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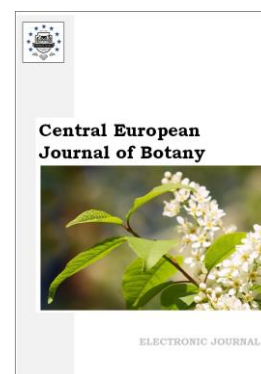
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Articles

Isolation and Identification of Fungi Associated with the Contamination of Different Varieties of Date Palm Fruit

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Abstract

The date palm tree (*Phoenix dactylifera*) is one of the most popular fruit trees of the world. It has religious values as well as cultural importance. Fungi are a source of fruit rot, produce mycotoxins and reduce the economic values of date fruit. The study aimed to isolate and identify the fungi associated with the contamination of different varieties of date palm fruit sold in Bauchi metropolis Nigeria, to isolate and identify the fungi associated with the date's contamination and to microscopically characterize the isolated fungi. Results showed that sample A had 11 organisms, 13 were found from B, 5 from C, 6 from D and 7 were isolated E. Results also showed the fungal count for sample A was 2.36×10^3 , that of sample B was 1.23×10^3 , C had 1.75×10^3 ; D, 1.12×10^3 while E had a count of 1.32×10^3 . Number and percentages of occurrence of *R. stolonifer*, *A. niger*, *P* spp, *M* spp and *C. candida* were 12 and 28.57; 08 and 19.05; 07 and 16.67; 05 and 11.90; 10 and 23.81 respectively.

Keywords: fungi, dates, mycotoxins, contamination, hazardous and toxic.

1. Introduction

Dates popularly known as Dabino among the Hausas and botanically known as *Phoenix dactylifera*, is a fruit obtained from the date palm tree (Anjili et al., 2015; Ramaswamy, 2015). They are extensively produced and consumed in the Middle East, West Africa and also in North Africa over the millennia (Bjornlund et al., 2020). The date palm tree (*Phoenix dactylifera*) is one of the most popular fruit trees of the world. It has religious values as well as cultural importance (Samakov, Berkes, 2017; González-Alcaide et al., 2020). Dates have been used in several traditional medicines for a long time to cure or as prevention against cold, sore throat, fever, abdominal troubles and traditional system (Wang et al., 2014; Satpathy, 2010). Date fruit can be used as juice, vinegar, wine beer, syrup, honey, pickle, paste and food flavorings (Fernández-Cruz et al., 2010; Adeyeye, 2016).

Fungi are a source of fruits rot, produce mycotoxins and reduce the economic values of date fruit. The most identified fungi were *Aspergillus* spp, *Cladosporium* spp, *Penicillium* spp,

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Fusarium spp, *Mucor* spp and *Chalaropsis* (Al-Alawi et al., 2017). The date palm fruits are mostly loaded with a mixture of microbes: bacteria moulds and yeasts but some people continue eating after clearing the pericarp (Gonçalves et al., 2018). Species *Alternaria*, *Aspergillus*, *Fusarium* and *Penicillium* have been reported to cause fruit rots of date palm (Dojjode, 2020).

Fruits and vegetables are exposed to contamination by microorganisms through direct contact with soil, dust, water, by handling at harvest or during post-harvest processing (Al-Muaini et al., 2019; Odebode et al., 2020). Fruits are reported to be contaminated with toxic and health hazardous chemicals. Contamination of fruits with mycotoxins producing fungi could lead to accumulation of these toxins in the fruit tissues.

2. Materials and methods

Sample collection

Five different varieties of date fruit were collected from different marketers in Bauchi metropolis and the samples were labelled A₁, A₂, A₃, A₄ and A₅. The labelled samples were transferred to the Biological Science Laboratory Abubakar Tatari Ali Polytechnic (ATAP).

Four different test tubes containing 9 ml of sterile distilled water (each) were arranged on a test-tube rack labeled accordingly. One gram of the macerated sample was weighed using a weighing balance. Each sample was homogenized by aspiration using a new syringe in different test-tubes containing 9 mls of sterile distilled water. One milliliter of the suspension was transferred from one original bottle to the first test-tube containing 9 ml of sterile water and was shaken properly to obtain 1:10 dilution. One milliliter was then being transferred from first test-tube to the second test-tube and also be shaken properly 1:100 dilutions up to the fourth test-tube where the dilution factor of 1:10000 (10^{-4}) was obtained.

