MAU J AGR NAT (2024) 4(1): 9-22
DOI: 10.59359/maujan.1335934
e-ISSN: 2822-3500

dergipark.org.tr/en/pub/maujan
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MUŞ ALPARSLAN ÜNİVERSİTESİ
TARIM VE DOĞA DERGİSİ

MUŞ ALPARSLAN UNIVERSITY
JOURNAL OF AGRICULTURE AND NATURE

Usage Shrub and Tree-Form Plants in Traditional Folk Medicine

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Please cite this paper as follows:

Kadıoğlu S., Kadıoğlu B., Sezer K.K. (2024). Usage Shrub and Tree-Form Plants in Traditional Folk Medicine. *Muş Alparslan Üniversitesi Tarım ve Doğa Dergisi*, *4*(1), 9-22. https://doi.org/10.59359/maujan.1335934

Research Article

Article History
Received: 01.08.2023
Accepted: 26.02.2024
Published online: 31.03.2024

Keywords:
Ethnobotany
Folk medicine
Medicinal plants
Tree
Treatment
Shrub

A B S T R A C T

The study purpose at the fourteen villages is to compile traditional knowledge and shrubs and trees used to improve human and animal health. In the study, traditional information about the medicinal uses of some wild plants in the form of trees, shrubs and heather, which the people continue to use primarily for food have been recorded and, 34 taxa used in folk remedies (human and animal health) have been determined. These plants belong to 11 families and most of the taxa used belong to the Rosaceae family. The families that these plants belong to are respectively; Rosaceae (15), Lamiaceae (5), Berberidaceae (2), Cupressaceae (2), Elaeagnaceae (2), Grossulariaceae (2), Salicaceae (2), Asteraceae (1), Adoxaceae (1), Ericaceae (1), Hypericaceae (1). These taxa consist of 59% shrub, 9% semi-shrub, 6% shrubby and 26% tree or small tree. These taxa's leaves, flowers, shoots and roots are used primarily in the fruit parts. These natural plants are used in respiratory system (18%), digestive system (9%), urinary system (14%), appetite and hematic purposes (11%), hemorrhoid (23%), rheumatism (7%), diabetes (11%) and other (9%) ailments. In the study, it was also determined that four taxa were used in animal diseases. It is imperative to record, protect and transfer the traditional knowledge and cultural richness that are fighting for survival in the study area, which has a rich flora. For this reason, it is necessary to identify, record and present to serve ethnomedicinal wealth.

1. INTRODUCTION

Traditional uses of medicinal plants are a part of human life in our country as well as all over the world. There are many studies on medicinal plants and raw pharmaceutical materials obtained from these plants, but it is more important to use traditional knowledge in this study. For this reason, studies based on recording traditional information have been given more attention, especially in recent years. According to the World Health Organization, at least 80% of developing countries have been used traditional methods in treating human and animal diseases (WHO, 2023). Herbal medicinal methods are advanced in many countries, such as Romania, Bulgaria, Hungary, India, China, and Japan. Even in Germany, with marginal plant diversity, more than 500 plants have been used for medicinal purposes. The World Health Organization (WHO) reports that in many developed countries, society still clings to traditional medicine and primary health care has been fueled by the workforce provided by those who use traditional practices. According to the World Health Organization, at least 80% of developing countries are used traditional methods in treating human and animal diseases (WHO, 2023). Herbal medicinal methods are advanced in many countries, such as Romania, Bulgaria, Hungary, India, China, and Japan. Even in Germany, with marginal plant diversity, more than 500 plants are used for medicinal purposes. The World Health Organization (WHO) reports that in many developed countries, society still clings to traditional medicine and primary health care is fueled by the workforce provided by those who use traditional

practices. Approximately 80% of the population of North India (Jaiswal, 2010) and Southeastern Ethiopia (Wabe et al., 2011) primarily prefer to use medicinal plants for human healthcare (Mesfin et al., 2013). Other studies in Jordan and Madagascar (Nawash, 2013) have indicated that these countries continue to benefit from high levels of bio-diversity, despite the threat of increasing population and climate change (Rabearivony et al., 2015). Anatolia has approximately 12.000 plant species, 30% of which are endemic, due to its rich geography that allows for rich plant diversity (Güner et al., 2012). The number of plant species added to literature is increasing daily. The natural flora has various trees, shrubs, and shrub-like plants, whose fruits or different parts are used or consumed. These plants are very advantageous as they are located in certain ecological, topographic, and geographic areas. They are also important genetic resources for breeding studies. Alongside the increase in technology and industrialization, it has become inevitable to conclude that the prospect of a healthy life a faces wide variety of threats. For this reason, alternatives for returning to rural or natural life have become an important area of research. Medicinal plant treatments, which are alternative medicine method, have gained popularity. Non-wood forest products are very important for the development of local people in the world and in our country. In our country, there are many traditional medical applications However, tradition and traditional knowledge are rapidly disappearing for many years. It is imperative to record, protect and transfer the traditional knowledge and cultural richness fighting for survival in the study area, which has a rich flora. For this reason, it is necessary to identify, record and present to serve ethnomedicinal wealth.

