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STUDIES ON THE MEDICINAL PLANTS OF AYVACIK-ÇANAKKALE IN TURKEY

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Abstract

A total of 117 taxa belonging to 42 families were collected from the Ayvacik city of Canakkale. Out of these 43 taxa were observed to be used for medicinal purposes with 54 applications. Lamiaceae dominated the list with 12 taxa followed by Asteraceae with 5 species and Malvaceae, Liliaceae, Urticaceae with 2 species each.The most commonly used taxa are *Origanum majorona*, *O. onites*, *O. vulgare* ssp. *hirtum*, *Salvia fruticosa*, *Sideritis perfoliata*, *Thymus longicaulis* ssp. *chaubardii* var. *chaubardii*, *Lavandula stoechas* ssp. s*toechas, Teucrium polium*, *Urtica dioica*, *Malva sylvestris*, *Portulaca oleracea*, *Urtica pilulifera*, *Tilia rubra* ssp. *caucasica*, *Vitex agnus-castus*, *Vitis vinifera*, *Asparagus acutifolius*, *Foeniculum vulgare*, *Juniperus oxycedrus* ssp. *oxycedrus,* and *Hypericum perforatum*. The taxa recorded here have been mostly used for the treatment of cough (18.6%), stomachache (13.4%), kidney ailments (11.6%), cold, analgesic, diüretic and hemorrhoid (9. 3%), injuries, tonic, abdominal pain, laxative and dyspepsia (6.9%).

Introduction

For a long time plants have played very important role for human life. Nowadays, the use of plants as a way of treatment is still very important for human beings. Studies on the traditional uses of plants is progressively increasing. Medicinal plants are extensively used in many countries for health problems (Ozturk *et al*., 2011a). A renewed interest in ethnobotany has become important in order to establish a proper knowledge of these plants, bringing together information on their ecology, habitat and distribution. Traditional medicinal plants also play an important role in Turkey (Baytop, 1999; Baslar, 200). Several papers have been published lately in this connection (Dogan *et al*., 2004; Simsek *et al*., 2004; Ozgokce & Ozcelik, 2005; Ozturk *et al*., 2011a, Ozturk *et al*., 2011b). However, no investigation has been undertaked on the ethnobotanical aspects of Ayvacik City except for the one carried out by Avcioglu (2002) on Çan situated in the eastern part of Çanakkale. Keeping this in view present study was planned and survey on traditional uses of plants of Ayvacik City of Çanakkale Province was started in 2001 before it is completely lost. This area has experienced migrations of different cultures during the history (Yakupoglu 2004). The area lies in the south of Canakkale Province (Fig. 1) near Kazdagi National Park, located (39° 27’ 20’’– 39° 41’ 48’’ N, 26° 03’ 48’’– 26° 39’30’’ E) in the Asian part of Turkey at an altitude of 322 m above sea level and covers an area of 874 km^2. The mountain range consists of an east-west ridge 60-70 km long, following the north side of the Edremit Gulf (Azatoglu & Azatoglu, 2001). The area experiences an average annual temperature of 14.5^{o}C, average annual rainfall is approximately 655.2mm (Koc, 2001). The aim of this study was to evaluate the relative efficacy of traditional medicinal plants of Ayvacik for the treatment of various diseases.

Materials and methods

Present investigation includes information on the Ayvacik city collected during the programme covering ethnobotanical and ecological studies carried out between the years 2001 and 2009 in the Province of Çanakkale. The plant specimens were collected in the field. These were air dried and deposited at the Canakkale Onsekiz Mart University, Herbarium of Faculty of Science & Arts under the collector numbers as private collection (COMU). The information on the local names, ailments and diseases treated, therapeutic effects, parts of plants used, methods of preparation, methods of administration, doses, duration of the treatment was obtained from local inhabitants. Interviews were conducted on 71 individuals from 22 settlements (Fig. 1), the towns and smaller villages of Ayvacik city and its environs, mainly in and around the rural areas. These included peasants, shepards, elderly people of the village, experienced adults and patients in various places such as tea houses, at their own houses. Most of the informants were more than 40 years old and asked for the source of their knowlegde in order to eliminate information of secondary nature. The information was checked with other areas, neighbouring villages, to verify the accuracy. Along with the collection of the plants from the fields either the informants guided us to or informants brought the dried specimens stored in their houses. Informants were asked how, when, in which cases, both the harmful and useful effects of the used plants.

The collected specimens were identified using ‘Flora of Turkey and the East Aegean Islands’ (Davis, 1965–1985; Davis *et al*., 1988; Guner *et al*., 2000) and Flora Europaea (Tutin *et al*., 1964-1980). Re-evaluation of threat status of taxa ecological and geographical data was collected and compared with the Red List criteria (Ekim, 2000; Anon., 2001). The author abbreviations were scanned in the International Plant Names Index (http://www.ipni.org) and authors of plant names (Brummitt & Powell, 1992).

