

CLASSIFIED MEDICINAL PLANTS OF CANAKKALE IN THE TROYA REGION AND THEIR USAGE AREAS

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Abstract

In this study, plants with medicinal properties were determined from the plants, which are included in the Flora of Turkey and The East Aegean Islands books, grown in Canakkale, located in the Troy region. The purposes of use of the plants used for treatment in Canakkale center and districts, the active substances they contain and their usage patterns are listed. As a result, 93 plant taxa with medicinal properties that naturally spread in Canakkale were identified. It contains 40 taxa essential oil, 26 taxa tannins, 19 taxa fixed oil, 15 taxa glycosides, 8 taxa alkaloids, 7 taxa organic acids from plants used for therapeutic purposes. Medicinal plants found in Canakkale are diaphoretic, diuretic, gas-reducing, potent, antidiabetic, antipyretic, wound healing, pain reliever, bile enhancer, stone reducer, etc. are used for such purposes. It is use the taxa, 54 are used as infusions, 22 as decoctions, 15 as powders, 2 as pills, 6 as ointments and 5 as mouthwash.

Keywords: Flora of Turkey, Canakkale, Medicinal Plant.

1. INTRODUCTION

Human beings has sought the solution of its problems and diseases in nature from the very first moment of its existence on earth. In particular, the interest in the herbal nature around them has identified plants that are beneficial to health as a result of centuries of experimentation. As a result of long researches, they not only found medicinal plants, but also created new medicinal recipes by mixing them together. They pass on this information, which they have reached through trial and error method, from generation to generation.

The expensiveness of artificially obtained drugs and some negative side effects have been effective in people's orientation to nature. For this reason, mankind has turned to seek the remedy in natural herbal products again. Today, all over the world, a return to nature has begun in many areas, especially in the prevention and treatment of diseases, from nutrition to cosmetic products.

In biological sciences, it is seen that plants used for therapeutic purposes in indigenous cultures are generally used based on a long tradition or "traditional medicine" (Leonti et al., 2003).

Turkey is one of the countries with a rich flora due to its geographical location, geomorphological structure and various climates. The flora of Turkey contains approximately 12,000 seed plants, 3,649 of which are endemic (Güner et al., 2012). Thanks to the new species found as a result of new studies, the number of plant species in Turkey is gradually increasing. The country has the richest flora of the Middle East in terms of endemic plant rate and diversity (Polat, 2010).

“Medicinal plants” are defined as plants that show therapeutic activity with their rich bioactive substance content (Boztaş et al., 2021).

The parts of medicinal plants used as medicine (leaf, flower, fruit, seed, root, etc.) heal diseases thanks to the active substances in them. These active substances are present at different levels in different stages of development in plants. The plant to be used for medicinal purposes should be collected when it is the richest in terms of active substance.

Knowledge of medicinal plant use and traditional pharmacological practices is a rich cultural heritage and must be preserved to ensure their long-term use. Various studies are being conducted to protect the traditional knowledge that is lost or in danger of extinction in the use of medicinal plants (Navia et al. 2021).

According to the World Health Organization (WHO), herbal medicines are used by approximately 80% of the world's population for the health system, especially in rural areas (Hu et al. 2020).

Since the majority of Turkish people live in rural areas, it is closely related to wild plants. The Anatolian people's use of wild plants as medicine dates back to ancient times. The plant names registered in the prescription formulas found in the Hittite period medical tablets are a proof of this (Baytop, 1999).

Civilizations living in Anatolia have been using medicinal plants since the early ages, and it is known that folk medical studies were carried out in the Republican Period in order to collect information about medicinal plants and transfer them to future generations (Kökçü et al., 2015).

In rural areas, plants that are grown or grown in the environment are used to make medicine. In cities, herbal medicines are purchased from pharmacies and herbalists.

In this study, medicinal plants were determined from the plants in the books of Flora of Turkey and Eastern Aegean Islands growing in Çanakkale, located in the Troy region. The active ingredients and usage patterns of the plants used for therapeutic purposes in Çanakkale were determined for which ailments. With this study, it is aimed to contribute to the ethnobotanical and pharmacological researches that will be made in the future.

