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Differences in the Traditional Use of Wild Plants between Rural and Urban Areas: The Sample of Adana

Sefa Akbulut

Karadeniz Technical University, Faculty of Forestry, Department of Forest Botany, 61080 Trabzon, Turkey
Telephone: +90 462 377 2841, Fax: +90 462 325 7499, E-mail: sakbulut@ktu.edu.tr

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ABSTRACT This study deals with reflections of sociocultural differences between the urban and rural settlers in Adana, on their use of medicinal plants. For this purpose, a face-to-face survey was employed so as to determine the plants used by the two groups from different sociocultural backgrounds and their intended use. A field study was carried first, in June 2013 and then in November 2014. The researcher interviewed 247 persons, out of whom 150 were from the country while 97 were from central Adana. The 10 most frequently used plants in ethnobotanical terms, as well as the most sold at herb shops were determined. At the end of the study, the 63 most local plants taxa used in ethnobotanical terms under 37 families were determined. *Mentha pulegium*, *Tilia tomentosa* and *Salvia cryptantha* are the most popular plants among herbal clients. The locals prefer plants like, *Juniperus drupacea*, *Rumex crispus*, and *Sideritis perfoliata* as medication for coughing, digestive disorders, and urological and gynaecological diseases, while the customers of herb shops use them in treatments relating to respiratory and digestive systems, as well as for skin diseases.

INTRODUCTION

Developing countries provide a more apparent observation of sociocultural structure. Cities, which significantly progressive in terms of urbanization, create an inclination for migration to downtown areas from surrounding cities and regions, as well as regional rural settlements. Consequently, the cultural structure of the city centre becomes more cosmopolitan compared to rural areas. Different cultural structures undergo a kind of synthesis in the face of novelties in modern life, and a subsequent adaptation process. Nevertheless, the traditionalist societies, which have adopted a settled life and seek to preserve their traditional and cultural values; aim at transferring such values to posterities.

Ethnobotany is about the relationship between man and plants. It also serves as a method in order to put forth differences between societies. Since ancient times, man has made use of plants for health and religious means, as well as a source of food (Heinrich et al. 2004; Koçyigit 2005; Lewin 2008). Today, medicinal and aromatic plants have become a significant commercial market in many countries. The use of natural vegetal products has increased in medicine, cosmetics, drugs, dye, textile and similar fields (Kathe et al. 2003; Schipmann et al. 2006).

Populated cities in the development process also display their growth in the medicinal plant market. Together with the growing importance of natural and organic products, alternative products are enjoying progress. In this respect, the rural people prioritize utilization of nature as they take their traditions to the future. Nevertheless, urban life offers a cosmopolitan environment where inhabitants meet their requirements concerning alternative medicine and natural products by means of herb shops that become more and more widespread (Everest and Ozturk 2005).

MATERIAL AND METHOD

Description of the Study Area

Established in the Çukurova section of the Mediterranean Region in the south of Turkey, Adana borders Osmaniye, Kahramanmaras on the east, Içel on the west, Kayseri on the north, Nigde on the northwest, Hatay on southeast and the Mediterranean Sea on the south (Fig. 1). The city is located on both coasts of the Seyhan River, between arctic circles 35°-38° and east longitudes 34°-36°. The city covers an area of 14,046 km². The Çukurova Delta, where Adana is located, extends from the Mediterranean coast to the highlands of the Taurus Mountains. The most notable streams in the region are Asi, Seyhan, Ceyhan, Göksu, and Aksu. Adana bears characteristics of Mediterranean climate. The summer is hot and dry, while winter is mild and rainy.

Vegetation in and around Adana possesses characteristics of Mediterranean climate. For up to 700-800 metres, there are maquis shrub lands. Shrub lands comprise species such as carob, laurel, olive, oleander and hackberry. Especially in flatlands with habitation and cultivated areas, the natural vegetation that underwent huge destruction by man and spontaneous anthropogenic steppes are formed. Adana has a population of 2,085,225. Out of this, 1,836,432 live in downtown areas, while 248,793 inhabit the surrounding districts and villages. The rates of urban and rural settlers are eighty-eight percent and twelve percent respectively (TSI 2010).

