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RESEARCH PAPER

The preliminary ethnobotanical study of medicinal plants in Uşak (Turkey)

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ABSTRACT

This study was made to reveal the plants used as traditional folk medicine in Uşak in 2013. The specimens of the plants used as folk remedies have been collected and the information about the local names, the part(s) used, the ailments treated, the therapeutic effect, the preparation, the methods of administration, and the duration of treatment were recorded. The plant specimens are kept in the Herbarium of the Faculty of Pharmacy, Marmara University. As a result of identification of the plant specimens, 38 species, used as a traditional folk medicine in Uşak, have been determined. According to the majority of the plants which have similar usages, the plants were mostly used for gastrointestinal system diseases, respiratory system diseases and urinary system diseases.

Key Words: Ethnobotany; Folk medicinal plants; Uşak; Turkey.

Introduction

Nowadays around the world, treatment with traditional folk medicine still maintains its importance especially when modern health services become inadequate. Almost 80% of general population in the world use plants to treat several illnesses (1). Turkey is located in a region where the influences of many civilizations can be seen in terms historical background. That's why, it has a rich traditional culture (2). Traditional folk medicine creates an important part of this culture. At the same time, our country has a rich flora. In West Anatolia where our research area is situated in, a lot of ethnobotanical researches (3-33) were conducted and a study related to Uşak was found out.

Uşak is a city in the interior part of the Aegean Region in Turkey (Fig. 1). The city has a population of 187.886 (2012) and it is the central district of Uşak Province. The city was previously known by its Greek name of Ousakeion. It is bordered by Kütahya to the north, Afyon to the east, Denizli to the south and Manisa to the west. Northern and eastern parts of Uşak is surrounded by mountains, and there are lowlands and rolling lands in the southern and western parts of the city. Mount Elma is located in the north of central district.

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There are wide tablelands and grasslands on the mountain reaching up to 1805 m. Another important elevation points of the city are Mount Ahır (1915 m), Tahtalı Hill (1644 m) and Kocatepe (1298) (http://www.yerelnet.org.tr/ the last accessed date 10.10.2016).

Figure 1: Map of Uşak

Material and methods

Ethnobotanical data was collected by means of open and semi-structured interviews (34-36) with local people. The interviews took the form of general conversations and a strict questionnaire (Appendix). We asked the participants to show us methods for preparing the medicinal plants that they used, and we usually collected the plants with local people. In some cases, certain plants were collected beforehand from the same locality that the interviews were made.

During the interviews, various information was collected (e.g. local names, part(s) of the plants used, ailments treated, therapeutic effect, methods of preparation and methods of administration) from experienced adults and patients. In addition, any harmful effects of the folk-medicine, if declared, were also recorded. The plant specimens are kept in the Herbarium of the Faculty of Pharmacy, Marmara University (MARE). The "Flora of Turkey and the East Aegean Islands" (37, 38) were mainly used for the identification of the plants.

Results and discussion

The plants used for medicinal purposes in Uşak are presented in Table 1 alphabetically arranged according to their botanical names with the relevant information. Taxonomical changes according to the Plant List (http://www. theplantlist.org/ the last accessed date 08.11.2016) are shown in square brackets in Table 1 together with their popular scientific names. Thirty-eight medicinal plant species, belonging to 25 families, were recorded in the research area. Of these, 26 species were wild, and 12 species were cultivated plants. The most common medicinal plant families were Lamiaceae (15%) and Rosaceae (10%).

During the study, a total of 51 remedies were recorded. Most remedies were taken internally (90%).

The plant parts most commonly used for the preparation of remedies were leaves (25.5%), aerial parts (21.6%) and fruits (15.6 %).

The main preparation methods were infusion and decoction.

According to the interviewees, *Ecballium elaterium*, should be handled with care since an over-dose could prove dangerous.

We compared our results with other comprehensive ethnobotanical studies on folk medicinal plants which have already been carried out in the neighbouring areas (2, 4, 5, 16-18, 20, 21, 32, 33) and presented in Table 1. According to this table, *Rosa canina* recorded in eight localities is the most common herbal medicinal plant in Uşak and its surroundings.

According to the majority of the plants which have similar usage, the plants are mostly used for gastrointestinal system diseases, respiratory system diseases and urinary system diseases.

Some of medicinal plants have been recorded as wild edible plants in our study area. They include: *Malva neglecta, Crataegus szovitsii, Cydonia oblonga, Juglans regia*, *Rumex crispus* and *Urtica urens*. *Peganum harmala* is used to not only medicinal but also amulet which is very common usages. In addition, *Herniaria hirsuta* L. (MARE 15018) is used as soap in Uşak (Fig. 2).