On the other hand, genetic erosion has increased due to overuse of natural resources, degradation of plant habitats, climate changes and environmental destruction. Protecting or preserving these plants for current or future research is extremely important. Therefore, such studies will also contribute to conserving genetic resources. For these reasons, with an ethnomedical approach, this study has examined the medicinal uses (in treating of animals and humans) of trees, shrubs or shrub-like plants in fourteen villages. The study aims to record the traditional usage information of shrubs and trees used for treatment, contribute to the literature and transfer them to future generations. In addition, it is also thought that the findings will be a source for studies in different disciplines.

2. MATERIALS AND METHOD

The study was carried out in fourteen (14) villages of Aşkale (Erzurum) and Center (Bayburt) districts (Figure 1).The targeted villages have been visited between March and November each year from 2012 to 2015. Information has been obtained from people living in the region for a long time. In the research; general information about the plant and information about its medical use have been recorded. Wild-growing shrubs and trees, used by the local people have been identified and recorded (Ekim and Kart Gür, 2019). Herbarium specimens have been collected, pressed, and stored (Tan et al., 2013). Suitable for techniques herbariums were prepared, and plant seed samples were taken (Tan and Taşkın, 2013). In plant identifications, mainly Flora of Turkey (Davis, 1965-88) was used. Plant identifications; Turkey's Trees and Shrubs (Yücel, 2005; Mamıkoğlu, 2007) were also controlled. In addition, technical support was received from the Botanical Department of Karabuk University-Faculty of Forestry to identify some species. Moreover some seeds and information forms have been sent to gene banks.

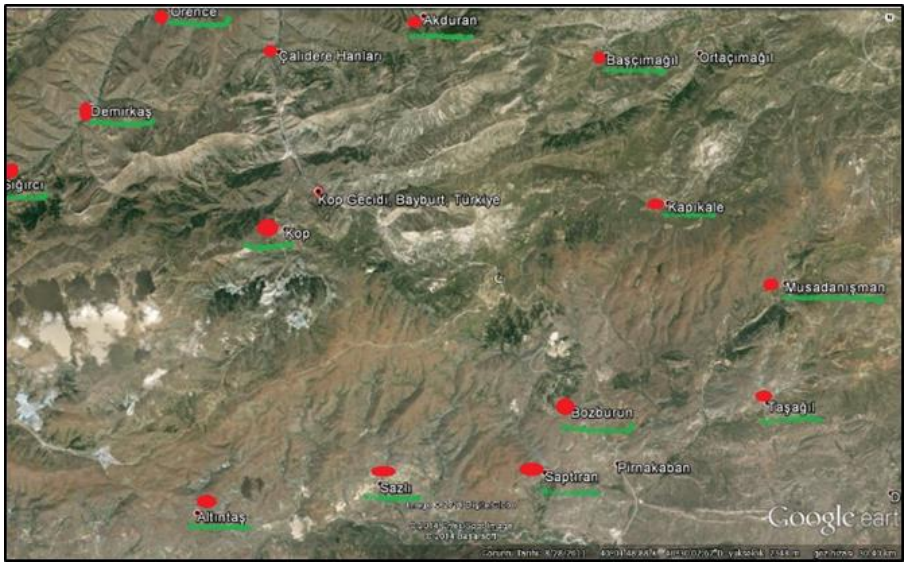

Figure 1. Geographical location of the research area

3. RESULTS AND DISCUSSION

The ethnomedicinal information was obtained through structured interviews with the local people. Although plants in question are generally considered as nutritional sources, they are also used for medicinal purposes. In the study; by learning the local names of the plants collected, the location of the place, habitat, used parts of the plant, and their usage has been recorded. 34 trees or shrubs belonging to 11 families, which are still used in the treatment of human and animal diseases, have been recorded. 15 taxons from Rosaceae family, 5 taxa from Lamiaceae family, 2 taxa from Grossulariaceae family, 2 taxa from Elaeagnaceae, 2 taxa from Berberidaceae family, 2 taxa from Cupressaceae family, 2 taxa from Salicaceae family, 1 taxa from Adoxaceae family, 1 taxa from Asteraceae family, 1 taxa from Ericaceae family and 1 taxa from Hypericaceae were found.