The literacy rate of Adana is 95.30 percent according to the data in 2012, which ranks 39th in Turkey's average (95.78%). In the age group of fifteen and above, high school and vocational school graduates' rate is above the average rate of Turkey (Uçar et al. 2013).

The manufacturing industry in Adana is based on agricultural activities, especially cotton. Evidently, commerce also takes place in connection with these sectors. Apart from cotton-based production, the manufacturing industry includes activities such as food, ready-to-wear clothes, and chemical and forestry products. Recently, the areas of citrus fruits have expanded and greenhouse cultivation has become more common. The fertile lands of Çukurova also yield corn, sunflower, peanut and soybean as secondary products, in addition to the growing greenhouse areas. Besides, modern methods are applied in viniculture and horticulture in order to cultivate fruits such as grape and cherry (TSI 2010).

Ethno-botanical Survey and Data Collection

The study was conducted in two stages; in June 2013 and in November 2014. At the first stage, a face-to-face survey was conducted with rural inhabitants of Adana via snowball sampling. The survey participants were selected from

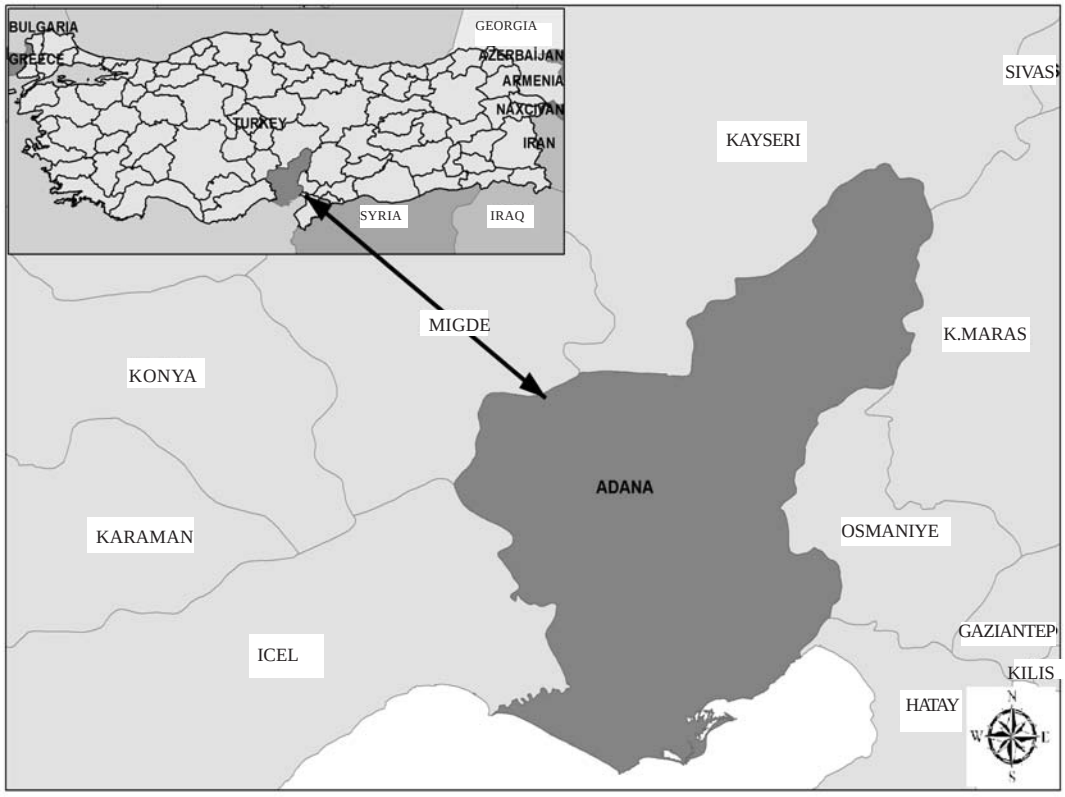

Fig. 1. Location of study area

among people who are middle aged and older, who have been locals of the region for a long period of time as well as from among local people suggested by such individuals. The questionnaire with local people included questions so as to determine certain demographic traits (age, gender, educational status), before recording the purposes (drug, food, spice, animal feed, religious beliefs etc.) and how the plants are put to use. The participants provided information about plants, and were made to explain with the actual examples in nature. At the second stage, a similar questionnaire was applied for herb companies and their clients, in other words, those who lead an urban life in downtown far from the country, in Adana. For customer selection, personal visits were paid to herb shops in order to meet the coming clients. At the end of the survey assessment, data was collected on the top 10 selling medicinal herbs at relevant shops regarding their purpose and forms of usage. Besides, the researchers tried to put forth the customer profile of herb shops. Obtained data was employed so as to analyze differences between rural and urban citizens in terms of intended use of medicinal herbs.

RESULTS AND DISCUSSION