Results and discussion

A majority of the informants had elementary education and most of them were married. Their main source of income was agrarian activity. Almost all informants were above their mid ages with an average of 46. Age of informants was generally over 31 (85.1%). The percentage of females was 73.1 percent and that of males 26.9 percent. The level of education was literate with an elementary or middle school (92.5.0%) education. Marital status of the informants in general was married (89.5%) and employment status was unemployed (92.5%). Nearly 88.1 percent were residing in town or village, and duration of residence in the survey area was more than 10 years (95.5%). In general 56.73 percent were generally housewives and 22.4 percent were carpetmakers.

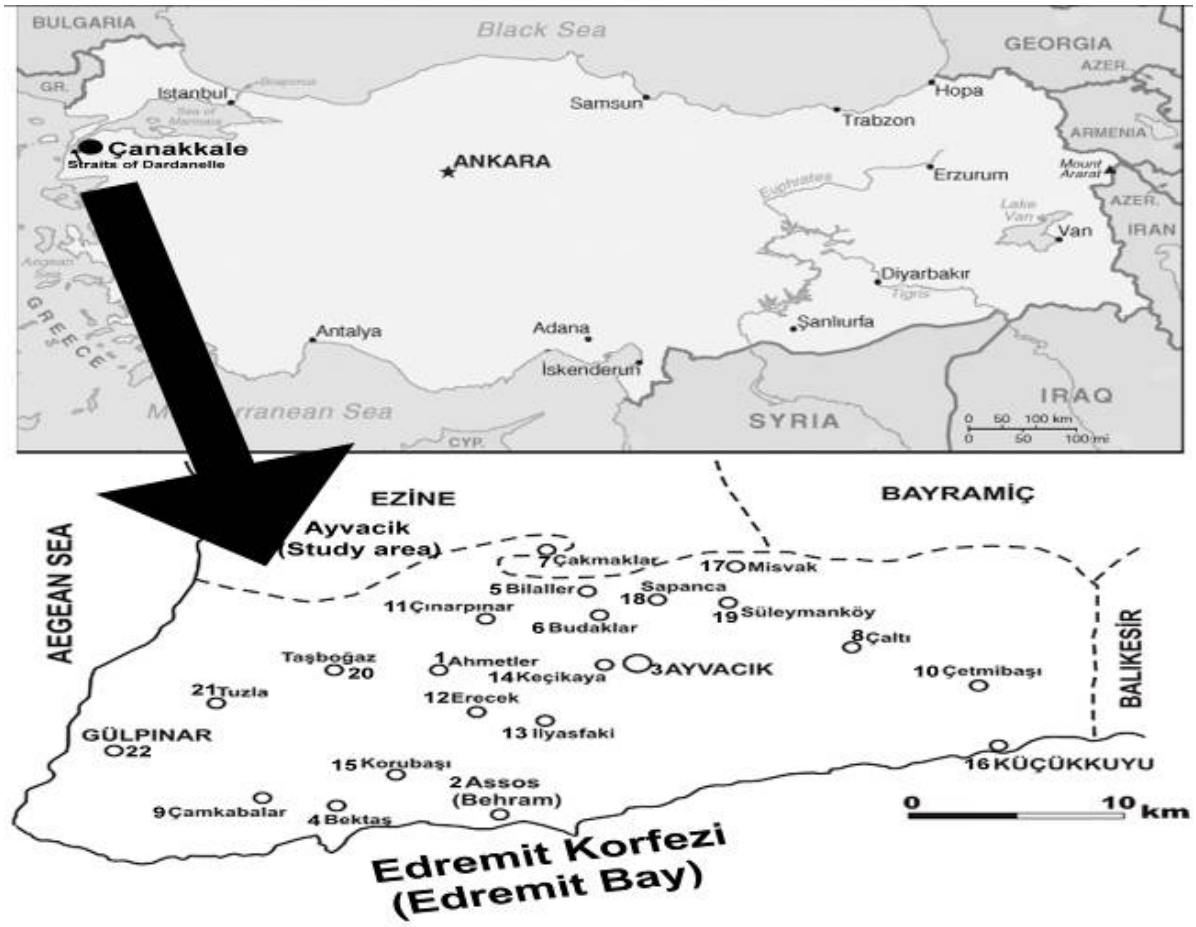

Fig 1. Map of surveyed area and sites of information 1.Ahmetler, 2. Assos, 3.Ayvacik (Centre), 4.Bektaş, 5.Bilaller, 6.Budaklar, 7.Çakmaklar, 8.Çaltı, 9.Çamkabalar, 10.Çetmibaşı, 11.Çınarpınar, 12. Erecek, 13.Ilyasfaki, 14.Keçikaya, 15.Korubaşı, 16.Küçükkuyu, 17.Misvak, 18.Sapanca, 19. Süleymanköy, 20.Taşboğaz, 21.Tuzla, 22.Gülpınar.