Grapefruits, raspberry and blackberry (*Rubus*), blackcurrant and gooseberry (*Ribes*), blueberry (*Vaccinium*), rosehip (*Rosa*), sea buckthorn (*Elaeagnus*), jackal prune (*Prunus*) and their related species are plants known and used by the public. Five species of blackcurrant are known to grow in natural areas. These species are red currant (*Ribes rubrum* L., black currant (*Ribes nigrum* L.), eastern black currant (*Ribes orientale* Desf.), alpine currant (*Ribes alpinum* L.) and caucasian currant (*Ribes biebersteinii* Berl. Ex.Dc.) species. Türkiye is the natural distribution area of these species; different forms of these species are encountered in all regions (Ağaoğlu, 2006). These plants were categorized according to their forms and habitus: 2 of them were classified as shrub-like plants, 3 as semi-shrubs, 20 as shrubs, and 9 as trees or treelets. Rosaceae family has the highest amount of taxons, and these taxons are consumed as fruit, fruit products and medicine. The Lamiaceae family plants are considered aroma plants and are also used for medicinal purposes. According to the recorded information, out of 34 taxons, fruits of the 13, leaves of 11, roots of 5, flowers of 4, stems of 2, shoots of 1, barks of 1, and branches of 1 are used for medicinal purposes.

Apple, pear, plum, cherry, rosehip, raspberry and blackberry etc. in the working area. It is collected from nature and evaluated. People are trying to continue this tradition. In addition, its fruits are used by the local people as jam, marmalade, fruit juice and dessert. The fact that most of the natural plants used are for food and treatment purposes, shows that the natural flora has been continued use in nutrition and health. Information regarding the plants used for medicinal purposes by the local population is parallel to information obtained via other ethnobotanical studies carried out in the region (Baytop, 1999; Özgökçe and Özçelik, 2004; Özgen *et al*., 2004; Bulut, 2005; Aksakal and Kaya, 2008; Özgen et al., 2012; Kadıoğlu and Kadıoğlu, 2014). Thirteen (13) of the taxa are used for hemorrhoids or other intestinal disorders, 10 are used for general respiratory ailments, 5 are used digestive system related disorders, 8 are used for urinary system disorders, 6 are used for diabetes, 4 are used for rheumatism, 6 are used for building appetite and for hematinic purposes, and 5 are used for other disorders. Hemorrhoids and respiratory ailments are the most common complaints in the findings (Figure 2a). It has been recorded that four taxa are used in some animal diseases. These taxa are; *Juniperus excelsa* M. Bieb. (foot-mouth- disease), *Juniperus communis* var. *saxatilis* Pall. (skin disease), *Pyrus elaeagnifolia* Pall. (diarrhea) and *Pyrus syriaca* var. *syriaca* Boiss. (diarrhea) (Figure 2b).

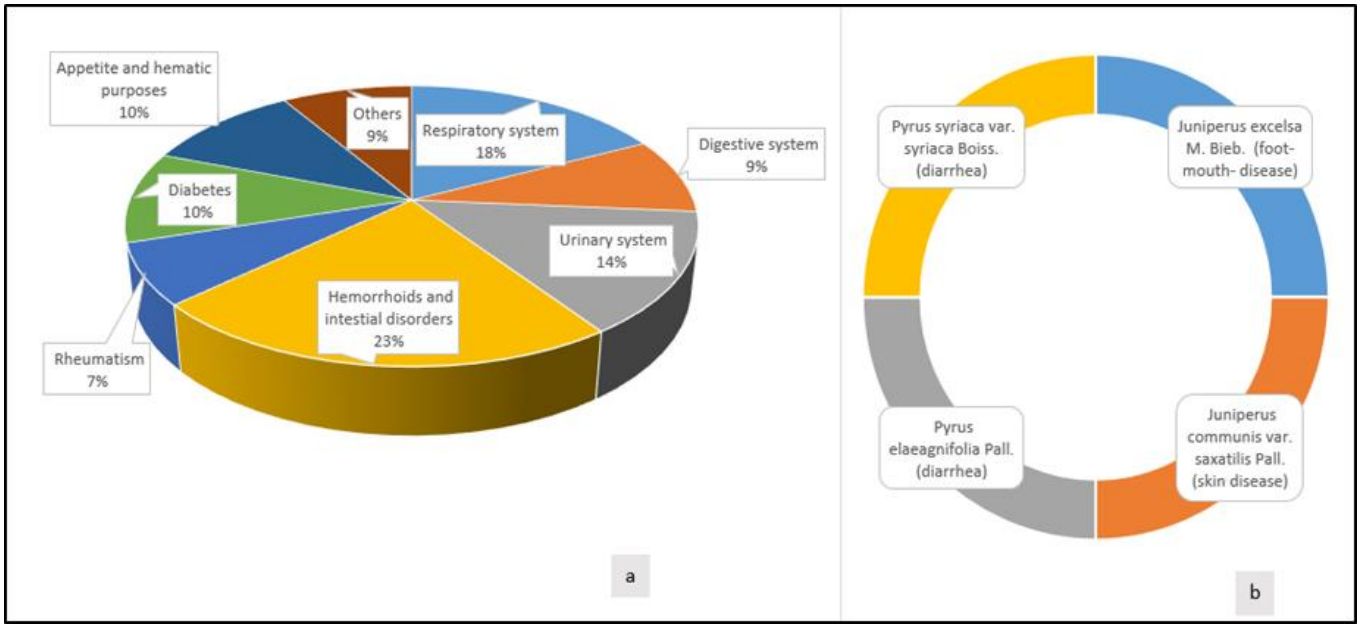

Figure 2. Human and animal diseases and ailments in which shrubs and trees are used