Preparation of media

Potato dextrose agar (PDA) was prepared according to the manufacturer's instruction.

Isolation of Fungi

The aliquot amount of the serial diluents normally 1ml was poured aseptically using a sterile syringe into the agar plate containing solidified Potato dextrose agar medium. The plates were incubated for a maximum of 5-7 days at 28°C. The plates were then observed after two to three days' interval for growth. A sub culture was made by preparing new plates of PDA, a needle was passed through a Bunsen flame until red hot which was used to pick a little from a colony, mostly from the center of the mixed culture. The colony was picked and inoculated at the middle of the fresh agar (PDA) plate and left for another 5-7 days at the same temperature 28°C.

Identification of Fungi

Microscopic examination of fungi was carried out to observe the structure and characteristics of the fungal isolates in addition to microscopic cultural observations. A sample of mycelia growth was picked with the aid of a sterile needle and was placed on a drop of lacto phenol cotton blue on a slide covered with a cover slip. The slide was then mounted and observed with $\times 10$ and $\times 40$ objective lenses of a microscope respectively. The isolates were identified by comparing characteristics under the microscope with diagrams in text book of mycological atlas. The identification was based on colonial appearance, pigment production and micro morphology of the spore produced.

3. Results

Table 1. Fungal count of isolated fungi from date palm fruit

Sample Code	means of colony count (cfu/ ml)
A.	2.36×10^3
B.	1.23×10^3
C.	1.75×10^3
D.	1.12×10^3
E.	1.32×10^3

Table 2. Microscopic characteristics of isolated fungi

Microscopic Identification	Microscopic Appearance	Organisms
Write cottony growth which turns black as the media ages	Presence of stolon and rhizoid with sporangia above rhizoid	<i>Rhizopus stolonifer</i>
Blue-black mould which turns complete powdery black	Conidiophores which terminate in a but-like stricture	<i>Aspergillus niger.</i>
Pale-blue growth that is smooth in texture	non-septate branched hyphal enlarge at the apex to form conidiophores	<i>Penicillium spp</i>
Creamy fluffy white colonics almost covering the whole media surface	Sporangium came directly from hyphal without stolon or rhizoid columella	<i>Mucor spp</i>
Yellowish-whitish colony with smooth and dry texture	Conidial masses which hyphal formed a grape like duster	<i>Candida albicans</i>

Table 3. Numbers and percentage occurrence of isolated fungi

Fungus Isolated	No. of occurrences	% Occurrences
R. stolonifera	12	28.57
A.niger	08	19.05
Penicillium spp	07	16.67
Mucor spp	05	11.90
C. albicans	10	23.81
TOTAL	42	100

Table 4. Frequency of Fungal Isolate from five varieties of date palm fruit

Sample Code	Numbers of Organisms	Frequency (%)
A	11	26
B	13	31
C	05	12
D	06	15
E	07	17

4. Discussion

Five organisms were isolated from dates in the current study. *Rizophus stolonifer*, *Aspergillus niger*, *Penicillium spp*, *Mucor spp* and *Candida albicans*. *R. stolonifer* had the highest no of colonies and percentage of occurrence with 10 and 28.57 % respectively; *A. niger* came second, while *P spp*, *Mucor spp* and *C. albicans* came in third, fourth and fifth respectively, this is not surprising as similar findings were observed by Anjili et al. (2015) and Doijode (2020), they discovered that the fungi *Aspergillus spp.*, *Penicillium spp.*, *Fusarium spp.*, and *Alternaria spp.* are the major fungal species found in stored grains. Sample A had the highest fungal count followed by C, E, B and D that came with second, third, fourth and fifth fungal counts respectively. More than

25 % of fruits and grains global have been stated to be polluted with mycotoxins produced by these fungal species, and over 300 fungal metabolites have been reported to have toxicity on humans and animals as expounded by Gonçalves et al. (2018) and those of Odebode et al. (2020).

