

An ethnobotanical survey in selected districts of the Black Sea region (Turkey)

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Abstract: The current study was carried out in selected districts of the Black Sea region of Turkey, in Trabzon (center), Çorum (İskilip town), Karabük (Yenice town), Amasya (Kapıkaya village), and Amasya (Belmebük village) in order to document the wild plants used by the local inhabitants, i.e. as a remedy or foodstuff or for other purposes. The data were collected from 352 individuals residing in these districts and volunteering to participate in the research through face-to-face interviewing. Depending on the data collected, the parts of the plants used, the purpose in using them, and the ways of preparation (simply cooking or decoction, infusion, poultice, ointment, etc.) were documented. Wild plants that are said to be used were collected with guidance from the informant and herbarium materials were prepared. All plant specimens collected were identified botanically and deposited at the Herbarium of the Faculty of Education of Hacettepe University (HEF). In the survey, the use of 72 plant taxa from 35 families was documented. Most of them belonged to the families Rosaceae (14 taxa), Lamiaceae (5 taxa), and Asteraceae (5 taxa). Among the 150 wild plant used in total, 106 were documented to be used in the treatment of several health problems. In descending order, these health problems were respiratory system disorders (25 remedies; 23.6%), dermatological disorders (21 remedies; 19.8%), gastro-intestinal disorders (20 remedies; 18.9%), endocrine and metabolic diseases (11 remedies; 10.4%), and urinary disorders (11 remedies; 10.4%), respectively.

Key words: Ethnobotany, folk medicine, foodstuff, Black Sea region, Turkey

1. Introduction

Turkey has a rich floristic diversity and cultural heritage. Even though many scientific studies have explored the usage of wild plants for the purpose of treatment, foodstuff, or others, efforts carried out in this field are not adequate in documenting this kind of information because of the large surface area of the country and the richness of cultural heritage. In particular, factors such as increased migration from rural areas to urban areas, urbanization, increased coverage of health services, easier accessibility to transportation, and current improvements in technology have gradually reduced the need for ethnobotanical information. Consequently, due to insufficient documentation and the reluctance of new generations to convey such knowledge, this wealth of wisdom is vanishing day by day. Therefore, it would be useful to try various alternative ways and carry out similar studies so as to have access to these data.

Folk medicine in the Black Sea region of Turkey has been investigated by several research groups (Alpınar, 1979; Sezik et al., 1991, 1992; Fujita et al., 1995; Yazıcıoğlu

and Tuzlacı, 1995; Yazıcıoğlu and Tuzlacı, 1996; Yesilada et al., 1999; Kandemir, 2002; Ezer and Arısan-Mumcu, 2006; Cansaran et al., 2007; Cansaran and Kaya, 2010; Sağıroğlu et al., 2012). Among the various approaches for selection of localities in these ethnobotanical surveys, detailed investigation in a selected province/town with the villages within it or in randomly selected localities, mostly one or two villages in a region, have been practiced more frequently. However, during our previous field surveys we faced the fact that in order to have a better quality of life (i.e. to find a job, school, etc.) many families in the villages migrate to larger centers, i.e. towns and cities, while the population in villages tends to decline gradually. Since in most of the ethnobotanical field surveys the main target was villages, the information possessed by people who migrated to towns/cities has remained undocumented. Therefore, the aim of this study was to record the dietary, ethnobotanical, and therapeutic uses of wild and domestic plants in the selected city (Trabzon), towns (İskilip, Yenice), and villages near city centers (Belmebük, Kapıkaya) in the Black Sea region.

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2. Materials and methods

2.1. Study area

A questionnaire form that was used in earlier studies was applied to 352 individuals residing in Trabzon (center; n = 121), Çorum (İskilip town; n = 80), Karabük (Yenice town; n = 76), Amasya (center, Kapıkaya village; n = 35), and Amasya (center, Belmebük (Karaköprü) village; n = 40) through face-to-face interviews (Simsek et al., 2001, 2004; Akaydin et al., 2013) (Figure). In addition to the demographic features of the participants, questions as to the purpose of using wild plants, preparation methods, and ways to obtain them were contained in the questionnaire form. While collecting data, attempts were made to avoid asking questions with regard to plants or diseases in order to prevent misdirecting the informants.

2.2. Field trips

The study data were collected between April and July 2008. Researchers behaved as a tracker in the interviews and the participants were visited at their homes and they were asked to call their neighbors who were particularly interested in using wild plants. Some interviews took place in the local teahouse or in the garden of the district mosque, where men frequently congregate. After each interview, plant samples were collected with assistance from the participants.

2.3. Identification of plants

The collected plant specimens were identified using references, i.e. *Flora of Turkey and the East Aegean Islands* (Davis, 1965–1985; Davis et al., 1988; Güner et al., 2000), *Kayışdağı'nın Çiçekleri* (Yesilada et al., 2008), and *Türkiye Bitkileri Listesi* (Güner et al., 2012). Identifications were performed by two of the authors (GA and EBY). The

dried plant samples are deposited at the Herbarium of the Faculty of Education, Hacettepe University (HEF).

2.4. Statistical evaluation

The demographic data were analyzed by using descriptive and cross tables in SPSS 16.0, and percentages were calculated. In the analyses, the chi-square test was used and the values of $P < 0.05$ were considered statistically significant.

The *Informant's Consensus Factor* (F_{IC}) was calculated according to the following equation: $F_{IC} = (n_{ur} - n_t) / (n_{ur} - 1)$, where n_{ur} refers to the number of use reports and n_t to the number of taxa used in each pharmacological category. If the calculated F_{IC} value was close to 1, this indicates a general consensus among the informants on the utilization of a remedy in that particular category, while a lower value indicates disagreement (Heinrich, 2000).

Another quantitative parameter used for the data evaluation was *Use Value* (UV), which indicates the relative importance of a taxon utilized by the informants. UV was estimated by using the formula $UV = \sum U/N$, where U refers to the number of citations and N to the number of informants per taxon.