It has been determined that many plants (Berberis, Rubus, Ziziphora, Malus, Pyrus) are used to treat diabetes in the study. These plants are used for the treatment of disorders that are common in Türkiye. The plants determined to be used in the treatment of some ailments in the study are also included in similar studies conducted throughout Türkiye (Gürhan and Ezer, 2004; Tuzlacı et al., 2010; Sarıkaya et al., 2010; Altay and Çelik, 2011; Arıtuluk and Ezer, 2012; Polat et al., 2012). The plants used by the local people in folk medicine for both human and animal health are given in Table 1 in alphabetical order. Their families, scientific, Turkish, English and local names, intended use, parts used, usage patterns and references are given in Table 1.

Table 1. The plants used by the local people for both human and animal health in folk medicine

Family: Asteraceae **Taxa:** *Artemisia absinthium* L. **English name:** Wormwood **Turkish Name:** Acı pelin **Local Name:** Boz ot, pire out **Plant form:** Shrubby **Location:** Taşağıl-Çığırtka **Habitats:** Stream,riverside, sloping areas **Used parts:** Herba **Recipe for use:** The research revealed that this plant had been used as herbal tea (decoction) for relieving pain, stomach-ache, and for expelling kidney stones. Additionally, for women, who are unable to have children, a cup of tea made with a pinch of this plant is given every morning for a month. **Similar uses:** Dülger et al., 1999; Bağcı et al., 2006; Yaldız and Kılınç, 2010	**Family:** Adoxaceae **Taxa:** *Viburnum lantana* L. **English name:** Wayfarer **Turkish Name:** Germeşe **Local Name:** Germişo, germişek **Plant form:** Shrub or Small Shrub Tree **Location:** Bozburun, Demirkaş **Habitats:** Rocky stony areas **Used parts:** Fruit **Recipe for use:** Riped fruits is crushed in a certain amount of water and consumed as a laxative to relieve constipation. This mixture for kidney stones is drunk every morning, one glass a day. **Similar uses:** Altun et al., 2010; Şimşek et al., 2004
Family: Berberidaceae **Taxa:** *Berberis integerrima* Bunge **English name:** Barberry **Turkish Name:** Sarıçalı **Local name:** Kızamık, kızambuk **Plant form:** Shrub **Location**: Sazlı **Habitats:** Calcareous slopes **Used parts:** Leaf /Fruit **Recipe for use:** The fruits are used in the production of syrup. The fruits together with the leaves are also made into brines and pickles. Tea (infusion or decoction) made from its leaves is consumed to reduce blood sugar (diabetes).	**Family:** Berberidaceae **Taxa:** *Berberis vulgaris* L. **English name:** Common barberry **Turkish name:** Kızılkaramuk **Local name:** Kızamık, kızambuk **Plant form:** Shrub **Location:** Bozburun **Habitats**: Stony slopes **Used parts:** Roots **Recipe for use:** The tea (tea-decoction) obtained by boiling the roots is drunk in a tea glass on an empty stomach in diabetes.
Similar uses: Altundağ and Öztürk, 2011; Arıtuluk and Ezer, 2012, Arslanoğlu and Ayna, 2019	

Table 1. The plants used by the local people for both human and animal health in folk medicine (continuance)

Family: Cupressaceae **Taxa:** *Juniperus excelsa* M. Bieb. **English name:** Greek juniper **Turkish Name:** Boz ardıç **Local Name:** Çekem, kekem **Plant form:** Shrub **Location:** Bozburun, Akduran **Habitats:** Rocky slopes **Used parts:** Fruit /Root **Recipe for use:** Fruits and roots are used. Tea (decoction) made from the plant is used for shortness of breath, common cold and bronchitis. Its roots are chopped, boiled with water, and placed in an earthen pot with holes at the bottom. A container is placed under this earthen pot to hold the filtered liquid. This liquid obtained is used against hemorrhoids and eczema (external application) **Similar uses:** Baytop, 1999; Fujita et al., 1995 **Animal health:** Foot-and-mouth disease (FMD) **Application:** This liquid was used (externally) in FMD.	**Family:** Cupressaceae **Taxa:** *Juniperus communis* var. *saxatilis* Pall. **English name:** Common juniper **Turkish Name:** Bodur ardıç **Local Name:** Çekem, kekem **Plant form:** Shrub **Location:** Saptıran-Göltarla **Habitats:** Mountain bush **Used parts:** Fruit/Root **Recipe for use:** Fruits and roots are used. Tea (decoction) made from the plant is used for shortness of breath. **Similar uses:** Cansaran et al., 2007; Güneş and Özhatay, 2011. **Animal health:** Skin diseases **Application:** Tar obtained from wood is used externally in the treatment of skin diseases of animals.
Family: Elaeagnaceae **Taxa:** *Elaeagnus rhamnoides* (L.) A.Nelson **English name:** Sea-buckthorn **Turkish Name:** Çıçırgan **Local Name:** Sincan, tikanucu **Plant form:** Shrub **Location:** Kapıkale- Kom, Demirkaş **Habitats:** Rocky slopes **Used parts: Fruit, flower, branch,** Leaf **Recipe for use:** The leaves are consumed as tea (decoction) for stomach pain, mouth sores, flu, common cold **Similar uses:** Duke, 2004; Zeynalov, 2008; Khan et al., 2010	**Family:** Elaeagnaceae **Taxa:** *Elaeagnus angustifolia* L. **English name:** Russian olive, Silver berry **Turkish Name:** İğde **Local Name:** İğde **Plant form:** Shrub-Tree or Shrub **Location:** Kopköy- Karasu Çayı **Habitats:** Stream sides **Used parts:** Fruit **Recipe for use:** The fruits are boiled with milk and turned into porridge. It is eaten to relieve respiratory problems associated with bronchitis. Tea (decoction) prepared by boiling the flowering branches is used against diabetes. **Similar uses:** Sarıkaya et al., 2010; Özgen et al., 2012)

