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Ethnobotany of medicinal plants used in dermatology in Türkiye: a review

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Abstract: Medicinal plants are increasingly used to treat skin diseases and as cosmetics. Türkiye has a rich diversity of medicinal flora, and patients have a choice of ethnomedicines to manage various dermatology problems. This comprehensive review aims to summarize the primary information available on the dermatological properties of medicinal plants in Türkiye and provide a baseline for the detection of new plant species having efficacy against skin conditions. In this review, clinical and experimental data were researched using relevant search terms in scientific literature databases like PubMed, Web of Science, Google Scholar, ScienceDirect, Scopus, EBSCO, ProQuest, Cochrane Library, and HighWire Press. The results are presented in different tables along with a regional comparative analysis. The study revealed that 439 taxa belonging to 89 families are used for the ethnomedical treatment of skin diseases or as cosmetics. The most commonly mentioned species are *Plantago lanceolata* L., *Malva neglecta* Wallr., *Plantago major* L., *Juglans regia* L., *Hypericum perforatum* L., *Rubus sanctus* Schreb., *Urtica dioica* L., *Juniperus oxycedrus* L., *Echium italicum* L., and *Rosa canina* L. This is the first nationwide ethnopharmacological review conducted in Türkiye for the treatment of dermatological disorders. Moreover, it is a contributing resource for further studies on using herbal remedies for the treatment of skin diseases.

Key words: Folk medicine, skin diseases, ethnobotany, Türkiye

1. Introduction

Since ancient times, numerous plants and plant-derived remedies have been the main component of the traditional healing system and have also been a fundamental part of history and culture. The use of medicinal plants in traditional medicine around the world has been reported via ethnobotanical studies (Harvey, 1999). Furthermore, many plants are used for medicinal purposes and are the foundation for newly developed pharmacologically active compounds or drug synthesis (Newman and Cragg, 2012). Even though bioactive natural products have been used for hundreds of years in traditional medicine, the isolation and characterization of their active compounds for novel drug discovery and development has been a focus of research in the last century. Despite this, very few plant species have been considered for possible drugs (Veeresham, 2012). Worldwide, only 10% of the estimated 391,000 plant species have been scientifically investigated for their potential use in health care (WCSP, 2012). It is also reported that about 60,000 species will become extinct by 2050, so there is an urgent imperative to search for therapeutically new compounds in plants (World Health Organization, 2005). Ethnobotanical and ethnopharmacological research can more effectively detect potentially novel molecules than random scanning, and it is well documented that this type of research plays a critical role in modern drug development (Harvey, 1999).

Türkiye possesses a rich flora with about 12,000 taxa of vascular plants, 30% of which are endemic to the country (Guner et al., 2012). This diversity was mentioned in Dioscorides' *Materia Medica* alongside the knowledge of medicinal plants that has existed for thousands of years (Demirci Kayıran, 2019). In Türkiye, the traditional use of medicinal plants is very widespread and is passed on between generations (Ozkan et al., 2016; Tuzlacı, 2016).

Medicinal plants have been commonly used in traditional medicines and are also seen as a source of therapeutic agents for skin diseases (Gül, 2021). The skin is the largest organ of the human body, and one of its main functions is the protection of the body from microbes, pathogens, ultraviolet (UV) irradiation, allergens, and irritants (Contassot et al., 2012). Skin ailments are the fourth most prevalent type of non-fatal disease, with nearly one-third of the population in the world having suffered at least one skin illness (Hay et al., 2015, Rundle et al., 2021). About 3000 skin diseases, which vary in symptoms and

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severity, have been identified, and they can severely diminish the quality of life (Bickers et al., 2006; Fritsch and Burgdorf, 2006). Skin diseases are frequently treated by dermatologists; however, more than 70% of patients do not consult a physician, and several skin diseases are self-treated with low hospitalization rates (Basra and Shahrukh, 2009; Wehausen et al., 2016). Studies on the incidence of skin diseases generally depend on secondary data that exclude patients who do not utilize healthcare. Thus, the real burden of skin illnesses may be greatly underrated (Tizek et al., 2019).

The epidermis is the outermost layer of the skin. It includes the basal layer, which contains melanocytes that produce melanin and is a natural protector against harmful UV radiations, the spinous layer that synthesizes keratin, the granular cell layer, which is a water barrier, and the stratum corneum, which protects from water loss, trauma, and infection (Mohd Ariffin and Hasham, 2020). When the epidermal barrier function is impaired, skin health is damaged because of increased inflammation, irritation, and dehydration leading to eczema. Furthermore, it can also allow pathogens and environmental allergens to penetrate the skin, causing autoimmune responses and hypersensitivity; these can leading to systemic immune responses and raise the risk of developing atopic dermatitis (Lin et al., 2017). Rosacea, acne, eczema, and psoriasis are all forms of impaired barrier function. The treatment of skin diseases like atopic dermatitis with steroids and immunosuppressants frequently induces adverse effects. Furthermore, the inclusion of skin atrophy and susceptibility to infection means that new therapeutic approaches are being pursued using natural products (Cury Martins et al., 2015; Benaim et al., 2019; Lee et al., 2019).

Skin photoaging is a complex biological progression caused by sunlight—mainly UV radiation—and induces major damage to many skin layers (Antoniou et al., 2010; Poon et al., 2015). Photoaging has a complicated pathogenesis, mostly including immune imbalance, inflammatory reaction, oxidative stress, apoptosis, damaged collagen fibrils, and pigmentation changes (He et al., 2021). The management of skin hyperpigmentation disorders is one of the primary targets of research on cosmetic formulations. Recently, cosmetics including herbal materials have attracted much interest because they are understood to be safer than other preparations with synthetic components (Saeedi et al., 2021).

In this study, the list of medicinal plants used against skin illnesses and as cosmetics by Turkish people is compiled for the first time as the first nationwide ethnopharmacological review for skin treatment in Türkiye.

2. Methods

2.1. Data collection and analyses

This review was conducted by searching for information on plants used in the treatment of skin diseases and as cosmetics in Turkish folk medicine. Various electronic databases such as PubMed, Google Scholar, ScienceDirect, EBSCO, Web of Science, Scopus, ProQuest, HighWire Press, and Cochrane Library were examined. Masters theses in the Yöktez database, written in all regions of Türkiye and covering medicinal plants used by indigenous people to cure various skin illnesses, have also been screened. Dating as far back as 1950, 129 articles on medicinal plants used to treat skin diseases in Türkiye were examined for the current study.

The studies selected as part of the plant screening were chosen with the following criteria in mind: the study was conducted in an ethnobotanical or ethnopharmacological context using plants native to Türkiye or those widely used in treating skin ailments; the work was carried out within Türkiye; the study includes both scientific names and local names of the plants; for books, either the academic title of the author must be available or it must have records of attribution to other scientific studies.

The plants used in traditional medicine that matched these criteria are shown in Table 3 with their scientific name, family name, part used, mode of preparation, whether it is cultivated or wild, and the skin disorders the plant is used to treat.

2.2. Data arrangement

Table 3 is an alphabetical list by scientific name of the plant taxa and includes family, Turkish name, vernacular name, English name, used parts, preparations, and references. The systematic identification or verification of these plants was carried out using the plant list of Türkiye (vascular plants) (Guner et al., 2012). The English names of the taxa were identified using data from USDA[1] Plants and the Encyclopedia of Life. Based on this, we have documented the nine most commonly used plant species for skin diseases and as cosmetics used by the people of Türkiye.

3. Results and discussion

Our research revealed a total of 439 plant taxa belonging to 89 families and 272 genera that are used to cure skin ailments and as cosmetics in Türkiye. The most common species are shown in Table 1, and Table 2 lists the dermatological and cosmetic preclinical animal studies and clinical trials in which these most common species have been used.

3.1. Distribution of the ethnobotanical studies across the regions of Türkiye

Organizing the 129 studies based on region revealed the following: 29 from Marmara (22.5%), 24 from Eastern Anatolia (18.6%), 21 from Mediterranean (16.27%), 19 from Aegean (14.73%), 18 from Central Anatolia (13.95%),

1 USDA, NRCS. 2023. The PLANTS Database [online]. Website (http://plants.usda.gov, 11/09/2023). National Plant Data Team, Greensboro, NC USA. [accessed May 2023].

Table 1. The most common species used for skin disease treatment and as cosmetics in Türkiye.

Plant taxa	Total data	Uses ratio %
Plantago lanceolata L.	33	6.05
Malva neglecta Wallr.	28	5.13
Plantago major L.	25	4.58
Juglans regia L.	24	4.40
Hypericum perforatum L.	23	4.22
Urtica dioica L.	16	2.93
Rubus sanctus Schreb.	15	2.75
Juniperus oxycedrus L.	10	1.83
Echium italicum L.	10	1.83

11 from the Black Sea (8.53%), and 7 from Southeastern Anatolia (5.42%) (Figure 1).

A total of 545 data points about regional distribution were determined as follows: 151 from Eastern Anatolia (27.70%), 130 from Aegean (23.85%), 101 from Marmara (18.53%), 60 from the Black Sea (11%), 52 from Mediterranean (9.55%), 40 from Central Anatolia (7.34%), and 11 from Southern Anatolia (2.03%) (Figure 2).

3.2. Data analysis: frequently used families and genera

All of the ethnomedicine publications we reviewed were from in Türkiye and mention uses of plants for treatment of skin diseases and as cosmetics. There were 99 articles and 30 theses examined. These plant taxa most frequently belong to the families Asteraceae (56 taxa, 12.75%), Lamiaceae (40 taxa, 9.11%), Rosaceae (28 taxa, 6.38%), Fabaceae (26 taxa, 5.92%), Apiaceae (13 taxa, 2.96%), Boraginaceae (13 taxa, 2.96%), Brassicaceae (12 taxa, 2.73%), Asparagaceae (11 taxa, 2.5 %), Ranunculaceae (10 taxa, 2.27%), Solanaceae (10 taxa, 2.27%), Euphorbiaceae (9 taxa, 2.05%), Malvaceae (9 taxa, 2.05%), Fagaceae (7 taxa, 1.6%), Amaryllidaceae (7 taxa, 1.6%), Pinaceae (7 taxa, 1.6%), Poaceae (6 taxa, 1.37%), Plantaginaceae (6 taxa, 1,37%), Hypericaceae (5 taxa, 1.14%), Ericaceae (5 taxa, 1.14%), Caryophyllaceae (5 taxa, 1.14%), Cucurbitaceae (5 taxa, 1.14%), Cupresaceae (5 taxa, 1.14%), Moraceae (5 taxa, 1.14%), Rubiaceae (5 taxa, 1.14%), and others (134 taxa, 30.53%). Asteraceae is the most commonly chosen by patients in Türkiye for treating skin diseases because this family is the richest and is very widespread in Türkiye. Some species of the family contain latex and are often used externally for skin diseases (Erarslan et al., 2020).

The most common nine genera used in dermatology in the different regions of Türkiye are *Salvia* L. (8 taxa, 1.81%), *Achillea* L. (8 taxa, 1.81%), *Quercus* L. (7 taxa, 1.58%), *Euphorbia* L. (7 taxa, 1.58%), *Allium* L. (6 taxa, 1.36%), *Pinus* L. (6 taxa, 1.36%), *Hypericum* L. (5 taxa, 1.13%), *Alcea* L. (5 taxa, 1.13%), and *Plantago* L. (4 taxa, 0.9%) (Figure 3).

These are the most common genera for skin diseases and as cosmetics because they include essential oils (*Salvia, Achillea*), tannins (*Quercus*), latex (*Euphorbia*), sulfurous compounds (alliin, allicin, *Allium*), anthraquinones (hypericin, *Hypericum*), mucilage (*Alcea*), oleoresin (*Pinus*), and iridoids (aucubin, *Plantago*) (Nahrstedt and Butterweck, 1997; Duke, 2001; Rezzi et al., 2005; Pakravan et al., 2007; Khennouf et al., 2010; Pintus et al., 2010; Mehta, 2012; Borlinghaus et al., 2014; El-Saber Batiha et al., 2020; Guzmán and Lucia, 2021).

There are 18 endemic taxa used for treating skin diseases that are in threatened categories in Türkiye, as reported by the group Tehdit Altında[2] and Ekim et al. (2000). The categories used to indicate the degree of threat are least concern (LC), vulnerable (VU), and near threatened (NT). The 18 taxa are: *Bellevalia gracilis* Feinbrun (LC), *Allium tuncelianum* (Kollmann) Özhatay, B.Mathew & Şiraneci (VU), *Eryngium kotschyi* Boiss. (LC), *Achillea teretifolia* Willd. (LC), *Achillea nobilis* L. subsp. *sipylea* (O.Schwarz) Basler (NT),*Centaurea derderiifolia* Wagenitz (LC), *Cirsium sipyleum* O. Schwarz (NT), *Scorzonera tomentosa* L. (LC), *Taraxacum turcicum* Soest (LC), *Anchusa leptophylla* Roem. & Schult. subsp. *tomentosa* (Boiss.) D.F.Chamb. (LC), *Hesperis isatidea* (Boiss.) D.A.German & Al-Shehbaz (VU), *Isatis spectabilis* P.H.Davis (VU), *Sideritis sipylea* Boiss. (NT), *Scutellaria orientalis* L. subsp. *bicolor* (Hochst.) Edm. (LC), *Linaria genistifolia* (L.) Mill. subsp. *confertiflora* (Boiss.) P.H.Davis (LC), *Pinus nigra* J. F. Arnold subsp. *pallasiana* (Lamb.) Holmboe f. *seneriana* (Saatçioğlu) Kandemir & Mataracı (No data), *Verbascum diversifolium* Hochst., (VU), and *Asphodeline prismatocarpa* J. Gay ex Baker (VU).

2 http://www.tehditaltindabitkiler.org.tr/

Table 2. Preclinical studies and clinical trials involving plants used for treating skin diseases and as cosmetics in Türkiye.

Plant taxa	**Locality of study**	**Extraction method**	**Model**	**Treatment days/duration**	**Results**	**Reference**
Plantago lanceolata L.	Türkiye	A 50-g sample was obtained after 1 h in steam-distilled water.	1 cm wound in mice	An ointment containing 10% and 20% *Plantago lanceolata* extract and vaseline for 7, 14, and 21 days	Different extract concentrations displayed positive effects on wound healing via increasing epithelialization, vascularization, and decreasing transforming growth factor beta 1 expression.	(Kurt et al., 2018)
Plantago lanceolata L.	Slovakia	10 g of dried *Plantago lanceolata* leaves were extracted with 100 mL boiling water.	Two excisional and one incisional wounds in the rats	Three consecutive days with two different concentrations of the extract for 7, 14, and 21 days	Extracts improve wound healing and increase wound tensile strength	(Kovac et al., 2015)
Malva neglecta Wallr.	Pakistan	Plant leaves powder (1 kg) was extracted with 1500 mL of 70% methanol for 7 days.	177 mm^2 wounds in the rats	An ointment containing 1 g, 1.5 g, and 2 g per 10 g extract for 14 days	Complete healing was detected following the application of 2 g of extract which exhibited considerable antiradical potential.	(Saleem et al., 2020)
Plantago major L. and *Aloe vera* L.	Iran	The powdered leaves were extracted with organic solvents such as petroleumether, chloroform, and acetoneusing soxhlet apparatus (1 mg/mL of respective organic solvents).	1 cm^2 circular full-thickness wound in the rats	5% *Plantago major* and 5% *Aloe vera* mixture gel for 15 days	Increased wound closure rate and fibroblasts, collagen bundles, mean diameter, as well as volume densities of the vessels after treatment	(Ashkani-Esfahani et al., 2019)
Plantago major L. *Siparuna guianensis* Aubl.	Brazil	Leaves (100 g) were extracted with a hydroalcoholic solution (70%).	Injury in the cervical dorsal area in the mice	Extracts for 4, 9, 15, and 21 days	Reduction in the wound area and increase in neoepithelium and skin appendages after *Plantago major* treatment. In *Siparuna guianensis* treatment, wound closure was not observed.	(Thome et al., 2012)

Table 2. (Continued).

Plantago major L.	Sweden	10 g of the freeze-dried leaves powder was extracted in 100 mL of 70 % Ethanol and 100 mL of distilledwater, respectively.	Porcine wound-healing model	Concentrations of 0.01, 0.1, and 1.0 mg/mL 1.0 mg/mL (on a dry-weightbasis)	The extracts accelerated wound healing in porcine skin, but the ethanol-based extracts had a stronger effect.	(Zubair et al., 2016)
Juglans regia L.	India	Male flowers of *Juglans regia* were extracted with methanol at 1:3 volumes.	Human skin epidermal keratinocytes	Concentrations of 80 µg/mL	The extract displays an 8.8 sun-protection-factor value. Pretreatment with extract, 30 min before UVB-irradiation, inhibited reactive oxygen species generation, lipid peroxidation, inflammatory markers and repaired antioxidant activity in cells.	(Muzaffer et al., 2018)
Hypericum perforatum L.	Iran	The *Hypericum* extract was quitepure, extracted from *Hypericum perforatum* (5% wt/wt).	10 patients with plaque-typepsoriasis	*Hypericum perforatum* ointment twice daily for 4 weeks	Psoriasis area severity index scores including erythema, scaling and thickness were decreased after the formulated ointment.	(Najafizadeh et al., 2012)
Hypericum perforatum L.	India	N/A	149 participants with active HSV-1 and HSV-2 lesions	Topical formulation containing copper sulfate pentahydrate and *Hypericum perforatum* for the 14-day treatment	Burning, stinging sensation acute, pain, erythema and vesiculation were higher in the Acyclovir group in comparison to the *Hypericum perforatum* group.	(Clewell et al., 2012)
Hypericum perforatum L.	Italy	N/A	56 patients with cleroderma-related skin ulcers linked to calcinosis	Neemoil and *Hypericum perforatum* cream	Complete healing of calcinosis occurred in 45% of cases. The treatment enhanced in terms of size, erythema, fibrin, and calcium deposits.	(Giuggioli et al., 2020)
Hypericum perforatum L.	Türkiye	5% *Hypericum perforatum* methanol extract	Exposing an area of 4 × 4 cm to 100 °C boiled water for 10 s	*Hypericum perforatum* four times a day (every six hours) Topical silver sulfadiazine twice a day	Administration of *Hypericum perforatum* in the first 24 h is effective in wound healing in the thermal burn modality and is significantly greater than silver sulfadiazine treatment.	(Kiyan et al., 2015)

Table 2. (Continued).

Rubus sanctus Schreb.	Türkiye	Each 50 g of powdered aerialparts was extracted with n-hexane, chloroform, ethylacetate, and methanol at room temperaturefor 24 h (3 × 500 mL each solvent).	Two linear-paravertebralincisions in th evertebral column	*Rubus sanctus* extractions of n-hexane, chloroform, ethylacetate and methanoltopically once a day for 9 days	The aerial parts of *Rubus sanctus* stimulate healing activity as well as the methanolic extract displayed significant wound healing activity.	(Suntar et al., 2011)
Aloe vera L. *Nerium oleander* L.	Türkiye	N/A	Burn injury covering 30% of the total body surface earea in rats	Topical application twice a day for 14 consecutive days	Thermal injury-induced alterations were significantly reversed by*Aloe vera* and *Nerium oleander*	(Akgun et al., 2016)
Juglans regia L., *Myrtus communis* L., *Matricaria chamomilla* L. var. *recutita* (L.) Fiori, *Urtica dioica* L. and *Rosa x damascena* Mill. *Brassica cretica* Lam.	Türkiye	*Juglans regia*, *Myrtus communis*, *Matricaria chamomilla*, *Urtica dioica*, and *Rosa damascena* were subjected to soxhlet extraction. A 60:40 (w/w) distilled water/ propylene glycol mixture was used as the solvent. *Brassica oleraceae* var. *botrytis* and *B. oleracea* var. *italica* were extracted with distilled water (ratio 1:5) for 3 h.	Human keratinocytecellline	Fresh medium containing different concentrations of antiacne extracts (100%, 50%, 10%, 5%, 2%, 1%, and 0, 01%)	Both herbal extracts verified antibacterial and antiinflammatory activity.	(Kılıç et al., 2018)
Momordica charantia L.	Türkiye	N/A	7 cm^2 wounds in rabbits	The cream were applied twice daily for 28 days	*Momordica charantia* cream decreased inflammatory cells and increased fibroblasts. Cream supplements caused healthy and fast wound healing.	(Pişkin et al., 2014)

Table 2. (Continued).