3. Results

3.1. Demographic data

Demographic features of the informants are given in Table 1. While 67.9% of the participants were female, 32.1% were male. When considering the age of the participants, 25.8% were 30 years old or younger and the remaining 74.2% were 31 years old or older. Moreover, 87.0% of them were literate. Two-thirds of the participants (75.6%) were married and the others were unmarried, widowed, or

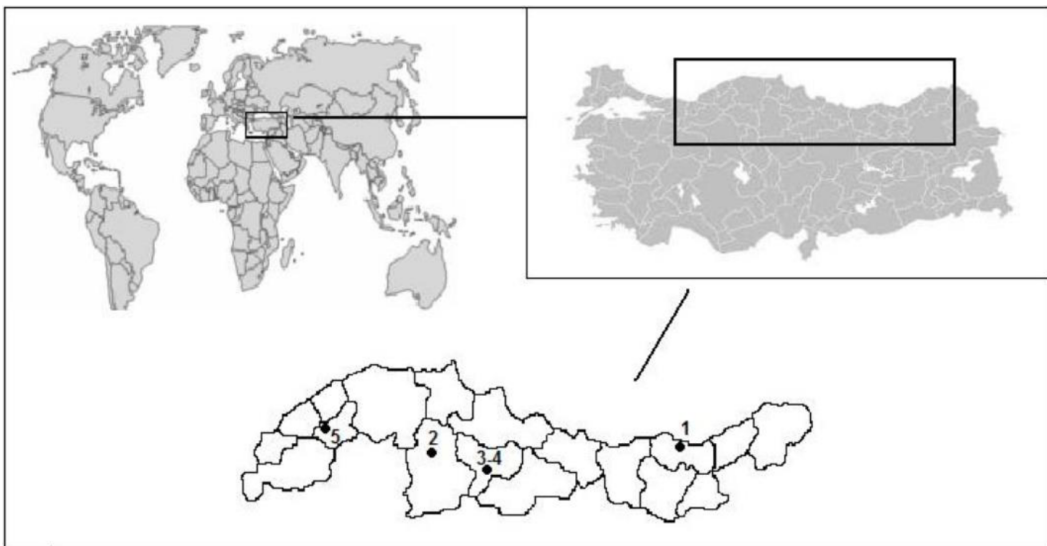


Figure. Map of research areas: (1) Trabzon - center, (2) Çorum - İskilip, (3) Amasya - Kapıkaya, (4) Amasya - Belmebük, (5) Karabük - Yenice.

Table 1. Demographic features of the informants (n = 352).

Demographic features		Number	%
Sex	Female	239	67.9
	Male	113	32.1
Age	30 or younger	91	25.8
	Between 31 and 43	97	27.6
	44 or older	164	46.6
Educational status	Illiterate	46	13.0
	Primary school	178	50.6
	High school or college	128	36.4
Marital status	Married	266	75.6
	Unmarried, widowed, divorced	86	24.4
Working status	Housewife	184	52.3
	Civil servant	47	13.4
	Self-employed	42	11.9
	Student	16	4.5
	Others (unoccupied, retired etc.)	63	17.9
Place where they lived longest	Rural area	204	58.0
	Urban area	148	42.0
Duration of residence in the region	Less than 10 years	71	20.2
	10 years or more	281	79.8

divorced. As for their working status, a great majority of the participants (52.3%) were housewives. The participants mostly resided in the rural areas (58.0%) and 79.8% lived in the area where they had resided for 10 years or more.

3.2. Correlation between demographic features and plant use

The data on the knowledge of the informants regarding the utilization of wild plants are given in Table 2. A great majority of the participants (90.6%) were informed about wild plants growing in the vicinity, while only 85.2% of them consumed these plants either as food or medicine. The rest (14.8%) were unwilling to consume them due to insufficient information on their benefits or they did not think that they would be beneficial.

Some consumers (53.0%) gathered plants for their own use, whereas some people (20.3%) purchased plants from bazaar or dealers. The rest (26.7%) consumed the materials either collected themselves or purchased. Among the participants purchasing wild plant materials, 27.0% obtained the materials from herbalists, 64.5% from the district bazaar, and 8.5% from greengrocers or supermarkets. As for the collection time of the plants from nature, while 29.7% of those participants preferred collecting the plants in the morning hours, the rest did not specify any time of day.

When the participants were asked about the origin of their information, the information was mostly acquired from elderly people (80.0%), with a smaller ratio from their friends (20.0%). Among the documented plant utilizations, they were mostly used for medical purposes (91.3%), while some were consumed as a foodstuff (74.3%) or as spice for taste and aroma (23.3%), and some plants were used as animal fodder (6.0%), ornamentals (5.3%), or dyestuff (3.0%). The participants mostly declared that they did not suffer from any significant side effect (98.5%) and nearly all expressed that they observed beneficial effects (99.3%).

Cross relations between the demographic features of the informants and their knowledge about plants are summarized in Tables 3 and 4, respectively. Upon evaluation based on the age of participants, 98.8% of the participants who were 44 years old or older were familiar with the wild plants, while this ratio fell to 71.4% among the participants 30 years old or younger. Among the participants, 97.0% of the individuals residing in rural areas were familiar with the wild plants and 95.1% of them consumed wild plants, while for those living in urban areas this ratio decreased to 81.8% and 71.6%, respectively.

No significant difference was found in habits of wild plant use among the respondents with respect to their

Table 2. Responses given by the informants concerning their benefitting from wild plants.

Questions and responses	Number	%
Do you know about the benefits of wild plants? (n: 352)		
Yes	319	90.6
No	33	9.4
Do you frequently consume plant materials? (n: 352)		
Yes	300	85,2
No	52	14.8
Do you have any reason for not consuming plant materials? (n: 52)		
Does not have sufficient information	27	52.0
Does not think it is beneficial	25	48.0
How long have you used wild plants? (n: 300)		
Less than 10 years	82	27.4
10 years or more	218	72.6
Where do you obtain the plant materials from? (n: 300)		
Self-gathered from nature	159	53.0
Self-gathered and purchased	80	26.7
<i>Purchased</i>	61	20.3
Where do you purchase the plant materials from? (n: 141)		
District bazaar	91	64.5
Herbalist	38	27.0
Grocer or supermarket	12	8.5
What time of the day do you prefer to gather the material from nature? (n: 239)		
Anytime	168	70.3
Mornings	71	29.7
What is the source of your information? (n: 300)		
Old people	267	89.0
Friends	60	20.0
Mass media	37	12.3
For what purposes do you use plant materials? (n: 300)*		
Treatment	274	91.3
Foodstuff	223	74.3
Taste and aroma	70	23.3
Animal fodder	18	6.0
Ornamental	16	5.3
Dyestuff	9	3.0
Wooden spoon	4	1.3
How often do you use plant materials? (n: 300)		
If necessary	160	53.3
Seasonal	75	25.0
Frequently	65	21.7
Have you ever witnessed any side effects due to utilization of a plant remedy? (n: 274)		
No	270	98.5
Yes	4	1.5
Do you think plant remedies are beneficial for health? (n: 274)		
Yes	272	99.3
No	2	0.7

* More than one choice is marked.

Table 3. Cross relations between the demographic features of informants and their knowledge about plants (n = 352).