The plants used for medicinal purposes in Ayvacik are arranged in alphabetical order together with their botanical names and other relevant information (Table 1). During the survey 117 specimens belonging to 42 families were collected from Ayvacik area. Out of these 43 taxa belonged to 24 families being used for medicinal purposes. The traditional medicinal plants have been mostly used for the treatment of cough (18.6%), stomach-ache(13.4%), kidney ailments (11.6%), cold, analgesic, diuretic and hemorrhoid (9.3%), injuries, tonic, abdominal pain, laxative and dyspepsia (6.9%). Most used families were Lamiaceae with 12 species, followed by Asteraceae with 5 species and Malvaceae, Liliaceae, Urticaceae with 2 species each. Of 60 vernacular names, 12 are mentioned here for the first time. These are Filiz, Mor Papatya, Kargı, Kokarot, Kırkdamar otu, Kırkbacak otu, Çarşır, Arapsaçı, Doğrak, Altın çiçeği, Mayasıl otu, and Mor kekik. Other vernacular names such as Hatmi, Altın otu, Peygamber otu, Baldıran otu, Igde, Ardıc, Karabas otu, Mersi, Mercankosk, Semiz otu, Hindiba, Kekik, Hayıt etc., are very well known in the literature (Baytop, 1999). Local people used different part of the plant species to prepare ethnomedicine. Most frequently used parts were leaves, flowers, aerial parts, seeds, fruits, but roots, flowering stems, and leafy stems were also used in many of the remedies. Decoction and infusion are the methods mostly used for the preparation of the remedies, but locals also used other ingredients, such as sugar, honey or olive oil to prepare the remedies. Among the recorded species *Origanum majorona*, *O.onites*, *O. vulgare* ssp. *hirtum*, *Salvia fruticosa*, *Sideritis perfoliata*, *Thymus longicaulis* ssp. *chaubardii* var. *chaubardii*, *Lavandula stoechas* ssp. s*toechas, Teucrium polium*, *Urtica dioica*, *Malva sylvestris*, *Portulaca oleracea*, *Urtica pilulifera* , *Tilia rubra* ssp. *caucasica*, *Vitex agnus-castus*, *Vitis vinifera*, *Asparagus acutifolius*, *Foeniculum vulgare*, *Juniperus oxycedrus* ssp. *oxycedrus,* and *Hypericum perforatum* are the most popular plants used in the treatment of many ailments. The number of usages of different species were recorded as follows; *Myrtus communis* ssp. *communis* (7 different usages), *Lavandula stoechas* ssp. s*toechas, Hypericum perforatum* and *Urtica dioica* (6 different usages), *Ceterach officinarum* (5 different usages), and *Salvia fruticosa* (4 different usages). Different parts of *Asparagus acutifolius*, *Hypericum perforatum*, and *Myrtus communis* ssp. *communis* species are used for dissimilar ailments. Leaves and flowers *of Lavandula stoechas* ssp. s*toechas* are used as vasodilator and for the treatment of, kidney stones, cardiac disease as decoction and stomache-ache, bronchitis, soporific as infusion. The seeds of *M. communis* ssp. *communis* are used against cardiac deficiency, kidney stones, caries, cough, and hemorrhoids, leaves are used against hemiplegia, balding; leaves and fruits are used as laxative, hemostatic and in urinary diseases as infusion (Ozturk *et al*., 2011b).

Table 1. Medicinal plants of Ayvacik District (Canakkale Province/Turkey)