5. Conclusion

Date fruit is regularly consumed in several countries in the Middle East and North Africa and is used for innumerable ethnomedical purposes. Date fruits are a virtuous source of ordinary antioxidants and may be used as a purposeful food in the management of oxidative anxiety-correlated and infectious diseases. Date fruit are easily perishable, so they need handling, preservation and supervised environments.

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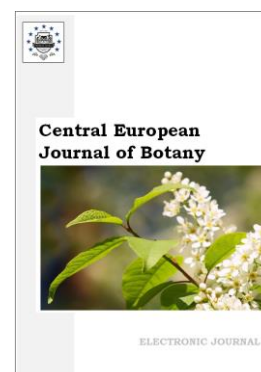
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A New Enigmatic Species, *Cota phitosiana* (Asteraceae) from East Anatolia, Turkey

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Abstract

Cota J. Gay belongs to Compositae (Asteraceae) family. *Cota* genus is represented by about 63 taxa in the world and is mainly distributed in Europe (excluding northern Europe), North Africa, Caucasus and Central Asia. In Turkey, the *Cota* genus includes about 22 taxa, nine of which are endemic.

Taxa of the *Cota* are mainly distributed and common in the Mediterranean and Irano-Turanian phytogeographic regions of Turkey. *Cota* was earlier classified as a section in the *Anthemis* L. genus in Flora of Turkey. After the generic and infrageneric concepts of *Anthemis* were changed and *Cota* was accepted as another genus. *Cota phitosiana* Yıld. & Kiliç, a new species from Elazığ province, Karakoçan district, East Turkey, is described and photographed. *Cota phitosiana* is compared with the closest related species *Cota tinctoria* (L.) J.Gay. var. *tinctoria*. The speciation features of the new species are briefly discussed. *Cota nigellifolia* (Boiss.) Álv. Fern. and Vitales subsp. *orientalis* (Grierson) Yıld. is made a new combination.

Keywords: *Cota phitosiana*, Asteraceae, new species, taxonomy.

1. Introduction

The genus *Cota* J.Gay was included as one of three sections in the genus *Anthemis* L. in the flora of Turkey (Grierson, Yavin, 1975). Since 2000 years, the genus was divided into two genera as *Anthemis* and *Cota* based on the disc corollas not inflated at base, and achenes compressed in *Cota* by Oberprieler et al. (Oberprieler, 2001; Oberprieler et al., 2007; Oberprieler et al., 2009); Greuter et al. (Greuter et al., 2003), and Lo Presti et al. (Lo Presti et al., 2010). Due to these reasons, sect. *Cota* have been elevated to genus level, and then all taxa attributed to this section transferred to the new genus. According to the "Flora of Turkey", *Anthemis* genus comprising 50 species all of which have been delimited into 3 different sections by Grierson and Yavin (Grierson, Yavin, 1975), and these are *Anthemis* sect. *Anthemis* consists of 29 species, *Anthemis* sect. *Maruta* (Cass.) Griseb. contains 9 species, and the remaining 12(+8) species, in the present day, Turkish *Cota* L. genus includes 20 species, 2 subspecies, 4 varieties, with 12 endemic species.

The *Cota* in Turkey has resulted in the description of two new species, increasing the number of species to 20 and taxa to 26 (including present this new species *C. phitosiana* Yıld. and Kiliç and previous new species *C. hamzaoglui* Özbek and Vural (Özbek et al., 2011), and the species transferred from *Anacyclus* L. to *Cota* J.Gay by Vitales et al. (Vitales et al., 2018) (*C. anatolica* (Behçet and Almanar) Alv.Fern., Vitales and Firat, *C. nigellifolia* (Boiss.) Álv. Fern. and Vitales,

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C. latealata (Hub.-Mor.) Álv. Fern. and Vitales (Vitalet al., 2018). The 12 species are endemics for Turkey (endemism rate 60.0 %) (Table 1).

The genus *Cota* species are distributed in the Europe, SW Asia and N Africa and is represented by about 55 species (60 taxa) throughout the World (9), and the above mentioned areas especially Turkey (W and C Anatolia, and Mediterranean area), Iran and Russia have been considered as the gene centre of the genus (Grierson, Yavin, 1975; Greuter et al., 2003; Özbek et al., 2011; Yıldırım, 1999).