Table 1. The plants used by the local people for both human and animal health in folk medicine (continuance)

<table>
<tr><td colspan="2">Family: Ericaceae
Taxa: Vaccinium uliginosum L.
English name: Bog bilberry, Bog blueberry
Turkish Name: Avcı üzümü
Local Name: Yemişen, ayı üzümü
Plant form: Shrub
Location: Taşağıl-Ağbaba, Akduran-Yıkıkhanlar
Habitats: Bushes
Used parts: Leaf/Fruit
Recipe for use: The fruits and leaves are used to make tea (decoction). Fruit or leave tea is used for anti-inflammatory purposes and to expel kidney stones.
Similar uses: Karık, 2017</td></tr>
<tr><td>Family: Grossulariaceae
Taxa: Ribes orientale Desf.
English name: Currants, Gooseberries
Turkish Name: Çeçem
Local Name: Horhoç, İt üzümü, Çeçem
Plant form: Shrub
Location: Sığırcı, Akduran
Habitats: Bushes
Used parts: Leaf/ Fruit</td><td>Family: Grossulariaceae
Taxa: Ribes petraeum Wulfen
English name: Currants, Gooseberries
Turkish Name: Kaya çeçemi
Local Name: Bük üzümü, Horhoç
Plant form: Shrub
Location: Taşağıl, Sığırcı, Akduran
Habitats: Road sides
Used parts: Leaf/ Fruit</td></tr>
<tr><td colspan="2">Recipe for use: Their fruits can be consumed without any processing. The fruits are also made into syrups and marmalades. Tea (decoction) made from its leaves has diuretic, diaphoretic and laxative purposes. The fruits are eaten raw for their appetite-increasing and hematinic characteristics.
Similar uses: Baytop, 1999; Özgen et al., 2012</td></tr>
<tr><td colspan="2">Family: Hypericaceae
Taxa: Hypericum scabrum L.
English name: St. John's wort, goatweed.
Turkish Name: Karahasançayı
Local Name: Mayasıl otu, Kantaron
Plant form: Shrubby
Location: Yukarı Kopköy
Habitats: Mountainous, Steppe
Used parts: Leaf/Flower
Recipe for use: Hypericum species have been popular among the people for centuries. As a healing herb, rheumatoid arthritis and stomach pain in relieving pain caused by ailments used (Kaçar and Azkan, 2010). The oil extracted from its flowers is used for joint and lower back pain. The plant is crushed along with its flowers and placed in olive oil for 40 days. The resulting oil is applied to the painful area and wrapped.
Similar uses: Cırak and Kurt, 2014</td></tr>
</table>

Table 1. The plants used by the local people for both human and animal health in folk medicine (continuance)