Plant species (Familiy/ Collector number)	Local name	Plant part used (No. of informants)	Preparation	Ailments treated,therapeutic effect (numbers of the localities referring to the Map)	Administration, dosage, duration of the treatment
Achillea nobilis L. ssp. *spylea* (O.Schwarz) Bois. (Asteraceae/78)	Civanperçemi	Flowers (3)	Decoction	Hemorrhoids (16)	O.Ad., drink one teacup three times a day before meals for 1 month
Alcea pallida Waldst. & Kit. (Malvaceae, 79)	Hatmi	Seeds, flowers (3)	Decoction, poultice	Kidney stone, cough, analgesic (16)	O.Ad., drink one teacup three times a day before meals for 1 week, Ext., applied once a day for 2 days
Anthemis cretica L. ssp. l*eucanthemoides* (Boiss.) Grierson .(Asteraceae/57)	Papatya	Flowers (3)	Infusion	Cough (18)	O.Ad., drink one teacup three times a day meals for 7-8 days week
Asparagus acutifolius L. (Liliaceae/66)	Filiz	Seeds (7)	Infusion	Embolism, arteriosclerosis (13,18)	O.Ad.
		Roots (5)	Decoction	Rheumatism (16,19)	Ext., bathing two times a day for 10 days
Asphodelus aestivus Brot. (Liliaceae/104)	Çiriş otu, çirişlik	Roots, leaves (3)	Crushed	İnjuress (8)	Ext., wrapping, one time a day until recovery
Capparis spinosa L. var. *spinosa* (Capparaceae/81)	Kebere, gebere	Flowers (5)	Decoction	Diuretic, constipation, tonic (1, 13, 16)	O.Ad., drink one teacup two times a day after meal
Centaurea cyanus L.(Asteracae/66)	Peygamber otu	Flowers (3)	Decoction	Uroclepsia (for children) (2)	O.Ad. ., drink one teacup every morning before brekfast for 30 days
Ceterach officinarum DC. (Aspleniaceae/75)	Altın otu, altın tozu.	Leaves, spores (4)	Decoction	Ulcer, abdominal pain,gynecology, kidney stone, kidney inflammations (1,16)	O.Ad. ., drink one teacup every morning before brekfast for 7-8 days
Cistus creticus L (Cistaceae/74)	Mor papatya.	Leaves, flowers (dried) (4)	Decoction	İnjuress (1,16)	Ext., applied once a day until recovery
Conium maculatum L.(Apiaceae/52)	Baldıran otu, yılan otu otu, kargı	Fruits (3)	Decoction	Analgesic (18)	O.Ad.
Dracunculus vulgaris Schott. (Araceae/67)	Kokar ot.	Leaves (Fresh) (3)	Crushed	itching (18)	Ext., applied once a day for 3 days
Elaeagnus angustifolia L. (Elaeagnaceae/85)	İğde	Flowers(4)	Infusion	Cold, asthma (1,16)	O.Ad. ., drink one teacup every morning before brekfast until recovery
Equisetum ramosissimum Desf.(Equisetaceae /86)	Kırkdamarotu, kırkbacak otu.	Aerial parts (3)	Infusion	Asthma, kidney stones (16)	O.Ad. ., drink one teacup every morning before brekfast for 7-8 days
Erica manipuliflora Salisb. (Ericaceae/105)	Funda	Leaves (3)	Infusion	Diuretic, loosing weight (16)	O.Ad. ., drink one teacup every morning
Foeniculum vulgare Miller (Apiaceae/8)	Erezene, çarşır, arap saçı, rezene, doğrak	Seeds (10)	Decoction	Cough, abdominal pain (2,5,6,11,18,20)	O.Ad. ., drink one teacup every morning until recovery
Helichrysum orientale (L.) DC (Asteraceae/76)	Altın Çiçeği	Flowers (4)	Decoction	Loosing weight, gallbladder ailments (9, 16)	O.Ad. ., drink one teacup every morning until recovery
Hypericum perforatum L. *(*Hypericaceae/67)	Kantaron otu	Aerial parts (Dried) (4)	Waiting in Olive oil, 40 days.	İnjuress (8, 16)	Ext., applied once a until recovery
		Leaves (Dried) (4)	Decoction	Stomach ulcer, gynecology, tonsilitis, diuretic, expectorant (1, 7, 16)	O.Ad. ., drink one teacup every morning before brekfast until recovery
Juniperus oxycedrus L. ssp. o*xycedrus (*Cupressaceae/106)	Ardıç	Cone (seeds) (8)	Decoction	Blood depurative (1, 2, 16, 18)	O.Ad. ., drink one teacup every morning before brekfast
Lavandula stoechas L. Ssp. *stoechas (*Lamiaceae/83)	Karabaş Otu	Leaves, Flowers (3)	Decoction	Vasodilator, kidney Stones, cardiac disease (16)	O.Ad. ., drink one teacup every morning until recovery
		Leaves, Flowers + *Mentha pulegium* (4)	Infusion	Stomache ache, bronchitis, soporific (7, 8, 16)	O.Ad. ., drink one teacup every morning for 7-8 days
Laurus nobilis L. (Lauraceae/107)	Defne	Seeds (4)	Fresh (+ honey)	head ache, rheumatism, shortness of breath (2, 16)	O.Ad. , eaten once a day every morning before brekfast
Malva sylvestris L. (Malvaceae/18)	Ebegümeci, Ebem gömeci, develik	Leaves (17)	Decoction	Analgesic, stomache ache (7,11,13,16,17,21)	O.Ad. ., drink one teacup every morning until recovery
Melissa officinalis L. Ssp. *altissima* (Sm.) Arcongeli (Lamiaceae/36)	oğul otu, limon çiçeği	Leaves, flower-buds (8)	Fresh (crushed) +honey	Refreshing, rejuvenate (13, 16, 17, 18)	O.Ad. , eaten once a day every morning before brekfast

Table 1. (Cont'd.).