2. MATERIALS AND METHODS

The research material was collected from areas of Çanakkale and their environs (Figure 1).



Figure 1. Geographical location of the study area (Google Maps).

The plant samples were collected during different vegetation periods, dried using standard herbarium methods, and identified following Flora of Turkey and the East Aegean Islands (Davis, 1965-1985; Davis et al., 1988).

In this study, plants with medicinal properties were determined from the plants, which are included in the Flora of Turkey and The East Aegean Islands books, grown in Canakkale, located in the Troy region. The purposes of use of the plants used for treatment in Canakkale center and districts, the active substances they contain and their usage patterns are listed. The book "Herbal Treatment in Turkey" (Baytop, 1999) was used to determine the active ingredients.

3. RESULTS AND DISCUSSIONS

In this study, 93 plant taxa with medicinal properties, naturally distributed in Canakkale, were determined. The list of medicinal plants found in Canakkale is given in Table 1.

Table 1. List of medicinal plants used in Canakkale

Scientific Name	Vernacular Name	Active Ingredient	Usage pattern/ preparation	Ailments treated / therapeutic effect
Amaryllidaceae				
<i>Allium sativum</i> L.	Sarımsak	Essential oil	Fresh, raw	Diuretic, antiseptic, vermifugal
<i>Allium cepa</i> L.	Soğan	Essential oil	Fresh, raw	Diuretic, wound treatment
Anacardiaceae				
<i>Pistacia terebinthus</i> L.	Menengiç	Tannin	As a pill	Antiseptic
<i>Rhus coriaria</i> L.	Sumak, somak	Tannin, essential oil	Mouthwash	Antiseptic
Apiaceae				
<i>Anethum graveolens</i> L.	Dere otu	Tannin, fixed oil, essential oil	Infusion	Carminative (gas reducing), sedative
<i>Apium graveolens</i> L.	Kereviz	Fixed oil, essential oil	Infusion	Diuretic, carminative (gas reducing), appetizing, prostate
<i>Conium maculatum</i> L.	Baldıran otu	Alkaloid	Infusion	Analgesic
<i>Coriandrum sativum</i> L.	Kişniş	Tannin	Infusion	Carminative (gas reducing)
<i>Eryngium campestre</i> L.	Yer kestanesi	Tannin	Infusion	Diuretic
<i>Eryngium maritimum</i> L.	Çakır diken, kumboğadikeni	Tannin	Infusion	Diuretic, stimulant, antitussive
<i>Foeniculum vulgare</i> Miller	Rezene, çarşır	Fixed oil, essential oil	in powder form	Diuretic, carminative (gas reducing), relieving stomach ailments, lactogen, wound treatment
Araceae				
<i>Dracunculus vulgaris</i> Schott	Yılanbıçağı	Alkoloid	Decoction	Chilblain, hemorrhoids
Asparagaceae				
<i>Asparagus acutifolius</i> L.	Kuşkonmaz	Essential oil	Decoction, infusion	Diuretic
<i>Ornithogalum umbellatum</i> L.	Akkız, sunbala	Glycoside	in powder form	Emetic, wound treatment

Table 1. List of medicinal plants used in Canakkale (continue)