Family: Lamiaceae **Taxa:** *Origanum acutidens* (Hand.-Mazz.) Ietsw. **English name:** Oregano **Turkish Name:** Zemul **Local Name:** Koç anığı **Plant form:** Half Shrubby **Location:** Taşağıl-Tatlıbahar, Yukarı Kopköy **Habitats:** Cliff, Water edge, Slope **Used parts:** Leaf/ Flower **Recipe for use:** Its leaves and flowers are used as a spice. Tea prepared by boiling (decoction) the plant is used to relieve abdominal pain. **Similar uses:** Baytop, 1999	**Family:** Lamiaceae **Taxa:** *Teucrium polium* L. **English name:** Felty germander **Turkish Name:** Acı yavşan **Local Name:** Mayasıl otu **Plant form:** Half Shrubby **Location:** Başçimagil- Karasu **Habitats:** Field edge **Used parts:** Leaf/Flower **Recipe for use:** Leaves and flowers of plants are used. It is used to flavor soups. It is used externally for hemorrhoids (plant leaves and flowers are boiled with water). **Similar uses:** Özgen et al., 2012; OGM, 2023
Family: Lamiaceae **Taxa:** *Thymbra sintenisii* subsp. *sintenisii* Bornm. & Azn. **English name:** Thyme **Turkish Name:** Akzahter **Local Name:** Karaanıh **Plant form:** Shrub **Location:** Musadanışman-Karaçamur **Habitats:** Cliff, Slope, Bushes **Used parts:** Leaf/Flower **Recipe for use:** Leaves and flowers of plants are used. It is used to flavor soups. It is used externally for hemorrhoids (plant leaves and flowers are boiled with water). **Similar uses:** OGM, 2023	**Family:** Lamiaceae **Taxa:** *Thymus fallax* Fisch. & C.A.Mey. **English name:** Thymes **Turkish Name:** Catri **Local Name:** Anuh, karaanıh **Plant form:** Shrub **Location:** Taşağıl-Kom, Yukarı Kopköy **Habitats:** Cliff, Slope **Used parts:** Leaf/ Flower **Recipe for use:** It is used as a spice also ıt is prepared as a tea (infusion) and for asthma, one glass is consumed each morning. **Similar uses:** Melikoğlu et al., 2015
Family: Lamiaceae **Taxa:** *Ziziphora clinopodioides* Lam. **English name:** Mediterranean thyme **Turkish Name:** Dağ reyhanı **Local Name:** Anuh, reyhan **Plant form:** Half Shrubby **Location:** Örence-Yayla **Habitats:** Steppe **Used parts:** Leaf/ Flower **Recipe for use:** Its leaves and flowers are used. It is used in soups and making herbed cheese. It is used externally for hemorrhoids (plant leaves and flowers are boiled with water) (decoction) **Similar uses:** Baytop, 1999; Özgen et al., 2012; Maral et al., 2015	

Table 1. The plants used by the local people for both human and animal health in folk medicine (continuance)

<table>
<tr><td colspan="2">Family: Rosaceae
Taxa: Cerasus angustifolia var. sintenisii (C.K.Schneid.) Browicz
English name: Cerasus (cherries)
Turkish Name: Kiraz
Local Name: Yabani kiraz
Plant form: Small Tree
Location: Kopköy-Ahpunların üstü
Habitats: Bushes
Used parts: Fruit / Fruit stems
Recipe for use: Wild cherries have a small tree structure. Its fruits and fruit stems are boiled with water. Tea (decoction) are used for diuretic (urine enhancer) and diaphoretic purposes.
Similar uses: Kültür, 2007</td></tr>
<tr><td>Family: Rosaceae
Taxa: Crataegus monogyna var. monogyna
English name: Common hawthorn
Turkish Name: Yemişen
Local Name: Yemiş
Plant form: Small Tree
Location: Taşağıl-Tatlıbahar
Habitats: Bushes, hill edge
Used parts: Flowering branches
Recipe for use:
For shortness of breath, flowering branches are boiled and drunk.
Similar uses: Elçi and Erik, 2006</td><td>Family: Rosaceae
Taxa: Crataegus orientalis var. orientalis Pallas ex Bieb.
English name: Silver thorn tree
Turkish Name: Alıç
Local Name: Aloş, aloç
Plant form: Small Tree
Location: Bozburun, Örence
Habitats: Cliff
Used parts: Fruit /Root
Recipe for use: The fruits are eaten raw. Tea (decoction) made from its fruits or roots is used for hemorrhoids and shortness of breath. Branch pieces gathered in the flowering period are boiled before drinking to clear the veins. Tea made using the leaves and fruits are drunk or applied externally to the area (as a pulp) to relieve joint pain.
Similar uses: Baytop, 1999; Behçet and Arık, 2013; Korkmaz and Alpaslan 2014; Melikoğlu et al., 2015</td></tr>
<tr><td>Family: Rosaceae
Taxa: Cotoneaster integerrimus Medik.
English name: Common cotoneaster
Turkish Name: Garagat
Local Name: Mecuk, Koyungözü
Plant form: Shrub
Location: Bozburun, Saptıran- Yıkıkhanlar, Çalıderehanları
Habitats: Stony slope
Used parts: Fruit/ Root/ Bark
Recipe for use: Roots or barks peeled from the trunk are boiled in cold water for a while and drunk as tea (decoction) against hemorrhoids. The fruits are eaten raw to relieve inflammation.</td><td>Family: Rosaceae
Taxa: Cotoneaster nummularius Fisch. & C.A.Mey.
English name: Coinwort cotoneaster
Turkish Name: Dağ muşmulası
Local Name: Mecuk
Plant form: Shrub
Location: Taşağıl- Kom
Habitats: Bushes, calcareous slope
Used parts: Fruit/ Shoots
Recipe for use: Shoots are boiled in cold water and drunk as tea (decoction) against hemorrhoids.</td></tr>
<tr><td colspan="2">Similar uses: Kadıoğlu and Kadıoğlu, 2014; Korkmaz and Alpaslan, 2014</td></tr>
</table>