The study includes a questionnaire answered by 247 persons, 150 from the rural and 97 from the urban areas. Table 1 shows results about demographic traits of participants. While the first age group is more interested in medicinal plants in the city, the rural areas are seen as having a close interest and knowledge in all age groups. Although, most of the habitants of the rural areas are primary school leavers, the habitants of urban areas are university graduates. This is in keeping with the age group in the city. In the rural areas, it is understood that is not relevant to the education of ethnobotanical knowledge. It is also understood that relevant information should be passed on from generation to generation. Among the participating herb shop clients, 58.8 percent exclusively go to the hospital in case of a health problem, twenty-five percent go to the hospital before visting a herb shop, while ten percent visit a herb shop before a hospital and only five percent go directly to a herb shop. In the rural region, seventy-eight percent utilize exclusively from plants for treatment, ninety-four percent prepare the plant mixture either in person or have neighbors for this process. Only six percent opt for herb shops or herbalists.

In downtown, younger citizens prefer medicinal plants more compared to those in the rural areas. Within both groups, women are more interested and better informed with respect to medicinal and aromatic plants. In the rural areas, persons with lower education level know more about the issue; this is mostly because the young population transfer unwritten, applicable ethnobotanical by migrating to the city centre and hence, the interest gradually diminishes. As for the downtown, a notable part of the people who use medicinal plants are graduates; therefore, the citizens with higher awareness are more interested in such plants. Graduates, who have adopted the urban life, are keener on the use of natural and organic life.

In ethnobotanical terms, the taxa of plants, which are found to be frequently used by rural

Table 1: Results on demographic features of participants

Features	*Rural*		*Urban*	
	Number of local people	*Percentage (%)*	*Number of customers*	*Percentage (%)*
Age Groups				
20-40	45	30	68	70.1
41-60	69	46	25	25.8
>60	36	24	4	4.1
Gender				
Male	69	46	40	41.2
Female	81	54	57	58.8
Educational Status				
Elementary School	90	60	19	19.6
Secondary School	27	18	7	7.2
High School	24	16	27	27.8
University	9	6	44	45.4

settlers, are determined and the relevant ethnobotanical forms and purposes of their use are listed in detail (Table 2).

At the end of the study, 63 taxa under 37 families were determined. The most common species are found from the families of *Lamiaceae* (7), *Fabaceae* (6), *Rosaceae* (4) and *Asteraceae* (4). The most applied sections of plants are the leaves (26), flower (15), fruit (11), the aerial part of plant (9) and seed (6). The intake and status of herbs is determined in following forms: decoction (23), infusion (15), fresh (11) and dried (6), powder (4).