Demographic features	Familiar		Unfamiliar	
	Number	%	Number	%
Sex				
Female (n: 239)	217	90.8	22	9.2
Male (n: 113)	102	90.3	11	9.7
	$\chi^2 = 0.03$ P = 0.874			
Age				
30 or younger (n: 91)	71	78.0	20	22.0
Between 31 and 43 (n: 97)	86	88.6	11	11.4
44 or older (n: 164)	162	98.8	2	0.2
	$\chi^2 = 30.3$ P = 0.001*			
Educational status				
Illiterate (n: 46)	45	97.8	1	2.2
Primary school (n: 178)	169	94.9	9	5.1
High school or college (n: 128)	105	82.0	23	18.0
	$\chi^2 = 17.84$ P = 0.001*			
Marital status				
Married (n: 266)	249	93.6	17	6.4
Unmarried, widowed, divorced (n: 86)	70	81.4	16	18.6
	$\chi^2 = 11.41$ P = 0.001*			
Place where the informants live longest				
Rural area (n: 204)	198	97.0	6	0.3
Urban area (n: 148)	121	81.8	27	18.2
	$\chi^2 = 23.64$ P = 0.001*			
Duration of residence in the region				
Less than 10 years (n: 71)	64	90.1	7	9.9
10 years or more (n: 281)	255	90.7	26	9.3
	$\chi^2 = 0.03$ P = 0.876			

*P < 0.05

residing period in the locality. While 90.1% of people who had lived in the same locality less than 10 years recognized the wild plants and consumed them, this percentage was 90.7% for those who had lived in the same area for 10 years or more.

As shown in the tables, the status of acquaintance with wild plants and consumption for the participants were significantly different in terms of their age, education, marital status, and the places in lived longest (P < 0.05) (Tables 3 and 4). However, no significant differences were observed between these parameters, i.e. acquaintance and consumption of plants, based on sex.

3.3. Ethnobotanical data evaluation

Plants are consumed for different purposes and prepared by various methods in every district. The plants used as

a remedy for healing purposes are processed either by boiling in water (decoction), by simmering in boiled water (infusion), by roasting in oil, by mixing with honey, in the form of paste, as a herbal tea, or by directly applying externally on the skin. Sometimes they prepare a condensed extract by condensing the aqueous extract on an open fire (pekmez, a molasses-like syrup).

Plants consumed as foodstuffs are mostly used fresh or by roasting or boiling. Such plants are sometimes added to dishes such as rice and bulgur, or used as the filling of Turkish pancakes (gözleme), in salads, or as spices. Fruit stewed with sugar is served as jam. On the other hand, some plants are used as animal fodder, for ornamentation, as natural dye materials, or to make wooden spoons.

Table 4. Cross relations between the demographic features of informants and their use of plants (n = 352).

Demographic features	Using		Not Using	
	Number	%	Number	%
Sex Female (n: 239) Male (n: 113)	201 99	84.1 87.6	38 14	15.9 12.4
$\chi^2 = 0.75$ P = 0.386				
Age 30 or younger (n: 91) Between 31 and 43 (n: 97) 44 or older (n: 164)	65 79 156	71.4 81.4 95.1	26 18 8	28.6 18.6 4.9
$\chi^2 = 27.62$ P = 0.001*				
Educational status Illiterate (n: 46) Primary school graduate (n: 178) High school or college graduate (n: 128)	45 162 93	97.8 91.0 72.7	1 16 35	2.2 9.0 27.3
$\chi^2 = 26.59$ P = 0.001*				
Marital status Married (n: 266) Unmarried, widowed, divorced (n: 86)	236 64	88.7 74.4	30 22	12.3 25.6
$\chi^2 = 10.56$ P = 0.001*				
Place where the informants live longest Rural area (n: 204) Urban area (n: 148)	194 106	95.1 71.6	10 42	4.9 28.4
$\chi^2 = 37.55$ P = 0.001*				
Duration of residence in the region Less than 10 years (n: 71) 10 years or more (n: 281)	64 236	90.1 84.0	7 45	9.9 16.0
$\chi^2 = 1.705$ P = 0.192				

*P < 0.05

4. Discussion

Among the 150 total uses recorded during the expeditions, 106 were therapeutic purposes; moreover, 25 remedies (23.6%) against respiratory system disorders; 21 remedies (19.8%) to cure dermatological problems; 20 remedies (18.9%) to combat gastro-intestinal disorders; 11 remedies (10.4%) for endocrine and metabolic diseases; 11 remedies (10.4%) for urinary disorders; 6 remedies (5.7%) against hematological, immune system diseases, and cancers; 4 remedies (3.8%) against cardiovascular complaints; 4 remedies (3.8%) for infectious diseases; 1 remedy (0.9%) for gynecological complaints; and 1 remedy (0.9%) for central nervous system disorders were documented.

Urtica dioica L. subsp. *dioica* was the most frequently used plant in the field survey. The leaves or the aerial parts of the plant were reported to be used for various health problems including cancers, hair loss, hemorrhoids, gynecological diseases, bronchitis, prostatitis, rheumatic pain, cough, shortness of breath, common cold, and as a diuretic, while the seeds were used for hemorrhoids and for blood purifying.

The other popular plants in terms of the number of uses were *Mentha × piperita* L., *Malva neglecta* Wallr., and *Rosa canina* L.

The utilization purpose of plants, their local names, and the preparation types described by participants are given in Table 5.

Table 5. List of wild plants used as remedies and foodstuffs and for miscellaneous purposes in selected districts of the Black Sea region.