Table 1. The plants used by the local people for both human and animal health in folk medicine (continuance)

<table>
<tr><td colspan="2">Family: Rosaceae
Taxa: Malus sylvestris (L.) Mill.
English name: European crab apple
Turkish Name: Yabani elma
Local Name: Eşki elma
Plant form: Tree
Location: Demirkaş-Kom
Habitats: Forest edge
Used parts: Fruit
Recipe for use: Its fruits are used in making syrups and marmalades. Its fruits are eaten due to their appetite-increasing and hematinic characteristics. It lowers the blood sugar. For diabetes, these apples are steeped in water for a period of 7 to 10 days. Obtained apple juice is drunk twice a day (morning a glass and evening a glass).
Similar uses: Arıtuluk and Ezer, 2012; Karakurt, 2014; Kadıoğlu and Kadıoğlu, 2014; Korkmaz and Alpaslan, 2014</td></tr>
<tr><td>Family: Rosaceae
Taxa: Pyrus elaeagnifolia Pall.
English name: Oleaster-leaf pear
Turkish Name: Ahlat
Local Name: Yabanarmudu, ahlat
Plant form: Small Tree
Location: Musadanışman
Habitats: Coniferous and deciduous fields
Used parts: Fruit</td><td>Family: Rosaceae
Taxa: Pyrus syriaca var. syriaca Boiss.
English name: Syrian pear
Turkish Name: Çakalarmudu
Local Name: Yaban armudu
Plant form: Tree
Location: Yukarı Kopköy
Habitats: Dry stony slopes, forest remains, field edges
Used parts: Fruit
Recipe for use: They have white-colored flowers and fleshy fruits. Its fruits are used in making syrups, marmalades, and similar spreads. The fruit is eaten boiled to prevent abdominal pain and diarrhea and to eliminate intestinal worms.</td></tr>
<tr><td colspan="2">Similar uses: Çakılcıoğlu et al., 2011
Animal diseases: Diarrhea
Application: Fruits are boiled with water and fed to animals with diarrhea after waiting for a while.</td></tr>
</table>

Table 1. The plants used by the local people for both human and animal health in folk medicine (continuance)

Family: Rosaceae **Taxa:** *Prunus divaricate* Ledeb. **English name:** **Turkish Name:** Dağ eriği **Local Name:** Yabani erik **Plant form:** Shrub or Small Tree **Location:** Taşağıl- Kom **Habitats:** Steep slope **Used parts:** Fruit **Recipe for use:** In addition to being consumed as regular fruits, the fruits are used in making syrups and marmalades. The fruits are eaten for their appetite increasing and hematinic characteristics. Unripe, sour raw fruits are boiled and drunk to lower blood sugar (diabetes). **Similar uses:** Arıtuluk and Ezer, 2012	
Family: Rosaceae **Taxa:** *Rosa spinosissima* L. **English name:** Burnet rose **Turkish Name:** Karakuşburnu **Local Name:** Garaguşburni **Plant form:** Shrub **Location:** Çalıderehanları **Habitats:** Cliff slope **Used parts:** Leaf/Fruit/Root **Recipe for use:** They have white coloured flowers and fleshy fruits. Its fruits are used in making syrups and marmalades. The fruit is eaten boiled to prevent abdominal pain and iarrhoea and to eliminate intestinal worms. Used for hemorrhoids (tea-decoction). **Similar uses:** Baytop, 1999; Tanker et al., 2007; Çakılcıoğlu et al., 2011	**Family:** Rosaceae **Taxa:** *Rosa villosa* L. **English name:** Downy rose, Apple rose **Turkish Name:** Sakız gülü **Local Name:** Kuşburnu **Plant form:** Shrub **Location:** Sazlı, Küçükahbun **Habitats:** Bushes, meadow **Used parts:** Leaf/Fruit/Root **Recipe for use:** Fruit and root parts of the plant are used. Similar to the general uses of the plant around Türkiye, its fruits are used in making syrups, juices, and marmalades, and its roots are used in making tea. The tea (decoction) made by boiling the fruits is drunk while hot for common cold and flu. The tea (decoction) prepared with its roots is drunk daily, preferable while hot or lukewarm, for hemorrhoids. This is continued until the complaints decrease or cease to exist. **Similar uses:** Kadıoğlu et al., 2010, Arık and Behcet, 2013; Kadıoğlu ve Kadıoğlu, 2014

Table 1. The plants used by the local people for both human and animal health in folk medicine (continuance)