Urtica dioica L., *Urtica urens* L., *Equisetum arvense* L., *Achillea millefolium* L., *Matricaria chamomilla* L. var. *recutita* (L.) Fiori and *Ceratonia Siliqua* L.	Türkiye	40 g of the plant mixture was extracted with 500 mL distilled water for 3 h at 100 °C using soxhlet extraction.	Human keratinocytecellline	Cells were subjected to different concentrations (100%, 10%, 5%, 3%, 1%, 0.2%, and 0%) of herbal extract	Herbal extract solution caused statistically significant downregulation of interleukin-1 alpha gene expressions.	(Pekmezci et al., 2018a)
Urtica dioica L., *Urtica urens* L., *Equisetum arvense* L., *Achillea millefolium* L., *Matricaria chamomilla* L. var. *recutita* (L.) Fiori and *Ceratonia siliqua* L.	Türkiye	*Urtica urens* leaf extract, *Urtica dioica* root extract, *Matricaria chamomilla* flower extract, *Achillea millefolium* aerial part extract, *Ceratonia siliqua* fruit extract, *Equisetum arvense* leaf extract	120 patients with androgenetic alopecia and hairloss (telogeneffluvium)	Shampoo: Every other day, three times a week, apply 5 mL on wet hair, wait for 3 to 4 min after foaming, and then rinse well for 6 months. Solution: Everyday in the morning and the evening, apply 3 mL on dry hair and massage all over the scalp. Let it stand for at least 4 to 6 h for 6 months.	Herbal formulations were found to be more effective in preventing and reducing hair loss via antiinflammatory, antioxidative, angiogenic, and hair-stimulating features.	(Pekmezci et al., 2018b)

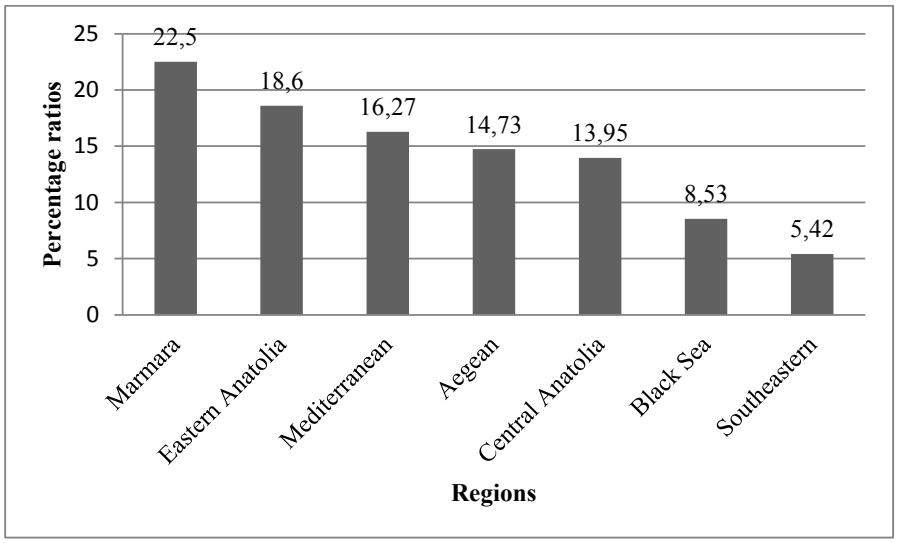

Figure 1. The distribution of 129 studies as stated by the regions

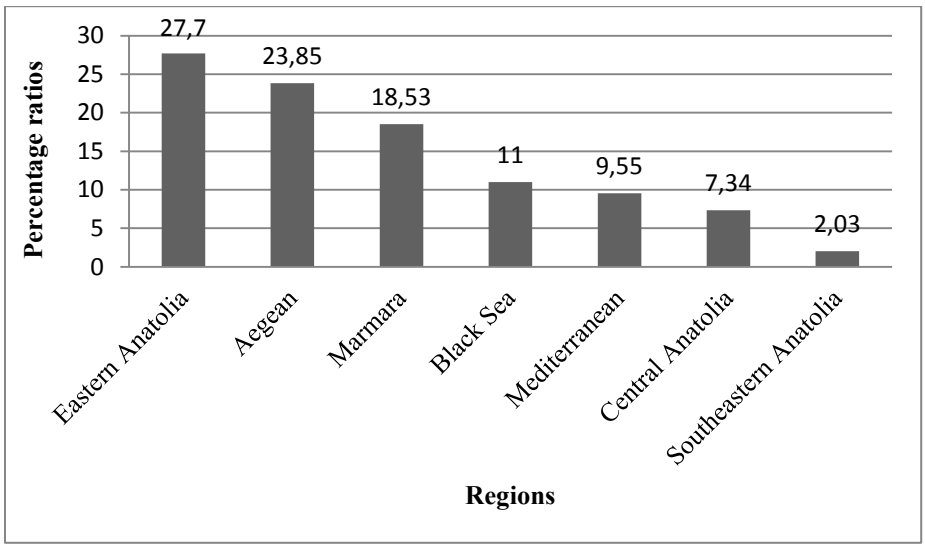

Figure 2. A total of 545 data points for regional distribution.

These endemic taxa have also been used for different ethnobotanical purposes in various regions. *Bellevalia gracilis* has been used as food in Tunceli (Dogan, 2014). *Achillea nobilis* subsp. *sipylea* has been used for treating diarrhea, colds, influenza, asthma, and as a pleasurable tea in Mersin (Sargın et al., 2015). *Achillea teretifolia* has been used for hormonal disorders and abdominal pain in Niğde (Özdemir and Alpınar, 2015). *Scorzonera tomentosa* has been used as food in Malatya (Yeşil and Akalın, 2009). *Anchusa leptophylla* subsp. *tomentosa* has been used for snake bites in Bingöl (Babacan et al., 2022). *Sideritis sipylea* has been used for dyspepsia, diarrhea, respiratory tract diseases, influenza, athlete's foot, and gallstones in Manisa (Sargın et al., 2013). *Verbascum diversifolium* has been used as an antiinflammatory, antitussive, emollient, and expectorant and to treat bronchitis, cicatrising, and laryngitis in Elazığ (Khatun et al., 2012).

The most common taxa used in skin disease treatment and as cosmetics in Türkiye are given in Table 1 and Figure 4.

Among the selected plants, 371 were wild (84.5%) and 68 were cultivated (15.5%), as shown in Table 3 with the labels of "W" for wild taxa and "C" for cultivated. A total of 572 used plant parts were determined: leaves (23.42%), aerial parts (16.43%), fruits (12.93%), flowers (13.29%), roots (6.65%),

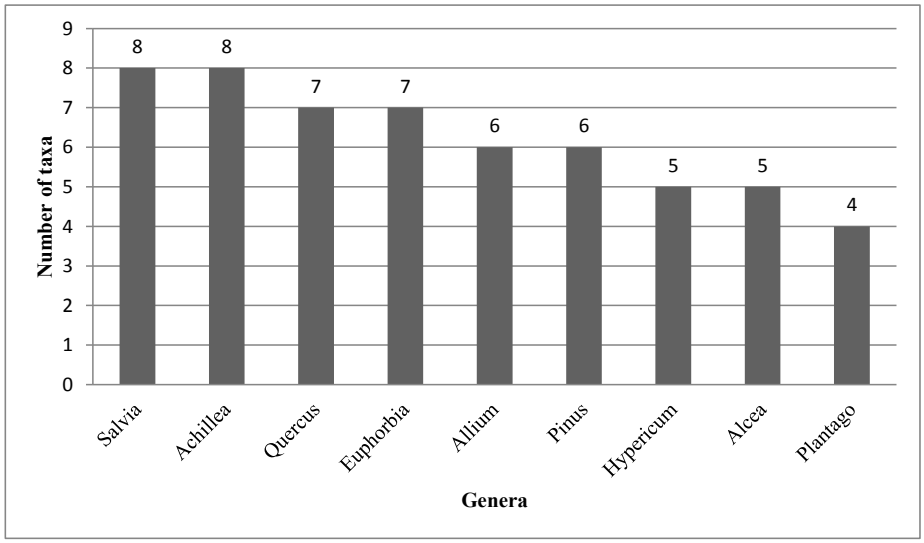

Figure 3. The most common nine genera used for dermatological treatment across Türkiye.

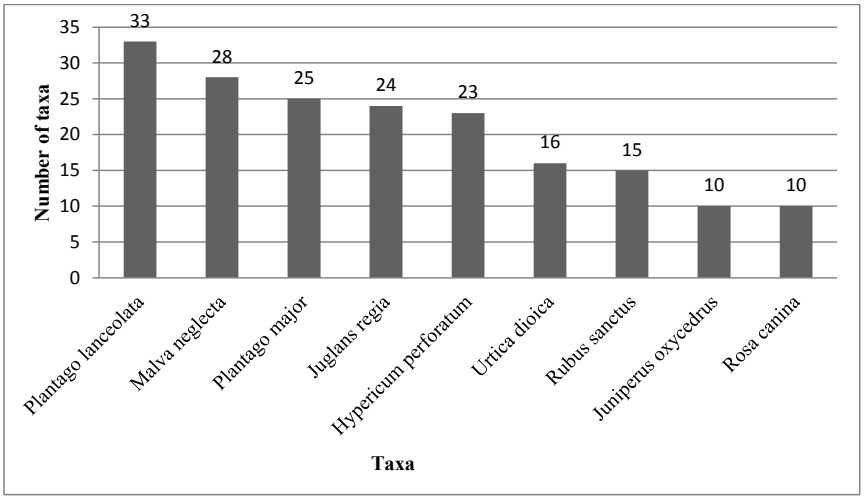

Figure 4. The most common taxa used for skin disease treatment and as cosmetics in Türkiye

seeds (4.9%), latex (3.85%), bulbs (2.98%), herbs (2.8%), branches (2.46%), bark (1.92%), whole plants (1.58%), cones (1.04%), stems (0.7%), tubers (0.7%), gums (1.22%), buds (0.52%), oils (0.7%), rhizomes (0.35%), thorns (0.35%), pix (0.35%), leaflets (0.17%), young shoots (0.35%), pedicels (0.17%), and pericarps (0.17%). (Figure 5).

Those parts are mostly used externally (93.67%), but occasionally are used internally (6.33%). The types of preparation or method of use include decoction (29.7%), infusion (25.52%), crushed (18.22%), poultice (4.7%), oleate (3.12%), eaten (2.1%), gargled (2.6%), wrapped (2.08%), fresh (2.08%), boiled (1.56%), rubbed (1.56%), porridge (1.56%), macerated (1.04%), in bath water (1.04%), extract (0.52%), steam compress (0.52%), burned (0.52%), lotion (0.52%), pomade (0.52%), and mask (0.52%) (Figure 6).

It was determined that the majority of the plant species were used to cure more than one skin illness or for more than one cosmetic purpose. It was found that some form of traditional medicine is used for a total of 24 skin disorders and 19 cosmetic purposes. The most common of them were wound healing (36.43%), eczema (12.93%), boils (9%), burns (8.04%), skin diseases (5.83%), warts (5.67%), acne (3.62%), funguses (2.2%), calluses (2.2%), psoriasis (1.9%), itching (1.73%), alopecia (1.73%), scars (1.73%), antiseptic (1.73), cuts (0.94%), skin cancer (0.47%), scabies (0.47%), allergies (0.31%), ringworm (0.31%), aphthae (0.31%), dermititis (0.31%), astringent (0.31%),

Table 3. The plant taxa used against skin diseases and as cosmetics in Türkiye.

Plant name	Family	W/C/	Vernacular name	Turkish name (Guner et al., 2012)	English name	Part(s)	Preparation(s)	/Uses	Region(s)	Report(s)
Acanthus dioscoridis L. var. *dioscoridis*	Acanthaceae	W	Ayıpençesi	Lokman Ayıpençesi	Acanthus	Leaves	Decoction, externally	Skin disease	Eastern Anatolia	(Dogan, 2014)
Acer tataricum L.	Aceraceae	W	Akçaağaç	Tatar Akçaağacı	Tatar maple	Barks	Infusion	Wound	Marmara	(Güneş, 2017)
Acer campestre L. subsp. *campestre*	Aceraceae	W	Akçaağaç	Ova Akçaağacı	Hedge Maple	Branches	Decoction	Skin disease	Aegean	(Sargın, 2013)
Sambucus ebulus L.	Adoxaceae	W	Ayıotu, Azıotu, Cücemürver, Hekimana, Kımçırık,	Mürver Otu	Danewort, dane weed	Leaves, roots	Externally	Wound, boil, eczema	İzmit	(Kızılarslan and Özhatay, 2012)
Sambucus nigra L.	Adoxaceae	W	Mürver, Kara mürver, Melesir, Mındarağ,	Ağaç Mürver	Elderberry	Flowers, Leaves	Externally	Wart, wound, burn, boil	Aegean, Marmara, Eastern Anatolia	(Sezik et al., 1997; Şimşek et al., 2002; Ecevit and Özhatay, 2006; Kültür, 2007; Dogan, 2014; Sargin et al., 2015; Bulut, 2006)
Liquidambar orientalis Mill.	Altingiaceae	W	Sığla, sığala, günlük	Günlük Ağacı	Orientalsweetgum	Oils	Externally	Wound	Aegean	(Sarı et al., 2010)
Chenopodium botrys L.	Amaranthaceae	W	Kızılbacak	Kızılbacak	Jerusalem oak goosefoot	Herb	Externally	Fungal	Aegean	(Sargın, 2013)
Spinacia oleracea L.	Amaranthaceae	C	Ispanak	Ispanak	Spinach	Aerialparts	Externally	Tonic	Central Anatolia	(Uzun and Kaya, 2016)
Allium ampeloprasum L.	Amaryllidaceae	W	Körmen, keçikörmeni, devekörmeni	Pırasa	No English name	Leaves, latex	Externally	Boil, wound	Eastern Anatolia	(Gençay, 2007)
Allium cepa L.	Amaryllidaceae	C	Soğan	Soğan	Onion	Bulbs	Mashed in porridge to reduce, Externally	Acne, boils, black spots	Marmara	(Depreli, 2020; Albayrak &Daskın, 2018; Çakır, 2017)
Allium cardiostemon Fisch. et C.A.Mey.	Amaryllidaceae	W	Sirik	Yamaç Körmeni	Wild garlic	Bulbs	Externally	Wound	Eastern Anatolia	(Dogan, 2014)

Table 3. (Continued)

Allium tuncelianum (Kollmann) Özhatay, B.Mathew & Şiraneci*	Amaryllidaceae	W	Tunceli dağ sarımsağı	Kaya Sarmısağı	Wild garlic	Bulbs	Externally	Alopecia	Eastern Anatolia	(Tuzlaci and Dogan, 2010; Dogan, 2014)
Allium scorodoprasum subsp. *rotundum* (L.) Stearn	Amaryllidaceae	W	Sirmo, sirmuk, Çatlanguç	Deli Pırasa	Wild garlic	Bulbs	Externally	Acne	Aegean	(Sargın, 2013; Sargin et al., 2015a)
Allium sativum L.	Amaryllidaceae	C	Tokat Sarımsağı	Sarmısak	Garlic	Bulbs	Externally	Wound Healing, Scar	Eastern Anatolia	(Akbulut and Bayramoglu, 2017; Karakaya et al., 2019)
Narcissus tazetta L.	Amaryllidaceae	C	Nergis	Nergis	Narcissus	Bulbs	Maceration with milk, Externally	Skin disease, wound	Aegean	(Gürdal and Kültür, 2013)
Cotinus coggyria Scop.	Anacardiaceae	W	Dumançalısı	Boyacı Sumağı	Sumac	Fruits	Internally	Wound, herpes	Eastern Anatolia	(Kültür, 2007; Tuzlaci and Dogan, 2010; Demirci and Özhatay, 2012; Dogan, 2014)
Pistacia atlantica Desf.	Anacardiaceae	C	Sakızağacı, Sakızlık	Sakızlık	Terebinth	Fruits	Externally	Skin cleaning	Marmara	(Polat and Satıl, 2010)
Pistacia lentiscus L.	Anacardiaceae	W	Sakızağacı	SakızAğacı	Gum	Leaves	Chewing	Wound	Aegean	(Ertuğ, 2000; Tuzlacı, 2007; Gürdal and Kültür, 2013)
Pistacia terebinthus L.	Anacardiaceae	W	Çitlenbik, çedene, çıtlık, çitemik, bıttım, çıtımık	Menengiç	Terebinth	Fruits	Decoction Externally	Skin blemish, hair care, wound	Aegean and Eastern Anatolia	(Gençay, 2007; Sargin et al., 2015a)
Pistacia eurycarpa Yalt.	Anacardiaceae	W	Kezvan, dareben	Bendek	Buuttum	Gums	Externally	Wound	Eastern Anatolia	(Dogan, 2014)
Rhus coriaria L.	Anacardiaceae	W	Dericisumağı	Sumak	Sumac	Fruits	Internally	Wound Eczema	Central Anatolia, Eastern Anatolia, Marmara Southern Anatolia	(Gençay, 2007; Sargin et al., 2015b; Güneş, 2017; Sinmez et al., 2018)
Ammi visnaga (L.) Lam	Apiaceae	W	Hıltan, Kılır, Koşni, Daraklı otu, Diş hilali, Hırhır, Hilal otu, Kürdan otu, Mısır anasonu ve Dişotu	Hıltan	Toothpicker	Pedicels	Externally	Tooth care	Aegean	(Sargin et al., 2015a)
Anethum graveolens L.	Apiaceae	C	Dereotu	Dereotu	Dill pickle	Buds	Infusion	Eczema	Aegean	(Sargın, 2013)

Table 3. (Continued)										
Carum carvi L.	Apiaceae	C	Karaman kimyonu, çayır kimyonu, frenk kimyonu		Cumin	Seeds	Crushed	Skin diseases	Eastern Anatolia	(Cakilcioglu et al., 2011)
Caucalis platycarpos L.	Apiaceae	W	Küçük pıtrak	Kavkal	Carrot bur parsley	Herb	Decoction Externally Internally	Eczema	Aegean	(Sargın, 2013)
Coriandrum sativum L.	Apiaceae	C	Kişniş	Kişniş	Chinese parsley	Aerial parts	Externally	Acne	Aegean	(Sargın, 2013)
Echinophora tenuifolia L. subsp. *sibthorpiana* (Guss.) Tutin	Apiaceae	W	Dikenli çörtük, çörtük, tarhana otu	Sarı çördük	No English name	Aerial parts	Externally	Wound	Aegean	(Sargın, 2013)
Eryngium kotschyi Boiss. (*Eryngium billardieri* F.Delaroche) *	Apiaceae	W	Tokuzotu	Hıyarok	Field eryngo	Roots Aerial parts	Externally	Wound	Eastern Anatolia	(Gençay, 2007)
Eryngium campestre L. var. *virens* Link	Apiaceae	W	Kırsenet	Yer Kestanesi	Field eryngo	Aerial parts	Externally	Eczema, psoriasis, wound	Aegean, Eastern Anatolia, Central Anatolia	(Gençay, 2007; Keskin, 2008; Sarper et al., 2009; Dogan, 2014; Sargin et al., 2015a)
Foeniculum vulgare Mill.	Apiaceae	C	Arapsaçı	Rezene	Fennel	Fruits	Externally	Wound	Marmara	(Polat and Satıl, 2010)
Oenanthe aquatica (L.) Poir.	Apiaceae	W	-	Deniz Rezenesi	Wild parsley	Seeds	Crushed	Skin blemish	Aegean	(Sargin et al., 2015a)
Oenanthe pimpinelloides L.	Apiaceae	W	Alan maydanozu, Kavallık, badibacağı, hadık, sakarotu	Deli Maydanoz	Wild parsley	Aerial parts	Externally	Burn	Black sea	(Karaköse and Karaköse, 2017)
Prangos pabularia Lindl.	Apiaceae	W	Çahşir	Beyik	Giant fennel	Roots	Externally	Wound	Eastern Anatolia	(Kaval et al., 2014; Dogan, 2014)
Sanicula europaea L.	Apiaceae	W	Kadra, Tatahan çayırı	Sanikel	Sanicle	Leaves	Externally	Wound	Black sea	(Karaköse and Karaköse, 2017)
Cynanchum acutum L.	Apocynaceae	W	Sütlü sarmaşık	Bacırgan	No English name	Leaves	Externally	Alopecia	Mediterranean	(Güzel et al., 2015)
Nerium oleander L.	Apocynaceae	W	Kan ağacı, ağu ağacı, ayancı ağaç, fattak	Zakkum	Nerium	Latex	Decoction, Externally	Eczema, boil	Eastern Anatolia, Aegean	(Gençay, 2007; Kızılarslan and Özhatay, 2012; Gürdal and Kültür, 2013)

Table 3. (Continued)