Figure 2: *Hernaria hirsuta* used as soap

Table 1 Folk medicinal plants of Uşak (Turkey)

Botanical name, family and specimen number	Local name	Plant part used	Ailments treated/ Therapeutic effect	Preparations/ Administration	Similar usage in literature
Alcea rosea L.[a] (Malvaceae, MARE 15023)	Peygamber övenderesi	Flowers	Kidney stones	Infusion, int.	(21)[b]
Amygdalus communis L.[a] [***Prunus dulcis*** (Mill.)D.A.Webb.] (Rosaceae, MARE 15025)	Acı badem	Seeds	Diabetes	Crushed, int.	Diabetes (20)
Anethum graveolens L.[a] (Apiaceae, MARE 15005)	Dere otu	Aerial parts	Stomach diseases	Cooked, eaten	(20)[b]
Avena sterilis L. subsp. ***sterilis***[a] (Poaceae, MARE 14994)	Yulaf	Aerial parts	Rheumatism	Crushed, ext.	
Capparis ovata Desf. [***Capparis spinosa*** L.] (Capparaceae, MARE 15020)	Kapari	Fruits	Rheumatism	—, eaten	(2,18)[b]
Carduus nutans L. (Asteraceae, MARE 14990)	Gül dikeni	Seeds	Liver diseases	Crushed then infusion, int.	(21)[b]
Convolvulus arvensis L. (Convolvulaceae, MARE 14991)	Tosbağa otu	Flowers & leaves	Wound	Crushed (+flour), ext.	(2, 17,18,21)[b]
Crataegus szovitsii Pojark. [***Crataegus orientalis*** Pall. ex M.Bieb. subsp. ***szovitsii*** (Pojark.) K.L. Chr.] (Rosaceae, MARE 15006)	Alıç	Flowers & leaves	Cardiovascular system diseases	Infusion, int.	
Cupressus sempervirens L.[a] (Cupressaceae, MARE 15008)	Selvi kozalağı	Cones	Shortness of breath	Decoction, int.	(20,21)[b]
Cydonia oblonga Miller (Rosaceae, MARE 15012)	Ayva	Leaves Leaves Fruits	Cough Stomach diseases Cardiovascular system diseases	Decoction, int. Decoction, int. —, eaten	Cough (2, 16,17)[b]
Cynodon dactylon (L.) Pers. var. ***villosus*** Regel (Poaceae, MARE 14986)	Ayrık kökü	Roots Roots	Diuretic Kidney stones	Decoction, int. Decoction, int.	Kidney stones (16,17,18)
Ecballium elaterium (L.)A. Rich. (Cucurbitaceae, MARE 15014)	Acı bostan	Roots Fruits juice	Hemorrhoids Sinusitis	Grated , int. Dropped into the nostrils	Hemorrhoids (17) Sinusitis (2, 4,18, 20, 21,33)
Elaeagnus angustifolia L.[a] (Elaeagnaceae, MARE 14996)	İğde	Leaves	Urinary system diseases	Decoction, int.	Urinary system diseases(16,20,32) (18)[b]
Equisetum ramosissimum Desf. (Equisetaceae, MARE 15000)	Kırkkilit otu	Aerial parts Aerial parts	Kidney Stones Rheumatism	Infusion, int. Infusion, int.	(2,5,18)[b]
Hyoscyamus niger L. (Solanaceae, MARE 15015)	Kulak otu	Seeds	Earache	Seeds are spread on dying embers and ears are exposed to fum, ext.	Earache (4,32) (20)[b]
Hypericum perforatum L. (Hypericaceae, MARE 14997)	Sarı kantaron	Flowering branches Flowering branches	Sedative Stomach diseases	Infusion, int. Infusion, int.	Stomach diseases (2,4, 5,18, 20)
Juglans regia L. (Juglandaceae, MARE 15003)	Ceviz	Seeds	Cardiovascular system diseases	Kept into the water for one night, int.	Cardiovascular system diseases (20) (2,4,5,16,17,32)[b]
Lactuca serriola L. (Asteraceae, MARE 15022)	Eşek marulu	Leaves Leaves	Hemorrhoids Cardiovascular system diseases	Infusion, int. Infusion, int.	(5,18)[b]
Malva neglecta Wallr. (Malvaceae, MARE 14988)	Ebe gümeci	Leaves Leaves	Cough Abdominal pain	Maseration into the water for one night, int. Crushed, wrapped in a cloth, ext.	Abdominal pain (2,32) (17,18,20)[b]