Plant species (Familiy/ Collector number)	Local name	Plant part used (No. of informants)	Preparation	Ailments treated,therapeutic effect (numbers of the localities referring to the Map)	Administration, dosage, duration of the treatment
Mentha pulegeum L.(Lamiaceae/4)	Filiskin	Leaves, flowers (7)	Infusion	Abdominal pain (7, 8, 16)	O.Ad., drink one teacup two times a day for 3-5 days
Myrtus communis L. Subsp. *Communis* (Myrtaceae/108)	Mersin	Seeds (3) Leaves (3)	Decoction Boiled in water	Cardiac deficiency, kidney stones, caries, cough, hemorrhoids (16) Hemiplegia, balding (16)	O.Ad. , eaten once a day every morning before brekfast for 10- 15 days Ext., dressed once a day until recovery
Origanum majorona L. (Lamiaceae/3)	Mercanköşk.	Leaves (dried) (23)	Boiled in water + honey	bronchital calmative (1, 2, 7, 8, 11, 12, 13, 16, 18)	O.Ad. ., drink one teacup every morning until recovery
Origanum onites L. (Lamiaceae/ 71)	Mercanköşk, kaya kekiği.	Aerial parts (dried) (16)	Decoction	Cough, flu (1, 2, 5, 12, 13, 16, 17, 18)	O.Ad. ., drink one teacup every morning until recovery
Origanum vulgare L. ssp. *hirtum* (Link.) Ietswart. (Lamiaceae/63)	Kekik	Aerial parts (dried) (12)	Decoction	Stomache ache (1,2, 16, 18)	O.Ad. ., drink one teacup every morning until recovery
Portulaca oleracea L. (Portulacaceae/90)	Semizotu,semizlik	Aerial parts (14)	Fresh	Dyspepsia, laxative (2, 5, 12, 13, 16, 18)	O.Ad. , eaten.
Rosa canina L. (Rosaceae/ 80)	Kuşburnu	Fruits (6)	Decoction	Bronchital calmative, diarrhea (1, 2, 16)	O.Ad., drink one teacup two times a day before meal for 3-5 days
Salvia fruticosa Miller (Lamiaceae/44)	Adaçayı, boşalba	Leaves (13)	Boiled in Water + sugar	Antiseptic, dyspepsia, cold, tonsilitis (2, 9, 13, 16, 17, 18, 19)	O.Ad. ., drink one teacup every morning until recovery
Sideritis perfoliata L. (Lamiaceae/85)	Dağ çayı	Aerial parts (8)	Decoction	Cold, flu, cough (16)	O.Ad., drink one teacup two times a day for 8-10 days
Spartium junceum L. (Fabaceae/115)	Katırtırnağı.	Flowering stems (4)	Infusion	Urinary diseases(1, 16)	O.Ad. ., drink one teacup every morning before brekfast until recovery
Taraxacum officinale Weber (Asteraceae/46)	Hindiba.	Leaves (young) (6)	Decoction	Diabetes (3, 13)	O.Ad. ., drink one teacup every morning
Teucrium chamaedrys L. ssp. *lydium* O.Schwarz (Lamiaceae/68)	Mayasıl otu	Aerial parts (3)	Decoction	Hemorrhoids (16)	O.Ad. ., drink one teacup every morning before brekfast until recovery
Teucrium polium L. (Lamiaceae/53)	Kısa Mahmut Otu	Aerial parts (7)	Decoction	Antipyretic, cough, tonic (16)	O.Ad., drink one teacup two times a day before meal until recovery
Thymus longicaulis C. Presl ssp. *chaubardii* (Boiss. & Heldr. ex Reichb. fil) Jalas var. *chaubardii* (Lamiaceae/37)	Kekik	Leaves (16)	Decoction	Enteralgia, stomache ache, diabetes (1, 2, 5, 6, 9, 16, 18, 19)	O.Ad., drink one teacup two times a day before meal
Tilia rubra D.C. ssp. *caucasica* (Rupr.) V.Engler (Tiliaceae/116)	Ihlamur	Flowers (11)	Infusion	Cold, cough (1, 5, 6, 8, 15, 16)	O.Ad., drink one teacup two times a day for 3-5 days
Urtica dioica L. (Urticaceae/12)	Isırgan otu	Aerial parts (13) Seeds (5)	Decoction Decoction	Analgesic, tonic, laxative (2, 4, 5, 12, 18, 19) Cancer, hemorrhoids, prostatitis (2, 4, 5, 12, 18)	O.Ad., drink one teacup a day after meal O.Ad. ., drink one teacup every morning before brekfast
Urtica pilulifera L. (Urticaceae/13)	Isırgan otu	Leaves (12)	Infusion	Stomache ache, dyspepsia (2, 4, 5, 7, 18, 19)	O.Ad. ., drink one teacup every morning after brekfast
Viscum album L. (Loranthaceae/82)	Ökse otu.	Leaves (5)	Decoction	Rheumatism, forgetfulness, galactagogue (16)	O.Ad.
Vitex agnus-castus L. (Verbenaceae/6)	Hayıt, ayıt	Flowering and leafy stems(10)	Decoction	Menstrual regulari (2, 4, 5, 7, 8, 18)	O.Ad.
Vitis vinifera L. (Vitaceae/110)	Asma	Fruits (dried) (8)	Decoction	Diuretic, laxative, tonic, sedative (1, 7, 8, 16)	O.Ad., drink 2-3 teacups a day after meal
Ziziphora capitata L. (Lamiaceae/77)	Mor kekik	Flowering and leafy stems (6)	Infusion	Stomache ache (1, 16)	O.Ad., drink one teacup two times a day before meal until recovery