Scientific Name	Vernacular Name	Active Ingredient	Usage pattern/ preparation	Ailments treated / therapeutic effect
<i>Ruscus aculeatus</i> L. var. <i>angustifolius</i> Boiss.	Tavşanmemesi	Essential oil	Decoction	Diaphoretic, diuretic
Asphodelaceae				
<i>Asphodelus ramosus</i> L.	Çiriş otu	Mucilage, glucose	as ointment	Diuretic, wound treatment
Asteraceae				
<i>Achillea nobilis</i> L.	Binbiryaprak	Essential oil	Infusion	Diuretic, carminative (gas reducing), menstrual remover, wound treatment
<i>Anthemis arvensis</i> L.	Tarla papatyası	Glycoside, essential oils	Infusion, in powder form	Diuretic, carminative (gas reducing), sedative
<i>Anthemis auriculata</i> Boiss.	Papatya, akbaba	Glycoside, essential oils	Infusion, in powder form	Diuretic, carminative (gas reducing), sedative
<i>Artemisia annua</i> L.	Yavşan otu	Essential oils	Infusion	Dysentery, tuberculosis, wound treatment
<i>Artemisia campestris</i> L.	Karayavşan	Essential oils	Infusion, in powder form	Vermifugal
<i>Artemisia santonicum</i> L.	Kumyavşanı	Essential oils	Infusion	Vermifugal, strengthening
<i>Carthamus lanatus</i> L.	Sarı diken	Fixed oil	Infusion	Diaphoretic, vermifugal, menstrual remover
<i>Centaurea cyanus</i> L.	Peygamber çiçeği	Glycoside, fixed oil	Infusion	Eye diseases, strengthening
<i>Cota tinctoria</i> (L.) J.Gay	Boyacı papatyası	Flavone	Infusion	Antitusive
<i>Helichrysum stoechas</i> (L.) Moench	Ölmez çiçek	Glycoside, essential oil	Decoction, infusion	Diuretic
<i>Lactuca serriola</i> L.	Eşekhelvası	Sesquiterpene lactones	As a pill	Diuretic, anesthetic, antispasmodic
<i>Tragopogon porrifolius</i> L.	Yemlik	Vitamin	Raw	Diaphoretic, diuretic
<i>Tussilago farfara</i> L.	Öksürük otu	Tannin, alkaloid	Infusion	Antitussive
<i>Xanthium spinosum</i> L.	Pıtrak	Glycoside	Infusion	Diaphoretic, diuretic, sedative
Boraginaceae				
<i>Borago officinalis</i> L.	Hodan	Tannin	Infusion	Diaphoretic, diuretic, antipyretic
Brassicaceae				
<i>Brassica nigra</i> (L.) W.D.J.Koch	Hardal	Fixed oil	in powder form	Analgesic
<i>Lepidium sativum</i> L.	Tere		Decoction	Cholesterol lowering
<i>Nasturtium officinale</i> R.Br.	Su teresi	Glycoside, vitamin	Raw	Diuretic, strengthening
<i>Raphanus raphanistrum</i> L.	Turp, eşek turpu	Fixed oil	Raw	Appetizing
Colchicaceae				
<i>Colchicum autumnale</i> L.	Acıçığdem	Tannin, alkaloid, fixed oil	in powder form	Diaphoretic, rheumatic pain relief, laxative, diuretic

Table 1. List of medicinal plants used in Canakkale (contunie)