On the other hand, it is recorded that the herb shops in the survey have a product range from 60 to 25,000 plants. Most are packed mixtures. City dwellers often prefer packs prepared for a given purpose or usage, or even drug mixtures. Therefore, pursuant to data obtained from herb shops, the survey lists on Table 3 shows the 10 most preferred plant taxa per species, as well as the most popular in rural habitations. Among them, the rural inhabitants strikingly do not prefer the following for medicinal or other purposes: *Zingiber officinale* used for indigestion and common cold, *Foeniculum vulgare* for redouble foremilk, and *Cassia fistula* used as laxative and for slimming. Indeed, *Zingiber officinale* and *Cassia fistula* are exotic plants that are not a part of the Turkish natural flora and are imported by herb shops. On the other hand, the taxa that are often preferred in the country but not used in the city include the following: *Centaurea solstitialis* subsp. *solstitialis* for woman's/man's diseases, tonic, respiratory disorders, mouth sore (human and animal), *Nerium oleander* for bee and scorpion sting (externally), *Heliotropium europaeum* for scorpion sting, *Opuntia ficus-indica* for cholesterol lowering, digestive disorders, eczema and as painkiller, *Ecballium elaterium* for painkilling, headache, rheumatic pain, scorpion sting and snake bite (use root externally), and *Platanus orientalis* against cancer.

As for 10 most preferred species in rural and urban areas (Table 3), the only common plant in both is *Ceratonia siliqua*; nevertheless, generally different but under the same family, they can be consumed under similar commercial names or via similar intended use. For example, sage from *Lamiaceae* family is known as *Sideritis perfoliata* in rural areas but sold as *Salvia cryptantha* in herb shops; thyme from the same family is *Thymbra spicata* subsp. *spicata* for rural people but *Thymus* spp. for herbalists, while chamomile from *Asteraceae* is called *Chrysanthemum coronarium* by rural people and sold under the name *Matricaria chamomilla* by herbalists.

The local people use some plants (*Elaeagnus angustifolia, Paliurus spina-christi* and *Peganum harmala*) for religious purposes, especially against evil eye, while urban citizens do not buy or use herbs for such usage.

Generally, the species used in rural areas vary depending on regions (Toksoy et al. 2010; Özüdogru et al. 2011; Ugulu 2012; Gürdal and Kültür 2013; Hayta et al. 2014; Korkmaz and Karakus 2015; Mükemre et al. 2015; Polat et al. 2015; Sargin et al. 2015); nevertheless, city dwellers in different regions use similar species since they buy from herb shops. A similar study lists the 10 most preferred herbs among urban citizens in Trabzon (Turkey) as follows: *Tilia platyphyllos, Mentha pulegium, Rosa canina, Urtica dioica, Anthemis cotula, Salvia forskahlei, Thymbra spicata, Cassia angustifolia, Zingiber officinale,* and *Foeniculum vulgare* (Akbulut and Bayramoglu 2014). On the other hand, the plants, commonly used in the region in ethnobotanical terms, are also in use in similar geographies (Abu-Irmaileh and Afifi 2003; Handlidou et al. 2004; Keusgen et al. 2006; Guarrera and Lucia 2007; Lentini and Venza 2007; Mphothulo et al. 2012; Gail et al. 2015).

Pursuant to Table 4, there are differences between the intended uses of medicinal and aromatic plants in urban and rural areas. Local people mostly employ them as cough medicine, while in downtown areas, there is no exclusive use for the purpose in question. The most preferred plants against coughing are *Juniperus drupacea* and *Thymbra spicata* subsp. *spicata*. Rural settlers apply ethnobotanical methods against diabetes or as a tranquilizer; however, urban people do not prefer wild plants for such chronic and sensitive diseases. On the other hand, the city dwellers have higher expectations of benefiting from medicinal plants and alternative medicine for incurable cases or as a supportive drug regarding cancer. Accordingly, cancer is not among the top 10 in the rural region. Then again, *Juniperus drupacea* has different utilizations in Antalya and Kahramanmaras (Demirci and Özhatay 2012; Senkardes and Tuzlaci 2014), but taken together with honey, mash-