O.Ad., oral administration; Ext., External use.

Some harmfull effects have also been observed during these treatments. The immature flowers of *Lavandula stoechas* ssp. s*toechas* have been used against cholera during the rule of Ottoman Empire and for analgesic, antiseptic, injuries, sedative (for epilepsi and asthma) as infusion, but an overdose of this taxon is harmfull (Baytop, 1999). Aerial parts of *Hypericum perforatum* are used as decoction to treat injuries as externally and leaves are used for stomach ulcer, in gynecology, tonsilitis, diuretic, and expectorant. The leaves are used against stomach ulcer, gynecology, tonsilitis, diuretic and expectorant and flowers are used laxative and antispasmodic as infusion (Baytop, 1999). Aerial parts of *H. perforatum* are also used as infusion for kidney stones, urinery diseases, diabetes, antihypertensive, cold, stomachache, enteritis, eczema, antifungal, cardiac diseases, arteriosclerosis as decoction and used for asthma, insomnia, uroclepsia (for babies), gall bladder ailments, facial paralysis, gastritis, chest diseases, internal hemorrhage, bronchitis, anti-inflammatory, tuberculosis, pharyngitis and flowers used for injuries, burns, cuts, herpes labialis, lip chap as salve (Kultur, 2007). Aerial parts of *Urtica dioica* are used for analgesic, tonic, laxative as decoction and seeds are used for cancer, hemorrhoids, prostatitis as decoction. The roots and leaves of *U. dioica* are used as depurative, diuretic, and appetizer as infusion (Baytop, 1999). Leaves of *U. dioica* used for abdominal pains, diuretic and allergies as decoction (Pieroni *et al*., 2005). Roots of *Urtica dioica* used for nephritis, stomach ache, baldness, prostatitis, urea as decoction and aerial parts used for rheumatism, prostatitis, hemorrhoids, antihypertensive, embolism, cancer, nephritis, stomach ache, as decoction (Kultur, 2007). Leaves and spores of *Ceterach officinarum* are used for ulcer, abdominal pain,gynecology, kidney stone, kidney inflammations as decoction. Aerial parts of *C. officinarum* are used as infusion in diuretic and as laxative as well as externally for hemorrhoids (Baytop, 1999). Leaves of *Origanum majorona* are used for bronchital calmative, and stems as sedative or diaphoretic (Ozgokce & Ozcelik, 2005). Aerial parts of *Origanum vulgare* ssp. *hirtum* are used for stomache ache and also used as carminative, digestive, diuretic, nervine, pectoral, tonic, cancer, catarrh, common cold, rheumatism, toothache, tumor (Johnson, 2000). Leaves of *Salvia fruticosa* are used as antiseptic, dyspepsia, cold, tonsilitis. Leafy and flowered stems of *S. fruticosa* are used as carminative, stomache ache, diuretic, but an overdose is harmfull (Baytop, 1999). Leaves and stems of *S. fruticosa* are used for cold, bronchitis, tonsillitis, carminative and digestive and stomach-ache as decoction (Pieroni *et al*., 2005). Leaves and flowers of *Mentha pulegium* are used for abdominal pain and aerial parts are used for gall bladder disorders (Ozgokce & Ozcelik, 2005). *Thymus longicaulis* ssp. *chaubardii* var. *chaubardii*, *Salvia fruticosa*, *Urtica dioica*, *Hypericum perforatum*, *Vitis vinifera*, and *Asparagus acutifolius* are commonly distributed in the area. Leaves of *Thymus longicaulis* var. *chaubardii* are used as decoction as enteralgia, stomache ache, diabetes. Fruits of *Vitis vinifera* are used for diuretic, laxative, tonic, sedative as decoction. Fruits of *V. vinifera* are used as decoction against diarrhea and tonic and also leaves are used as infusion for constipation and hemostatic (Baytop, 1999). Concentrated juice of fruits of *V. vinifera* is used for cough, bronchitis, as blood depurative and in rheumatisma (Pieroni *et al*., 2005). Seeds of *Asparagus acutifolius* are used against embolism and arteriosclerosis and roots are used against rheumatism. Leaves and flower-buds of *Melissa officinalis* ssp. *altissima* are used for refreshing, rejuvenate and aerial parts are also used for asthma, children's ailments, colic, common cold, headache, tootache, migraine (Johnson, 2000). The roots of *Asparagus acutifolius* are used as infusion or decoction as diuretic and laxative (Baytop, 1999). Leaves of *Viscum album* are used for rheumatism, forgetfulness, galactagogue and aerial parts are also used for cancer, depression, tumor, tension, hypertension (Johnson, 2000).