Scientific Name	Vernacular Name	Active Ingredient	Usage pattern/ preparation	Ailments treated / therapeutic effect
Cornaceae				
<i>Cornus mas</i> L.	Kızılcık	Tannin	Decoction	Cold, exhaustion
Cucurbitaceae				
<i>Ecballium elaterium</i> (L.) A. Rich	Eşek hıyarı, acıkavun	Cucurbitacin	Raw	Sinusitis
<i>Momordica charantia</i> L.	Kudretnarı	glycosides, saponins, alkaloides, fixed oils	raw in oleum oliva	Gastralgia, wound treatment
Ericaceae				
<i>Arbutus andrachne</i> L.	Sandal ağacı	Tannin	Infusion	Antiseptic
<i>Arbutus unedo</i> L.	Sandal ağacı	Tannin	Infusion	Antiseptic
Euphorbiaceae				
<i>Euphorbia aleppica</i> L.	Sütleğen	Fixed oil	as ointment	Laxative
<i>Euphorbia helioscopia</i> L.	Sütleğen	Fixed oil	as ointment	Laxative
<i>Euphorbia peplis</i> L.	Sütleğen	Fixed oil	as ointment	Laxative
<i>Euphorbia rigida</i> M.Bieb.	Sütleğen	Fixed oil	as ointment	Laxative
Fabaceae				
<i>Lupinus albus</i> L. subsp. <i>albus</i>	Acı bakla	Fixed oil	Decoction	Diuretic, vermifugal, strengthening
<i>Ononis spinosa</i> subsp. <i>antiquorum</i> (L.) Briq.	Kayışkırın	Tannin, essential oil, organic acid	Decoction	Diuretic, antiseptic, wound treatment
<i>Ononis spinosa</i> L. subsp. <i>leiosperma</i> (Boiss.) Sirj.	Kayışkırın	Tannin, essential oil, organic acid	Decoction	Diuretic, antiseptic, wound treatment
<i>Spartium junceum</i> L.	Katırtırnağı	Alkaloid	Infusion	Anesthetic, diuretic
<i>Trigonella foenum-graecum</i> L.	Çemenotu	Fixed oil	Decoction, in powder form	Laxative, diabetes, strengthening
Gentianaceae				
<i>Centaurium erythraea</i> Rafn.	Kırmızı kantaron	Glycoside, essential oil	Infusion, in powder form	Appetizing
Hypericaceae				
<i>Hypericum perforatum</i> L.	Kantaron	Tannin, essential oil	Infusion, in oleum oliva	Antiseptic, sedative, vermifugal, antispasmodic, wound treatment
Lamiaceae				
<i>Lavandula stoechas</i> L. subsp. <i>stoechas</i>	Karabaş otu	Glycoside, essential oil	Infusion	Antiseptic, analgesic, sedative, wound treatment
<i>Mentha longifolia</i> (L.) L.	Nane	Essential oil	Infusion, decoction	Gastralgia, antitusive
<i>Mentha pulegium</i> L.	Filiskin, yarpuz	Essential oil	Decoction, infusion	Gastralgia, orexigenic
<i>Origanum majorana</i> L.	Mercanköşk	Essential oil	Decoction	Gastralgia

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Scientific Name	Vernacular Name	Active Ingredient	Usage pattern/ preparation	Ailments treated / therapeutic effect
<i>Origanum onites</i> L.	Bilyalıkekik	Essential oil	Infusion, in powder form	Antiseptic, relieving stomach ailments, sedative, vermifugal
<i>Rosmarinus officinalis</i> L.	Biberiye	Tannin, essential oil	Infusion	Rheumatic pain relief, diuretic, bile enhancer
<i>Salvia officinalis</i> L.	Adaçayı	Tannin, essential oils	Infusion	Cold, gastralgia
<i>Salvia tomentosa</i> Mill.	Boşalba	Tannin, essential oils	Infusion	Cold, diarrhea
<i>Salvia verbenaca</i> L.	Yabani adaçayı	Tannin, essential oils	Infusion, mouthwash	Eye diseases, antiseptic, carminative (gas reducing), stimulant, strengthening
<i>Salvia viridis</i> L.	Mor tepeli adaçayı, zarıfşalba	Essential oil	Infusion	Relieving stomach ailments, antiperspirant, sedative
<i>Satureja thymbra</i> L.	Zahter	Essential oil	Infusion	Diaphoretic, diuretic, stimulant, relieving stomach ailments, appetizing
<i>Teucrium chamaedrys</i> L. subsp. <i>lydium</i>	Kısamahmut otu	Essential oil	Infusion	Stimulant, relieving stomach ailments, appetizing, strengthening
<i>Teucrium divaricatum</i> Sieber	Kısamahmut	Essential oil	Infusion	Stimulant, relieving stomach ailments, appetizing, strengthening
<i>Teucrium flavum</i> L.	Kısamahmut	Essential oil	Infusion	Stimulant, appetizing, strengthening
<i>Thymbra capitata</i> (L.) Cav.	Acı kekik	Essential oil	Infusion, in powder form	Antiseptic, relieving stomach ailments, sedative, vermifugal
<i>Thymbra spicata</i> L.var. <i>spicata</i>	Zahter	Essential oil	Infusion, in powder form	Antiseptic, relieving stomach ailments, sedative, vermifugal
<i>Vitex agnus-castus</i> L.	Hayıt	Essential oil	Infusion	Laxative, relieving stomach ailments
<i>Ziziphora capitata</i> L.	Anuk, dağreyhanı	Essential oil	Infusion	Carminative (gas reducing), relieving stomach ailments
Malvaceae				
<i>Tilia tomentosa</i> Moench	Gümişihlamur	Musilage, essential oil	Infusion	Cold, gastralgia
Orchidaceae				
<i>Orchis italica</i> Poir.	Salep	Glucomannan, musilage	in powder form	Children's diarrhea, strengthening
<i>Orchis simia</i> Lam.	Salep	Glucomannan, musilage	in powder form	Children's diarrhea, strengthening