Family: Rosaceae **Taxa:** *Rosa canina* L. **English name:** Dog rose, Wild rose **Turkish Name:** Yaban gülü **Local Name:** İtburnu, öküzgötü **Plant form:** Shrub **Location:** Saptıran, Kapıkale **Habitats:** Coasts, rocky slopes, scrub, hedges, forests and clearings, mainly limestones **Used parts:** Fruit/Root **Recipe for use:** Fruit of the plant are used. Its fruits are used in making syrups, juices, and marmalades. Plant tea (decoction) is drunk while hot for cold, bronchitis and flu. **Similar uses:** Bağcı et al., 2006; Sarper et al., 2009; Yapıcı et al., 2009; Akçiçek, 2010	**Family:** Rosaceae **Taxa:** *Rosa foetida* J.Herrm. **English name:** Austrian briar, Persian yellow rose **Turkish name:** Kuşburnu **Local name:** Kuşburni **Plant form:** Shrub **Location:** Akduran **Habitats:** Road side, slope **Used parts:** Fruit **Recipe for use:** Used for colds, hemorrhoids (tea-decoction). **Similar uses:** Doğan et al., 2016
Family: Rosaceae **Taxa:** *Rubus caesius* L. **English name:** Dewberry **Turkish name:** Böğürtlen **Local name:** Mormor, gözemor **Plant form.** Shrub **Location:** Akduran, Taşağıl-Tatlısuderesi **Habitats:** Stream edge **Used parts:** Fruit/Leaf/Root **Recipe for me:** Fruits, leaves, and roots of plant are used. Rubus is rich in fiber, vitamin C, and vitamin K. Rubus fruits are consumed raw and are widely used in making desserts, jams, and marmelade. Tea (decoction) made by boiling the plant's root and leaf parts is drunk to reduce blood sugar (diabetes). **Similar uses:** Bozkurt, 2019; Harris, 2012	**Family:** Rosaceae **Taxa:** *Rubus idaeus* L. **English name:** Raspberry **Turkish Name:** Ahududu **Local Name:** Yabani çilek **Plant form:** Shrub **Location:** Musadanışman- Karaçamur **Habitats:** Stoy slope **Used parts:** Fruit/Leaf **Recipe for use:** Rubus fruits are consumed raw and are widely used in making desserts, jams, and marmalade. The leaves are boiled (tea-decoction) and a glass is drunk in the morning and evening (for hepatit). **Similar uses:** Giano et al., 2010

Table 1. The plants used by the local people for both human and animal health in folk medicine (continuance)

Family: Salicaceae **Taxa:** *Salix fragilis* L. **English name:** Crack willow, Brittle willow **Turkish name:** Gevrek söğüt **Local name:** Gevrek, düllük **Plant form:** Big Shrub or Small Tree **Location:** Çalıdere hanları **Habitats:** Field edge **Used parts:** Shoot/ Bark **Recipe for use:** It is used to relieve rheumatic pain. Young shoots are tied to the sore parts of the body while raw or cooked. **Similar uses:** Özgen et al., 2012; Torlak, 2020	***Family:*** *Salicaceae* **Taxa:** S*alix alba* L. **English name:** White willow **Turkish Name:** Söğüt **Local Name:** Söğüt **Plant form:** Tree **Location:** Sazlı **Habitats:** Riverside **Used parts:** Shoot **Recipe for use:** It is rheomatic pain. Young shoots are tied to the sore parts of the body while raw or cooked. **Similar uses:** Kerr, 2009

4. CONCLUSION

The study examined ethnomedicinal uses of plants in tree, shrub or shrubby forms. These plants, rich in vitamins and minerals are consumed as fruits. In addition, products such as sweets, syrups, compotes, canned food, jams, and marmalades are produced in the season. It has been noted that these plants roots, leaves, and fruits which have many health benefits are also used. The recorded data revealed that the fruits and other parts of these 34 taxa are used for medicinal purposes and in treating many ailments such as intestinal problems, diabetes, eczema, asthma, and rheumatism. Biodiversity is the interaction of living things with the environment in the different environments in which they live. The study area; it has a rich biodiversity including a flora of plants used for health, aroma and other purposes. Plants with wild ancestors in nature need to be cultivated to obtain new varieties or to improve existing uses or to develop them as needed. New research supporting the results of the study; argues that the cultivation and expansion of these plants can prevent the extinction of plants for different reasons (especially urbanization, construction). Taxa with medicinal uses can be evaluated in other studies and supported by pharmacological studies to achieve better results. It is thought that plant genetic resources that continue to be used for medicinal purposes will be recorded and protected by similar studies.

COMPLIANCE WITH ETHICAL STANDARDS

Author Contributions

Concept, design, supervision, resources, data collection and/or processing, analysis and/or interpretation, literature search, writing manuscript, critical review – S.K.

Resources, data collection, literature search, writing manuscript – B.K.

Data collection, literature search – K. K. S

Conflict of Interest

The authors do not have any conflicts of interest to declare.

Ethical Approval

For this type of study, formal consent is not required

Acknowledgements

The study was taken from TAGEM (General Directorate of Agricultural Research and Policies) TBAD/13/A01/P05/006 project.

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