Inspite of narrow distribution of *M. communis* ssp. *communis*, *Lavandula stoechas* ssp. s*toechas*, and *Ceterach officinarum* in the research area, a common usage is observed. In a number of cases, several species of a genus are known under the same vernacular name. For instance: *Origanum majorona* and *O. onites* are used under the same name mercankösk. Similarly *Urtica dioica* and *U. pilulifera* are used as ısırgan otu.

Use of plants on the basis of different organs are 28% leaves, 17% fruit, 16% stems, 15% aerial parts, 10% flowers and 10% roots, 3% cone and 1% seeds. Leaves are mostly used in the plants. It was observed that some of the plants are collected for commercial purposes by local people: *Foeniculum vulgare*, *Hypericum perforatum*, *Origanum vulgare*, *Origanum onites, Salvia fruticosa*, *Thymus longicaulis* ssp. *chaubardii* var. *chaubardii*, *Urtica dioica*, and *U.* p*ilulifera*.

References

Anonymous. 2001. The IUCN Red List categories and criteria, version 3.1. [WWW document]. URL.http://www.iucn.org/themes/ssc/redlists/RLcats2001booklet.html.

Azatoglu, S. and I. Azatoglu. 2001. Kazdagi in past/present. Mengitan Publication and packing industry, Izmir.

Baser, K.H.C. 2002. Aromatic biodiversity among the flowering plant taxa of Turkey. *Pure Appl. Chem*., 74(4): 527-545.

Baser, K.H.C. 2009. Most widely traded plant drugs of Turkey. In: *Traditional and alternative medicine research & policy perspectives*. (Eds.): Tuley De Silva. Daya Publishing House, Delhi, India; pp. 443-454.

Baytop, T. 1997. Turkce bitki adları sozlugu. Ataturk Kultur, Dil ve Tarih Yuksek Kurumu-Turk Dil Kurumu yayınları: 578, Ankara.

Baytop, T. 1999. Therapy with medicinal plants in Turkey past and present, 2nd ed. Nobel Tıp Kitabevi, Istanbul.

Brummit, R.K. and C.E. Powel. 1992. *Authors of Plant Names*. London, UK: Royal Botanic Garden, Kew.

Davis, P.H. 1965-1985. Flora of Turkey and the East Aegean Islands, vols. 1-9. Edinburg University Press, Edinburg.

Davis, P.H., R.R. Mill and K. Tan. 1988. Flora of Turkey and the East Aegean Islands (Supplement), Vol. 10. Edinburg University Press, Edinburg.

Dogan,Y., S. Baslar, M. Ozturk and H. Mert. 2008a. Plants used as dye sources. In: *Underutilized* and *Underexplored Horticultural Crops*, (Ed.): K.V. Peter. Vol. 3. New India Publishing Agency, New Delhi, India, pp. 109-145.

Ekim, T., M. Koyuncu, M. Vural, H. Duman, Z. Aytac and N. Adıguzel. 2000. *Red Data Book of Turkish Plants*. Van, Turkey: Turkish Association for the Conservation of Nature and Van Centennial University.

Guner, A., N. Ozhatay, T. Ekim and K.H.C. Baser. 2000. Flora of Turkey and the East Aegean Islands (Supplement II), Vol. 11. Edinburg University Press,Edinburg.