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Scientific Name	Vernacular Name	Active Ingredient	Usage pattern/ preparation	Ailments treated / therapeutic effect
Papaveraceae				
<i>Glaucium corniculatum</i> var. <i>corniculatum</i> (L.) Rudolph	Çömlek çatlatan	Fixed oil, alkaloid	Infusion	Sedative, antitussive
<i>Papaver rhoeas</i> L.	Gelincik	Alkaloid	Raw	Sedative, antitussive
<i>Papaver somniferum</i> L.	Haşhaş	Alkaloid	Decoction, mouthwash	Analgesic
Plantaginaceae				
<i>Digitalis ferruginea</i> L.	Yüksük otu	Tannin, Glycoside	Infusion	Diuretic
<i>Digitalis trojana</i> Ivanina	Yüksük otu	Tannin, Glycoside	Infusion	Diuretic
<i>Plantago coronopus</i> L.	Sinirli ot	Tannin, organic acid	Decoction, infusion	Diuretic
<i>Plantago lanceolata</i> L.	Sinirli ot	Tannin, organic acid	Decoction, infusion	Diuretic
<i>Plantago scabra</i> Moench	Sinirli ot	Fixed oil	Mouthwash	laxative
Rosaceae				
<i>Amygdalus communis</i> L.	Badem	Glycoside, fixed oil	as ointment	Laxative, diuretic, antitussive, vermifugal, wound treatment
<i>Cornus domestica</i> (L.) Spach	Üvez	Essential oil, organic acid	Infusion	Diabetes
<i>Cydonia oblonga</i> Mill.	Ayva	Fixed oil	Decoction, mouthwash	Sedative, antipyretic, children's diarrhea
<i>Fragaria vesca</i> L.	Dağ çileği	Tannin	Decoction, infusion	Diuretic
<i>Geum urbanum</i> L.	Meryem otu	Tannin, Glycoside	Infusion	Relieving stomach ailments, strengthening
<i>Prunus spinosa</i> L. subsp. <i>dasyphylla</i> (Schun.) Domin.	Çakaleriği	Alkaloid	Raw, decoction	Laxative, diuretic, vermifugal
<i>Rosa canina</i> L.	Kuşburnu	Tannin, organic acid	Infusion	Diabetes, strengthening
<i>Sorbus aucuparia</i> L.	Kuşüvezi	Essential oil, organic acid	Infusion	Diabetes
Rubiaceae				
<i>Rubia tinctorum</i> L.	Kökboyası	Glycoside	Infusion, in powder form	Laxative, diuretic
Solanaceae				
<i>Hyoscyamus niger</i> L.	Banotu	Alkaloid	Decoction	Analgesic
<i>Solanum nigrum</i> L.	İtüzümü	Alkoloid	decoction	Sedative, analgesic
Urticaceae				
<i>Urtica dioica</i> L.	Isırgan otu	Flavone	Decoction	Gastralgia, antitusive, sinusitis

In the study area, 93 plant taxa belonging to 26 families with medicinal use were identified. The order of these families according to the number of taxa they have, from the most to the least, is as follows: Lamiaceae (18 taxa), Asteraceae (14 taxa), Rosaceae (8 taxa), Apiaceae (7 taxa), Fabaceae (5 taxa), Plantaginaceae (5 taxa), Brassicaceae (4 taxa), Euphorbiaceae (4 taxa), Asparagaceae (3 taxa), Papaveraceae (3 taxa), Amaryllidaceae (2 taxa), Anacardiaceae (2 taxa), Cucurbitaceae (2 taxa), Ericaceae (2 taxa), Orchidaceae (2 taxa), Solanaceae (2 taxa), Araceae (1 taxon), Asphodelaceae (1 taxon), Boraginaceae (1 taxon), Colchicaceae (1 taxon), Cornaceae (1 taxon), Gentianaceae (1 taxon), Hypericaceae (1 taxon), Malvaceae (1 taxon), Rubiaceae (1 taxon), Urticaceae (1 taxon) (Figure 2).