*Arum italicum*Mill.	Araceae	W	Yılanyastığı, nivikotu, livikotu, ayıkulağı, kabarga, tirşik, Andırın doktoru, pancar	Domuz Lahanası	Italian arum	Fruit, tuber	Decoction	Eczema	Marmara	(Kızılarslan and Özhatay, 2012)
Dracunculus vulgaris Schott	Araceae	W	Gavurotu, yılancık	Yılan bıçağı	Dragon lily	Fruit Tuber	Decoction, Externally	Eczema, skin diseases	Marmara, Eastern Anatolia West Anatolia	(Gençay, 2007; Bulut, 2011; Aladı et al., 2022)
Hedera helix L.	Araliaceae	W	Orman sarmaşığı	Duvar Sarmaşığı	Ivy	Leaves	Decoction	Wound, burn	Eastern Anatolia, Black sea	(Cakilcioglu et al., 2011; Karaköse and Karaköse, 2017)
Bellevalia gracilis Feinbrun*	Asparagaceae	W	Öküz soğanı	Aktepeli	Ox onion	Bulbs	Externally	Wound	Eastern Anatolia	(Dogan, 2014)
Muscari armeniacum Leichtlin ex Baker	Asparagaceae	W	Dağ sümbülü, Sümbül	Gâvurbaşı	Hyacinth	Bulbs	Externally crushed	Foot callus	Eastern Anatolia	(Dogan, 2014)
Muscari comosum (L.) Mill.	Asparagaceae	W	Dağ sümbülü, Sümbül	Morbaş	Hyacinth	Bulbs	Externally crushed	Foot callus	Eastern Anatolia	(Dogan, 2014)
Muscari neglectum Guss.	Asparagaceae	W	Dağ sümbülü, Sümbül	Arapüzümü	Hyacinth	Bulbs	Externally crushed	Foot callus	Eastern Anatolia	(Dogan, 2014)
Ornithogalum arcuatum Steven	Asparagaceae	W	Köpek soğanı	Kurtkirişi	Dog onion	Bulbs	Externally	Animal wound	Eastern Anatolia	(Dogan, 2014)
Ornithogalum pyrenaicum L.	Asparagaceae	W	İt soğanı	Eşek Susamı	Dog onion	Bulbs	Externally	Animal wound	Eastern Anatolia	(Dogan, 2014)
Ornithogalum armeniacum Baker	Asparagaceae	W	-	Soryaz	No English name	Bulbs	Poultice	Eczema	Aegean	(Sargın, 2013)
Ornithogalum umbellatum L.	Asparagaceae	W	Sakarca	Sunbala	Garden star-of-Bethlehem	Bulbs	Externally	Eczema, acne, boil	Aegean	(Sargın, 2013)
Ornithgalum ortophyllum Ten.	Asparagaceae	W	-	-	No English name	Bulbs	Externally	Boil	Central Anatolia	(Bağcı and Keskin, 2022)
Polygonatum multiflorum (L) All.	Asparagaceae	W	Mührüsüleyman, KurtpençesiveBoğumluca	Mührüsüleyman	Solomon's seal	Rhizomes	Externally	Wound, burn	Aegean	(Sargin et al., 2015a)
Polygonatum orientale Desf.	Asparagaceae	W	Doğu mührüsüleymanı ve Boğumluca	Boğumluca	No English name	Root	Externally	Boil	Marmara	(Sanlı, 2006)
Asplenium adiantum-nigrum L.	Aspleniaceae	W	Kara saçakotu, Baldırıkara, Bağrıkara ve Kara baldır	Kara Saçakotu	Black spleenwort	Whole plant	Externally	Eczema	Black sea	(Karaköse and Karaköse, 2017)
Asplenium trichomanes L.	Aspleniaceae	W	Saçakotu	Saçakotu	Maidenhair spleenwort	Whole plant	Externally	Eczema	Black sea	(Karaköse and Karaköse, 2017)

Table 3. (Continued)

Asplenium ceterach L.	Aspleniaceae	W	Dalakotu	Dalakotu	Rustyback	Whole plant	Externally	Wound	Marmara	(Polat and Satıl, 2010)
Achillea aleppica DC. subsp. *aleppica*	Asteraceae	W	Yılançiçeği	Tatarcıotu	Yarrow	Aerial parts	externally	Wound	Eastern Anatolia	(Dogan, 2014)
Achillea arabica Kotschy	Asteraceae	W	-	Hanzabel	Yarrow	Aerial parts	externally	Skincare, skin blemishes, wart, wound, fungus	Eastern Anatolia, Central Anatolia, Aegean West Anatolia	(Honda et al., 1996; Sezik et al., 2001; GençlerOzkan, 2005; Senol et al., 2006; Çakır, 2017; Tuzlaci and Dogan, 2010; Özgen et al.; 2012)
Achillea teretifolia Willd.*	Asteraceae	W	Civanperçemi, Yavşan	BeyazCivanperçemi	Yarrow	Aerial parts	Decoction Oleat	Acne, cut, wound	Eastern Anatolia, Aegean, Central Anatolia	(Sezik et al., 2001; Çakır, 2017; Ugulu et al., 2009; Arı et al., 2015)
Achillea millefolium L. subsp. *millefolium*	Asteraceae	W	Civanperçemi	Civanperçemi	Yarrow	Flowers	Decoction	Callus, wound,	Mediterranean	(Bağcı et al., 2006; Karaköse and Karaköse, 2017)
Achillea nobilis L. subsp. *sipylea* (O.Schwarz) Basler *	Asteraceae	W	Mayasılotu	KâbeFlesleğeni	Yarrow	Flowers	Infusion, Internally	Eczema	Aegean	(Sargın, 2013)
Achillea nobilis L. subsp. *neilreichii* (A. Kern.) Velen.	Asteraceae	W	Mayasılotu	Binbiryaprak	Yarrow	Flowers	Infusion, Internally	Eczema, wound	Aegean, Marmara	(Sanlı, 2006; Bulut and Tuzlaci, 2013)
Achillea setacea Waldst. et Kit.	Asteraceae	W	Mayasılotu	Ayvabala	Yarrow	Aerial parts	Decoction	Eczema	Marmara	(Yeşilyurt et al., 2016)
Achillea santolinoides Lag. subsp. *wilhelmsii* (K.Koch) Greuter	Asteraceae	W	Civanperçemi	-	Yarrow	Flowers	Externally	Wound	Central Anatolia	(Oral, 2007)
Anthemis cotula L.	Asteraceae	W	KöpekpapatyasıveHozançiçeği	HozanÇiçeği	Stinking chamomile	Flowers	Externally	Hair color	Mediterranean	(Güzel et a, 2015)
Anthemis cretica L. subsp. *anatolica* (Boiss.) Grierson	Asteraceae	W	Papatya	HorozPapatyası	Stinking chamomile	Flowers	Decoction	Alopecia	Marmara	(Yeşilyurt et al., 2016)
Anthemis cretica L. subsp. *tenuiloba* (DC.) Grierson	Asteraceae	W	Papatya	İnce Papatya	Chamomile	Flowers	Infusion,	Boil	Marmara	(Güneş, 2017)

Table 3. (Continued)

Arctium minus (Hill) Bernh. subsp. *minus*	Asteraceae	W	Boz diken	Löşlek	No English name	Leaves	Externally Decoction	Wound, boil, psoriasis Animal wound care	Aegean Marmara, Eastern Anatolia	(Aktan, 2011; Sargın, 2013; Dogan, 2014)
Artemisia absinthium L.	Asteraceae	W	Acı Yavşan Otu	Acı Pelin	Wormwood	Flowers	Decoction externally	Hair care, wound, burn	Aegean	(Sargin et al., 2015a)
Artemisia annua L.	Asteraceae	W	Yıllıkpelinotu	Kâbe Süpürgesi	Sweet wormwood	Aerial parts	Externally	Acne	Mediterranean	(Güzel et al., 2015)
Artemisia vulgaris L.	Asteraceae	W	Ayvadana, Adi pelin, Ayakot, pelinotu (adi)	Kaba Yavşan	Mugwort	Aerial parts	Internally drink a tot after meals	Skin diseases	Eastern Anatolia	(Cakilcioglu et al., 2011)
Asteriscus spinosus (L.) Sch. Bip.	Asteraceae	W	-	Dikenotu	Spiny Starwort	Flowers	Poultice	Wound, boil	Aegean	(Sargın, 2013)
Bellis perennis L.	Asteraceae	W	Papatya	Koyungözü	Common daisy	Flowers	Externally	Tonic	Black Sea	(Karaköse and Karaköse, 2017)
Calendula arvensis (Vaill.) L.	Asteraceae	W	Aynısafa, portakalnergisi	Portakal Nergisi	Calendula	Flowers	Externally	Wound, burn, skin care	Aegean	(Sargin et al., 2015a)
Carduus nutans L. subsp. *leiophyllus* (Petrovič) Stoj. & Stef.	Asteraceae	W	Kerbes	Kerbeş	Musk thistle	Flowers	Externally	Wart, hand-foot fungus	Aegean	(Sargın, 2013; Sargin et al., 2015a)
Cyanus segetum Hill	Asteraceae	W	Mavi kantaron, Dağ peygamber çiçeği, Gelintacı	Gelin tacı	Centaury	Flowers	Externally	Acne	Aegean	(Sargın, 2013)
Centaurea derderiifolia Wagenitz*	Asteraceae	W	Bağsarıbaşı	Bağsarı başı	Centaury	Flowers	Infusion externally	Wound	Eastern Anatolia	(Dogan, 2014)
Centaurea iberica Trev. ex Sprengel	Asteraceae	W	Deligöz dikeni	Deligöz dikeni	Centaury	Flowers Leaves	Infusion Externally	Wound, boil	Eastern Anatolia	(Sezik et al., 1997; Cakilcioglu and Turkoglu, 2010; Dogan, 2014)
*Centaurea solstitialis*L.	Asteraceae	W	Zerdali dikeni	Çakırdikeni	Centaury	Thorns	Externally	Acne	Marmara	(Güneş, 2017)
Centaurea virgata Lam.	Asteraceae	W	Acı süpürge	Acı Süpürge	Centaury	Flowers Leaves	Infusion Externally	Wound	Eastern Anatolia	(Tabata et al., 2008)
Cardopatium corymbosum (L.) Pers.	Asteraceae	W	Kurtlu diken	Kurtludiken	Blue thistle	Seeds	Infusion	Hand-Foot fungus	Aegean	(Sargın, 2013)
Cnicus benedictus L.	Asteraceae	W	Şevketibostan, Akkız, Bostan otu	Topdiken	thistle	Flowers Leaves	Infusion Externally	Eczema	Aegean	(Sargın, 2013)
Chondrilla juncea L.	Asteraceae	W	Çengelsakızı, Çıtlık, Çöpkanak, Ezzezze, Garagavık, Garagavlık,	Karakavuk	Rush skeletonweed	Flowers Leaves	Externally	Wound, burn	Aegean	(Sargın, 2013; Sargin, et al.; 2015a)

Table 3. (Continued)

Cichorium intybus L.	Asteraceae	W	Hindiba, Yabani Hindiba	Hindiba	Blue daisy	Latex	Externally	Wound, eczema, cut, hair care, tonic acne	Aegean, Marmara, Eastern Anatolia	(Sezik et al., 2001; Sanlı, 2006; Mükemre, 2013; Dogan, 2014; Sargin et al., 2015a; Karakaya et al., 2019;)
Cirsium arvense (L.) Scop.	Asteraceae	W	Köygöçüren, Çahır, Çahor, Çarıkkesen, Eşekkangalı, Eşek out, Kösemen	Köygöçüren	Creeping thistle	Leaves	Externally	Wound	Aegean	(Aktan, 2011)
Cirsium hypoleucum DC.	Asteraceae	W	Vişnekangalı	VişneKangalı	No English name	Leaves	Externally	Eczema	Black Sea	(Karaköse and Karaköse, 2017)
Cirsium sipyleum O. Schwarz*	Asteraceae	W	Çelebi Kangalı	ÇelebiKangalı	Thorn	Leaves	Externally	Skin blemish	Aegean	(Sargin et al., 2015)
Conyza canadensis (L.) Cronquist.	Asteraceae	W	Kanadaşifaotu	Selviotu	Horseweed, butterweed	Aerial parts	Decoction	Antibit and itch	Marmara	(Polat and Satıl, 2010)
Cota tinctoria (L.) J. Gay ex Guss.var. *tinctoria*	Asteraceae	W	-	Boyacıpapatyası	Chamomile	Flowers	Infusion Externally	Hair care, eczema, wound	Aegean Black Sea	(Sargın, 2013)(Karaköse and Karaköse, 2017)
Filago arvensis L.	Asteraceae	W	Keçeotu	Keçeotu	No English name	Leaves, Herb	Externally Steam compress	Burn, wound, eczema	Aegean	(Sargın, 2013; Sargin et al., 2015a)
Filago germanica (L.) L.	Asteraceae	W	Kuzaotu	Alamankeçeotu	No English name	Aerial parts	Decoction	Wounds on hands, warts	Marmara	(Kızılarslan and Özhatay, 2012)
Gundeliatournefortii L. var. *tournefortii*	Asteraceae	W	Kengerkahvesi, Cenger, Çakırdikeni, Çengel out, Çenger	Kenger	Thistle	Fruits Latex	Latex is removed a piece of latex is eaten	Skin disease, eczema, vitiligo	Aegean Eastern Anatolia	(Cakilcioglu et al., 2011; Arı et al., 2015)
Helichrysum plicatum DC.	Asteraceae	W	Arıçiçeği, Bozoğlan, Yaylaçiçeği	Mantuvar	No English name	Leaves	Externally	Scar	Eastern Anatolia	(Karakaya et al., 2019)
Lapsana communis L. subsp. *intermedia* (M. Bieb.) Hayek	Asteraceae	W	Şebrek, Meme otu	Şebrek	Rabbit broad	Leaves	Externally	Burn, wound	Aegean	(Sargin et al., 2015a)
Matricaria chamomilla L. var.*recutita* (L.) Fiori	Asteraceae	C	Papatya, Beyazpapatya, Sarıpapatya, Adi	Alman papatyası	No English name	Flowers	Decoction	Hair bleaching, scars, burns, eczema, alopecia	Aegean	(Sargın, 2013)
Reichardia dichotoma (Vahl) Freyn	Asteraceae	W	Karasakız	Karasakız	Milky herb	Roots latex	Externally with leaves of *Alceacalvertii*	Wound	Eastern Anatolia	(Dogan, 2014)

Table 3. (Continued)

Petasites hybridus (L.) P. Gaertner	Asteraceae	W	Kabalak, Şemsiyeotu, Ayıkulağı, Kabakulakotu, Farafla	Kabalak	Butterbur	Leaves	Extract	İnflammed wounds	Marmara	(Kızılarslan and Özhatay, 2012)
Pulicaria vulgaris (L.) Gaertner	Asteraceae	W	Ak yaraotu	Ak Yaraotu	Papatya	Aerial parts	Decoction	Hands whitening	Marmara	(Kızılarslan and Özhatay, 2012)
Scorzonera cinerea Boiss.	Asteraceae	W	Dağsakızı	Bozkonak	Rack	Roots latex	Externally	Wound	Eastern Anatolia	(Dogan, 2014)
Scorzonera mollis M.Bieb. subsp. *mollis*	Asteraceae	W	Bırçalık	İskorçina	Rack	Roots latex	Externally	Wound	Eastern Anatolia	(Dogan, 2014)
Scorzonera tomentosa L.*	Asteraceae	W	Dağsakızı, Sakızotu	Alabent	Rack	Roots latex	Externally	Wound, itch	Eastern Anatolia	(Sezik et al., 1997; Yeşil and Akalın, 2009; Tuzlaci and Dogan, 2010; Demirci and Özhatay, 2012; Dogan, 2014)
Scorzonera veratrifolia Fenzl.	Asteraceae	W	Tekesakalı	Nerebent	Rack	Roots latex	Externally	Wound	Eastern Anatolia	(Dogan, 2014)
Senecio vernalis Waldast. & Kit.	Asteraceae		Ekinotu	Kanaryaotu	Eastern groundsel	Aerial parts	Externally	İnflammed wounds	Eastern Anatolia	(Gençay, 2007)
Senecio vulgaris L.	Asteraceae	W	Kanaryaotu, Taşakcılotu, Ölüçiçeği, Sütlüce	Taşakcılotu	Groundsel	Aerial parts	Externally	Eczema	Aegean	(Sargın, 2013)
Silybum marianum (L.) Gaertn.	Asteraceae	W	Gangal, Gengel, Kangal, Kenger	Devedikeni	Milk thistle	Seeds	Externally	Itch	Aegean	(Sarı et al., 2010)
Tanacetum parthenium (L.) Sch. Bip.	Asteraceae	W	Gümüşdüğme, Pire otu	Beyazpapatya	No English name	Flowers Leaves	Externally	Tonic	Black Sea	(Karaköse and Karaköse, 2017)
Taraxacum turcicum Soest*	Asteraceae	W	Türkkarahindibası	Ağcakavağı	Dandelion	Roots	Externally	Tonic, wound, acne	Marmara	(Sanlı, 2006)
Tragopogon buphthalmoides (DC.) Boiss. var. *buphthalmoides*	Asteraceae	W	Tarlayemliği	Tarlayemliği	Rack	Roots latex	Externally	Wound, wart	Eastern Anatolia	(Sezik et al., 1997; Dogan, 2014)
Tragopogon porrifolius L. subsp. *longirostis* (Sch.Bip.) Greuter	Asteraceae	W	Beyaziskorçina, Salsifi, Sarıiskorçina, Sarıtekesakalı	Helevan	Rack	Roots latex	Externally	Wound	Eastern Anatolia	(Tuzlaci and Dogan, 2010; Dogan, 2014)
Tussilago farfara L.	Asteraceae	W	Kabalak, Lapazzaçiçeği, Şapla, Deveşaplağı	Öksürükotu	Coltsfoot	Leaves	Crushed, Externally wrapped in a cloth	Wound, boil, burn	Marmara, Aegean, South Anatolia	(Yeşilada et al., 1995; Tuzlaci and Aymaz, 2001; Ugulu et al., 2009; Bulut and Tuzlaci, 2013)
Xanthium spinosum L.	Asteraceae	W	Domuzpıtrağı	Pıtrak	Centaury	Thorns	Externally	Callus	Marmara	(Güneş, 2017)

Table 3. (Continued)

Xanthium strumarium L.	Asteraceae	W	Büyükpıtrak	KocaPıtrak	Rough cocklebur	Leaves	Externally	Eczema	Aegean	(Sargin et al., 2015)
Berberis crataegina DC.	Berberidaceae	W	Amberbaris, Dikenüzümü, Ekşimen, Garamık, Gıraba, Gırabuh, Karamuk	Karamuk	Barberry	Fruits	Externally	Wounds	Central Anatolia	(Han and Bulut, 2015)
Berberis vulgaris L.	Berberidaceae	W	Zibike	Kızılkaramuk	Barberry	Fruits	Eaten raw	Tonic, wounds	Eastern Anatolia	(Cakilcioglu et al., 2011)
Alnus glutinosa (L.) Gaertner subsp. *barbata* (C.A.Mey.) Yaltırık	Betulaceae	W	Kızılsöğüt	Yeykin	European alder	Seeds, leaves, bark	Externally	Tonic, wounds	Black Sea	(Karaköse and Karaköse, 2017)
Carpinus betulus L.	Betulaceae	W	Kara gürgen, Orsit	Gürgen	Common hornbeam	Leaves	Externally	Wounds, astringent	Black Sea	(Karaköse and Karaköse, 2017)
Corylus avellana L.var. *avellana*	Betulaceae	C	Yabanfındığı	-	Common hazel	Seeds, leaves	Externally	Tonic	Black Sea	(Karaköse and Karaköse, 2017)
Blechnum spicant (L.) Sm.	Blechnaceae	W	Tarakeğreltisi, Serteğrelti	TarakEğreltisi	Hard-fern	Leaflets, Fronds, Roots	Externally	Skin sores	Black Sea	(Ergul Bozkurt and Terzioğlu, 2017)
Alkanna orientalis (L.) Boiss.	Boraginaceae	W	Tosbağaotu, Havacıva, Güvegüve, Kanburuyan,Kurbağaotu, Tosbağıotu, Tosbaotu, Tosgabaotu	SarıSormuk	Barberry	Leaves	Externally	Scar	Eastern Anatolia	(Karakaya et al.., 2019)
Anchusa azurea Mill. var. *azurea*	Boraginaceae	W	Güriz	Sığırdili	Prickly Alkanet	Root, aerial parts Flowers Leaves	Decoction Internally crushed	Wound, eczema, burn	South Anatolia, Eastern Anatolia, Aegean	(Yeşilada et al., 1995; Honda et al., 1996; Mart and Türkmen, 2008; Deniz et al., 2010; Cakilcioglu et al., 2011; Polat et al., 2013; Tetik et al., 2013; Akgul et al., 2018)
Anchusa azurea Mill. var. *kurdica* (Guşul.) D.F.Chamb.	Boraginaceae	W	Güriz	-	Garden anchusa	Leaves, root bark	Crushed	Wounds, eczema, skin stretch marks	Eastern Anatolia	(Gençay, 2007)

Table 3. (Continued)