Table 2: Traditional usage of wild plants in Adana, Turkey

Family	*Botanical name*	*Local name*	*Part used*	*Prepar-ation*	*Traditional uses*
Amaryllidaceae	*Allium cepa*	Sogan	B	Cooking	Ulcer
Anacardiaceae	*Pistacia terebinthus*	Menengiç	Fr	Dried	Diarrhea, cancer, `respiratory disorders
Anacardiaceae	*Rhus coriaria*	Derici Sumagi	L	Decoction	Constipation, nausea, `mouth sore, fabric dye
Apiaceae	*Centaurea solstitialis* subsp. *solstitialis*	Çakir Dikeni	St	Fresh	Woman's/man's diseases, ``tonic, respiratory `disorders, mouth sore `(human and animal)
Apiaceae	*Ferula elaeochytris*	Çak°ir Otu	L, Ro	Infusion, powder (with honey)	Painkiller, woman's/ `man's diseases, tonic, tranquilizer, digestive `disorders, respiratory `disorders
Apiaceae	*Petroselinum crispum*	Maydanoz	L	Decoction	Nephritis, `urethritis, `slimming
Apocynaceae	*Nerium oleander*	Zakkum	Fl, L, Br	Decoction (mixed with olive oil)	Bee and scorpion sting (externally)
Araceae	*Arum dioscoridis*	Yilan Pancari	L	Boiled (low temperature long time)	Digestive disorders, diuretic, antitussive, ``tranquilizer
Arecaceae	*Phoenix dactylifera*	Hurma Çekirdegi	Se	Amulet	For religious beliefs
Aspleniaceae	*Asplenium ceterach*	Altinotu	P p	Infusion, decoction, powder (with honey)	Taeniafuge, pass a kidney `stone, diabetes, `stomachache, woman's/ `man's diseases
Asteraceae	*Achillea nobilis* subsp. *neilreichii*	Civanperçemi	P p	Decoction (mixed with olive oil)	for wormy wound in livestocks
Asteraceae	*Chrysanthemum coronarium*	Papatya	Fl	Infusion	Diuretic, woman's/man's `diseases, nausea, ulcer, digestive disorders, nervous system disoerders, bronchitis, asthma
Asteraceae	*Helichrysum stoechas*	Altin Otu, Yahudiotu	Fl	Infusion	Digestive disorders, pass a ``kidney stone, slimming
Asteraceae	*Silybum marianum*	Deve Dikeni	Fl, Sh, St (without bark)	Fresh, decoction	Rheumatic pain Crushed (consume with ``wine)
Boraginaceae	*Heliotropium europaeum*	Akrep Otu	Fl		Scorpion sting
Brassicaceae	*Brassica nigra*	Kara Hardal	P p	Decoction	Diabetes
Brassicaceae	*Nasturtium officinale*	Su Teresi	L	Fresh	Pass a kidney stone
Cactaceae	*Opuntia ficus-indica*	Hint Ynciri	Fr	Fresh	Cholesterol lowering, `digestive disorders, `eczema, painkiller
Cistaceae	*Cistus creticus*	Tüylü Laden	L, Fl	Infusion	Skin disorders, woman's/ `man's diseases, diuretic, `antitussive
Cucurbitaceae	*Ecballium elaterium*	Aci Hiyar (E°ek Hiyari, Aci Kavun)	Fr, Ro externally)	Juice sap (fruit), crushed (root, *ation*	Painkiller, headache, `rheumatic pain, `scorpion `sting and snake bite (use `root externally)
Cupressaceae	*Juniperus drupacea*	Andiz Agaci	Co, Ro	Molasses (Cone), mixed with honey (root)	Cardiovascular disease, `headache, cholesterol `lowering, tonic, `rheumatic pain, `betwetting child, liver `failure, migraine, `antitussive

Table 2: Contd...