As can be understood from this result, it was seen that the plants used by the local people for medicinal purposes mainly belong to the families of Lamiaceae (19%), Asteraceae (15%), Rosaceae (9%) and Apiaceae (8%). These results were compatible with studies investigating plants used for medicinal purposes in the districts of Çanakkale (Avcıoğlu, 2003; Emre, 2003; Uysal et al., 2006; Tuzlacı and Emre, 2007; Bulut and Tuzlacı, 2009; Uysal et al., 2012; Tutenocaklı, 2014; Bulut and Tuzlacı, 2015; Kökçü, 2015; Sevgi et al., 2022).

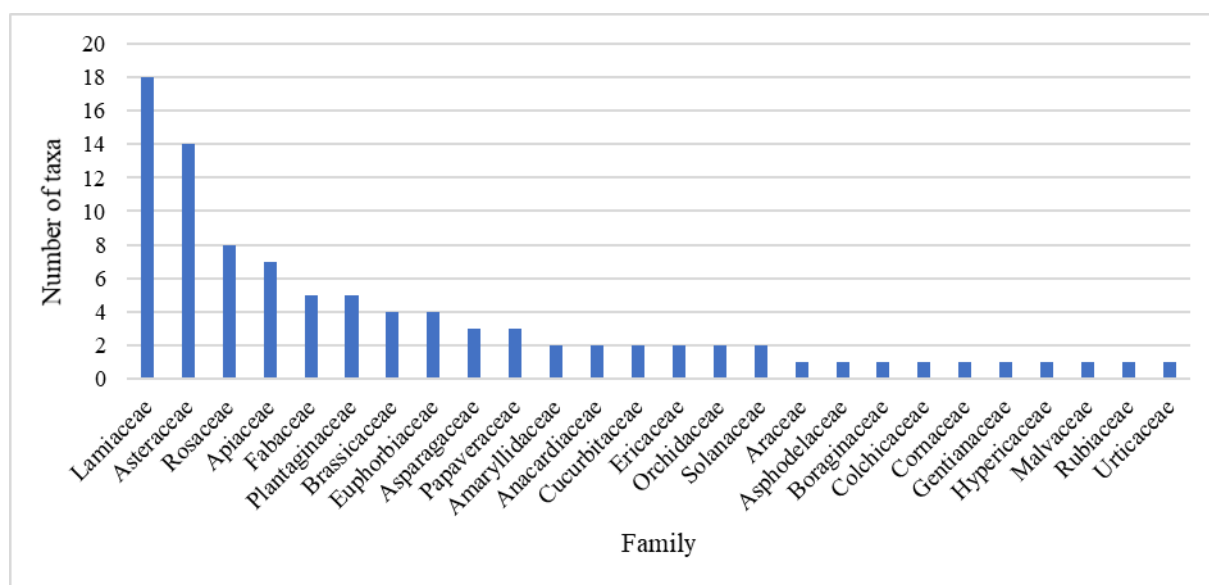


Figure 2. Distribution of taxa with medical use according to families

It contains 40 taxa essential oil, 26 taxa tannins, 19 taxa fixed oil, 15 taxa glycosides, 8 taxa alkaloids, 7 taxa organic acids, 2 flavone, 2 vitamin, 1 sesquiterpene lactones, 1 cucurbitacin and 1 saponin from plants used for therapeutic purposes (Figure 3).