Johnson, T. 2000. Ethnobotany Desk Reference CRC Press LLC. Corparate Blvd., N.W., Boca Raton, Florida. 33431.

Koc, T. 2001. Climate and environment in Northwest Anatolia (synoptic, statistics and aplication). Cantay Press. Istanbul, Turkey.

Kultur, S. 2007. Medicinal plants used in Kırklareli Province (Turkey). *Journal of Ethnopharmacology*, (in press).

Mert, T., E. Akcicek, S. Celik, I. Uysal and M. Ozturk. 2008b. Ethnoecology of poisonous plants from West Anatolia in Turkey. *European Journal of Scientific Research*, 19(4): 222-228.

Nakipoglu, M. 1997. Kazdaglari'nin Tibbi ve Aromatik Bitkileri. Yerlesim ve Çevre Sorunları : Canakkale Ili, Bildirileri, 9-13 Eylül 1996, Izmir.

Ozgokce, F. and H. Ozcelik. 2005. Ethnobotanical aspects of some taxa in East Anatolia, Turkey. *Eco. Bot*., 58(4): 697-704.

Ozturk, M., A. Guvensen, E. Akcicek and R. Dalgic. 2010. Deli Bal. Ballı Yazılar (Nilhan Aras) Metro Kultur Yayınları, *Gastro Dizisi* IV, pp. 95-103.

Ozturk, M., S. Gucel, A. Celik, T. Mert, E. Akcicek and E. Altundag. 2011b. *Myrtus communis* in phytotheraphy in the mediterranean. In: *Genetic resources, chromosome engineering and crop improvement: Medicinal crops*, (Ed.): R. Singh, Chapter 8, Vol. 6, CRC Press, LLC, Taylor & Francis, (In Press).

Ozturk, M., S. Gucel, E. Altundag, C. Gork, T. Mert, G. Gork and E. Akcicek. 2011a. An overview of the medicinal plants of Turkey. In: *Genetic resources, chromosome engineering and crop improvement: Medicinal crops*, (Ed.): R. Singh, Chapter 8, Vol. 6, CRC Press, LLC, Taylor & Francis, (In Press).

Pieroni, A., H. Muenz, M. Akbulut, K.H.C. Baser and C. Durmuskahya. 2005. Traditional phytotherapy and trans-cultural pharmacy among Turkis migrants living in Cologne, Germany. *Journal of Ethnopharmacology*, 102: 69-88.

Sadıkoglu, N. and K. Alpinar. 2004. An evaluation of Turkish ethnobotanical studies (1928-1997). *Journal of Faculty of Pharmacy Istanbul*, 37: 61-66.

Simsek, I., F. Aytekin, E. Yesilada and S. Yıldırımlı. 2004. An ethnobotanical survey of the Beypazarı, Ayas and Gudul district towns of Ankara province (Turkey). *Economic Botany*, 58: 705-720.

Tutin, T.G., V.H. Heywood, N.A. Burges, D.H. Valentine, S.M. Walters and D.A. Webb. 1964-1980. *Flora Europaea*, vols 1-5. Cambridge, UK: Cambridge Univ. Press.

Uysal, I. 2010. An overview of plant diversity of Kazdagi (Mt. Ida) Forest National Park, Turkey". *Journal of Environmental Biology*, 31: 141-147.

Uysal, I., A. Guvensen, S. Celik, H. Ozcelik and M. Ozturk. 2008. The post-fire plant diversity of Gallipoli National Park (TURKEY). *The Malaysian Forester*, 71: 39-55.

Uysal, I., S. Celik, N. Avcioglu, E. Karabacak and M. Ozturk. 2006. Ethnobotany of Çan (Çanakkale) from Turkey. In: Plant, fungal and habitat diversity investigation and conservation-Proceedings of IV Balkan Botanical Congress-Sofia (Ed.): Daniella Ivanova, pp. 632-637.

Yesilada, E., E. Sezik, G. Honda, Y. Takaishi, Y. Takeda and T. Tanaka. 1999. Traditional medicine in Turkey. IX. Folk medicine in North-West Anatolia. *Journal of Ethnopharmacology*, 64: 195-210.

Yesilada, E., G. Honda, E. Sezik, M. Tabata, K. Goto and Y. Ikeshiro. 1993. Traditional medicine in Turkey. IV. Folk medicine in the Mediterranean subdivision. *Journal of Ethnopharmacology*, 39: 31-38.

Yucel, E. and M. Ozturk. 2000. Studies on the autecology of *Origanum spyleum*."*Plant Life in South-West and Central Asia*, Vth Intern. Symp.", pp. 201-204, Tashkent, Uzbekistan.

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