Family	*Botanical name*	*Local name*	*Part used*	*Prepar-ation*	*Traditional uses*
Elaeagnaceae	*Elaeagnus angustifolia*	Igde Çekirdegi	Se	Amulet	For religious beliefs
Fabaceae	*Arachis hypogaea*	Fistik Samani	Pp	Dried	Milk yield for livestock
Fabaceae	*Ceratonia siliqua*	Keçiboynuzu	Fr	Molasses	Diarrhea, appetite suppressant, woman's/ man's diseases, antitussive, tranquilizer, hematinic, tonic, digestive disorders, slimming
Fabaceae	*Glycyrrhiza glabra*	Meyan Kökü	Ro	Decoction	Painkiller, ulcer, laxative,antitussive, tranquilizer, nervous system disoerders, respiratory disorders
Fabaceae	*Medicago* spp.	Yonca	Pp	Fresh, dried	Milk yield for livestock
Fabaceae	*Onobrychis* spp.	Korunga	Pp	Fresh, dried	Milk yield for livestock
Fabaceae	*Vicia sativa* subsp. *sativa*		Fig	L	Fresh, dried Milk yield for livestock
Fagaceae	*Quercus* spp.	Me°e Peliti	Fr	Fresh, dried	Milk yield for livestock
Hypericaceae	*Hypericum perforatum*	Sari Kantaron	St, L, Fl	Infusion, medical oil	Painkiller, fever reducer, diarrhea, bedwetting child, ambustion, wound healing, whet, tranquilizer, nervous system disorders, tonic, rheumatic pain, woman's/man's diseases
Juglandaceae	*Juglans regia*	Ceviz	L, Br, Se	Decoction	Cholesterol lowering, tonic, digestive disorders, diabetes, dysmnesia, anemia
Lamiaceae	*Ajuga chamaepitys*	Mayasil Otu	L, Fl	Decoction, crushed (with honey)	Skin disorders, tonic, chlorothiazide, diaphoretic, eczema, painkiller, diabetes
Lamiaceae	*Melissa officinalis* subsp.*Ýnodora*	Ogul Otu, Kalp Otu	L	Infusion, decoction, pulp	Heart throb, cardiovascular disease, digestive disorders
Lamiaceae	*Mentha longifolia*	Nane	L	Infusion	Stomachache, common cold
Lamiaceae	*Sideritis perfoliata*	Adaçayi	L	Infusion	Diuretic, tranquilizer, nervous system disorders, dysmnesia, mouth sore, respiratory disorders, woman's/ man's diseases, diabtes, urethritis,
Lamiaceae	*Teucrium polium*	Yav°an Otu	Pp	Decoction	Diuretic, diabetes
Lamiaceae	*Thymbra spicata* subsp. *spicata*	Kekik, Sater, Zatrin	L, Fl	Infusion	Tranquilizer, digestive disorders, taeniafuge, whet, common cold, antitussive, respiratory disorders, diaphoretic
Lamiaceae	*Thymus* spp.	Kekik	L, Fl	Decoction	Stomach discomfort, prostat, painkiller, constipation
Lauraceae	*Laurus nobilis*	Defne	L, Fr	Medical oil, soap, spices	Fever reducer, diuretic, whet, rheumatic pain, nervous system disorders
Malvaceae	*Althaea officinalis*	Gül Hatmi	Fl	Decoction	Common cold, food poisoning, digestive disorders

Table 2: Contd...