Family, plant species, herbarium number	Local name	Plant part(s) used ^a	Use (locality)	Preparations and administration way	Recorded literature uses ^b	UV (IUCN)
ADOXACEAE						
<i>Sambucus nigra</i> L. (08KR04)	Şehmelik	Lea	Inflammatory wound (5)	Heated on fire and applied to wound.	Wound (Kültür, 2007)	0.02
AMARANTHACEAE						
<i>Beta vulgaris</i> L. (08KP05)	Pazi	Lea	Foodstuff (3)	Boiled in water, roasted, and used as an ingredient of pastry.	Foodstuff (Akaydin et al., 2013; Akbulut and Bayramoglu, 2014)	0.07
<i>Chenopodium murale</i> L. (08BE06)	Sirken	Aer	Foodstuff (4)	Cooked with onion and tomato paste.	Foodstuff (Sarper et al., 2009)	0.09
<i>Spinacia oleracea</i> L. (08BE07)	Karacelik, Ekşiefelik	Aer	Foodstuff (4)	Cooked with beet.	Not reported	0.08
ANACARDIACEAE						
<i>Rhus coriaria</i> L. (05CR01)	Tetre	Fru Lea	Foodstuff (2) Dyestuff (5)	As spice. Boiled in water to fix the color of woolen cloth	Foodstuff (Uysal et al., 2010; Akyol and Altan, 2013), as dyestuff (Uysal et al., 2010)	0.14
APIACEAE						
<i>Oenanthe</i> sp. (08KR01)	Kazotu	Lea	Foodstuff	Boiled in water and cooked with rice.	Not reported	0.06
<i>Petroselinum crispum</i> (Mill.) A. W. Hill. (06TR01, 08KR02)	Maydonoz	Aer	Diuretic (1,5)	Eaten fresh.	Diuretic (Polat and Satli, 2012; Akaydin et al., 2013)	0.02
ARALIACEAE						
<i>Hedera helix</i> L. (06TR02)	Sarmaşık	Aer	Abscess (1)	Pounded and applied to abscess.	Not reported.	0.02
ASTERACEAE						
<i>Achillea arabica</i> Koitschy (08BE01)	Sarıkelle	Aer	Sedative (4)	Infusion as tea.	Not reported.	0.08
<i>Calendula officinalis</i> L. (08BE02)	Nergis	Lea	Hair loss (4)	Boiled in water and apply to hair.	Not reported.	0.01
<i>Chondrilla juncea</i> L. (05CR02, 08KP01)	Karavuk, Sütlükeni	Lea	Foodstuff (2)	Eaten fresh.	Not reported.	0.06
	Karakavuk, Sütleğen	You	Wart (3)	Latex applied to warts.		
<i>Taraxacum</i> sp. (08BE03)	Yaba pancarı	Aer	Foodstuff (4)	Cooked with onion, bulgur, and minced meat.	Foodstuff (Özüdoğru et al., 2011; Akaydin et al., 2013)	0.08
<i>Tussilago farfara</i> L. (06TR03)	Farofla	Flo, Lea	Expectorant (1)	Infusion as tea.	Expectorant (Demirci and Özhatay, 2012; Çakılcıoğlu et al., 2010)	0.02
BERBERIDACEAE						
<i>Berberis crataegina</i> DC. (05CR03)	Kızamık	Roo	Diuretic (2) Dyestuff (2)	Infusion as tea. Boiled in water and extract is used to fix the color of cloth.	Not reported. Dyestuff (Simsek et al., 2004; Özüdoğru et al., 2011)	0.02
BETULACEAE						
<i>Corylus avellana</i> L. (06TR06)	Fındık	See	Foodstuff (1)	Eaten fresh.	Foodstuff (Özüdoğru et al., 2011)	0.17
BORAGINACEAE						
<i>Trachystemon orientalis</i> (L.) G. Don (06TR04, 08KP02, 08KR03)	Marvovatan, Kabalak, İspit	Who	Foodstuff (1,3,5)	Boiled in water and roasted with garlic.	Foodstuff (Uysal et al., 2010; Kızılarslan and Özhatay, 2012; Akbulut and Bayramoglu, 2014)	0.12

Table 5. (Continued).

BRASSICACEAE						
<i>Brassica oleracea</i> L. (06TR05, 08KP03)	Karalahana, Pancar, Tekilean, Ballık, Kuşekmeği	Lea	Foodstuff (1,3)	Prepared as soup. Roasted as meal. Leaves are stuffed with rice and cooked.	Foodstuff (Kızılarslan and Özhatay, 2012)	0.34
<i>Capsella bursa-pastoris</i> (L.) Medik. (05CR04)	Kuşekmeği, Kuşcynağı	Lea	Foodstuff (2)	Eaten fresh; cooked with onion.	Foodstuff (Simsek et al., 2004; Özüdođru et al., 2011; Kızılarslan and Özhatay, 2012; Akaydin et al., 2013; Akbulut and Bayramoglu, 2014)	0.19
<i>Diplotaxis tenuifolia</i> (L.) DC. (08BE04)	Hardal, Karanamzan	Aer	Foodstuff (4)	Roasted with onion. Cooked with rice, tomato paste, and onion.	Not reported	0.09
<i>Sinapis arvensis</i> L. (05CR05, 08KP04)	Hardal, Sarthardal	Aer	Foodstuff (2,3)	Cooked with rice, tomato paste and onion.	Foodstuff (Simsek et al., 2004; Özgen et al., 2004; Özüdođru et al., 2011; Akaydin et al., 2013; Akan et al., 2013)	0.16
CARYOPHYLLACEAE						
<i>Cerastium perfoliatum</i> L. (05CR06)	Bağpancarı, Gavurpancarı	Lea	Foodstuff (2)	Eaten fresh; cooked with onion.	Not reported	0.06
<i>Stellaria media</i> (L.) Vill. (05CR07, 08BE05, 08KR05)	Gazgursağı, Kazotu, Takıcak	Aer	Foodstuff (2)	Eaten fresh; cooked with onion.	Foodstuff (Kızılarslan and Özhatay, 2012)	0.18
				Boiled in water and cooked with rice.		
		Lea	Foodstuff (4,5)	Boiled in water and used as an ingredient of pastry. Leaves are stuffed and cooked.		
COLCHICACEAE						
<i>Colchicum</i> sp. (06TR015)	Tokalıza	See, Tub	Diuretic, constipation (1)	Daily 1 cup of decoction is consumed as tea.	Not reported	0.03
CONVOLVULACEAE						
<i>Convolvulus arvensis</i> L. (05CR08, 08BE08)	Fasulyeotu, Sarmaşık	Aer	Animal fodder (2,4)	Fresh plant.	Animal fodder (Kızılarslan and Özhatay, 2012; Akan et al., 2013)	0.03
CRASSULACEAE						
<i>Sedum</i> sp. (05CR09)	Sigilotu	Lea	Wart (2)	Fresh leaves are pounded and applied to warts (NB. Due to round shape of the leaves local people thought that it was seed).	Wart (Yesilada et al., 1995; Özdemir and Alpınar, 2015)	0.01
CUCURBITACEAE						
<i>Echallium elaterium</i> (L.) A. Rich. (05CR010)	Kırbostanı, Acıkavun	Fru	Sinusitis (2)	Fruit is squeezed. One drop of juice for each nostril is dropped in once a month.	Sinusitis (Yesilada et al., 1993; Honda et al., 1996; Yesilada et al., 1999; Tuzlacı and Tolon, 2000; Sezik et al., 2001; Ezer and Arısan-Mumcu, 2006; Kültür, 2007; Fakir et al., 2009; Uysal et al., 2010; Ugulu, 2011; Polat and Satlı, 2012; Demirci and Özhatay, 2012; Bulut and Tuzlacı, 2013; Akaydin et al., 2013; Akkol and Altan, 2013)	0.02
CUPRESSACEAE						
<i>Cupressus sempervirens</i> L. (08KR06)	Zelze	Fru	Fungal infection (5)	Fruits are left in a glass of warm water overnight and applied to infected area.	Not reported	0.02

Table 5. (Continued).