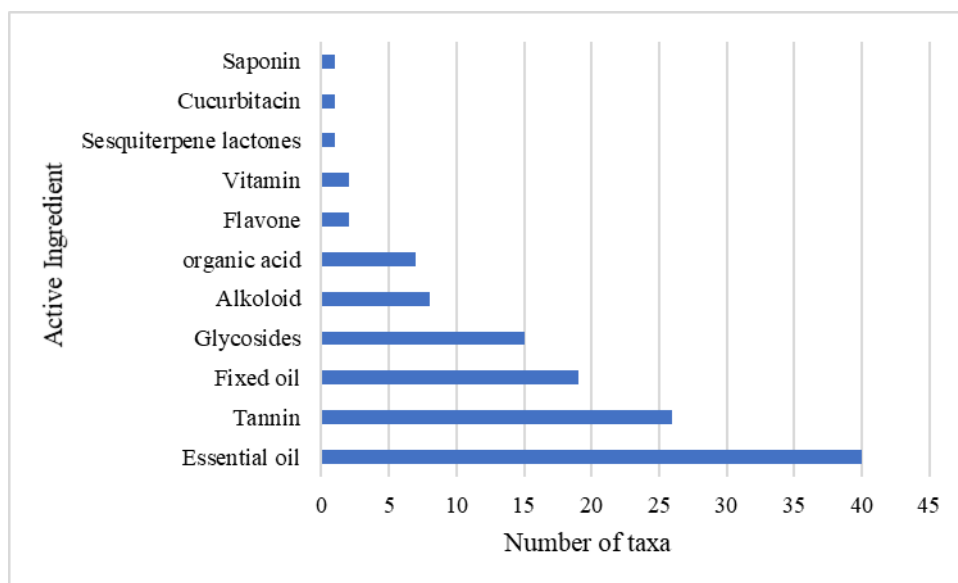


Figure 3. Number of taxa according to the active ingredients they contain

Considering the uses of medicinal plants in Canakkale, they are diaphoretic, diuretic, sedative, antiseptic, strengthener, antidiabetic, antipyretic, wound healing, pain reliever, bile increaser, stone reducer, etc. appears to be used for such purposes (Figure 4).

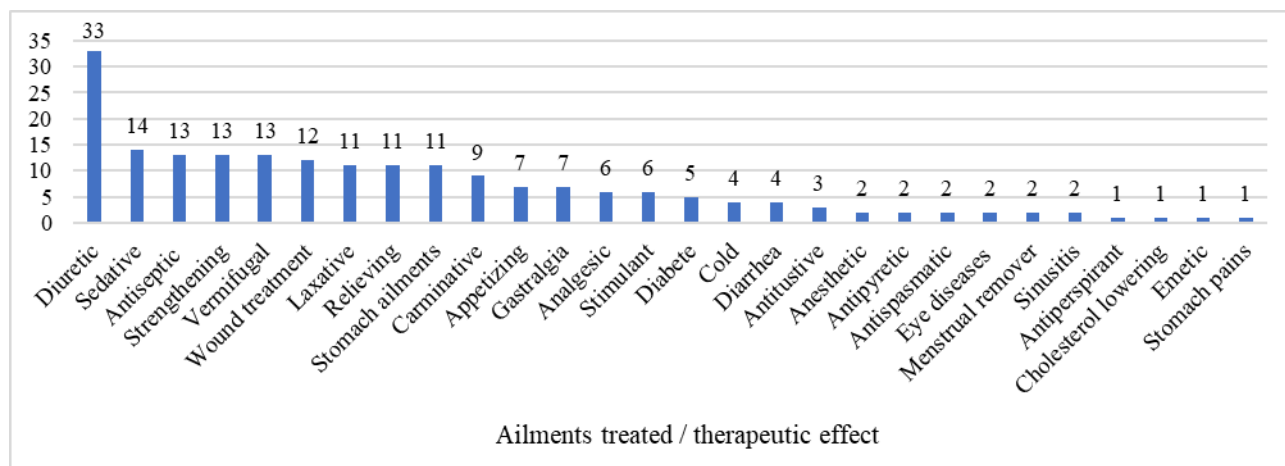


Figure 4. Number of plants according to usage purposes

In order for herbal medicines to be taken as medicine, they must be put in an appropriate form. The simplest way is to powder the medicine as it is or to take it in a liquid. Of the taxa used for therapeutic purposes in Çanakkale, 54 are used as infusion, 22 as decoction, 15 as powder, 9 as raw, 6 as ointment, 9 as raw, 5 as mouthwash, 2 as pills, 2 as fresh and 2 as oleum oliva (Figure 5).