2. Materials and methods

During a field trip, we collected some specimens belonging to the genus *Cota*, from Elazığ (Type. Turkey. B7), Karakoçan, Golan thermal springs surroundings, stony slopes, foresty openings from step, 1500-1600 m, 16.08.2018, Ö. Kılıç 5879 & Ş. Yıldırım (holo. Yıldırım Otluk'u (Hb. Yıldırım) (Figure 1). After studying species descriptions in the accounts of related literature, we concluded that our specimens represent a species new to science and named *Cota phitosiana*.

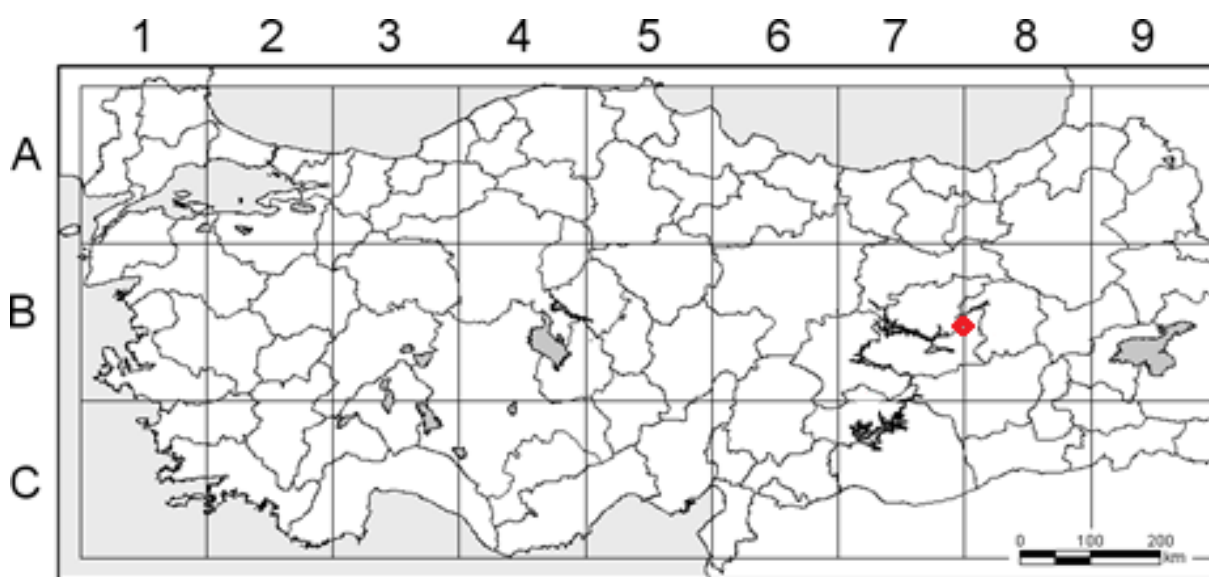


Fig.1. ♦ The holotype locality of *Cota phitosiana*

3. Results and discussion

Anacyclus nigellifolius Boiss. has two subspecies, subsp. *nigellifolius* and subsp. *orientalis* Boiss., in flora of Turkey (Grierson, Yavin, 1975). Vitalet al. 2018 transferred only one subspecies of *Anacyclus nigellifolius* Boiss. subsp. *nigellifolius* to *Cota* but other subspecies *A. nigellifolius* subsp. *orientalis* Grierson not transferred to the genus *Cota* from *Anacyclus* (Vitalet al., 2018). New combination is made here:

Cota nigellifolia (Boiss.) Álv. Fern. & Vitales subsp. *orientalis* (Grierson) Yild., comb. nov.

Basionym: *Anacyclus nigellifolius* Boissier (1849: 13). Type: Lebanon. Al Biqa: Rascheya, May-June 1846, E. Boissier s.n. (holotype G, isotypes G) subsp. *orientalis* Grierson in Notes R.B.G. Edinb. 33: 411 (1975). Type: Turkey. C7 Urfa: Nemrut Da., 1888, Sintenis 817 (holo. LD!).