Anchusa leptophylla Roem. &Schult. subsp. *tomentosa* (Boiss.) D.F.Chamb.*	Boraginaceae	W	Gurız, Güriz	YünlüBallık	Prickly Alkanet	Leaves	Externally	Wound	Eastern Anatolia	(Dogan, 2014)
Anchusa stylosa M.Bieb.	Boraginaceae	W	Çıtdayış	Çıtdayış	No English name	Aerial Parts	Burned, ash mixed with honey and gargle	Gingiva diseases and tooth decay, wound	Central Anatolia, Mediterranean	(Sağıroğlu et al., 2013)
Cynoglossum creticum Mill.	Boraginaceae	W	Pisiktetiği	Pisiktetiği	No English name	Root	Externally	Burn, wound, wart, hair care	Aegean	(Sargin et al., 2015a)
Echium italicum L.	Boraginaceae	W	Kurtkuyruğu	Kurtkuyruğu	Italian viper's bugloss	Root	Externally	Wound	Central Anatolia, Eastern Anatolia	(Erdem et al., 1993; Fujita et al., 1995; Yeşilada et al., 1995; Isil et al., 2004; Özgökçe and Özçelik, 2004; Oral, 2007; Tabata et al., 2008; Tuzlaci and Dogan, 2010; Han and Bulut, 2015; Dogan, 2014)
Echium vulgare L. subsp. *vulgare*	Boraginaceae	W	Engerekotu	EngerekOtu	Viper's bugloss blueweed	Root	Externally	Wounds	Black Sea	(Karaköse and Karaköse, 2017)
Heliotropium europaeum L.	Boraginaceae	W	Siğilotu	AkrepOtu	European heliotrope	Aerial parts Leaves	Externally Lotion	Eczema	Aegean	(Sargin et al., 2015a)
Heliotropium suaveolens M.Bieb.	Boraginaceae	W	Siğilotu	ItırlıBambul	Heliotrope	Leaves	Crushed	Wounds	Marmara	(Güneş, 2017)
Macrotomia densiflora (Ledeb.) McBride	Boraginaceae	W	-	Kocaeğnik	Prickly Alkanet	Root	Externally	Fungus, wound, burn, boil	Eastern Anatolia, Central Anatolia	(Sezik et al., 1997; Gençler Ozkan, 2005; Dogan, 2014)
Onosma sericea Willd.	Boraginaceae	W	-	KâğıtEmcek	No English name	Flowers	Externally	Boil	Eastern Anatolia	(Gençay, 2007)
Trachystemon orientalis (L.) G. Don	Boraginaceae	W	Galdırık, Galdirik, Galdireyik, Galdurak	Kaldirik	No English name	Aerial parts	Externally	Itch, inflamed wounds	Black Sea	(Karaköse and Karaköse, 2017)
Alyssum murale Waldst. & Kit. subsp. *murale* var.*murale*	Brassicaceae	W	Sekikuduzotu	-	No English name	Flowers herb	Infusion	Skin blemishes	Aegean	(Sargın, 2013)

Table 3. (Continued)

Brassica oleracea L.	Brassicaceae	W	Lahana	Lahana	Cabbage	Leaves	Externally Decoction	Wound, fungus Athlete's foot, boil	Eastern Anatolia Aegean	(Sargın, 2013; Sinmez et al., 2018; Karakaya et al., 2019)
Capsella bursa - pastoris (L.) Medik.	Brassicaceae	W	Kuşkuşotu	Çobançantası	Shepherd's purse	Aerial parts	Externally	Skin lesions	Aegean	(Sargın, 2013)
Coluteocarpus vesicaria (L.) Holmboe subsp. *vesicaria*	Brassicaceae	W	Patarıkotu	Patarıkotu	No English name	Aerial parts	Crushed externally	Wound	Eastern Anatolia	(Dogan, 2014)
Hesperis isatidea (Boiss.) D.A.German & Al-Shehbaz*	Brassicaceae	W	Boyaçiçeği, Allıgelin	Allıgelin	No English name	Flowers, Roots	Decoction Internally	Wound	Eastern Anatolia	(Cakilcioglu et al., 2011)
Isatis spectabilis P.H.Davis*	Brassicaceae	W	Yara otu	TunceliÇivitotu	Wound herb	Flowers	externally	Wound	Eastern Anatolia	(Dogan, 2014)
Lepidium ruderale L.	Brassicaceae	W	Tuzık	Tuzık	Narrow-leaf pepperwort	Leaves	Crushed	Halitosis	Marmara	(Polat and Satıl, 2010)
Lepidium sativum L.	Brassicaceae	C	Kerdeme	Tere	Garden cress	Leaves, flowers	Externally	Wounds	Eastern Anatolia	(Gençay, 2007)
Nasturtium officinale R.Br.	Brassicaceae	W	Suteresi, Acıgerdeme, Cırcır, Çakandura, Çünk	Suteresi	Nasturtium	Aerial parts	Externally	Tonic	Black Sea	(Karaköse and Karaköse, 2017)
Raphanus raphanistrum L.	Brassicaceae	C	Turpotu	EşekTurpu	Sea radish	Leaves	Externally	Depilatory	Mediterranean	(Güzel et al., 2015)
Raphanus sativus L.	Brassicaceae	C	Turp	Turp	Winter radish	Leaves	Externally	Acne, skin diseases	Aegean	(Sargın, 2013)
Sinapis arvensis L.	Brassicaceae	W	Hardalotu, Acırga, Eşekturpu	Hardal	Charlock mustard	Seeds	Externally	Making soap	Eastern Anatolia	(Gençay, 2007)
Campanula rapunculus L. subsp. *lambertiana* (A.DC.) Boiss.	Campanulaceae	W	Sidikliçançiçeği, Firenksalatası	SidikliÇançiçeği	Rampion bellflower	Leaves	Externally	Wound	Black Sea	(Karaköse and Karaköse, 2017)
Campanula sclerotricha Boiss.	Campanulaceae	W	Bal çiçeği	DereÇıngırağı	Bellflower	Leaves	Crushed externally	Wound, burn	Eastern Anatolia	(Dogan, 2014)
*Capparis sicula*Veill. subsp. *sicula*	Capparaceae	W	Feşelleh, Şefellah	-	No English name	Leaves	Crushed	Itch	Eastern Anatolia	(Gençay, 2007)
Capparis spinosa L.	Capparaceae	W	Kebere, Berikemberi	Kebere	Flinders rose	Fruits Roots	Decoction externally	Eczema, fungal itch	Aegean	(Sargin et al., 2015a)
Lonicera caucasica Pall.	Caprifoliaceae	W	-	Çakkana	No English name	Fruits	Decoction externally	Acne	Eastern Anatolia	(Dogan, 2014)
Scabiosa argentea L.	Caprifoliaceae	W	Gıcıkotu, Kavurtotu, Kum otu, Maya otu	Yazı Süpürgesi	Silver scabious	Whole plants	Decoction Externally	Scabies	Eastern Anatolia	(Cakilcioglu et al., 2011)
Scabiosa columbaria L.subsp. *columbaria* var. *columbaria*	Caprifoliaceae	W	Gıcıkotu, Kavurtotu, Kum out, Maya otu	-	Small scabious,	Aerial parts	Externally	Wound	Black Sea	(Karaköse and Karaköse, 2017)

Table 3. (Continued)

Dianthus tripunctatus Sm.	Caryophyllaceae	W	Beneklikaranfil	BenekliKaranfil	No English name	Aerial parts	Boiling	Warts	Mediterranean	(Nacakcı and Dutkuner, 2018)
Dianthus zonatus Fenzl	Caryophyllaceae	W	Kayakaranfili	Kaya Karanfili	Mountain glove	Flowers	Infusion	Wart, skin diseases.	Aegean Eastern Anatolia	(Arıtuluk, 2009; Arı et al., 2015; Sargin et al., 2015a)
Herniaria hirsuta L.	Caryophyllaceae	W	-	Deli Yaran	Hairy rupturewort	Aerial parts	Rubbing	Soap	Marmara	(Polat and Satıl, 2010)
Silene compacta Fisch. ex Hornem.	Caryophyllaceae	W	Sıkçiçekliyapışkanot,Sıkçiçeklinakıl, Kanlıbasıraotu	Kanlıbasıra Otu	No English name	Leaves	Crushed, Externally	Wound	Eastern Anatolia	(Çakır, 2017)
Stellaria media (L.) Vill. subsp. *media*	Caryophyllaceae	W	Kuşotu, Cam otu, Kuşmak, Kuşulak, Serçedili, Serçeotu, Tavukotu	Kuşotu	Chickenwort	Leaves	Externally	Wound	Marmara	(Polat and Satıl, 2010)
Vaccaria hispanica (Mill.) Rauschert	Caryophyllaceae	W	Arapbaklası,Ekinebesi, İnekotu	Kızılbacak	Reşreşik, Kıyşayak	Seeds	Decoction	Wound, scabies	Eastern Anatolia	(Gençay, 2007)
Cistus creticus L.	Cistaceae	W	Karağan, Karağı, Karahan, Karah	Laden	Pink rock-rose	Flowers Leaves	Externally Infusion Crushed	Acne, skin disease, cuts	Mediterranean	(Bulut and Tuzlacı, 2015; Güzel et al., 2015)
Cistus laurifolius L.	Cistaceae	W	İldan, İldon, Tavşancı	Karağan	laurel-leaf cistus	Leaves, flowers	Externally	Boil	Central Anatolia	(Bağcı and Keskin, 2022)
Cistus salviifolius L.	Cistaceae	W	Adaçayıyapraklı laden, Beyazçiçekli laden, Kartli	Kartli	Sage-leaved rock-rose	Flowers Leaves	Infusion Crushed, Externally	Skin disease, cuts	Mediterranean	(Bulut and Tuzlacı, 2015)
Calystegia silvatica (Kit.) Griseb.	Convolvulaceae	W	Boyatansarmaşık, Bürük	Bürük	Giant bindweed	Leaves	Externally	Wound	Black Sea	(Karaköse and Karaköse, 2017)
Convolvulus arvensis L.	Convolvulaceae	W	Mamıza, Çadırçiçeği, Hamıza	TarlaSarmaşığı	Field bindwee	Leaves	Crushed, Externally	Cuts, wound	Central Anatolia	(Isil et al., 2004; Savran et al., 2008)
Cornus mas L.	Cornaceae	W	ErkekKızılcı	Kızılcık	Ornelian cherry	Fruits	Externally	Wound, boil	Marmara	(Polat and Satıl, 2010)
Kalanchoe blossfeldiana Poelln.	Crassulaceae	C		-	Flaming Katy	Leaves	Externally	Wound, acne.	Black Sea	(Gürbüz et al., 2019)
Prometheum sempervivoides (Fischer ex M.Bieb.) H.Ohba	Crassulaceae	W	Horozlelesi	YalıKoruğu	No English name	Aerial Parts	Decoction and pomade	Callus	Central Anatolia, Mediterranean	(Sağıroğlu et al., 2013)

Table 3. (Continued)

Sedum pallidum M.Bieb.	Crassulaceae	W	Solukdamkoruğu, Kedimemesi,	Koyunörmece	No English name	Leaves	Externally	Wound	Marmara Black Sea	(Kızılarslan and Özhatay, 2012; Karaköse and Karaköse, 2017)
Cucumis sativus L.	Cucurbitaceae	C	Hıyar, Salatalık	Hıyar	Wild cucumber	Fruits	Face mask	Refreshing	Aegean	(Sargın, 2013)
Cucurbita pepo L.	Cucurbitaceae	C	Kabak	SakızKabağı	Summer squash	Fruits, stems	Crushed	Eczema	Eastern Anatolia	(Gençay, 2007)
Ecballium elaterium (L.) A. Rich.	Cucurbitaceae	W	Acıdüğlek, Acıdülek, Acıdüvelek	EşekHıyarı	Squirting cucumber	Fruits	Externally	Eczema, wound	Aegean	(Arıtuluk, 2009)
Lagenaria siceraria (Molina) Standl.	Cucurbitaceae	C	Sukabağı, Alavırt, Alavur	UzunKabak	Bottle gourd	Fruits	Externally	Alopecia, callus, burn	Aegean	(Sargın, 2013)
Momordica charantia L.	Cucurbitaceae	C	Kudretnarı	Kudretnarı	Bitter melon	Fruits	Externally	Eczema, psoriasis	Mediterranean	(Güzel et al., 2015)
Juniperus oxycedrus L.	Cupressaceae	W	Katranardıcı	KatranArdıcı	Juniper	Pix	Infusion Externally wrapped in a cloth	Psoriasis, skin blemishes, skin disease, eczema, wound, body resistance booster,woun, prickly heat	Aegean, Marmara, South Anatolia	(Özdemir and Alpınar, 2015; Kültür 2007; Uysal et al., 2010; Demirci and Özhatay, 2012; Bulut and Tuzlaci, 2013; Mükemre, 2013;Dogan, 2014; Bulut and Tuzlacı, 2015; Sargin et al., 2015a; Akgul et al., 2018)
Juniperus communis L. var. *communis*	Cupressaceae	W	Adi ardıç	Ardıç	Common juniper	Fruits	Externally	Wound	Marmara	(Güneş, 2017)
Juniperus foetidissima Willd.	Cupressaceae	W	Kokarardıç,Yağardıcı	KokarArdıç	Foetid juniper	Pix	Externally	Wound	Eastern Anatolia	(Güneş and Özhatay, 2011)
Cupressus sempervirens L.	Cupressaceae	C/W	Servi, Selvi	Servi	Mediterranean cypress	Cones	Oleat, Externally	Warts, hair restorer	Aegean	(Bulut and Tuzlacı, 2015; Sargin et al., 2015a)
Thuja articulata Vahl.	Cupressaceae	C	Sandalozsakızı	-	Tetraclinis	Gums	Externally	Cracked skin	South Anatolia	(Akan and Bakır-Sade, 2015)
Cyperus rotundus L.	Cyperaceae	W	Kara topalak, İncirop, Araptopalağı, Gecebiten, Topalak	Topalak	Coco-grass	Tubers	Externally	Halitosis	Central Anatolia, Mediterranean	(Sağıroğlu et al., 2013)
Dioscorea communis (L.) Caddick & Wilkin	Dioscoreaceae	W	Dolangaç, Sarmaşık, Acıtilkişen,	Dolanbaç	Black bryony	Root	Externally Oleat, Externally	Wound, skin blemishes	Black Sea Marmara	(Polat and Satıl, 2010; Bulut and Tuzlacı, 2015; Karaköse and

Table 3. (Continued)

Dioscorea communis (L.) Caddick & Wilkin	Dioscoreaceae	W	Dövülmüşavrat ot, Gavurtilkişeniv e Kara asma	Dolanbaç	Black bryony	Root	Externally Oleat, Externally	Wound, skin blemishes	Black Sea Marmara	Karaköse, 2017)
Diospyros kaki Thunb.	Ebenaceae	C	Amme, Japonhurması	Trabzon Hurması	Oriental persimmon	Fruits	Externally	Wound	Aegean	(Sargın, 2013)
Elaeagnus angustifolia L.	Elaeagnaceae	W	Çalıgaga, Kuşiğdesi, Pışat, Puşat, Yabaniiğde	İğde	Russian olive	Fruits	Externally	Antiseptic	Marmara	(Sanlı, 2006)
Elaeagnus rhamnoides (L.) A.Nelson	Elaeagnaceae	C	Çıçırgan, Yalancıİğde	Çıçırgan	Sea-buckthorn	Seeds, leaves	Poultice	Ringworm	Aegean	(Sargın, 2013)
Equisetum arvense L.	Equisetaceae	W	Çamotu, Çığçığ, Ekliot, Katırkuyruğu, Kırkboğum, Kırkkilitotu, Tilkikuyruğu, Zemberekotu	Atkuyruğu	Field horsetail	Aerial parts Leaves	Infusion	Wart	Aegean	(Sargin et al., 2015a)
Equisetum giganteum L.	Equisetaceae	W	-	Kırkkilitotu	Branched horsetail	Aerial parts	Externally	Wound	Aegean	(Doğanoğlu, 2004)
Arbutus andrachne L.	Ericaceae	W	Hartlap, Sandal	Sandal Ağacı	Greek Strawberry Tree	Fruits, Leaves	Externally	Eczema	Mediterranean	(Güzel et al., 2015)
Arbutus unedo L.	Ericaceae	W	Ayıyemişi, Dağyemişi, Davulga	Kocayemiş	Strawberry tree	Fruits	Externally	Depilatory	Marmara	(Polat and Satıl, 2010)
Erica manipuliflora Salisb.	Ericaceae	W	Piren, Süpürgeçiçeği	Püren	No English name	Leaves	Externally	Eczema, boil	Aegean	(Sargın, 2013)
Rhododendron ponticum L.	Ericaceae	W	Komar, Kafil, Kaful, Kara ağu	Kumar	Common rhododendron	Leaves	Externally	Eczema	Black Sea	(Karaköse and Karaköse, 2017)
Vaccinium myrtillus L.	Ericaceae	W	Çobanüzümü	Ayıüzümü	European blueberry	Fruit, leaves	Externally	Tonic	Black Sea	(Karaköse and Karaköse, 2017)
Euphorbia amygdaloides L. subsp. *amygdaloides*	Euphorbiaceae	W	Zerena	Zerana	Wood spurge	Seeds, latex	Externally	Wart	Black Sea	(Karaköse and Karaköse, 2017)
Euphorbia cheiradenia Boiss. &Hohen	Euphorbiaceae	W	Haşil, Sütleğen	Şirker	No English name	Latex	Externally	Wart, wound, eczema, psoriasis	Eastern Anatolia	(Gençay, 2007)
Euphorbia helioscopia L.	Euphorbiaceae	W	Seherotu, Zehirotu	Feribanotu	Sun spurge	Aerial parts	Externally	Wart	Marmara	(Onar, 2006)
Euphorbia kotschyana Fenzl	Euphorbiaceae	W	Sütleğen	Sütlüce	No English name	Latex, stem	Externally	Wound, wart	Central Anatolia	(Bağcı and Keskin, 2022)

Table 3. (Continued)

Euphorbia macroclada Boiss.	Euphorbiaceae	W	Nebul	Neblul	Euphorbia	Latex	Externally	Curing warts, eczema	Eastern Anatolia	(Cakilcioglu et al., 2011)
Euphorbia rigida M. Bieb.	Euphorbiaceae	W	Sütleğen, Çiftbezelisütleğen	Sütleğen	Euphorbia	Latex	Externally	Eczema, burn, wound healing, wart.	Aegean	(Sargin et al. 2013; Sargin et al., 2015a)
Euphorbia stricta L.	Euphorbiaceae	W	Katısütleğen	KatıSütleğen	Euphorbia	Latex	Externally	Eczema, wound	Eastern Anatolia	(Karakaya et al., 2019; Depreli, 2020)
Chrozophora tinctoria (L.) A. Juss.	Euphorbiaceae	W	Akbaş	Siğilotu	No English name	Fruit	Decoction	Acne	Eastern Anatolia	(Dogan, 2014)
Ricinus communis L.	Euphorbiaceae	C	Dedemene, Genegerçek	Hintyağı	Castor Oil	Fruits	Externally	Alopecia	Mediterranean	(Güzel et al., 2015)
Acacia karroo Hayne	Fabaceae	C	Akasya, akasya	Akasya	Sweet thorn	Leaves	Infusion	Skin cleansing	Aegean	(Sargın, 2013)
Anagyris foetida L.	Fabaceae	W	Katırkuyruğu, Yiyircik	Zivircik	Roat rumination	Fruits	Externally	Tonic	Mediterranean	(Arıcan et al., 2013)
Anthyllis vulneraria L. subsp. *pulchella (*Vis.) Bornm.	Fabaceae	W	Renkliçobangülü	RenkliÇobangülü	Common kidneyvetch	Flowering branches	Externally	Wound	Black Sea	(Karaköse and Karaköse, 2017)
Astragalus microcephalus Willd.	Fabaceae	W	Boz geven, Kara geven	Anadolu Kitresi	Gum tragacanth	Gums	Externally	Dehydrating wart,wound, boil	Eastern Anatolia	(Karakaya et al., 2019)
Cicer arietinum L.	Fabaceae	W	Nohut	Nohut	Gram	Fruit	Externally	Ringworm, wart	Aegean	(Sargın, 2013)
Cassia angustifolia Vahl.	Fabaceae	C	Sinameki	Sinameki	Senna alexandrina	Leaves	Infusion	Hair disorders	Eastern Anatolia	(Polat et al., 2011)
Colutea cilicica Boiss. et Balansa	Fabaceae	W	Yabanisinameki, Patlu	Patlangaç	No English name	Seeds	Externally	Skin disease, wart, wound	Black Sea, Central Anatolia	(Sezik et al., 2001; Özdemir and Alpınar, 2015; Ezer and Arısan, 2006; Han and Bulut, 2015)
Gleditsia triancanthos L.	Fabaceae	W	Gladiçya, Amerikangladiçyası	-	Honey locust	Seeds	Externally	Antiseptic	Eastern Anatolia	(Gençay, 2007)
Glycyrrhiza glabra L.	Fabaceae	W	Tatlımeyan	Meyan	Licorice	Flowers Fruits Roots	Externally Infusion Decocsion	Skin disease, Wound	Eastern Anatolia	(Akbulut and Bayramoglu, 2017; Karakaya et al., 2019)
Lathyrus cicera L.	Fabaceae	W	Colban, Bayırfiyi, Nohutmürdümüğü	Colban	Wild broad bean	Fruits	Eaten by chewing	Psoriasis	Aegean	(Sargin et al., 2015a)
Melilotus officinalis (L.) Desr.	Fabaceae	W	Eşekyoncası	KokuluYonca	Trefoil	Aerial parts	Decoction	Wound healing	Eastern Anatolia	(Cakilcioglu et al., 2011)
Medicago radiata L.	Fabaceae	W	-	HilâlYonca	Ray-podded	Aerial parts	Crushed	Boil, wound	Eastern Anatolia	(Gençay, 2007)

Table 3. (Continued)

