. Parts of medicinal plants used to treat human ailments in the Izmir province, Turkey.

Plant parts used	Number of species	Percentage (%)
Root	12	8.82
Aerial Parts (Stem, leaves, flowers)	17	12.5
Leaf	49	36.02
Fruit	17	12.5
Seed	17	12.5
Flower	10	7.35
Bark	3	2.20
Gum	2	1.47
Bud	3	2.20
Tuber	2	1.47
Others	4	2.94

Table 5. Districts and villages of Izmir.

Number	Districts	Villages
1	Balçova	Central District
2	Bornova	Central District
3	Buca	Central District
4	Çi li	Central District
5	Gaziemir	Central District
6	Güzelbahçe	Central District
7	Kar ıyaka	Central District
8	Konak	Central District
9	Menderes	Central District
10	Narlıdere	Central District
11	Alia a	A a ı akran, Bahçedere, Bozköy, Çıtak, Çoraklar, Güzelhisar, Hacıömerli, Horozgedi i, Kalabak, Karaköy, Samurlu, Uzunhasanlar, Yüksekköy
12	Bayındır	Alankıyı, Alanköy, Buruncuk, Çamlıbel, Çiftçigedi i, Çınardibi, Dereköy, Elifli, Fırınlı, Gaziler, Hasköy, Karahalılı, Kızıla aç, Sarıyurt, Turan, Yakacık, Yakapınar, Yusuflu
13	Bergama	Alacalar, Balaban, Cevaplı, Çamköy, Da ıstan, E rigöl, Gaylan, Karaveliler, Kurfallı, Küçükkaya, Narlıca, Ovacık, Pireveliler, Rahmanlar, Sarıdere, Tepeköy, Tırmanlar
14	Beyda	Alakeçili, Bakırköy, Çamlık, Çiftlikköy, Çomaklar, E ridere, Erikli, Halıköy, Karaoba, Kurudere, Mutaflar, Palamutçuk, Sarıkaya, Tabaklar, Yukarıaktepe, Yukarıtosunlar
15	Çe me	Germiyan, Ildırı, Karaköy, Ovacık
16	Dikili	Bademli, Bahçeli, Ça lan, Çukuralan, Delikta , Esentepe, Gökçea ıl, slamlar, Kabakum, Kızılçukur, Kocaoba, Mazılı, Merdivenli, Nebiler, Salihler, Samanlıkköy, Uzunburun, Yah ibey, Yaylayurt
17	Foça	Ilıpınar, Kozbeyli, Yeniba arası, Yeniköy
18	Karaburun	Ambarseki, Bozköy, E lenhoca, Hasseki, necik, Kösedere, Küçükbahçe, Parlak, Saip, Salman, Sarpıncık, Tepeboz, Yaylaköy
19	Kemalpa aAkalan,	Ansızca, A a ıkızılca, Bayramlı, Be pınar, Cumalı, Çambel, Çınılıköy, Dereköy, Gökyaka, Halilbeyli, Kuyucak, Ovacık, Örnekköy, Sarıçalı, Sütçüler, Vi neli, Yenikurudere, Ye ilköy, Ye ilyurt, Yi itler
20	KınıkÇaltıdere,Ta	tepe,Arpaseki,Azizye,Ta ma ar,Hamzahoca,Cumalı,Ba lan,Örtülü,Arpadere, Karadere,Elmadere,Kocaömer,Köseler,Arpadere,Dermenceli
21	Kiraz	Ahmetler, Akpınar, Arkacılar, Ba aran, Ceritler, Cevizli, Çanakçı, Çömlekçi, Do ancılar, Emenler, Gedik, Haliller, Hisarköy, deli, Kaleköy, Kibar, Mavidere, Örencik, Saçlı, Sarıkaya, Suludere, Ta lıyatak, Uzunköy, Veliler, Ya lar
22	Menemen	Alaniçi, Ayvacık, Ba cılar, Belen, Buruncuk, Çaltı, Çavu köy, Çukurköy, Do a, Görece, Haykıran, nedere, Karaorman, Musabey, Süleymanlı, Süzbeyli, Telekler, Yah elli, Yanıkköy

Table 5. Contd

23	Ödemi	Ala arlı, Artıcak, Bayırlı, Bıçakçı, Bozcakaya, Büyükkavulcuk, Çayırköy, Cevizalan, Dereuzunyer, Elmaba ı, Gerçekli, Horzum, Ikkur un, Köseler, Kurucaova, Mescitli, Mursallı, Ocaklı, Seki, Veliler, Yenice, Yeniköy, Yılanlı
24	Seferihisar	Beylerl, Çamtepe, Düzce, Gödence, hsaniye, Kavakdere, Orhanlı, Turgut, Ulamı
25	Selçuk	Acarlar, Barutçu, Çamlık, Gökçealan, Havutçulu, Sultaniye, irince, Zeytinköy
26	Tire	Akça ehir, Alaylı, Ba köy, Boynuyo un, Çayırlı, Da dere, Dereba ı, Dereli, Doyranlı, Eskioba, Hasançavu lar, Kaplan, Mehmetler, Musalar, Osmancık, Pe refli, Saruhanlı, Somak, Ye enli, Yenioba
27	Torbalı	Ahmetli, Arslanlar, Bulbuldere, Çakırbeyli, Çamlıca, Çapak, Da teke, Eyerci, Göllüce, Helvacı, Karaot, Kırba , Ku çuburnu, Özbey Pamukyazı, Sa lık, Saipler, Ta kesik, Tulum, Yeniköy, Ye ilköy, Yo urtçular
28	Urla	Bademler, Balıklıova, Barbaros, Birgi, Demircili, Gölcük, Gülbahçe, Kadıovacık, Ku çular, Nohutalan, Ovacık, Özbek, Uzunkuyu, Ya cılar, Zeytinler

and those with low number of reports have lowest FL values. The remedies such as *Nigella segetalis* (33%) have low FL value because the majority of the informants do not know the dosage and the methods of preparation of the remedies. The average F_{ic} value for all illness categories was 0.58, indicating a relatively high level of informant consensus compared with similar studies (Heinrich, 2000).

The fact that most of the medicinal plants (87%) are from the natural vegetation indicates that there is very little practice of keeping medicinal plants in cultivated areas or home gardens. This is in agreement with former studies by Wondimu et al. (2007) where 92% of the medicinal plants collected from their study area belong to the category of non-cultivated plants. Giday et al. (2003) also recorded only six medicinal plants species from the cultivation areas.

Finally, unfortunately, native people throughout the world are fast losing some of their most important traditions; and this includes the knowledge of how to recognize and use economically valuable wild plant species (Ozgen et al., 2004) . This indicates that ethnobotanical studies constitute a valuable first step in the bioprospection process, which may lead to the development of new plant-based medicines. It is hoped that the present study conducted in Turkey would provide new treatment methods for future.

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