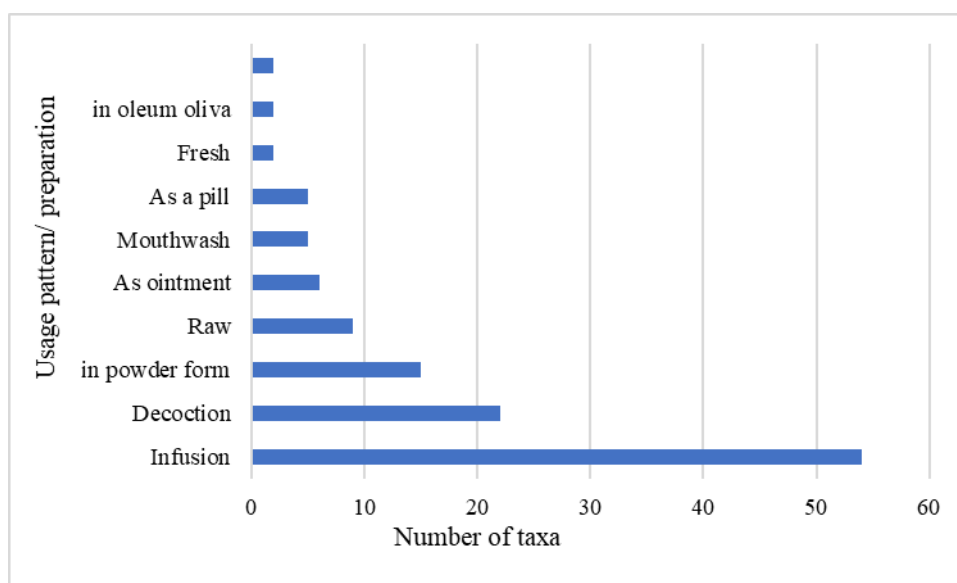


Figure 5. Usages form of medicinal plants

The use of plants collected from nature for therapeutic purposes is increasing day by day and medicinal plants are recorded within the scope of ethnobotanical researches on this subject. In Turkey, studies are carried out on the basis of provinces and districts as well as regionally.

There are studies examining plants used for medicinal purposes in provinces and districts close to Çanakkale, which is our research area. In the studies on plants used for therapeutic purposes in Çanakkale, 43 taxa (Uysal et al., 2012) in Ayvacık district, 60 taxa in Bayramiç district (Bulut and Tuzlacı, 2009), 66 taxa in Ezine district (Tuzlacı and Emre, 2007), 79 taxa in Yenice district. (Tutenocakli, 2014), 82 taxa (Kökçü, 2015) were identified in Lapseki district. In addition, in the studies carried out in the vicinity of the research area, 133 taxa in Kaz Mountains (Satıl et al., 2007), 46 taxa in Balıkesir Madra Mountain (Satıl et al., 2008), 65 taxa in Bandırma district of Balıkesir (Onar, 2006). 118 taxa (Polat, 2010) were recorded for therapeutic purposes in Balıkesir Burhaniye-Havran district.

4. CONCLUSIONS

Turkiye has a rich medicinal and aromatic flora, which is very important to protect this flora, to reveal cultural diversity, to record plant use information and to reveal the contribution of plants with economic value to our country. Ethnobotanical studies, in which traditional uses of herbal medicines are revealed, are also important in terms of protecting cultural heritage. As a result, taxonomic, phytochemical and pharmacological studies should be carried out on plants used for therapeutic purposes in future research. In addition, attention should be paid to the use of medicinal plants and their unconscious use should be prevented.

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