<i>Juniperus oxycedrus</i> L. subsp. <i>oxycedrus</i> var. <i>oxycedrus</i> f. <i>oxycedrus</i> (05CR011)	Ardıç, Ardıçüzümü	Fru	Hemorrhoids, diabetes mellitus (2)	Fruits are swallowed.	Hemorrhoids (Sezik et al., 1992; Yesilada et al., 1993; Fujita et al., 1995; Yesilada et al., 1995; Honda et al., 1996; Yesilada et al., 1999; Sezik et al., 2001; Polat and Satil, 2012), diabetes mellitus (Bulut and Tuzlaci, 2013)	0.04
ERICACEAE						
<i>Erica arborea</i> L. (06TR07)	Mazudal, Mazi	Lea	Foodstuff (1)	Roasted as meal.	Not reported	0.05
<i>Rhododendron luteum</i> Sweet (06TR08)	Zifin, Tifin	Aer	Ornamental (1)	-	Not reported	0.02
<i>Rhododendron ponticum</i> L. (06TR09)	Komarçığı	Flo	Foodstuff (1)	Cooked as jam.	Not reported	0.05 (EN)
		Ste	Ethnobotany (1)	Used to cut into wooden spoon and as fuel.	Not reported	
FABACEAE						
<i>Vicia</i> sp. (05CR012)	Yonca	Aer	Animal fodder (2)	Fresh or dried plant.	Animal fodder (Kızılarslan and Özhatay, 2012; Akan et al., 2013; Akaydin et al., 2013)	0.02
FAGACEAE						
<i>Castanea sativa</i> Mill. (06TR010)	Kestane	Fru	Foodstuff (1)	Eaten fresh. Cooked as meal.	Foodstuff (Uysal et al., 2010; Kızılarslan and Özhatay, 2012; Akbulut and Bayramoglu, 2014)	0.12
<i>Quercus infectoria</i> Oliv. subsp. <i>infectoria</i> (06TR011)	Pelit	Fru	Diabetes mellitus (1)	Fruit is heated on the stove and the seed inside is eaten.	Diabetes mellitus (Hayta et al., 2014)	0.04
HYPERICACEAE						
<i>Hypericum perforatum</i> L. (08BE09, 08KR07)	Kanotu, Kantaronotu	Aer	Anemia (4) Urinary tract infection (5)	Daily one cup of decoction is consumed. Infusion as tea.	Not reported. Urinary infections (Kültür, 2007; Akaydin et al., 2013)	0.03
IRIDACEAE						
<i>Crocus ancyrensis</i> (Herb.) Maw (05CR013)	Çiğdem	Tub	Diuretic (2)	Eaten fresh.	Not reported	0.01 (LC)
LAMIACEAE						
<i>Ajuga reptans</i> (L.) Schreb. subsp. <i>clivata</i> (Schreb.) Arcang. (05CR014)	Mayasurotu	Lea	Hemorrhoids (2) Stomachache (2)	Pounded and applied externally to anal region. One teaspoonful of dried leaves eaten daily Infusion as tea. Infusion as tea.	Hemorrhoids (Yesilada et al., 1995; Honda et al., 1996; Demirci and Özhatay, 2012; Kilic and Bagci, 2013), stomachache (Honda et al., 1996)	0.03
<i>Lamium purpureum</i> L. var. <i>purpureum</i> (08BE010)	Ballık	Lea	Foodstuff (4)	Roasted with oil and onion.	Foodstuff (Simsek et al., 2004; Kızılarslan and Özhatay, 2012)	0.05
<i>Mentha x piperita</i> L. (06TR012, 05CR015, 08KP06, 08KR08, 06TR013)	Nane	Lea	Foodstuff (1,2,3,5) Common cold, nausea, respiratory disease (1)	Eaten fresh. Dried leaves added to soup and salad. Infusion as tea. Optionally consumed with lemon.	Common cold (Tezik et al., 2013; Akaydin et al., 2013), nausea (Akaydin et al., 2013), foodstuff (Uysal et al., 2010; Akaydin et al., 2013)	0.46
<i>Thymus siphyleus</i> Boiss. (05CR016)	Kekik	Lea	Shortness of breath, embolism, diabetes mellitus (2) Bronchitis (2)	Infusion as tea. Mixed with honey and eaten.	Diabetes mellitus (Özdemir and Alpınar, 2015), breath problems (Özdemir and Alpınar, 2015)	0.05
<i>Thymus</i> sp. (06TR014)	Kekikotu, Kekik	Lea	Foodstuff (1)	As spice.	Foodstuff (Akaydin et al., 2013)	0.28
MALVACEAE						

Table 5. (Continued).