Medicago rigidula (L.) All. var. *cinerascens* (Jord.) Rouy	Fabaceae	W	Kabayonca		Nefel, çakırdikeni	Aerial parts	Externally	Boil	Eastern Anatolia	(Gençay, 2007)
Medicago sativa L.	Fabaceae	C	Çevrince, Teknecik	Karayonca	Trefoil	Aerial parts	Maceration	Wounds, burn	Aegean	(Sargin et al.. 2015a)
Ononis spinosa L. subsp. *leiosperma* (Boiss.) Sirj.	Fabaceae	W	Kayışkıran, Kayıkçiçeği, Sabankıran, Yandak, Yandukta, Yantak	Demirdelen	Spiny restharrow	Aerial parts	Externally	Wound	Central Anatolia, Eastern Anatolia	(Özdemir and Alpınar, 2015; Çakılcıoğlu and Türkoğlu, 2009)
*Spartium junceum*L.	Fabaceae	W	Borcak, Borçoh, Boruk, Kuşçubuğu	Katırtırnağı	Spanish broom, rush broom, weaver's broom	Flowers, stem	Externally	Skin beauty, fragrance	Marmara	(Onar, 2006)
Trigonella capitata Boiss.	Fabaceae	W	Çemen	Top Çemenotu	No English name	Aerial parts, flowers	Externally	Wound, sterilizer	Eastern Anatolia	(Gençay, 2007)
Trigonella foenum-graecum L.	Fabaceae	W	Boy otu, Bay, Buy otu, Çemen	Çemenotu	Fenugreek	Seeds	Externally	Alopecia	Aegean	(Sarı et al., 2010)
Trifolium hybridum L.	Fabaceae	W	Yonca	MelezÜçgül	Alsike clover	Leaves	Externally	Acne	Marmara	(Onar, 2006)
Trifolium echinatum M. Bieb.	Fabaceae	W	Yonca	Kirpiüçgülü	No English name	Aerial parts	Externally	Wound	Eastern Anatolia	(Gençay, 2007)
Trifolium medium L.	Fabaceae	W	Yonca	KöseYonca	Zigzag clover	Aerial parts	Externally	Burn, boil	Marmara	(Sarı et al., 2010)
Trifolium purpureum Lois. var. *purpureum*	Fabaceae	W	Yonca	Morüçgül	Clover	Leaves	Externally	Acne	Marmara	(Onar, 2006)
Trifolium repens L.var. *repens*	Fabaceae	W	Yonca	Aküçgül	White clover	Flowering branches	Externally	Tonic	Black Sea	(Karaköse and Karaköse, 2017)
Trifolium resupinatum L. var. *resupinatum*	Fabaceae	W	Yonca	anadoluüçgülü	Reversed clover	Aerial parts	Poultice	Wound	Aegean	(Sargın, 2013)
Trifolium rubens L.	Fabaceae	W	Yonca	KınlıYonca	Clover	Aerial parts	Externally	Burn, boil	Marmara	(Sarı et al., 2010)
Vicia cracca L. subsp. *stenophylla* Vel.	Fabaceae	W	Fiğ	MeşeFiği	No English name	Aerial parts, seeds	Externally	Tonic	Black Sea	(Karaköse and Karaköse, 2017)
Quercus brantii Lindl.	Fagaceae	W	Kara meşe	Karameşe	Brant's oak	Fruit	Externally	Wound, teeth whitener	Eastern Anatolia	(Gençay, 2007)
Quercus cerris L.	Fagaceae	W	Saçlımeşe, Türkmeşesi	Saçlımeşe	Oak	Fruits	Externally	Wound, burn, skin disease, eczema.	Aegean	(Arı et al., 2015; Sargin et al., 2015a)
Quercus coccifera L.	Fagaceae	W	Kızılmeşe	Kermes Meşesi	Kermes oak	Fruits	Externally	Eczema, hair care	Aegean	(Sargın, 2013)

Table 3. (Continued)

Quercus ilex L.	Fagaceae	W	Çalımeşesi, Karagan, Pırnar	PırnalMeşesi	Vergreen oak	Bark	Externally	Wound	Eastern Anatolia	(Gençay, 2007)
Quercus infectoria Oliv. subsp. *veneris* (A.Kern.) Meikle	Fagaceae	W	Mazımeşesi	Zindiyen	No English name	Bark	Externally	Eczema, wound, antiseptic	Eastern Anatolia	(Gençay, 2007)
Quercus libani Oliv.	Fagaceae	W	Kara meşe	LübnanMeşesi	Oak	Fruits	Externally	Wound	Eastern Anatolia	(Polat et al., 2013)
Quercus pubescens Willd.	Fagaceae	W	Meşe	TüylüMeşe	Oak	Barks	Externally	Fungus	Central Anatolia	(Sinmez et al., 2018)
Centaurium erythraea Rafn subsp. *erythraea*	Gentianaceae	W	antariyon, Kızılkantaron	KırmızıKantaron	Common centaury	Aerial part	Oleat, Externally	Eczema, wounds	Marmara	(Kızılarslan and Özhatay, 2012)
Centaurium erythraea Rafn. subsp. *turcicum* (Velen) Melderis	Gentianaceae	W	Kantariyon, Kızılkantaron	Tukulotu	Centaury	Leaves	Decoction, externally	Skin diseases	Mediterranean	(Bağcı et al., 2006)
Centaurium pulchellum (Sw.) Druce	Gentianaceae	W	-	Pembe Tukul	Lesser centaury	Flowering branches	Externally	Wounds	Marmara	(Onar, 2006)
Geranium divaricatum Ehrh.	Geraniaceae	W	Dönbaba	ÇatalItır	No English name	Aerial Parts	Boiled or fresh and wrapped	Eczema	Central Anatolia, Mediterranean	(Sağıroğlu et al.., 2013)
Geranium robertianum L.	Geraniaceae	W	Dönbaba	DağItırı	Herb-Robert, red robin	Whole plants	Externally	Tonic	Black Sea	(Karaköse and Karaköse, 2017)
Hypericum montbretii Spach	Hypericaceae	W	Kantaron	ÇayKantaronu	No English name	Aerial parts	Decoction	Eczema	Marmara	(Kızılarslan and Özhatay, 2012)
Hypericum olympicum L.	Hypericaceae	W	Kantaron	UludağKantaronu	Mount Olympus St. John's wort	Flower	Externally	Burn and wound care	Black Sea	(Karaköse and Karaköse, 2017)
Hypericum perforatum L.	Hypericaceae	W	Binbirdelikotu, koyunkıran, kantaron	Sarıkantaron	St. John's Wort	Flower	Oleat, Externally Internally	Burn and wound care, mouth wounds, wound healing	Aegean, Marmara, Cental Anatolia, Mediterranean, Eastern Anatolia	(Erdem et al., 1993; Sezik et al., 2001; Doğanoğlu, 2004; Koyuncu, 2005; Aslan et al., 2007; Kazan, 2007; Oral, 2007; Sezik et al., 2008; Uysal, 2008; Vural, 2008, Çakılcıoğlu and Türkoğlu, 2009; Metin, 2009; Deniz et al., 2010; Aktan, 2011; Cakilcioglu et al., 2011; Güneş and Özhatay, 2011; Kayabaşı et al., 2016; Polat and Satıl, 2012; Akaydın, 2013;

Table 3. (Continued)

Hypericum perforatum L.	Hypericaceae	W	Binbirdelikotu, koyunkıran, kantaron	Sarıkantaron	St. John's Wort	Flower	Oleat, Externally Internally	Burn and wound care, mouth wounds, wound healing	Aegean, Marmara, Cental Anatolia, Mediterranean, Eastern Anatolia	Polat et al., 2013; Dogan, 2014; Bulut and Tuzlacı, 2015; Sargin et al., 2015a)
Hypericum scabrum L.	Hypericaceae	W	Kepir out, Kızılotu, Mayasılotu	Karahasançayı	Touch-and-heal	Aerial part	Decoction	Eczema, wound, burn	Eastern Anatolia	(Tuzlaci, 2011; Tetik et al., 2013; Dogan, 2014)
Hypericum triquetrifolium Turra	Hypericaceae	W	Pırpırotu	Pırpırotu	Curled-leaved St. John's-wort	Flowers, aerial parts	Decoction Externally	Wound, burn, antiseptic, eczema, alopecia	Eastern Anatolia Aegean, Marmara,	(Gençay, 2007; Sarı et al., 2010)
Pteridium aquilinum (L.) Kuhn	Dennstaedtiaceae	W	Evratı, Eylentü, Eyraltu, Güllük, İfteri, Kartaleğreltisi	Eğrelti	Eagle fern	Leaves	Infusion, Externally	Eczema	Black Sea Marmara	(Bulut and Tuzlacı, 2015; Karaköse and Karaköse, 2017)
Iris x germenica L.	Iridaceae	C	Morsüsen	Göksüsen	German bearded iris	Flowers	Externally	Fragrance	Marmara	(Polat and Satıl, 2010)
Iris lazica Albov	Iridaceae	W	Laz süseni	Laz Süseni	Iris	Roots	The juice of the fresh	Cosmetic and for the removal of freckles from the skin.	Black Sea	(Ergul Bozkurt and Terzioğlu, 2017)
Juglans regia L.	Juglandaceae	C	Yandak, koz	Ceviz	Walnut	Fruit, Leaves Immature fruits	Infusion Decoction Crushed Externally	Skin cancer, hair and nail care, skin disease, tonic, fungus, eczema	Aegean, South Anatolia, Mediterranean, Central Anatolia, Marmara, Black Sea	(Akalın, 1993, Yazıcıoğlu and Tuzlacı, 1996; Özgökçe and Özçelik, 2004; Koçyiğit and Özhatay, 2006; Ecevit and Özhatay, 2006; Onar, 2006; Kültür, 2007; Tabata et al., 2008; Metin, 2009; Uysal et al., 2010; Aslan et al., 2011; Bulut, 2011; Cakilcioglu et al., 2011; Tuzlaci, 2011

Table 3. (Continued)

Juglans regia L.	Juglandaceae	C	Yandak, koz	Ceviz	Walnut	Fruit, Leaves Immature fruits	Infusion Decoction Crushed Externally	Skin cancer, hair and nail care, skin disease, tonic, fungus, eczema	Aegean, South Anatolia, Mediterranean, Central Anatolia, Marmara, Black Sea	Demirci and Özhatay, 2012; Han and Bulut, 2015; Polat and Satıl, 2012; Dogan, 2014; Arı et al., 2015; Bulut and Tuzlacı, 2015; Sargin et al., 2015a; 2015b; Akbulut and Bayramoglu, 2017)
Juncus inflexus L.	Juncaceae	W	Saz	Sazak	Hard rush	Aerial parts	Decoction	İtch scabies	Aegean	(Sargın, 2013)
Ajuga chamaepitys (L.) Schreb. subsp. *chia* (Schreber) Arcang.	Lamiaceae	W	Yerçamı, acıyavşan, Kısamahmutotu	Acıgıcı	Smelly herb	Aerial parts	Externally	Fungus,wound	Central Anatolia, Aegean	(Deniz et al., 2010; Bağcı and Keskin, 2022)
Ajuga orientalis L.	Lamiaceae	W	Bozbodurot, Bozcaot, Mayasıl	Dağmayasılı	Oriental	Aerial parts	Externally	Skin diseases	Black Sea	(Karaköse and Karaköse, 2017)
Ajuga laxmannii (Murray) Benth.	Lamiaceae	W	Mayasılotu	Bozmayasıl	Oriental	Aerial parts	Infusion Externally	Skin diseases	Marmara	(Selvi et al., 2022)
Lavandula pedunculata (Mill.) Cav.subsp. *cariensis* (Boiss.) Upson &S.Andrews	Lamiaceae	W	-	Karan	No English name	Leaves	Externally	Antiseptic, wound, eczema	Marmara	(Sanlı, 2006)
Lavandula stoechas L. subsp. *stoechas*	Lamiaceae	W	Gargan, Keşişotu, Yalancılavanta	Karabaş	French lavender	Leaves	Externally	Wound, antiseptic, anti dandruff	Marmara	(Polat and Satıl, 2010)
Melissa officinalis L. subsp. *officinalis*	Lamiaceae	W	Limon nanesi, Limon otu,	Oğulotu	No English name	Leaves	Rubbing	Soap	Marmara	(Polat and Satıl, 2010)
Mentha longifolia (L) Hudson subsp. *longifolia* (L). L.	Lamiaceae	W	İt nanesi, Tüylünane	Pünk	Horse mint	Aerial parts	Externally	Fragrance, antiseptic	Eastern Anatolia	(Gençay, 2007)
Mentha longifolia (L.) Hudson subsp. *typhoides* (Briq.) Harley	Lamiaceae	W	İt nanesi, Tüylünane	DereNanesi	Mint	Leaves	Decoction, internally	Wounds	Eastern Anatolia	(Cakilcioglu et al., 2011)
Mentha x piperita L.	Lamiaceae	C	Bahçenanesi, Kara nane	Nane	Peppermint	Herb	Infusion	Foot odor and sweating	Aegean	(Sargın, 2013)
Mentha pulegium L.	Lamiaceae	W	Filiskin	Yarpuz	Pennyroyal	Leaves	Infusion	Fragrance	Black Sea	(Toksoy et al., 2010)
Mentha spicata L.	Lamiaceae	C	Antep nanesi, Kıvırcıknane	EşekNanesi	Mint	Leaves	Decoction, Externally	Hair growing	Mediterranean	(Arıcan et al., 2013)
Nepeta nuda L. subsp. *albiflora* (Boiss.) Gams	Lamiaceae	W	Beyazçiçekliçıplak kedinanes	Morküncü	Cat mint	Aerial parts	Externally	Wound	Eastern Anatolia	(Güneş and Özhatay, 2011)

Table 3. (Continued)

Marrubium cuneatum Banks & Sol.	Lamiaceae	W	-	Elkurtaran	Horehound	Aerial parts	Externally	Skin tone whitening	South Anatolia	(Abak, 2018)
Ocimum basilicum L.	Lamiaceae	C	Fesliyen, Irıhan, Peslan	Fesleğen	Great basil	Aerial parts	Externally	Wound	Marmara	(Sanlı, 2006)
Origanum x majoricum Cambess.	Lamiaceae	C	-	-	No English name	Aerial parts	Externally	Fragrance	Marmara	(Polat and Satıl, 2010)
Origanum onites L.	Lamiaceae	W	İzmir kekiği, İzmir mercanköşkü	BilyalıKekik	Thyme	Aerial parts	Externally	Hair and nail care	Aegean	(Sargin et al., 2015a)
Origanum vulgare L. subsp. *viridulum* (Martrin-Donos) Nyman	Lamiaceae	W	Çanakkalekekiği, Güveyotu	İstanbul Kekiği	No English name	Herb, leaves	Infusion	Acne, alopecia	Aegean	(Sargın, 2013)
Origanum vulgare L. subsp. *gracile* (C. Koch) Ietsw.	Lamiaceae	W	Çanakkalekekiği	KuşZemulu	Thyme	Aerial parts	Externally	Wound	Eastern Anatolia	(Özgökçe and Özçelik, 2004)
Phlomis armeniaca Willd.	Lamiaceae	W	-	Boz Şavlak	No English name	Aerial parts	Externally	Wound	Central Anatolia	(Oral, 2007)
Prunella vulgaris L.	Lamiaceae	W	Yara otu, Dağerik otu, Gelincikleme otu	Gelinciklemeotu	Woundwort	Aerial parts	Externally	Wound, skin disease	Marmara	(Tuzlacı and Tolon, 2000; Ergul Bozkurt and Terzioğlu, 2017)
Rosmarinus officinalis L.	Lamiaceae	W	Beyaz püren, Kuşdili	Biberiye	Rosemary	Aerial parts	Infusion Externally	Wound, hair care, skin disease	Marmara Mediterranean	(Sanlı, 2006; Arıcan et al., 2013)
Salvia glutinosa L.	Lamiaceae	W	Yapışkan ada çayı, Okluşalba	OkluŞalba	Glutinous sage	Leaves	Externally	Wound, burn	Black Sea	(Karaköse and Karaköse, 2017)
Salvia multicaulis Vahl	Lamiaceae	W	Kürtreyhanı	KürtReyhanı	Mountain tea	Aerial parts	Externally	Wart, wound	Eastern Anatolia	(Akgül, 2008; Cakilcioglu and Turkoglu, 2010)
Salvia palaestina Benth.	Lamiaceae	W	-	SürmeliŞalba	Mountain tea	Aerial parts	Externally	Wound	Eastern Anatolia	(Cakilcioglu and Turkoglu, 2010)
Salvia sclarea L.	Lamiaceae	W	Ayıkulağı, Miskadaçayı, Tüylüadaçayı	Paskulak	No English name	Leaves	Gargle	Mouth and throat sores	Marmara	(Sanlı, 2006)
Salvia syriaca L.	Lamiaceae	W	-	Çevlikotu	Ironwort	Flower	Externally	Wound	Eastern Anatolia	(Gençay, 2007)
Salvia tomentosa Mill.	Lamiaceae	W	Büyükçiçekliadaçayı	Şalba	Mountain tea	Aerial parts	Externally	Wound	Aegean, Mediterranean	(Tuzlacı and Erol, 1999; Kahraman and Tatlı, 2004)
Salvia verticillata L. subsp. *amasiaca* (Freyn et Bornm.) Bornm.	Lamiaceae	W	Dadırak, Kara ot	Hart Şalbası	Mountain tea	Aerial parts	Externally	Wound	Central Anatolia	(Bağcı and Keskin, 2022)
Salvia virgata Jacq.	Lamiaceae	W	Yılancık	Fatmanaotu	Wand sage	Leaves	Externally	Wounds, Boil	Marmara	(Kızılarslan and Özhatay, 2012)
Sideritissipylea Boiss.*	Lamiaceae	W	Spilçayı	SipilÇayı	Mountain tea	Aerial parts	Externally	Food odor, wound	Aegean	(Sargin et al., 2015a)

Table 3. (Continued)

Sideritis libanotica Labill. subsp. *Kurdica* (Bornm.) Hub.-Mor.	Lamiaceae	W	Adaçayı	İnceçay	Mountain tea	Aerial parts	Decoction Externally	Wound healing, skin diseases)	East Anatolia	Selvi et al., 2022
Scutellaria orientalis L. subsp. *bicolor* (Hochst.) Edm.*	Lamiaceae	W	-	AlacaKasid e	No English name	Aerial parts	Externally	Wound	Eastern Anatolia	(Mükemre, 2013)
Stachys lavandulifolia Vahl	Lamiaceae	W	Eşekotu, Tokalıçay	TüylüÇay	No English name	Aerial parts	Externally	Wound	Eastern Anatolia	(Deniz et al., 2010)
Teucrium chamaedrys L. subsp. *chamaedrys*	Lamiaceae	W	Kısamahmut	Kısamahmu t	Wall germander	Aerial parts, leaves	Decoction	Itch	Eastern Anatolia	(Gençay, 2007)
Teucrium chamaedrys L. subsp. *lydium* O. Schwarz	Lamiaceae	W	Bodurmahmut	Bodurmahm ut	No English name	Leaves, flowers	Infusion, internally before breakfast	Eczema	Marmara	(Bulut and Tuzlacı, 2015)
Teucrium polium L.	Lamiaceae	W	Yavşan	Acıyavşan	Mountain thyme	Leaves, flowers	Infusion, internally before breakfast	Eczema, wounds, boil	Marmara Eastern Anatolia Mediterranean, Central Anatolia	(Honda et al., 1996; Tuzlacı and Erol, 1999; Everest and Ozturk, 2005; Emre and Tuzlacı, 2006; Cakilcioglu et al., 2011; Bağcı and Keskin, 2022; Bulut and Tuzlacı, 2015; Karakaya et al., 2019)
Thymbra spicata L.	Lamiaceae	W	Kara kekik, Kekik	Zahter	No English name	Leaves, flowers	Infusion	Wound	Marmara	(Sanlı, 2006)
Vitex agnus-castus L.	Lamiaceae	W	Acıayıt, Ayıd, Beşparmakotu	Hayıt	Vitex	Seeds, Leaves, Flowers, Roots, stems	Decoction, Internally before breakfast	Tonic, hair care, eczema allergies, sweating of the feet and smell	Mediterranean, Marmara, Eastern Anatolia	(Gençay, 2007; Arıcan et al., 2013; Bulut and Tuzlacı, 2015)
Ziziphora taurica M. Bieb. subsp. *taurica*	Lamiaceae	W	Naneruhu	ÇölReyhanı	No English name	Leaves, flowers	Externally	Wound, burn	Aegean	(Sargın, 2013; Satıl and Selvi, 2020)
Ziziphora tenuior L.	Lamiaceae	W	Anık, Karınağrısıotu, Morkızçayı, Naneruhu	Fareotu	No English name	Herb	Infusion	Boil, wound, burn	Aegean	(Sargın, 2013)

Table 3. (Continued)