Botanical name, family and specimen number	Local name	Plant part used	Ailments treated/ Therapeutic effect	Preparations/ Administration	Similar usage in literature
Mentha longifolia (L.) Hudson subsp. ***typhoides*** (Briq.)Harley var. ***typhoides*** (Lamiaceae, MARE 14998)	Su nanesi	Aerial parts	Sprain	Crushed (+onion, tarhana), wrapped in a cloth, ext.	(2,5,18, 21, 32)[b]
Mentha x ***piperita*** L. [a] (Lamiaceae, MARE 15004)	Nane	Leaves Leaves	Cold Sore throat	Decoction, int. Decoction, int.	Cold (16) (20)[b]
Morus alba L. [a] (Moraceae, MARE 15013)	Dut	Fruits Fruits	Anaemia Constipation	—, eaten —, eaten	(18)[b]
Olea europaea L. var. ***europaea*** [a] (Oleaceae, MARE 15010)	Zeytin	Leaves Leaves	Diabetes Antihypertensive	Decoction, int. Decoction, int.	Diabetes (2,20) Antihypertensive (2,20)
Papaver rhoeas L. (Papaveraceae, MARE 15017)	Gelincik	Flowers Flowers	Cold Expectorant	Infusion, int. Infusion, int.	Expectorant (4,16) (18,33)[b]
Peganum harmala L. (Zygophyllaceae, MARE 15021)	Üzerlik	Seeds Seeds	Eye diseases Rheumatism	Seeds are spread on dying embers then added water, ext. Seeds are spread on dying embers then added water, ext.	Rheumatism (17) (2,18,21,32)[b]
Plumbago europaea L. (Plumbaginaceae, MARE 14993)	Soyulgan otu	Leaves	Eczema	Crushed (+*Lawsonia inermis*), ext.	
Rosa canina L. (Rosaceae, MARE 14989)	Öküzgötü	Fruits	Cold	Decoction, int.	Cold (2,4,20,21) (5,17,18,32)[b]
Rosmarinus officinalis L. [a] (Lamiaceae, MARE 15011)	Biberiye	Aerial parts Aerial parts	Sedative Stomach diseases	Infusion, int. Infusion, int.	Stomach diseases (20)
Rumex crispus L. (Polygonaceae, MARE 15016)	İlabada	Fruits Fruits	Urinary system diseases Diuretic	Decoction, int. Decoction, int.	(5,17,21)[b]
Salvia tomentosa Miller (Lamiaceae, MARE 14992)	Şabla	Aerial parts	Sore throat	Infusion, int.	Sore throat (20,21) (5,16, 17,18, 32)[b]
Teucrium polium L. (Lamiaceae, MARE 15001)	Topalan otu	Aerial parts Aerial parts	Stomach diseases Abdominal pain	Infusion, int. Infusion, int.	Abdominal pain (18,32) (2,5)[b]
Thymbra spicata L. var. ***spicata*** (Lamiaceae, MARE 15007)	Kekik	Aerial parts Aerial parts	Stomach diseases Respiratory system diseases	Infusion, int. Infusion, int.	Respiratory system diseases (20) (2,21)[b]
Tilia platyphyllos Scop. [a] (Tiliaceae, MARE 15024)	Ihlamur	Flowers and bracts Flowers and bracts	Cold Sedative	Infusion, int. Decoction, int.	Cold (2)
Tribulus terrestris L. (Zygophyllaceae, MARE 15019)	Demir pıtırağı	Roots	Stomach diseases	Decoction, int.	Stomach diseases (21) (2,18,20)[b]
Urtica urens L. (Urticaceae, MARE 14987)	Isırgan	Leaves	Respiratory system diseases	Infusion, int.	Respiratory system diseases (32) (2,5,20)[b]
Verbascum lasianthum Boiss. ex Bentham (Scrophulariaceae, MARE 14985)	Sığırkuyruğu	Flowers	Hemorrhoids	Infusion (+*Viola* sp.), int., for 1 month	
Vicia faba L.[a] (Fabaceae, MARE 14995)	Bakla	Leaves	Eye diseasess	—, eaten	(20, 21)[b]
Viscum album L. subsp. ***album*** [***Viscum album*** L.] (Loranthaceae, MARE 14999)	Buç, Ökse otu	Whole plant Whole plant	Diabetes Antihypertensive	Maseration into the water, int. Maseration into the water, int.	Diabetes (17,18) (2,16)[b]

Int.; Internal use. Ext.; External use. [a] Cultivated plant [b] Different usage.

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Appendix 1

Questionnaire Form

1. Name and surname of the participant.
2. Age and sex of the participant.
3. Telephone and address of the participant.
4. Educational level of the participant.
5. Date of interview.
6. Place of residence of the participant.
7. Duration of residence of the participant.
8. Local name of the plant.
9. Human health or Animal health.
10. Ailments treated /therapeutic effect.
11. Plant part used.
12. Preparation.
13. Administration.
14. Dosage.
15. Duration of treatment.
16. Age group of patients (baby, child, adult).
17. Side effects.
18. Different ethnobotanical use.

Uşak yöresinin tıbbi bitkileri hakkında etnobotanik ön bir araştırma

ÖZ

Bu çalışma, Uşak yöresinde 2013 yılında geleneksel halk ilacı olarak kullanılan bitkilerini saptamak amacıyla yapılmıştır. Halk ilacı olarak kullanılan bitki örnekleri toplanmış; bitkilerin yöresel adları, kullanılan kısımları, tedavideki kullanılışları, tedavideki etkisi, hazırlanışı, uygulama yöntemi ve tedavi süresi ile ilgili bilgiler kayıt edilmiştir. Bitki örnekleri Marmara Üniversitesi Eczacılık Fakültesi Herbaryumu'nda saklanmaktadır. Bitki örneklerinin teşhisleri sonucunda, 38 türün Uşak'da geleneksel halk ilacı olarak kullanıldığı saptanmıştır. Görüşme yapılan kişilerin çoğunluğuna göre, bitkiler en çok mide-barsak sistemi şikayetlerinde, solunum yolları ve üriner sistem rahatsızlıklarında kullanılmaktadır.

Anahtar Kelimeler: Etnobotanik; Tıbbi bitkiler; Uşak; Türkiye.

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