<i>Malva neglecta</i> Wallr. (06TR016, 05CR017)	Ebegümeçi, Ebegümeçi	Lea	Foodstuff (1) Hemorrhoids (2)	Eaten fresh.		Foodstuff (Özgen et al., 2004; Simsek et al., 2004; Sarper et al., 2009; Akaydin et al., 2013), hemorrhoids (Yeşilada et al., 1995; Simsek et al., 2004; Sarper et al., 2009; Kılıc and Bağcı, 2013)	0.45
				Pounded and applied to anal region. Infusion or decoction as tea.			
<i>Malva sylvestris</i> L. (08BE011)	Ebegümeçi, Kömeç, Ebegümeçi	Aer	Foodstuff (4) Cough (4)	Leaves are roasted with onion.		Cough (Sezik et al., 2001; Kültür, 2007; Fakir et al., 2009), foodstuff (Simsek et al., 2004; Kızırlıslan and Özhataş, 2012; Akaydin et al., 2013)	0.11
				Cooked with onion and rice. Decoction as tea. Daily 1 cup of decoction is drunk.			
<i>Tilia tomentosa</i> Moench (08KR020)	Ihlamur	Lea, Flo	Common cold (5)	Infusion as tea.		Common cold (Tuzlaci and Toton, 2000; Tuzlaci and Aymaz, 2001)	0.04
MORACEAE							
<i>Morus nigra</i> L. (05CR018)	Karadut	Lea	Diabetes mellitus (2)	Decoction as tea.		Diabetes mellitus (Kültür, 2007; Özüdoğru et al., 2011)	0.02
NITRARIACEAE							
<i>Peganum harmala</i> L. (08BE017)	Üzerlikotu	Aer	Tiredness, weakness (4)	Decoction as tea. Daily 1 cup of decoction is drunk.		Not reported	0.01
ORCHIDACEAE							
<i>Orchis</i> sp. (08KR010)	Salep	Tub	Foodstuff (5)	Consumed as hot drink.			0.12
PINACEAE							
<i>Pinus nigra</i> J.F. Arnold subsp. <i>pallasiana</i> (Lamb.) Holmboe var. <i>pallasiana</i> (08KR011)	Kozalak	Gre	Bronchitis (5)	Decoction as tea.		Bronchitis (Fujita et al., 1995; Honda et al., 1996; Polat et al., 2015)	0.02
PLANTAGINACEAE							
<i>Plantago major</i> L. subsp. <i>major</i> (05CR019, 08KP07, 08KR012)	Çımdırçıt, Bağyaprağı, Damarlıot, Sönüşek	Lea	Abscess (2)	Boiled in water and applied to wound.		Wound (Yazıcıoğlu and Tuzlaci, 1995; Yazıcıoğlu and Tuzlaci, 1996; Yeşilada et al., 1999; Ertuğ, 2000; Tuzlaci and Aymaz, 2001; Özgökçe and Özçelik, 2004; Polat and Satıl, 2012; Demirci and Özhataş, 2012; Hayta et al., 2014; Kaval et al., 2014; Polat et al., 2015), abscess (Sezik et al., 1991; Yeşilada et al., 1993; Fujita et al., 1995; Yeşilada et al., 1995; Yeşilada et al., 1999; Sezik et al., 2001; Özgökçe and Özçelik, 2004; Simsek et al., 2004; Ezer and Arisan-Mumcu, 2006; Polat and Satıl, 2012), expectorant (Fakir et al., 2009), pimple (Fakir et al., 2009)	0.12
			Expectorant (3)	Decoction as tea. Kept for a day, one cup drunk daily.			
			Inflammatory wounds, abscess, pimple (5)	Heated on fire or pounded and applied to wound.			
			Jaundice (5)	Infusion as tea.			
			Bronchitis (5)	Leaves are boiled in water and decoction is drunk.			
<i>Plantago</i> sp. (08KP08)	Eşşekmadımağı	Lea	Wound, abscess (3)	Boiled in water and applied to wound or abscess.		Wound (Ertuğ, 2000; Tuzlaci and Aymaz, 2001; Özgökçe and Özçelik, 2004; Polat and Satıl, 2012; Demirci and Özhataş, 2012; Hayta et al., 2014; Kaval et al., 2014; Polat et al., 2015), abscess (Sezik et al., 1991; Yeşilada et al., 1993; Fujita et al., 1995; Yeşilada et al., 1995; Yeşilada et al., 1999; Sezik et al., 2001; Özgökçe and Özçelik, 2004; Simsek et al., 2004; Polat and Satıl, 2012)	0.05
POACEAE							
<i>Cynodon dactylon</i> (L.) Pers. var. <i>dactylon</i> (05CR020)	Ayrık	Roö, Lea	Diabetes mellitus (2)	Decoction as tea.		Not reported	0.02
POLYGONACEAE							

Table 5. (Continued).

<i>Polygonum arenastrum</i> Boreau (08KP09)	Madımak	Aer	Foodstuff (3)	Cooked with onion, mince, tomato paste, bulgur.	Not reported	0.08
<i>Polygonum cognatum</i> Meissn. (05CR021)	Madımak, Madımalak	Lea	Foodstuff (2)	Roasted with onion.	Foodstuff (Simsek et al., 2004; Özgen et al., 2004; Sarper et al., 2009; Özüdoğru et al., 2011)	0.19
<i>Rumex conglomeratus</i> Murray (05CR022, 08BE012)	Efelek, Efelek	Lea	Foodstuff (2)	Leaves are stuffed with rice and cooked. Roasted with onion.	Foodstuff (Uysal et al., 2010; Akaydin et al., 2013)	0.27
		Aer	Foodstuff (4)	Leaves are stuffed with rice and cooked. Cooked with beet.		
RANUNCULACEAE						
<i>Ranunculus ficaria</i> L. subsp. <i>ficariformis</i> Rouy & Foucaud (08KR013)	Katırmalı	Lea	Abscess, wound (5)	Leaves are applied directly to wound.	Not reported	0.01
ROSACEAE						
<i>Cerasus avium</i> (L.) Moench (05CR023, 08KR014)	Kiraz	Sta	Cough, urinary tract infection, diuretic (2,5)	Decoction as tea.	Diuretic (Kültür, 2007; Tetik et al., 2013), urinary tract infections (Akaydin et al., 2013; Akbulut and Bayramoglu, 2014)	0.06
<i>Crataegus tanacetifolia</i> (Poir.) Pers. (05CR024)	Alıç	Fru	Shortness of breath (2)	Eaten fresh.	Not reported	0.02 (LC)
		Lea	Common cold, cough, shortness of breath (2,3)	Decoction as tea. Daily 1 cup of decoction is drunk.	Hemorrhoids (Tuzlaci and Aymaz, 2001; Tetik et al., 2013), diarrhea (Yesilada et al., 1999; Sezik et al., 2001; Kültür, 2007; Akaydin et al., 2013; Akbulut and Bayramoglu, 2014), common cold (Fujita et al., 1995; Yesilada et al., 1999; Kültür, 2007; Bulut and Tuzlaci, 2013; Akbulut and Bayramoglu, 2014), cough and Tuzlaci et al., 1999; Tuzlaci and Tolon, 2000; Sezik et al., 2001; Ezer and Arisan-Mumcu, 2006; Kültür, 2007; Akaydin et al., 2013; Akbulut and Bayramoglu, 2014)	
<i>Cydonia oblonga</i> Mill. (05CR025, 08KP010, 08KR015)	Ayva	Fru	Diarrhea (5)	Stewed.		
<i>Fragaria vesca</i> L. (06TR017)	Hamofia, Yabanıçilek, Dağçileği	See	Hemorrhoids (5)	Seeds kept with garlic in warm water for a week (in the dark), applied as a paste to anus.		
		Fru	Foodstuff (1)	Eaten fresh.	Foodstuff (Özüdoğru et al., 2011)	0.18
<i>Laurocerasus officinalis</i> M. Roem. (06TR018)	Karayemiş, Taflan	Fru	Diabetes mellitus (1)	Eaten fresh.	Diabetes mellitus (Yazıcıoğlu and Tuzlaci, 1995; Yazıcıoğlu and Tuzlaci, 1996; Akbulut and Bayramoglu, 2014), stomachache (Yesilada et al., 1999)	0.04
		Fru	Stomachache (1)	Decoction as tea.		
<i>Prunus × domestica</i> L. (05CR026)	Yönizeriği	Fru	Diabetes mellitus (2)	Eaten fresh.	Not reported	0.02
<i>Pyracantha coccinea</i> M. Roem. (08BE013)	Tavşankulağı	Fru	Foodstuff (4)	Eaten fresh.	Not reported	0.07
<i>Pyrus elaeagnifolia</i> Pall. subsp. <i>elaegnifolia</i> (05CR027)	Ahlat	Fru	Diarrhea (2)	Eaten fresh.	Diarrhea (Fujita et al., 1995; Honda et al., 1996; Sezik et al., 2001)	0.02

Table 5. (Continued).