Cinnamomum camphora (L.) Sieb.	Lauraceae	C	Kafur	Kafur	Camphor tree	Leaves	Externally	Antiseptic	Black Sea	(Toksoy et al, 2010)
Cinnamomum cassia (L.) J.Presl	Lauraceae	C	Tarçın	Çintarçını	Chinese cassia	Leaves	Infusion	Antiseptic	Black Sea	(Toksoy et al, 2010)
Laurus nobilis L.	Lauraceae	W	Har, Nehtel, Tahnal	Defne	Laurel	Leaves	Infusion	Skin disease, psoriasis, hair scarf	Eastern Anatolia, Mediterranean	(Altay et al, 2015; Korkmaz et al, 2016; Akbulut and Bayramoglu, 2017)
Fritillaria pinardii Boiss.	Liliaceae	W	Ağlayangelin	MahçupLâle	Fritillary	Bulbs	Externally	Boil	Eastern Anatolia	(Dogan, 2014)
Lilium candidum L.	Liliaceae	W	Bey zambağı, Beyazzambak, Miskzambağı	Akzambak	Lilium	Aerial parts	Oleat, Externally Internally	Wounds	Marmara	(Onar, 2006)
Tulipa armena Boiss. var. *armena*	Liliaceae	W	-	DağLâlesi	Tulip	Bulbs	Externally	Wound	Eastern Anatolia	(Dogan, 2014)
Linum usitatissimum L.	Linaceae	C	Cimit, Cinit	Keten	Linen	Seeds	Externally	Wound care, antifungal	Central Anatolia	(Sinmez et al., 2018)
Lycopodium clavatum L.	Lycopodiaceae	W	Çamotu, Kurtayağı	Göbektozu	Common club moss	Whole plants	Externally	Skin disease, skin rubbing	Türkiye	(Akbulut and Bayramoglu, 2017)
*Lawsonia inermis*L.	Lythraceae	W	Kına	Kına	Egyptian privet	Leaves	Externally	Eczema	Black Sea	(Gürbüz et al., 2019)
Punica granatum L.	Lythraceae	C	Nar	Nar	Pomegranate	Fruits	Externally	Mouth sore	Aegean	(Sargın, 2013)
Alcea apterocarpa (Fenzl) Boiss.	Malvaceae	W	Hatmi	Gülfatma	No English name	Flowers Leaves	Externally	Hair care	Eastern Anatolia	(Karakaya et al., 2019)
Alcea biennis Winterl	Malvaceae	W	Hatmi	Fatmaanagülü	Biennial hollyhock	Flowers Fruits, Roots	Infusion Decoction Gargle, tea	Hair care, skin blemishes Wound	Aegean Mediterranean Marmara	(Sanlı, 2006; Arıtuluk, 2009; Sargın, 2013)
Alcea calvertii (Boiss.) Boiss.	Malvaceae	W	Hıraçiçeği	Hıraçiçeği	No English name	Leaves	Externally	Wound	Eastern Anatolia	(Dogan, 2014)
Alcea hohenackeri (Boiss. &Huet.) Boiss.	Malvaceae	W	Hero	Hevur	No English name	Leaves, root, flower	Externally	Wound	Eastern Anatolia	(Gençay, 2007)
Alcea striata subsp. *striata* (DC.) Alef	Malvaceae	W	-	YivliHatmi	No English name	Flowers, Fruits, Roots	Infusion	Wound healing	Eastern Anatolia	(Akgul et al., 2018)
Malva neglecta Wallr.	Malvaceae	W	KüçükEbegümeci	Çobançöreği	Mallow	Flowers, Leaves Aerial parts	Crushed infusion	Wound, food care, skin care, boil, psoriasis,	Marmara, West-Black sea, Central Anatolia, Eastern Anatolia	(Erdem et al., 1993; Fujita et al., 1995; Yeşilada et al., 1995; Sezik et al., 1997;

Table 3. (Continued)

Malva neglecta Wallr.	Malvaceae	W	KüçükEbegümeci	Çobançöreği	Mallow	Flowers, Leaves Aerial parts	Crushed infusion	Burn	Mediterranean	Tuzlacı and Erol, 1999; Sezik et al., 2001; Özgökçe and Özçelik, 2004; Özdemir and Alpınar, 2015; Öztürk and Dinç, 2005; Balos and Akan, 2007; Oral, 2007; Yeşil and Akalın, 2009; Tabata et al., 2008; Çakır, 2017; Metin, 2009; Sarper et al., 2009; Cakilcioglu and Turkoglu, 2010;
Malva neglecta Wallr.	Malvaceae	W	KüçükEbegümeci	Çobançöreği	Mallow	Flowers, Leaves Aerial parts	Crushed infusion	Wound, food care, skin care, boil, psoriasis, burn	Marmara, West-Black sea, Central Anatolia, Eastern Anatolia Mediterranean	Tuzlaci and Dogan, 2010; Erdoğan, 2011; Güneş and Özhatay, 2011; Kaval et al., 2014; Ozüdoğru et al., 2011, Polat et al., 2013; Tetik et al., 2013; Mükemre, 2013; Dogan, 2014; Güneş, 2017; Akgul et al., 2018)
Malva sylvestris L.	Malvaceae	W	Büyükebegümeci	Ebegümeci	Mallow	Leaves	Porridge	Eczema, to relieve the pain of boils, wounds	Aegean, Mediterranean, Eastern Anatolia	(Bağcı et al., 2006, Sargin et al., 2015a, Korkmaz et al., 2016)
Tilia argentea Desf. ex DC Mill.	Malvaceae	W	GümüşiIhlamur	-	Silver linden	Flowers	In bath water	Hair care	Marmara	(Sanlı, 2006)
Tilia rubra DC. subsp. *caucasica* (Rupr.) V.Engl.	Malvaceae	W	Kırmızıihlamur, Fambur, Felenbur, Filanbur	Felamur	No English name	Flowers, leaves, barks, fruits	Externally In bath water	Wound Skin beauty	Black Sea Marmara	(Karaköse and Karaköse, 2017; Sanlı, 2006)
Veratrum album L.	Melanthiaceae	W	Ak çöpleme, Ağukunduzu, Beyazçöpleme	Dokuztepeli	False helleborine	Rhizomes	Externally	Skin diseases	Black Sea	(Karaköse and Karaköse, 2017)
Melia azedarach L.	Meliaceae	C	Yalancıtesbihağacı	TesbihAğacı	Chinaberry tree	Flower, leaves,	Externally	Wound	Marmara	(Polat and Satıl, 2010)

Table 3. (Continued)

Ficus carica L.	Moraceae	C	İncir	İncir	Fig	Latex	Infusion, Externally	Wart, skin cancer, Eczema, boil	Aegean Marmara	(Sanlı, 2006; Arıtuluk, 2009; Bulut and Tuzlacı, 2015; Sargin et al., 2015a)
*Ficus carica*L. subsp. *rupestris* (Hausskn.) Browicz.	Moraceae	W	İncir	İt İnciri	Fig	Latex	Externally	Wart, boil, eczema, fungus	South Anatolia, Eastern Anatolia	(Yeşil and Akalın, 2009; Tuzlaci and Dogan, 2010; Dogan, 2014)
Morus alba L.	Moraceae	W	Istanbul dutu	Ak Dut	White mulberry	Leaves	Infusion	Eczema	Eastern Anatolia	(Gençay, 2007)
Morus nigra L.	Moraceae	W	Kara dut	Kara Dut	Black mulberry	Branches, fruits	Externally	Skin diseases	Eastern Anatolia	(Gençay, 2007)
Morus rubra L.	Moraceae	W	Mordut	MorDut	Red mulberry	Fruits	Externally	Aphthae	Marmara	(Yeşilyurt et al., 2016)
Myristica fragrans Houtt.	Myristicaceae	C	Küçükhindistancevizi	-	Nutmeg	Fruits	Decoction	Antiseptic	Black Sea	(Toksoy et al., 2010)
Myrtus communis L.	Myrtaceae	W	Elduran, Eldüren, Mord, Mort, Murt, Sazak	Mersin	Myrtle	Flowers, Leaves	Fresh, decoction	Skin disease, wound	Aegean Mediterranean	(Bulut and Tuzlacı, 2015; Sargin et al., 2015a; Akbulut et al., 2019)
Syzygium aromaticum L.	Myrtaceae	C	Karanfil	-	Cloves	Buds	Externally	Antioxidant, antifungal	Mediterranean	(Kaya, 2019)
Peganum harmala L.	Nitrariaceae	W	İlezik, Nazarotu, Üzellik	Üzerlik	Harmal	Flowers Seeds	Dried seeds hung on the wall Externally	Wart, skin healing, wound	Aegean	(Sargin et al., 2015a; Akgul et al., 2018)
Mirabilis jalapa L.	Nyctaginaceae	C	Gecesefası, Gündüzsefası	Akşamsefası	Marvel of Peru	Leaves	Externally	Boil, wound	Marmara	(Polat and Satıl, 2010)
Fraxinus ornus L. subsp.*ornus*	Oleaceae	W	Dişbudak	ÇiçekliDişbudak	manna ash	Buds	Externally	Warts	Aegean	(Sargın, 2013)
Olea europaea L. subsp. *europaea*	Oleaceae	W	Zeytinağacı	Zeytin	Olive	Fruits	Crushed, Externally	Wound	Eastern Anatolia, Marmara	(Bulut and Tuzlacı, 2015; Karakaya et al., 2019)
Jasminum nudiflorum Lindl.	Oleaceae	C	Çalıyasemini, Sarıyasemin	Yasemin	Winter jasmine	Flowers	Externally	Anti-inflammatory, antiviral	Mediterranean	(Kaya, 2019)
Phillyrea latifolia L.	Oleaceae	W	Akçakesme, Kesme,Akçekesme	Akçakesme	Green olive tree	Herb	Gargle	Eczema, bad breath	Aegean	(Sargın, 2013)
Euphrasia pectinata Ten.	Orobanchaceae	W	-	Gözotu	No English name	Branches	Externally	Wound	Black Sea	(Karaköse and Karaköse, 2017)
Oxalis acetosella L.	Oxalidaceae	W	Ekşiyonca	Ekşiyonca	Wood sorrel	Leaves, root	Externally	Wound, astringent	Black Sea	(Karaköse and Karaköse, 2017)

Table 1. (Continued)

*Oxalis corniculata*L.	Oxalidaceae	W	-	SarıEkşiyonca	creeping woodsorrel beauty	Herb	Infusion	Eczema	Aegean	(Sargın, 2013)
Chelidonium majus L.	Papaveraceae	W	Temreotu	Kırlangıçotu	Greater celandine	Latex	Infusion as tea	Wart, skin diseases	Aegean	(Arı et al., 2015; Sargin et al., 2015a)
Fumaria capreolata L.	Papaveraceae	W	-	KeçiŞahteresi	No English name	Aerial parts	Externally	Eczema	Mediterranean	(Güzel et al., 2015)
Fumaria officinalis L.	Papaveraceae	W	Şahtere	Şahtere	Common fumitory smoke	Branches with flowers	Externally	Eczema	Eastern Anatolia	(Korkmaz et al., 2016)
Papaver rhoeas L.	Papaveraceae	W	Gelincik, Gelincikotu, Kukumavotu	Şelincik	Common poppy	Flowers	Decoction	Wound	Eastern Anatolia	(Gençay, 2007)
Sesamum indicum L.	Pedaliaceae	C	Küncü, Susam	Susam	Sesam	Seeds	Externally	Fungus, wound, burn	Eastern Anatolia	(Dogan, 2014; Sinmez et al., 2018)
Abies nordmanniana (Steven) Spach subsp.*nordmanniana**	Pinaceae	W	Iledenaz, Küner	KafkasGöknarı	Nordmann fir, Caucasian fir	Leaves, gum	Externally	Wound	Black Sea	(Karaköse and Karaköse, 2017)
Pinus nigra J.F. Arnold	Pinaceae	W	Karaçam	Karaçam	Pine	Cones	Externally	Callus, wart, skin disease, psoriasis	Aegean, Eastern Anatolia	(Cakilcioglu et al., 2011; Arıtuluk, 2009)
Pinus nigra J.F. *Arnold* subsp. *pallasiana* (Lamb.) Holmboe	Pinaceae	W	Karaçam	Karaçam	No English name	Cones	Externally	Wart, wound, callus	Marmara	(Polat and Satıl, 2010)
Pinus nigra J.F. Arnold subsp. *pallasiana*(Lamb.) Holmboe var. *pallasiana*	Pinaceae	W	Karaçam	Karaçam	Pine	Immature cones Terebinthine	Externally	Wounds	Marmara	(Bulut and Tuzlacı, 2015)
Pinus nigra J. F. Arnold subsp. *pallasiana* (Lamb.) Holmboe f. *seneriana* (Saatçioğlu) Kandemir & Mataracı *	Pinaceae	W	Karaçam	Ebekaraçamı	No English name	Cones	Externally	Wound, burn, boil, wart, callus	Aegean	(Sargın, 2013)
Pinus brutia Ten.	Pinaceae	W	Kızılçam, Pürçam	Kızılçam	Pine	Young shoots	Boiled, Externally	Tonic, burns, wound	Mediterranean Marmara	(Arıcan et al., 2013; Bulut and Tuzlacı, 2015)
Pinus sylvestris L.	Pinaceae	W	Sarıçam	Sarıçam	Pine	Cone	Externally	Wound, eczema	Eastern Anatolia	(Karakaya et al., 2019)
Piper nigrum L.	Piperaceae	C	-	-	Black pepper	Fruits	Externally	Tonic	Black Sea	(Toksoy et al., 2010)
Digitalis ferruginea L. subsp. *ferruginea*	Plantaginaceae	W	Arıkovanı	Arıkovanı	Rusty foxglove	Leaves, seeds, root	Externally	Wound	Black Sea	(Karaköse and Karaköse, 2017)

Table 3. (Continued)

Linaria genistifolia (L.) Mill. subsp. *confertiflora* (Boiss.) P.H.Davis*	Plantaginacea e	W	Katırtırnağıyaprak lıketenotu	ÇokNevruzotu	No English name	Leaves Flowers	Boiled	Skin disease, eczema	Aegean	(Arı et al., 2015)
Plantago lanceolata L.	Plantaginacea e	W	Yılandili, Yılanotu	Damarlıca	Cart track	Leaves	Externally	Wound, wart	Eastern Anatolia	(Yazıcıoğlu and Tuzlacı, 1996; Ertuğ, 2000; Tuzlaci and Aymaz, 2001; Şimşek et al., 2002; Ezer and Avcı, 2004; Özgökçe and Özçelik, 2004; Arslan, 2005; Koçyiğit and Özhatay, 2006; Özdemir and Alpınar, 2015; Bağcı et al., 2006; Kültür, 2007; Yeşil and Akalın, 2009; Tabata et al., 2008; Uysal, 2008; Çakır, 2017; Güldaş, 2009; Metin, 2009; Saday, 2009; Deniz et al., 2010; Tuzlaci and Dogan, 2010; Polat and Satıl, 2010; Cakilcioglu et al., 2011; Güneş and Özhatay, 2011; Kayabaşı et al., 2016; Bağcı and Keskin, 2022; Polat et al., 2011; Tuzlacı, 2011; Han and Bulut, 2015; Özgen et al., 2012; Bulut and Tuzlaci, 2013; Mükemre, 2013; Tetik et al., 2013; Dogan, 2014)

Table 3. (Continued)

Plantago major L. subsp. *major*	Plantaginaceae	W	Bağayaprağı, Beş damar otu	Sinirotu	Cart track	Leaves	Externally	Wound, wart, boil	Black Sea, Marmara, Eastern Anatolia	(Fujita et al., 1995; Honda et al., 1996; Sezik et al., 1997; Tuzlacı and Tolon, 2000; Sezik et al., 2001; Alparslan, 2003; Bulut and Tuzlacı, 2015; Ezer and Avcı, 2004; Isil et al., 2004; Özgökçe and Özçelik, 2004; Koçyiğit and Özhatay, 2006; Ecevit and Özhatay, 2006; Ezer and Arısan, 2006; Akgül, 2007; Cansaran et al., 2007; Kültür, 2007; Aktan, 2011; Kaval et al., 2014; Bağcı and Keskin, 2022; Kayabaşı et al., 2016; Han and Bulut, 2015; Polat et al., 2013; Sağıroğlu et al., 2013; Tetik et al., 2013; Dogan, 2014)
Plantago major L. subsp. *intermedia* (Gilib.) Lange	Plantaginaceae	W	Beş damar otu	Yedidamarotu	Cart track	Leaves	Externally	Eczema, burn, wound	Aegean, Marmara	(Bulut and Tuzlacı, 2015; Sargin et al., 2015a)
Plantago media L.	Plantaginaceae	W	Sinirliot	Şimşekyaprağı	Plantain	Leaves	Externally	Skin disease	Eastern Anatolia	(Korkmaz et al., 2016)
Platanus orientalis L.	Platanaceae	W	Beladan, Biladan, Buladan, Çaymığ,	Çınar	Oriental plane	Leaves	Externally	Burn, wound	Aegean	(Sargin et al., 2015a)
Plumbago europaea L.	Plumbaginaceae	W	Kurşunotu, Dişotu, Dövenotu, Kuduzotu	Karakına	Common leadwort	Leaves	Crushed, Externally	Eczema	Marmara	(Bulut and Tuzlacı, 2015)
Avena barbata Pott ex Link subsp. *barbata*	Poaceae	W	-	NarinYulaf	Slender wild oat	Fruits	Externally	Cellulite	Aegean	(Sargın, 2013)

Table 3. (Continued)

Elymus repens (L.) Gould	Poaceae	W	Ayrıkotu, Aylıkotu, Demir otu	Sabankıran	Common couch	Fruits	Externally	Wound, boil	Aegean	(Sargın, 2013)
Hordeum vulgare L.	Poaceae	C	Arpa	Arpa	Barley	Aerial parts Fruits	Externally	Boils, warts, wounds,skin blemishes	Central- Eastern Anatolia, Mediterranean Marmara	(Sezik et al., 1997; Sezik et al., 2001; Gençler Ozkan, 2005; Yesil 2007; Metin, 2009;Güneş, 2017)
Triticum aestivum L.	Poaceae	C	Buğday	EkmeklikBuğday	Common wheat	Fruits, seeds	Externally	Eczema, callus	Eastern Anatolia	(Gençay, 2007)
Triticum turgidum L.	Poaceae	C	Buğday	ŞişikBuğday	Durum wheat	Seeds	Poultice	Wound	Aegean	(Sargın, 2013)
Zea mays L. subsp. *mays*	Poaceae	C	Mısır	Mısır	Corn	Seeds	Externally	Antiseptic	Eastern Anatolia	(Gençay, 2007)
Polygonum cognatum Meissn.	Polygonaceae	W	Madımak	Madımak	Madimak	Leaves	Externally	Boil	Eastern Anatolia	(Şimşek et al., 2002; Özgen et al, 2012)
Rumex acetosella L.	Polygonaceae	W	Ebenekşisi, Eğşikulak, Eğşimene	Kuzukulağı	Red sorrel	Leaves, root	Externally	Boil, inflammation	Black Sea	(Karaköse and Karaköse, 2017)
Rumex conglomerates Muray	Polygonaceae	W	Çayırlabadası, Labada	Ekşikulak	Clustered dock, sharp dock	Leaves	Poultice	Boil, eczema, wound swelling, rash	Eastern Anatolia	(Gençay, 2007)
Rumex crispus L.	Polygonaceae	W	Kıvırcıklabada, Evelik, Sığırkuyruğu	Labada	Curly dock	Aerial parts	Crushed Externally	Skin cooking disorders, sunburn	Mediterranean	(Bulut and Tuzlacı, 2015)
Rumex patientia L.	Polygonaceae	W	Efelek, Evelik, Develik	Efelek	Curly dock	Leaves	Externally	Boil, wound	Aegean	(Ugulu et al., 2009)
Rumex tuberosus L. subsp. *tuberosus*	Polygonaceae	W	Kuzukulağı, Trişoğ, Trişok	Kuzukıkırdağı	No English name	Leaves	Poultice	Boil	Marmara	(Sanlı, 2006)
Portulaca oleracea L.	Portulacaceae	C	Yabanisemizot, Bostangüzeli	Semizotu	Common purslane	Herb	Externally	Allergy	Aegean	(Sargın, 2013)
Portulaca rausii Danin	Portulacaceae	W	-	PiçSemizotu	No English name	Aerial parts	Crushed	Callus	Marmara	(Güneş, 2017)
Lysimachia punctata L.	Primulaceae	W	Kargaotu	BenliKargaotu	Dotted loosestrife	Leaves	Externally	Wound, burn	Aegean	(Sargin et al., 2015a)
Lysimachia verticillaris Spreng.	Primulaceae	W	Kargaotu	HilalKargaotu	No English name	Aerial parts	Decoction	Wounds	Marmara	(Kızılarslan and Özhatay, 2012)
Primula acaulis (L.) L. subsp. *acaulis*	Primulaceae	W	Susam, çuha	Çuhaçiçeği	Primrose,	Roots, Leaves, Flowers	Externally	Boil	Black Sea	(Karaköse and Karaköse, 2017)

Table 3. (Continued)