Family	*Botanical name*	*Local name*	*Part used*	*Prepar-ation*	*Traditional uses*
Malvaceae	*Malva neglecta*	Ebegümeci	L, Fl	Decoction	Digestive disorders, respiratory disorders, antitussive, diabetes, cancer, nephritis, antioxidant
Malvaceae	*Tilia argentea*	Ihlamur	Fl	Decoction	Painkiller, fever reducer, nausea, tranquilizer, antitussive
Moraceae	*Morus nigra*	Karadut	Fr	Molasses	Anemia, digestive disorders, antitussive
Myrtaceae	*Eucalyptus camaldulensis*	Ökaliptus	L	Vapor bath	Breath odor, headache, antitussive, respiratory disorders
Myrtaceae	*Myrtus communis*	Mersin	Fr, L	Fresh, decoction	Skin disorders, diarrhea, ulcer, constipation
Nitrariaceae	*Peganum harmala*	Üzerlik	Se	Amulet	For religious beliefs
Oleaceae	*Olea europaea* var. *sylvestris*	Zeytin	L	Decoction	Diabetes, chlorothiazide
Papaveraceae	*Papaver rhoeas*	Gelincik	Fl	Infusion, sorbe	Tranquilizer, respiratory disorders, antitussive, ambustion, taeniafuge, cholesterol lowering
Pinaceae	*Cedrus libani*	Sedir	Re	Ointment	Inflamed wound
Platanaceae	*Platanus orientalis*	Çinar	L	Decoction	Cancer
Poaceae	*Cynodon dactylon* var. *dactylon*	Ayrik Otu	Pp	Decoction	Toxicide
Poaceae	*Hordeum vulgare*	Arpa	Fr	Dried	Milk yield for livestock
Poaceae	*Zea mays*	Misir	Stl	Decoction	Urethritis
Polygonaceae	*Rumex crispus*	Kuzu Kulagi	Pp	Crushed (externally), cooking	Nausea, diabetes, sunburn and subspot, skin disorders, diuretic, constipation, woman's/man's diseases, breast milk intensifier
Portulacaceae	*Portulaca oleracea*	Semizotu	L	Fresh	Gout, headache
Ranunculaceae	*Nigella arvensis* var. *glauca*	Çörek Otu	Se	Powder (with honey)	Skin disorders, diabetes, woman's/man's diseases, hepatoprotective, bronchitis, asthma, antitussive, pass a kidney stone, breast milk intensifier
Rhamnaceae	*Paliurus spina-christi*	Karaçali	Fr	Amulet	For religious beliefs
Rosaceae	*Cerasus avium*	Kiraz	Fr, S	Decoction	Diuretic
Rosaceae	*Cydonia oblonga*	Ayva	L	Infusion	Diarrhea

Table 3: The most preferred 10 plant species in rural and urban

Rural		*Urban*	
Botanical name	*Family*	*Botanical name*	*Family*
Juniperus drupacea	Cupressaceae	*Mentha pulegium*	Lamiaceae
Rumex crispus	Polygonaceae	*Tilia tomentosa*	Malvaceae
Sideritis perfoliata	Lamiaceae	*Salvia cryptantha*	Lamiaceae
Centaurea solstitialis subsp. *solstitialis*	Asteraceae	*Thymus* spp.	Lamiaceae
Rhus coriaria	Anacardiaceae	*Ceratonia siliqua*	Fabaceae
Thymbra spicata subsp. *spicata*	Lamiaceae	*Zingiber officinale*	Zingiberaceae
Hypericum perforatum	Hypericaceae	*Foeniculum vulgare*	Apiaceae
Chrysanthemum coronarium	Asteraceae	*Cassia fistula*	Fabaceae
Ceratonia siliqua	Fabaceae	*Laurus nobilis*	Lauraceae
Urtica dioica	Urticaceae	*Matricaria chamomilla* var. *recutita*	Asteraceae