<i>Rosa canina</i> L. (08KR016, 05CR028)	Kuşburnu	Fru	Hemorrhoids (5)	Boiled in water and condensed to a thick consistency on fire (pekmez) and consumed as tonic.	Foodstuff (Kızıllarslan and Özhatay, 2012; Akbulut and Bayramoglu, 2014), cough (Özgökçe and Özçelik, 2004; Kültür, 2007; Polat and Satli, 2012; Hayta et al., 2014; Kaval et al., 2014), diabetes mellitus (Yesilada et al., 1999; Tuzlaci and Tolon, 2000; Sezik et al., 2001; Çakılcıoğlu, 2010; Polat and Satli, 2012; Akoyol and Altan, 2013; Kılıc and Bağcı, 2013; Hayta et al., 2014; Polat et al., 2015), hemorrhoids (Fujita et al., 1995; Honda et al., 1996; Yesilada et al., 1999; Tuzlaci and Tolon, 2000; Sezik et al., 2001; Tuzlaci and Aymaz, 2001; Özgökçe and Özçelik, 2004; Ezer and Arisan-Mumcu, 2006; Bulut and Tuzlaci, 2013), stomachache (Ertuğ, 2000; Tuzlaci and Tolon, 2000; Sezik et al., 2001; Tuzlaci and Aymaz, 2001; Özgökçe and Özçelik, 2004), bronchitis (Yesilada et al., 1999; Sezik et al., 2001; Tuzlaci and Aymaz, 2001; Simsek et al., 2004; Kültür, 2007; Sarper et al., 2009), ease inhalation (Sarper et al., 2009)	0.37
		Fru	Foodstuff, bronchitis (5) Stomachache (5) Cough, shortness of breath, diabetes mellitus (2)	Eaten fresh. Decoction as tea. Cooked as jam. Decoction as tea.		
<i>Rosa</i> sp. (08BE014)	Böğürtlen	Lea	Oral infection (4)	Leaf is impasted. Once daily applied to wound.	Not reported	0.01
<i>Rubus caesius</i> L. (05CR029, 08BE015)	Böğürtlen	Fru	Oral infection, diabetes mellitus (2)	Eaten fresh or decoction as tea.	Not reported	0.03
		Lea	Oral infection (4)	Leaf is impasted. Once daily applied to wound.		
<i>Rubus idaeus</i> L. (08KR017)	Diken kök	Fru	Foodstuff (5)	Eaten fresh.	Foodstuff (Özgen et al., 2004)	0.13
		Lea	Abscess, wound (5) Diabetes mellitus (5) Anemia (5)	Leaves are chewed and applied to wound. Decoction as tea. Infusion as tea.	Wound (Yesilada et al., 1999; Tuzlaci and Tolon, 2000; Tetik et al., 2013), diabetes mellitus (Ezer and Arisan-Mumcu, 2006; Fakir et al., 2009; Akaydin et al., 2013), anemia (Hayta et al., 2014)	0.06
<i>Sorbus aucuparia</i> L. (05CR030)	İvaz	Fru	Diarrhea (2)	Eaten fresh.	Diarrhea (Kültür, 2007)	0.05
		Lea	Diarrhea, cough (2)	Infusion as tea.		
SANTALACEAE						
<i>Viscum album</i> L. subsp. <i>austriacum</i> (Wiesb.) Vollman (08KR09)	Çampurçu, Öksüotu	Lea	Hypertension, bronchitis, diabetes mellitus (5)	Leaves are cut into pieces. Daily 1–2 cups of decoction are drunk.	Hypertension (Ezer and Arisan-Mumcu, 2006; Kültür, 2007; Fakir et al., 2009), diabetes mellitus (Ezer and Arisan-Mumcu, 2006)	0.07
		Aer	Foodstuff (1)	Consumed as vegetable.		
<i>Smilax excelsa</i> L. (06TR019, 08KR019)	Yabandikeni, Kızılcık	Lea	Pimple, whitlow (5)	Heated on fire and applied to wound.	Not reported	0.20
URTICACEAE						

Table 5. (Continued).

<i>Urtica dioica</i> L. subsp. <i>dioica</i> (06TR020, 05CR031, 08BE016, 08KR021)	Isrgan	Lea	Foodstuff (1)	Roasted as meal.	Bronchitis (Kültür, 2007; Hayta et al., 2014; Polat et al., 2015), cough (Kültür, 2007; Hayta et al., 2014; Polat et al., 2015), hemorrhoids (Yazıcıoğlu and Tuzlacı, 1995; Yesilada et al., 1999; Tuzlacı and Tolon, 2000; Tuzlacı and Aymaz, 2001; Sezik et al., 2001; Simsek et al., 2004; Kültür, 2007; Polat and Satıl, 2012; Akaydin et al., 2013), rheumatism (Sezik et al., 1992; Yesilada et al., 1993; Fujita et al., 1995; Yazıcıoğlu and Tuzlacı, 1995; Yesilada et al., 1999; Tuzlacı and Tolon, 2000; Ertuğ, 2000; Tuzlacı and Aymaz, 2001; Sezik et al., 2001; Simsek et al., 2004; Özgökçe and Özçelik, 2004; Ezer and Arisan-Mumcu, 2006; Kültür, 2007; Uçulu, 2011; Bulut and Tuzlacı, 2013; Kılıc and Bağcı, 2013; Kaval et al., 2014; Akbulut and Bayramoğlu, 2014), cancers (Sezik et al., 1992; Yazıcıoğlu and Tuzlacı, 1995; Yesilada et al., 1999; Tuzlacı and Tolon, 2000; Sezik et al., 2001; Simsek et al., 2004; Özgökçe and Özçelik, 2004; Ezer and Arisan-Mumcu, 2006; Kültür, 2007; Polat and Satıl, 2012; Akaydin et al., 2013; Bulut and Tuzlacı, 2013; Kaval et al., 2014; Akbulut and Bayramoğlu, 2014; Özdemir and Alpınar, 2015), hair loss (Simsek et al., 2004; Ezer and Arisan-Mumcu, 2006; Polat and Satıl, 2012; Akaydin et al., 2013), prostatitis (Tuzlacı and Tolon, 2000; Kültür, 2007), diuretic (Sezik et al., 2001; Fakir et al., 2009), foodstuff (Simsek et al., 2004; Özgen et al., 2004; Kızıllarslan and Özhatay, 2012; Akaydin et al., 2013; Akbulut and Bayramoğlu, 2014), gynecological diseases (Uysal et al., 2010; Tetik et al., 2013), common cold (Kılıc and Bağcı, 2013; Kaval et al., 2014)	0.62
			Cancers (1)	Boiled as meal.		
			Hemorrhoids (2)	Leaf is impasted. Paste is applied between the gauze on anus.		
			Cancers (2)	Prepared as decoction and sitting on the steam.		
			Diuretic (2)	Consumed in all ways.		
			Hemorrhoids (2)	Decoction as tea.		
			Cough, shortness of breath (4)	Consumed mixed with honey.		
			Common cold, rheumatic pain (4)	Decoction as tea. Daily 2 cups of decoction are drunk.		
			Prostatitis (4)	Decoction as tea. Daily 1 cup of decoction is drunk.		
			Diuretic (4)	Plant is impasted and mixed with olive oil. Daily 2 dessert spoons eaten.		
			Cancer (5)	Decoction as tea. Daily 1 cup of decoction is drunk.		
			Lea	Decoction as tea.		
Rheumatic pain (5)	Decoction as tea. Daily 1–2 cups of decoction are drunk.					
Hair loss, blood purifying (5)	Leaves applied to painful area fresh.					
Blood purifying (5)	Decoction as tea.					
See	Consumed with honey or pekmez.					