Primula veris L. subsp. *columnae* (Ten.) Lüdi	Primulaceae	W	Susam, çuha	Tutya	No English name	Roots, Leaves, Flowers	Externally	Boil	Black Sea	(Karaköse and Karaköse, 2017)
Anemone coronaria L.	Ranunculaceae	W	Dağlalesi	Manisalalesi	Poppy anemone	Aerial parts, flowers	Decoction	Purulent wound	Central Anatolia, Mediterranean	(Sağıroğlu et al., 2013)
Clematis flammula L.	Ranunculaceae	W	Akasma	Hamilmiskin	Fragrant virgin's bower	Aerial parts	Externally	Boil	Mediterranean	(Arıcan et al., 2013)
Clematis vitalba L.	Ranunculaceae	W	AkasmaPeçek	Akasma	Clematis	Bark	Externally	Skin diseases	Marmara	(Güneş, 2017)
Consolida orientalis (J.Gay) Schrödinger	Ranunculaceae	W	Hezaren, Mevzekotu, Naneçiçeği	Morçiçek	Consolida	Leaves	Externally	Wound	Central Anatolia	(Özdemir and Alpınar, 2015)
Nigella arvensis L. var. *glauca* Boiss.	Ranunculaceae	W		Çörekotu	Black bread weed	Seeds	Externally	Skin diseases	Mediterranean	(Bulut and Tuzlacı, 2015)
Nigella sativa L.	Ranunculaceae	C	ÇörekotuCüccem, Cüccum, Cütcan	Çörekotu	Black caraway	Seeds	Externally	Acne, eczema	Mediterranean, Aegean, Central Anatolia	(Kaya, 2019)
Ranunculus asiaticus L.	Ranunculaceae	W	Acemdüğünçiçeği	Şakayıklâlesi	Persian buttercup	Aerial parts	Externally	Wound	Eastern Anatolia	(Gençay, 2007)
Ranunculus ficaria L. subsp. *ficaria*	Ranunculaceae	W	Basurotu	Arpacıksalebi	Lesser celandine, pilewort	Aerial parts	Externally	Wound	Marmara	(Polat and Satıl, 2010)
Ranunculus ficaria L. subsp. *ficariiformis* Rouy & Foucaud	Ranunculaceae	W	Basurotu	Arpacıksalebi	Esser celandine	Flowers	Infusion as tea	Skin diseases	Aegean	(Arı et al., 2015)
Ranunculus sericeus Banks et Sol.	Ranunculaceae	W	Basurotu	Çınarcık	No English name	Aerial parts	Externally	Wound	Mediterranean	(Mart and Türkmen, 2008)
Reseda lutea L. var. *lutea*	Resedaceae	W	Gerdanlık	Muhabbetçiçeği	Yellow mignonette	Roots	Raw	Eczema	Eastern Anatolia	(Cakilcioglu et al., 2011)
Paliurus spina-christi P.Mill.	Rhamnaceae	W	Çalıdikeni, Çaltıdikeni, Çeşmezen, İsa dikeni, Kara çaltı	Karaçalı	Jerusalem thorn	Fruits, Flowers, Stems	Infusion, decoction Externally	Acne, boil, wart, wound	Marmara, Aegean, South Anatolia	(Sadıkoğlu 2003, Ugulu et al., 2009; Polat and Satıl, 2010; Cakilcioglu and Turkoglu, 2010; Şığva and Seçmen, 2010; Güneş, 2017)
Amygdalus communis L.	Rosaceae	C	Badem	Badem	Almond	Fruits, branches, oil	Externally	Burn, rash	Eastern Anatolia	(Gençay, 2007)

Table 3. (Continued)

Amygdalus orientalis Mill.	Rosaceae	W	Bayam, Bayan, Bıyam, Boççа	Payam	No English name	Herb Fruits	Decoction Externaly	Burn, wound	Aegean	(Sargın, 2013; Sargin et al., 2015a)
Armeniaca vulgaris Lam.	Rosaceae	C	Zerdali, Sarıerik, Acıkayısı, Fışfiş	Kayısı	Apricot	Seeds Fruits	Externaly	Wound under eye dark circles	Eastern AnatoliaAegean	(Gençay, 2007; Sargın, 2013)
Cerasus avium (L.) Moench	Rosaceae	C	Kiraz	Kiraz	Wild cherry	Fruits	Externally	Boil, acne	Aegean	(Sargın, 2013)
Cerasus mahaleb (L.) Mill.	Rosaceae	C	Endirez, Endürüz, İdris ağacı, Keniro,	Mahlep	No English name	Fruits	Externally	Tonic	Black Sea	(Toksoy et al., 2010)
Cotoneaster nummularius Fisch. & C.A.Mey.	Rosaceae	W	Dağmuşmulası	Dağ Muşmulası	Nummular	Aerial parts	Externally	Dermatitis	Central Anatolia	(Bağcı and Keskin, 2022)
Crataegus monogyna Jacq. subsp. *monogyna*	Rosaceae	W	Enişen, Geyikdikeni, Gırgat, Keçialıcı, Kırmızıalıç, Kocakarıyemişi	Yemişen	Thorn apple	Flowers	Infusion Internally	Wounds	Eastern Anatolia	(Cakilcioglu et al., 2011)
Crataegus orientalis Pallas ex M.Bieb. subsp. *orientalis*	Rosaceae	W	İt alıcı, Kırmızıalıç	Alıç	Oriental hawthorn	Root, fruits, flowers	Externally	Dermatitis	Central Anatolia	(Bağcı and Keskin, 2022)
Cydonia oblonga Mill.	Rosaceae	C	Ayva	Ayva	Quince	Seeds Leaves	Infusion	Wound	South Anatolia	(Akgul et al., 2018; Sinmez et al., 2018)
Fragaria vesca L.	Rosaceae	C	Amahta, Amofta, Col, Çiğelek, Çiğelem, Çile	DağÇileği	Wild strawberry	Leaves	Poultice	Acne	Aegean	(Sargın, 2013)
Geum urbanum L.	Rosaceae	W	Sukaranfili, Bit otu	Meryemotu	Wood avens	Whole plant	Externally	Tonic	Black Sea	(Karaköse and Karaköse, 2017)
Malus sylvestris (L.) Mill. subsp. *orientalis* (Uglitzk.) Browicz var. *orientalis*	Rosaceae	W	Acalma, Acamuk, Acıelma, Acuk, Ekşielma, Kivil, Kratuna, Sengeç, Senkeç, Yabanelması	-	Apple	Fruits	Externally	Wound	Marmara	(Kültür, 2007)
Mespilus germanica L.	Rosaceae	W	Döngel, Döngal, Ezgil, Gelinboğan, Tongel	Muşmula	Medlar	Fruits	Externaly	Hair color	Marmara	(Polat and Satıl, 2010)
Potentilla recta L.	Rosaceae	W	Beşparmakotu	SuParmakotu	Sulphur cinquefoil	Aerial parts	Crushed Externaly	Wound	Eastern Anatolia	(Özdemir and Alpınar, 2015; Dogan, 2014)
Potentilla reptans L.	Rosaceae	W	Beşparmakotu	Reşatınotu	Creeping cinquefoil	Aerial parts	Crushed Externaly	Wound	Eastern Anatolia	(GençlerOzkan, 2005; Dogan, 2014)

Table 3. (Continued)

Prunus divaricata Ledeb.	Rosaceae	W	Yonuseriği, Yunuseriği, Alça, Alsa	Yunuseriği	Cherry plum	Fruits	Externaly	Wound dressing	Aegean	(Sargın, 2013)
Persica vulgaris Mill.	Rosaceae	W	Şeftali	Şeftali	Peach	Leaves	Infusion	Wound		(Sinmez et al., 2018)
Pyrus elaeagnifolia Pall.	Rosaceae	W	Ahlat	Ahlat	Oleaster-leafed pear	Fruits, leaves, branches		Wound	Eastern Anatolia	(Karakaya et al., 2019)
Pyrus elaeagnifolia subsp. *kotschyana* (Boiss.) Browicz	Rosaceae	W	DağArmudu	DağArmudu	Leaf, pear	Fruits	Externaly	Wound, burn	Aegean, Eastern Anatolia	(Sargin et al., 2015a; Karakaya et al, 2019)
Rosa canina L.	Rosaceae	W	Asker gülü, İt gülü, Köpekgülü, Yabanigül	Kuşburnu	Dog rose	Fruits	Externally	Tonic, wound, eczema, boil, fungus, psoriasis, wart	Mediterranean, Eastern Anatolia, Central Anatolia, South Anatolia	(Yeşilada et al., 1995; Tuzlacıand Erol, 1999; Tuzlacı and Tolon, 2000; Sezik et al., 2001; Koçyiğit and Özhatay, 2006; Ecevit and Özhatay, 2006; Kültür, 2007; Han and Bulut, 2015; Arıcan et al., 2013; Bulut and Tuzlaci, 2013)
Rosa damascena Mill..	Rosaceae	C	Ispartagülü, Şamgülü, Yağgülü, Fındıkgülü	IspartaGülü	Damask rose	Fruits	Externally	Psoriasis	Eastern Anatolia	(Gençay, 2007)
Rubus caesius L.	Rosaceae	C	Kapina	Büküzümü	Blackberry	Leaves, fruits	Infusion, decoction	Tonic	Black Sea	(Toksoy et al, 2010)
Rubus canescens DC. var. *canescens*	Rosaceae	W	Çobanköste ğ i	Çobanköste ğ i	No English name	Leaves	Externally	Wound	Eastern Anatolia	(Gençay, 2007)
Rubus canescens DC. var. *glabratus* (Godr.) Davis & Meikle	Rosaceae	W	-	-	Woolly blackberry	Young shoots	Crushed, Externally wrapped	Wound	Marmara	(Bulut and Tuzlacı, 2015)
*Rubus hirtus*Waldst. & Kit.	Rosaceae	W	Tüntürük	Tüntürük	No English name	Leaves, Root	Externally	Wound healing, allergy, burn	Black Sea	(Karaköse and Karaköse, 2017)
Rubus idaeus L.	Rosaceae	W	Ahududu, Moruh, Totuk	Ahududu	Raspberry	Fruits	Externally	Wound	Aegean	(Sargin et al., 2015a)
Rubus sanctus Schreb.	Rosaceae	W	Böğürtlen	Böğürtlen	Blackberry	Leaves Stems	Decoction externally	Wound, burn, fungus, cut, eczema	Aegean, Eastern Anatolia, Marmara Mediterranean	(Erdem et al., 1993; Bulut and Tuzlacı, 2015; Koçyiğit and Özhatay, 2006; Koyuncu, 2005

Table 3. (Continued)

Rubus sanctus Schreb.	Rosaceae	W	Böğürtlen	Böğürtlen	Blackberry	Leaves Stems	Decoction externally	Wound, burn, fungus, cut, eczema	Aegean, Eastern Anatolia, Marmara Mediterranean	Ecevit and Özhatay, 2006; Onar, 2006; Kültür, 2007; Çakılcıoğlu and Türkoğlu, 2009; Uysal et al., 2010 Cakilcioglu et al., 2011; Tuzlaci, 2011; Polat and Satıl, 2012; Bulut and Tuzlaci, 2013; Dogan, 2014; Sargin et al., 2015a)
Sanguisorba minor L.subsp. *balearica* (Bourg. ex Nyman) Muñoz Garm. & C.Navarro	Rosaceae	W	Amelotu, Kelekotu, Kara göndürme	Kelekayağı	Small burnet	Aerial parts	Crushed externally	Wound, skin disease, eczema	Eastern-Central Anatolia Marmara	(GençlerOzkan, 2005; Yildirim et al, 2008; Bulut and Tuzlaci, 2013; Dogan, 2014)
Galium aparine L.	Rubiaceae	W	Çobansüzgeci	Çobansüzgeci	Hitchhikers	Aerial parts	Externally	Skin diseases, wound	Aegean	(Sargın, 2013)
Galium rotundifolium L.	Rubiaceae	W	Koru Yoğurtotu	Koru Yoğurtotu	Round-leaved bedstraw	Whole plant	Decoction	Alopecia	Marmara	(Yeşilyurt et al., 2016)
Galium tricornutum Dandy	Rubiaceae	W	Havotu	Havotu	Rough corn bedstraw	Aerial parts	Externally	Tonic	Eastern Anatolia	(Gençay, 2007)
Galium verum L. subsp. *verum*	Rubiaceae	W	Boyalık	Boyalık	Lady's bedstraw	Flowered branch	Externally	Wound, burn	Eastern Anatolia	(Özgen et al., 2012, Dogan, 2014)
Rubia tinctorum L.	Rubiaceae	W	Kökboya, Bostanotu, Boyacıkökü, Boya çili, Boya kökü	Kökboyası	Rose madder	Roots Aerial parts	Decoction, Externally	Eczema, wound, burn	Eastern Anatolia	(Dogan, 2014)
Citrus aurantium L.	Rutaceae	C	Turunç	Turunç	Bitter orange	Pericarp	Externally	Acne, cellulite, in soap and shampoo	Mediterranean	(Sargin et al., 2015a)
Citrus limon (L.) Burm.f.	Rutaceae	C	Limon	Limon	Lemon	Fruits	Externally	Antioxidant, antibacterial Fragrance	Mediterranean Aegean	(Sargın, 2013; Kaya, 2019)
Citrus sinensis (L.) Osbeck	Rutaceae	C	Portakal	Portakal	Sweet Orange	Bark	Externally	Fragrance	Mediterranean	(Kaya, 2019)
Populus alba L.	Salicaceae	W	Ak kavak, Akçakavak	Akkavak	Silver poplar	Leaves, bark	Decoction	Wound, hair scurf	Aegean	(Sargın, 2013)
Populus tremula L.	Salicaceae	W	Dağkavağı, Titrekkavak	TitrekKavak	Aspen	Leaves, bark	Externally	Callus	Aegean	(Sargın, 2013)

Table 3. (Continued)

Salix alba L.	Salicaceae	W	Ak söğüt, Köysöğüdü, Sarısöğüt	Ak Söğüt	White willow	Leaves	Decoction	Hair scurf	Eastern Anatolia	(Gençay, 2007)
Salix armeno-rossica A.K. Skvortsov	Salicaceae	W	-	Kars Söğüdü	No English name	Leaves	Externally	Skincare	Eastern Anatolia	(Karakaya et al., 2019)
Viscum album L. subsp. *album*	Santalaceae	W	Armutotu	Ökseotu	European mistletoe	Whole plants	Externally	Boil	Marmara	(Polat and Satıl, 2010)
Verbascum cheiranthifolium Boiss.	Scrophulariaceae	W	Bozkulak	Bozkulak	Torchwort	Leaves	Externally	Wound, boil, hand care, itch, alopecia	Central Anatolia Mediterranean	(GençlerOzkan, 2005; Esen, 2008; Bağcı and Keskin, 2022; Özüdoğru et al, 2011; Sinmez et al., 2018)
Verbascum diversifolium Hochst.*	Scrophulariaceae	W	-	NizipSığırkuyruğu	Torchwort	Flowers, Leaves	Infusion Internally	Scars, wounds	Eastern Anatolia	(Cakilcioglu et al., 2011)
Verbascum sp.	Scrophulariaceae	W	Sığırkuyruğu	-	Torchwort	Leaves Flowers	Infusion	Skin diseases, warts, eczema	Aegean	(Arı et al., 2015)
Smilax aspera L.	Smilacaceae	W	Çıtırgı, Dikenotu, Dikengözü, Dikenucu, Gıcırdikeni	Gıcırdikeni	Common smilax	Fruits Leaves	Decoction	Eczema	Central Anatolia, Mediterranean	(Sağıroğlu et al., 2013)
Atropa belladonna L.	Solanaceae	W	Güzelavratotu, Avratotu, Ayıçileği,	Güzelavratotu	Belladonna	Leaves, Fruit	Externally	Skin beauty	Black Sea	(Karaköse and Karaköse, 2017)
Capsicum annuum L.	Solanaceae	C	Biber	Biber	Peppers	Fruits	Internally	Wound	Aegean	(Sargın, 2013)
Datura innoxia Mill.	Solanaceae	W	Tüylüboruçiçeği	Abuzambak	Pricklyburr,	Aerial parts	Externally	Boil	Eastern Anatolia	(Gençay, 2007)
Datura stramonium L.	Solanaceae	W	Boruçiçeği, Abızambak, Abuzambak, Bostankaranfili, Büyüotu, Cinotu, Kokarot	BoruÇiçeği	Thorn apple	Seeds	Internally	Eczema	Marmara	(Kızılarslan and Özhatay, 2012)
Hyoscyamus niger L.	Solanaceae	W	Bat bat, Batbatotu, Bengildek, Bengilikotu, Çanakçömlek	Banotu	Henbane	Aerial parts	Externally in hot water	Wound, itch	Cental, Eastern Anatolia	(Yeşilada et al., 1995; Sezik et al., 1997; Sezik et al., 2001; Alparslan, 2003; Çakır, 2017, Polat and Satıl, 2010; Polat and Satıl, 2012)

Table 3. (Continued)

Lycopersicon esculentum Mill.	Solanaceae	C	Domates	Domates	Tomato	Fruits	Externally	Boil	Marmara	(Onar, 2006)
Nicotiana tabacum L.	Solanaceae	C	Tütün	Tütün	Tobacco	Leaves	Crushed	Wound	Eastern Anatolia	(Gençay, 2007)
Physalis alkekengi L.	Solanaceae	W	Güveyfener, Gelinfeneri, Gelinotu, Kembelotu, Kambilotu,	Güveyfeneri	Bladder cherry	Fruits	Internally	Erythema on skin	Marmara	(Kızılarslan and Özhatay, 2012)
Solanum americanum Mill.	Solanaceae	C	-	İtüzümü	American black nightshade	Fruits	Crushed Externally, internally	Wound Aphtha	Marmara	((Kızılarslan and Özhatay, 2012; Güneş, 2017)
Solanum tuberosum L.	Solanaceae	W	Patates	Patates	Potato	Tubers	Poultice	Burn, in wrinkle	Aegean	(Sargın, 2013)
Daphne oleoides Schreb. subsp. *oleoides*	Thymelaeaceae	W	Develik, Göğçe, Gökçe, Yaygıç	Gövçek	Daphne	Branches	Crushed Externally	Wound, boil	Eastern Anatolia	(Sezik et al., 2001; Dogan, 2014)
Ulmus glabra Huds.	Ulmaceae	W	Karağaç	DağKaraağacı	Wych elm	Branches	Crushed Externally	Wound, scar	Eastern Anatolia	(Karakaya et al., 2019)
Ulmus minor Mill.	Ulmaceae	W	Karağaç	Ova Karaağacı	Field elm	Branches	Externally	Callus	Marmara	(Güneş, 2017)
Urtica dioica L.	Urticaceae	W	Acıısırgan, Büyükısırganotu	Isırgan	Nettle	Leaves	Externally	Eczema, boil, skin disease, itch, fungus, psoriasis, wound	Aegean, Marmara, Central Anatolia Mediterranean Black Sea, Eastern Anatolia	(Yeşilada et al., 1995; Yazıcıoğlu and Tuzlacı, 1996; Tuzlacı and Erol, 1999; Tuzlacı and Tolon, 2000; Sezik et al., 2001; Alparslan, 2003; Arslan, 2005; Koyuncu, 2005; Ecevit and Özhatay, 2006; Bulut, 2006; Gençay, 2007; Kültür, 2007; Sarper et al., 2009; Han and Bulut, 2015; Bulut and Tuzlaci, 2013; Sargın, 2013)
Urtica pilulifera L.	Urticaceae	W	Kara ısırganotu	Dalağan	Roman nettle	Herb	Infusion Internally	Hair care, hair beauty, eczema	Aegean	(Sargın, 2013)

Table 3. (Continued)										
*Urtica urens*L.	Urticaceae	W	Küçükısırganotu, Tatlısırgan	Cılağan	Nettle	Leaves	Decoction as tea	Skin cancer	Aegean	(Arı et al., 2015)
Viola gracilis Sibth. & Sm.	Violaceae	W	Menekşe	KırMenekşesi	No English name	Flowers	Crushed	Wounds, Boil Wounds, burns	Marmara	(Kızılarslan and Özhatay, 2012)
Viola sieheana W.Becker	Violaceae	W	Menekşe	ÇayırMenekşesi	No English name	Flowers	Externally	Skin beauty	Black Sea	(Karaköse and Karaköse, 2017)
Vitis vinifera L.	Vitaceae	C	Asma, üzüm	Asma	Grape	Fruits Leaves	Externally	Boil, wound, burn,	Aegean	(Sarı et al., 2010; Sargin et al., 2015a)
Aloe vera (L.) Burnm. f.	Xanthorrhoeaceae	C	Sarısabır, Ağu, Sabırlık	Sarısabır	Aloe	Leaves	Externally	Burn, skincare	Mediterranean, Aegean	(Sarı et al., 2010)
*Asphodeline prismatocar*pa J. Gay ex Baker *	Xanthorrhoeaceae	W	-	Gavursaçağı	No English name	Fruits	Crushed	Warts	Central Anatolia, Mediterranean	(Sağıroğlu et al., 2013)
Asphodelus aestivus Brot.	Xanthorrhoeaceae	W	Çirişotu, Çiriş, Dededeğneği, Beyazçiriş, Yalancıçiriş	Kirgiçkökü	Asphodel	Roots	Eaten Decoction, Internally	Eczema	Marmara	(Bulut and Tuzlacı, 2015)
Eremurus spectabilis M.Bieb	Xanthorrhoeaceae	W	Çiriş, Çirişotu, Çireş, Dağpırasası, Gülük	Çiriş	Foxtail lilies	Aerial parts	Decoction externally	Eczema, fungus	Eastern Anatolia, Mediterranean	(Tuzlaci and Dogan, 2010; Demirci and Özhatay, 2012; Dogan, 2014)
Tribulus terrestris L.	Zygophyllaceae	W	Demir dikeni, Çarıkdikeni, Çobançökerten,	Çobançökerten	Puncture vine	Aerial parts	Externally	Wart, eczema, scars, wounds	Aegean, Eastern Anatolia, Central Anatolia	(Yeşilada et al., 1995; Oral, 2007; Cakilcioglu et al., 2011; Bulut and Tuzlaci, 2013; Sargin et al., 2015a)

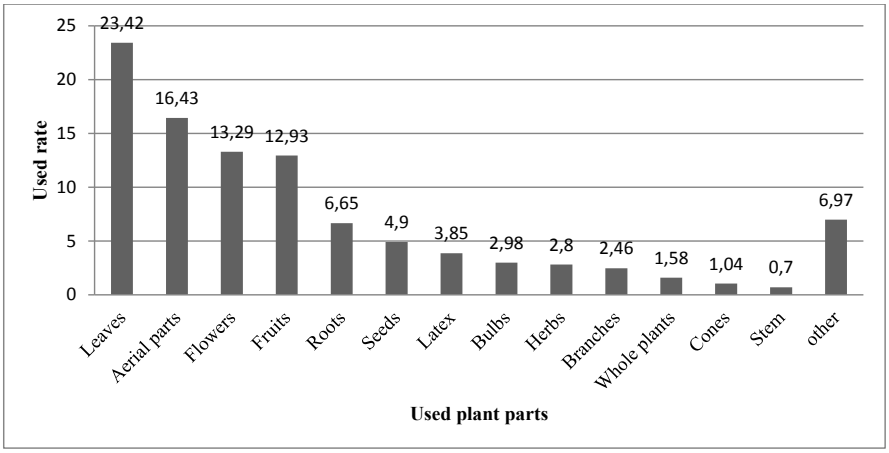

Figure 5. The most commonly used plant parts for skin disease and as cosmetics in Türkiye.