Table 4: The most common usage purpose of wild plants

Rural		*Urban*	
Main therapeutic indications	*Percentage(%)*	*Main therapeutic indications*	*Percentage (%)*
Antitussive	32.0	Respiratory disorders	24.74
Digestive disorders	30.0	Digestive disorders	20.62
Woman's/man's diseases	28.0	Skin disorders	13.40
Respirtory disorders	26.0	Wound healing	11.34
Diabetes	24.0	Cardiovascular disease	9.28
Tranquilizer	22.0	Nervous system disorders	6.19
Diuretic	20.0	Woman's/man's diseases	5.15
Skin disorders	18.0	Cancer	4.12
Painkiller	16.0	Anemia	3.09
Diarrhea	14.0	Diabetes	2.06
Tonic	14.0		
Rheumatic pain	14.0		
Pass a kidney stone	14.0		

ing both the root and cone in the areas subject to present study. In addition to such application, it is also preferred for treatment of rheumatic pain, a bedwetting child, liver failure and migraine.

Men and women sexual diseases are highest in rural areas, but have a lower prevalence in the city. The psychological factors, which are active in formation of sexual dysfunctions, are vulnerable to common cultural and social approaches regarding sexuality. Various sexual dysfunctions are more common in conservative societies where sexuality is prohibited and seen as a taboo, or there is no formal education on sex where women are suppressed and men are glorified, the prescribed roles of men and women govern, and the virginity bears importance (Salman 2015). Since the rural people live a more reserved life, they do not want people around them to know about such diseases; accordingly, they refrain from medicinal treatment and steer towards herbal solutions.

In downtown, use of medicinal treatments for cancer is at the eighth position with 4.12 percent; nonetheless, it is not among common intended use in rural areas. For cancer treatment, *Pistacia terebinthus, Platanus orientalis* and *Urtica dioica* are employed in different regions according to various relevant studies (Simsek et al. 2002; Uysal et al., 2010; Akbulut and Bayramoglu 2013; Akyol and Altan 2013; Akbulut and Bayramoglu 2014). However, the use of *Malva neglecta* in rural area is recorded for the first time, and the literature does not include such use for cancer treatment (Sarper et al. 2009; Çakilcioglu et al. 2010; Dogru-Koca and Yildirimli 2010; Günes and Özhatay 2011; Rajaer and Mohamadi 2011; Yücel et al. 2011; Ahmad et al. 2013; Sher et al. 2014).

CONCLUSION

This study was conducted in Adana province and it determined the usage, purposes and methods of wild plants in rural and urban areas. Adana province was situated on a major route between the Central Anatolia regions with the Mediterranean region. Adana has a wide potential for medicinal and aromatic plants studies. A total of 63 wild plants belonging to 37 families were identified in the study area. The data obtained in this study based on the wild plants in rural area of Adana province was compared with the herb companies and their clients. The study shows that local people prefer the plants mostly as medication for antitussive, digestive disorders, and woman's/man's diseases; while the customers of herb shops apply them for treatments regarding respiratory and digestive systems, as well as for skin diseases. Various auxiliary products such as olive oil, honey, and wine are used for preparing drugs of some plants. For example, the aerial part of *Asplenium ceterach* is used with honey for powder, flowers of *Heliotropium europaeum are* used with wine for crushed, and flowers, leaves, and the bark of *Nerium oleander* are used with olive oil for decoction.

RECOMMENDATIONS

Despite belonging to the same genus, identical or different uses of all species should be

recorded. Individuals should take to the doctor's advice before using any plant for healing or as medicine. For example, *Ecballium elaterium* is deadly, and was determined to be used as painkiller and for headaches. Hence, this must be clearly defined as its plant is sold by the herbalist because similar species of the same family can be therapeutic or toxic. Some species (*Chrysanthemum, Matricaria, Aster, Bellis* etc.) are sold as "Papatya (daisy)" in *Asteraceae* family. Differences in rural and urban use may help ethnobotanical, pharmaceutical and medicinal researches. In this context, the aromatic and medicinal plants should be determined and a national database must be established for their proper use.

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