*1. Trabzon, 2. Çorum-İskilip, 3. Amasya-Kapıkaya, 4. Amasya-Belmebük, 5. Karabük-Yenice

*Plant part(s) used: Fru, Fruit; Lea, Leaf; Aer, Aerial part; You, Young stem; Flo, Flower; Roo, Root; Who, Whole plant; See, Seed; Ste, Stem; Tub, Tuber; Gre, Green cone; Sta, Stalk.

Among the various utilization records, several were found to be quite different from those of previous scientific documents on Turkish folk medicine: *Hedera helix* L. aerial parts for abscess, *Achillea arabica* Kotschy aerial parts as sedative, *Calendula officinalis* L. leaves against hair loss, *Chondrilla juncea* L. young stem for warts, *Berberis crataegina* DC. roots as diuretic, *Cupressus sempervirens* L. fruits to combat fungal infections, *Hypericum perforatum* L. aerial parts for anemia, *Crocus ancyrensis* (Herb.) Maw tubers as diuretic, *Mentha × piperita* L. leaves for respiratory diseases, *Thymus siphyleus* Boiss. leaves for embolism and bronchitis, *Smilax excelsa* L. leaves for skin inflammations such as pimples and whitlow, *Viscum album* L. subsp. *austriacum* (Wiesb.) Vollman leaves for bronchitis and diabetes mellitus, *Plantago major* L. subsp. *major* leaves for jaundice and bronchitis, *Cynodon dactylon* (L.) Pers. var. *dactylon* roots and leaves for diabetes mellitus, *Ranunculus ficaria* L. subsp. *ficariiformis* Rouy & Foucaud leaves for abscess and wound healing, *Cerasus avium* (L.) Moench stalk and *Sorbus aucuparia* L. leaves for cough, *Crataegus tanacetifolia* (Poir.) Pers. fruits and *Cydonia oblonga* Mill. leaves for shortness of breath, *Prunus × domestica* L. fruits for diabetes mellitus, *Rubus caesius* L. leaves and fruits for oral infections and diabetes mellitus, *Rubus sanctus* Schreb. leaves for abscess, *Urtica dioica* L. aerial parts for shortness of breath and blood purifying, and *Peganum*

harmala L. aerial parts for tiredness and weakness.

Based on the findings of the study, 25 taxa out of 72 in total collected from different parts of the Black Sea region were used only as foodstuffs and 34 were used only for therapeutic purposes, while 7 were used as both foodstuffs and for healing. Among the other utilizations, 2 were used as animal fodder only, one was used as an ornamental, one was used as both a foodstuff and dye, one was used for both treatment and dye material, and one was used as both a foodstuff and for wooden spoon making.

In addition, the classification of uses in terms of pharmacological activity is given in Table 6 and *FIC* values for each disease category in order to determine the reliability of the information are given in Table 7.

The present study reports the ethnobotanical use of plants either as a remedy or foodstuff or any other purposes in the Black Sea region. Plant samples were collected and their botanical identifications were fulfilled and the prepared herbarium samples were deposited for future reference. It was found that a total of 72 taxa, with 9 taxa at the level of genus, belong to 35 families. It was also found that 33.0% of the taxa used for ethnobotanical purposes belonged to three families. These families were Rosaceae (14 taxa), Lamiaceae (5 taxa), and Asteraceae (5 taxa). Other taxa (67.0%) belonged to the remaining 32 families.

Table 6. The classification of remedies based on pharmacological activity.

Type of disorder	Principle symptoms
Dermatological disorders	hair loss, painful wound, wound, pimple, wart, inflammatory wound, abscess, whitlow, fungal infection
Central nervous system disorders	sedative
Cardiovascular complaints	embolism, hypertension, blood purifying
Gastro-intestinal disorders	stomachache, constipation, hemorrhoids, nausea, diarrhea
Respiratory system disorders	cough, respiratory disease, common cold, bronchitis, expectorant, shortness of breath, sinusitis
Endocrine and metabolic diseases	diabetes mellitus
Skeletomuscular system disorders	rheumatic pain
Hematological, immune system diseases and cancers	anemia, tiredness and weakness, cancer (without specifying the type)
Urinary disorders	prostatitis, diuretic, urinary tract infection
Gynecological disorders	gynecological diseases
Infection diseases	jaundice, oral infections

Table 7. Informant's consensus factor (*Fic* value) for each disease category.

Category of diseases	Number of taxa	Use citations	F _{ic} value
Dermatological disorders	9	63	0.87
Central nervous system disorders	1	2	1.00
Cardiovascular complaints	3	19	0.88
Gastro-intestinal disorders	9	75	0.89
Respiratory system disorders	15	167	0.91
Endocrine and metabolic diseases	11	99	0.89
Skeletomuscular system diseases	8	60	0.88
Hematological, immune disorders and cancer	4	59	0.94
Urinary disorders	6	65	0.92
Gynecological disorders	1	2	1.00
Infection diseases	9	52	0.84

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