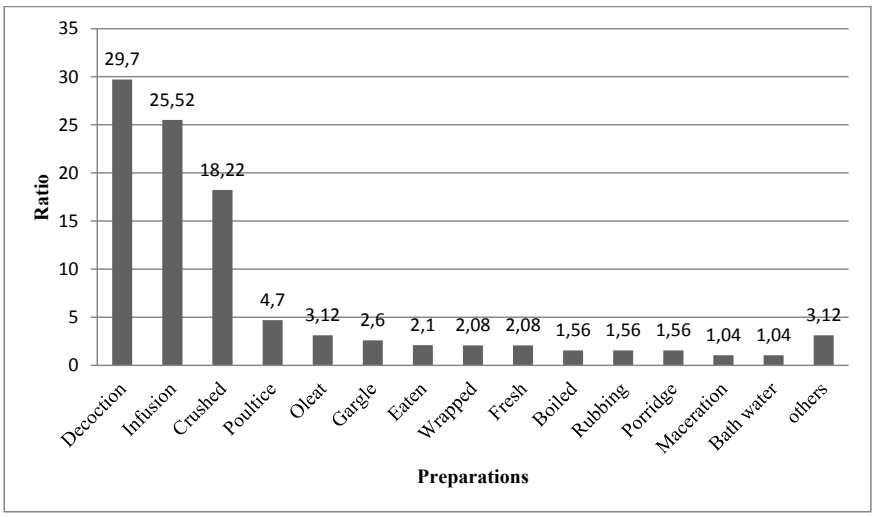

Figure 6. Preparations of the used plants for skin disease treatment and as cosmetics in Türkiye.

antiinflammatory(0.31%), antioxidant (0.31%), erythema (0.15%), herpes (0.15%), vitiligo (0.15%), gingiva (0.15%), antiparasitic (0.15%), and antiviral (0.15%) (Figure 7). The most common cosmetic uses were as a tonic, fragrance, skin blemish or cellulite treatment, hair or skin care and cleaning, and skin whitening.

3.3. Plants used worldwide and their active compounds

Based on previous studies around the world, there are many plants with active compounds used for treatment of skin diseases. Some of them are listed here with their active compounds and uses included parenthetically: *Nerium oleander* L. (neriine, digoxigenin; atopic dermatitis), *Aloe vera* (L.) Burm.f. (polysaccharides; frostbite, wounds, rashes, cold sores, psoriasis, dry skin, burns), *Camellia sinensis* (L.) Kuntze (polyphenon E; atopic dermatitis, acne, condyloma acuminata), *Hamamelis virginiana* L. (catechin, tannins; atopic dermatitis, photoprotection), *Matricaria chamomilla* L. (flavonoids, apigenin; essential oils, atopic dermatitis), *Aesculus hippocastanum* L. (aescine; venous insufficiency, wrinkles), *Salix alba* L. (salicylic acid; psoriasis), *Ricinus communis* L. (ricine; atopic dermatitis), *Calendula officinalis* L. (essential oils; wounds, psoriasis, atopic dermatitis), *Hypericum perforatum* L. (hypericin; wounds, burns, eczema), *Cardiospermum helicacabum* L. (flavonoids; atopic dermatitis), *Glycyrrhiza glabra* L. (glycrrhetinic acid; atopic dermatitis, cellulite), *Berberis aquifolium* Pursh (berberine; psoriasis, atopic dermatitis), *Persea americana* Mill. (vitamin B12, psoriasis; atopic dermatitis), *Coriandrum sativum* L. (coriander oil; eczema), *Solanum dulcamara* L. (alkaloids; atopic dermatitis), *Solanum chrysotrichum* Schltdl. (ketaconazole; dermatophytes), *Quercus robur* L. (tannins;

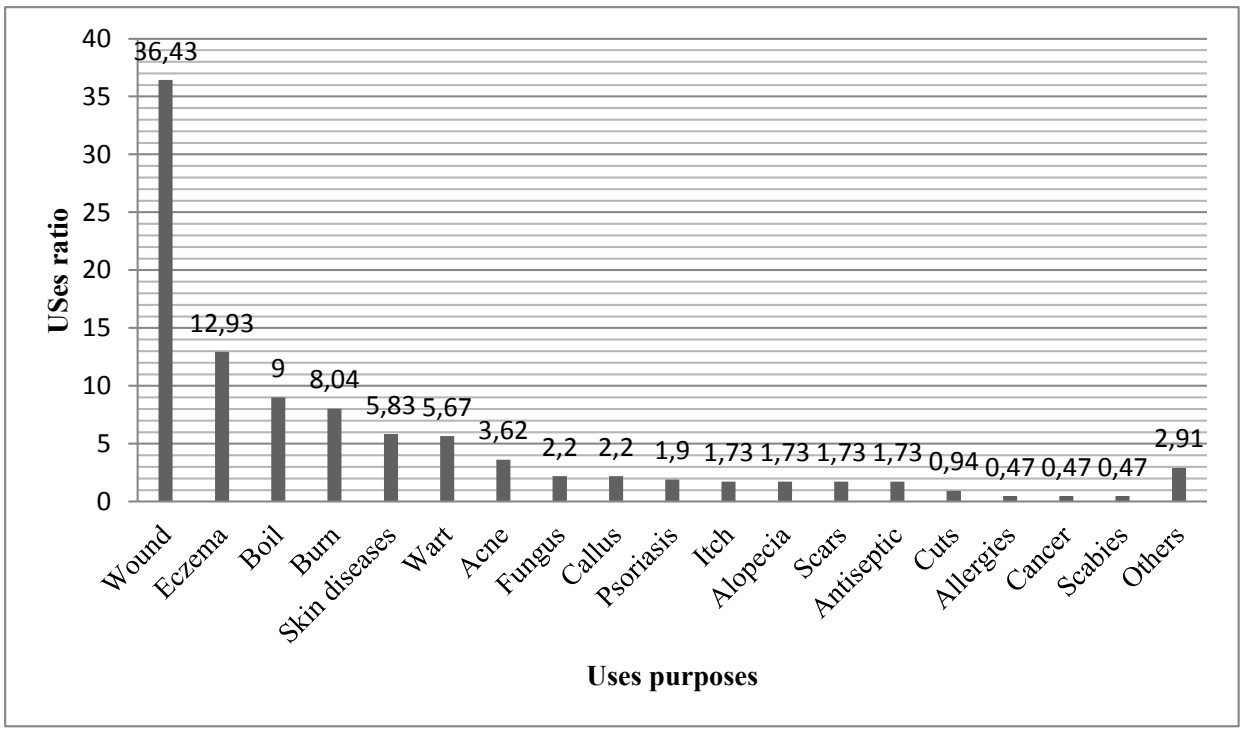

Figure 7. Skin disorders and cosmetic purposes for which the plant taxa were used.

atopic dermatitis), *Oenothera biennis* L. (y-linoleic acid; atopic dermatitis), *Betula pubescens* Ehrh. (betulin; actinic keratosis, atopic dermatitis), *Vataireopsis araroba* (Aguiar) Ducke (cignolin; psoriasis), *Ammi majus* L. (8-methoxypsoralen; psoriasis), *Strobilanthes cusia* (Nees) Kuntze (alkaloids, indirubin; psoriasis), *Capsicum annuum* L. (capsaicin; psoriasis), *Azadirachta indica* A.Juss. (nimbidin; psoriasis), *Melaleuca alternifolia* (Maiden & Betche) Cheel (essential oils; acne, dermatophytes), *Podophyllum peltatum* L. (podophyllotoxin; condyloma acuminata), *Melissa officinalis* L. (essential oils; herpes simplex), *Salvia officinalis* L. (carnusols, carnosic acid; photosensitivity, herpes simplex), *Rheum palmatum* L. (herpes simplex), *Eucalyptus pauciflora* Sieber ex Spreng. (essential oils; dermatophytes), *Allium cepa* L. (sulfur; alopecia, scarring), *Allium sativum* L. (sulfur; dermatophytes), *Pinus halepensis* Mill. (pycnogenol, proanthocyanidins; venous insufficiency, hyperpigmentation), *Vitis vinifera* L. (flavonoids; chronic venous insuffiency), *Ruscus aculeatus* L. (steroid saponins; chronic venous insuffiency), *Fagopyrum esculentum* Moench (flavonoids, rutin; chronic venous insuffiency), *Styphnolobium japonicum* (L.) Schott (flavonoids, rutin; chronic venous insufficiency), *Polypodium leucatomos* Poir. (polyphenols; photoprotection, vitiligo), *Reseda lutea* L. (luteolin; photoprotection), *Theobroma cacao* L. (catechin; photoprotection), *Euphorbia peplus* L. (ingenol mebutate; actinic keratosis), *Ginkgo biloba* L. (ginkgolides; vitiligo), *Serenoa repens* (W.Bartram) Small (β-sitosterol; alopecia), *Ecliptaprostrata* (L.) L. (triterpenoid saponins; alopecia), *Phoenix dactylifera* L. (phytohormones; wrinkles), *Centella asiatica* (L.) Urb. (asiaticoside; wrinkles, cellulite), *Glycine max* (L.) Merr. (amino acids; melasma, hyperpigmentation), *Pamburus missionis* (Wight) Swingle (β-caryophyllene; skin cancer), *Cinnamomum verum* J.Presl. (essential oils; skin inflammation, skin whitening), *Nandina domestica* Thunb. (essential oils; skin infections, fungal pathogens), *Curcuma longa* L. (curcumin; antiaging), *Baccharis dracunculifolia* DC. (essential oils; skin inflammation), *Dendranthema lavandulifolium* (Fisch. ex Trautv.) Kitam. var. *seticuspe* (Maxim.) C.Shih. (essential oils; skin regeneration), and *Trigonella foenum-graecum* L. (flavonol glycosides; skin reactions) (Graf, 2000; Bajpai et al., 2009; Reuter et al., 2010a and 2010b; Han and Parker, 2017; Pavithra et al., 2018; Laothaweerungsawat et al., 2020; Sihoglu Tepe and Ozaslan, 2020; Zheng et al., 2020). The most commonly studied taxa for skin disease treatment and cosmetics worldwide are *Nerium oleander*, *Aloe vera*, *Matricaria chamomilla*, *Hamamelis virginiana*, *Calendula officinalis*, *Viola tricolor* L., *Quercus robur*, *Hypericum perforatum*, *Melissa officinalis*, *Salvia officinalis*, and *Echinacea purpurea* (L.) Moenchand *Arnica montana* L. (Reuter et al., 2010b).

Aloe vera and *Hamamelis virginiana* are well known worldwide because they have skin protection effects (Graf, 2000; Deters et al., 2001). The leaves of *A. vera* have been used externally for burn and skin care in Türkiye (Sarı et al., 2010), and the gel of *A. vera* is produced as a commercial product and is usually consumed via topical medications for skin disorders like wounds, dry skin, burns, rashes, frostbite, psoriasis, and cold sores (Barcroft and Myskja, 2003). The flowers of *Calendula officinalis* were used in ancient times as a medicinal herb and cosmetic (Güven et al., 2022). Furthermore, the oil extracted from the plant protects the skin (Arora et al., 2013), and the leaves of *C. officinalis* can be made into a poultice with beneficial effects on scratches, infection, and wound healing. The topical application of a *C. officinalis* flower infusion is used as antiseptic and antifungal for marks, wounds, freckles, and sprains (Rehecho et al., 2011). In India, ointments from the flowers are consumed to treat wounds, herpes, and scars, and an infusion of *C. officinalis* leaves is used for varicose veins treatment (Givol et al., 2019). The flowers of *C. arvensis* M.Bieb. have been used externally for wound, burn, and skin care in Western Türkiye (Sargın et al., 2015a).

Hypericum perforatum is currently one of the most used medicinal plants and has beneficial effects for wounds, eczema, and burns (Wills et al., 2000; Butterweck, 2003). Moreover, with its antiseptic and antibacterial properties, its essential oil is one of the most frequent chemical constituents for the treatment of skin diseases in the world (Saddiqe et al., 2010). Its essential oil contains common active compounds which have been the most effective compounds used for the treatment of skin disorders (Guzmán and Lucia, 2021). *Hypericum perforatum* has also been used in traditional Turkish medicine for the treatment of burns, skin wounds, and mouth wounds (Ersoy et al., 2020).

Similarly, Sihoglu Tepe and Ozaslan (2020) reported that the essential oil of *Cinnamomum verum* significantly induced skin-whitening activity. In a previous study, Pavithra et al. (2018) reported that the essential oil of *Pamburus missionis* is likely to be consumed for the treatment of precancerous and epidermoid skin cancer cells. Additionally, Bajpai et al. (2009) emphasized that numerous organic extracts of *Nandina domestica* containing high essential oils have antifungal effects on infectious fungal pathogens of the skin. Moreover, Zheng et al. (2020) stated that the essential oils of *Curcuma longa* rhizomes containing curlone, ar-turmerone, 8,9-dehydro-9-formyl-cycloisolongifolene, β-turmerone, germacrone, β-sesquiphellandrene, α-himachalene, ar-curcumene, and ledane exhibited pronounced triacylglycerols, thereby reducing cutaneous photoaging in a UVB-irradiated nude mouse model. Furthermore, Laothaweerungsawat et al. (2020) indicated that essential oils from *Origanum vulgare* L. have a potential role in retardation of skin aging. Indeed, many researchers (Viciolle et al., 2012; Estevao et al., 2015; Kim et al., 2015; Srivilai et al., 2017; Kumar et al., 2018; Brandenburg et al., 2020; Capetti et al., 2020; Kazemi et al., 2020) have pointed out that essential oils are antibacterial and antiseptic and highlighted that these molecules can be useful in the management of several skin diseases. Taxa with flavonoids, which have a typical polyphenol structure, safely absorb UV radiation and reduce UV damage to the surrounding cells. Flavonoids have antioxidant effects and decrease the number of damaging reactive oxygen species molecules. Lastly, flavonoids might have a role in the repair of damaged DNA. The plants containing flavonoids used for treating skin diseases are *Matricaria chamomilla*, *Cardiospermum halicacabum*, *Betula pubescens*, *Vitis vinifera*, and *Fagopyrum esculentum* (Bonina et al., 1996; Reuter et al., 2010b).

As stated previously, *Matricaria chamomilla*, *Nerium oleander*, and *Reseda lutea* are effective treatments for atopic dermatitis, but these plants are used for eczema treatments in Türkiye (Reuter et al., 2010b).

The Asteraceae family members such as *Achillea nobilis* subsp. *sipylea*, *Achillea nobilis* subsp. *neilreichii*, *Achillea setacea*, *Cota tinctoria*. var. *tinctoria*, *Cnicusbenedictus* var. *benedictus*, *Cichorium intybus*, *Cirsium hypoleucum*, *Filago arvensis*, *Gundelia tournefortii* var. *tournefortii*, *Matricaria chamomilla* var. *recutita*, *Senecio vulgaris*, and *Xanthium strumarium* have been used to treat eczema in Türkiye (Sanlı, 2006; Bulut and Tuzlacı, 2013; Sargın, 2013; Yesilyurt et al., 2016; Karaköse and Karaköse, 2017).

4. Conclusion

Alongside their use as therapeutic agents, medicinal plants play an essential role in pharmacological studies and drug development worldwide (Sofowora et al., 2013).

The important plants of Southern Africa that are used traditionally for dermatological conditions were reviewed by Mabona and Van Vuuren (2013). In an ethnobotanical exploration of the herbal remedies for skin diseases in India, 52 herbal preparations from 31 plants belonging to 21 families have been recorded (Harsha et al., 2003). A study of the ethnopharmacological application of medicinal plants to cure skin diseases and in folk cosmetics in Pakistan recorded 66 plant species belonging to 45 families (Abbasi et al., 2010). A study conducted by Malik et al. (2019) on the importance of various species used by local communities of Northern Pakistan to treat skin diseases found that 106 plant species belonging to 56 flower families were recorded for the treatment of skin disorders. According to previous ethnobotanical studies, medicinal plants are often used for skin diseases in Türkiye, but there are not many preclinical and clinical studies on this subject. Furthermore, it has been determined that

many patients resort to herbal treatments in addition to medical treatments in the treatment of skin diseases (Erarslan et al., 2020). A worldwide review conducted in 2007 investigated the phytotherapy applications used in the treatment of skin diseases in the world; the plants were categorized by disease with a focus on uses and side effects (Durusoy and Ulusal, 2007). In another Turkish study conducted on 1006 dermatology patients, it was determined that one-third of the patients used at least one traditional treatment and that the most commonly treated diseases are chronic ones such as acne, psoriasis, contact dermatitis, and fungal infections (Gül, 2021). The same study identified uses of thyme, Isparta rose, basil oil, green tea, and tea tree oil (acne treatment); tea tree oil (psoriasis treatment); *Aloe vera*, khellin, and capsaicin (vitiligo treatment); temple tree, local melon, khellin, green tea, and capsaicin (Verruca vulgaris and Condyloma acuminata); podophyllin and colchicine (Behcet's disease); thyme (oral aphthae and stomatitis); wheat bran (itching); garlic extract (alopecia areata); and pyrethrins (scabies and lice) (Gül, 2021). In a review conducted by Erarslan et al. in 2020, it was determined that 191 plant taxa are traditionally used in the treatment of eczema, psoriasis, and vitiligo in Türkiye; it determined that the most widely used plant species identified for eczema, psoriasis, and vitiligo treatment are *Juglans regia*, *Urtica dioica*, *Juniperus oxycedrus*, *Chelidonium majus*, *Dracunculus vulgaris*, *Ecballium elaterium*, *Ficus carica*, *Malva sylvestris*, and *Rosa canina* (Erarslan et al., 2020).

Ethnobotany has significant potential to remedy diverse skin ailments (Malik et al., 2019). This review is the first nationwide ethnopharmacological review study conducted on skin diseases in Türkiye. Many scientists have been contributing to the research in the field by doing ethnobotanical studies in the Southeastern Anatolia and Aegean regions, thereby providing more options in terms of the plants useful for the management of skin disorders (Gençay, 2007; Arıtuluk, 2009).

A total of 439 taxa of medicinal plants used for the treatment of skin ailments and as cosmetics were identified in this review. Most of the reported species are wild.

In Türkiye, the traditional use of medicinal plants is very common, including for treatment of skin disorders, and this knowledge is passed on between generations. The frequent use of plants to cure various diseases is still necessary in rural places due to the high cost of and lack of access to standard medical treatments (Mükemre, 2013).

It is known that many plants treat more than one skin ailment. *Juglans regia*, *Hypericum perforatum*, *Malva neglecta*, *Rubus sanctus*, and *Rosa canina* are natural sources for the cure of various skin illnesses. Although there is a strong traditional background supporting the use of these plants for skin diseases in Türkiye, ethnopharmacological studies are not sufficient to promote the claim.

In addition, a few studies have been conducted on the toxic effects of these medicinal plants (Mantle et al., 2001). Further studies are required on the toxicity of these medicinal plants to establish a safe dosage and duration of use. There have not been sufficient pharmacological studies on Turkish medicinal plants. Plant extracts are tested against pathogens in various activity studies for skin diseases, but very few secondary metabolites or pure isolated constituents have been studied; detailed phytochemical studies on skin diseases should be conducted in conjunction with the isolation of new compounds.

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Conflict of Interest
The authors declare no conflict of interest.

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