The new enigmatic species was first collected in the summer of 2018 from Elazığ province, Karakoçan (Golan thermal facility) district by Kılıç and Yıldırım. It was examined in morphologically. *Cota phitosiana* differs from all others taxa of *Cota* by foliculate or spathiform (not flat) ligules. Especially, on the basis of this feature, the material is described in the present paper as a species new to science, *Cota phitosiana* Yild. & Kılıç.

Cota phitosiana Yild. and Kılıç, sp. nov., Figure 2.

Greyish-green perennial. Stems 24-28 cm x 1-1.5 mm, erect, 5-green striate, branching from near base, branches 1-headed, densely covered with adpressed lanate-tomentose pubescence. Leaves c. 1.5-2 x 1 cm, oblong in outline, 1-pinnatisect, primary segments 3-5-paired, linear, c. 5-10 x 1-2 mm, margins 0.5-1 mm, dentate, flat. Capitula radiate. Involucre c. 0.8 x 1.5 cm excluding

ligules, densely white lanate-tomentose; all phyllaries green-brownish, white margined. Ligules c. 15-20, c. 10 x 2 mm, linear, foliculate or spathiform, yellow, tubes 8 mm, lobes 2 mm. Disc flowers 3 x 1 mm, yellow, not inflated distinctly at base. Paleae ovate-acuminate, as long as disc flowers. Achenes immature.

Type. Turkey. B7 Elazığ: Karakoçan, Golan kaplıcası çevresi, taşlı yamaç, bozkırda orman açıklığı, 1500-1600 m, 16.08.2018, Ö. Kılıç 5879 & Ş. Yıldırım (holo. Yıldırım Otluk'u (Hb. Yıldırım)).



Fig. 2. *Cota phitosiana*

Close to *Cota tinctoria* (L.) J.Gay var. *tinctoria* but leaves 1-pinnatisect (not 2-3-pinnatisect), oblong (not oblanceolate or obovate) in outline; involucre c. 0.8 x 1.5 cm (not 1-1.2(-2) cm), densely white lanate-tomentose (not sparsely or densely white tomentose); ligules foliculate or spathiform (not flat); paleae ovate-acuminate (not oblong-acuminate). Endemic. Anatolia-Turanian element. *Cota phitosiana* is known from only a single locality and two specimens, so it should be classified as 'Critically Endangered' (CR) (11).

Eponymy. The new species is dedicated to honour of emeritus Prof. Dr. Dimitrios Phitos, on the occasion of his 90th birthday, from Patras, Greece.

4. Conclusion

The most distinct feature of this new species is foliculate or spathiform ligulate petals. This is unique feature foliculate or spathiform of ligulate petals in the genera *Anthemis* and *Cota* and in fact *Asteraceae* family. This spathiform character is probably because of the Golan thermal spring. This character can be seen at the very hot areas. This is one of the speciation ways. Thus, polyploidy is one of the main evolutionary forces in especially in *Asteraceae* family. This chromosome set multiplication directly impacts the nuclear DNA contents, in terms of variation at holoploid and monoploid levels. Other karyological changes such as aneuploidy or dysploidy might produce genome size alterations as well, therefore playing also a relevant role as evolutionary forces. All these factors may promote speciation, thus having systematic implications (Valles et al., 2012). The chromosome number of the examined a lot of taxa of *Cota* has been indicated as $2n = 18$ (Özbek, 2010). If it was possible to count the number of chromosome, it would be revealed that this new species was polyploid.

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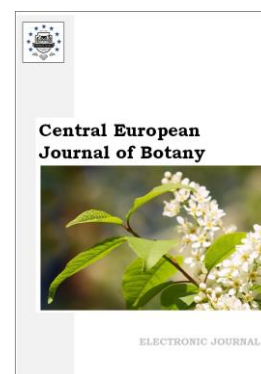
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A Review: Some Plants Used for Stomach Ailments in Turkey Traditional Medicine

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Abstract

People have employed numerous natural materials to cure ailments and to improve their health throughout history. For thousands of years, nature has provided medicinal agents, and an impressive number of modern medications have been isolated from natural sources, many of which are based on their use in traditional medicine. Ethnobotany is a larger discipline which is interested in all studies about the relationship between plants and people. Indigenous peoples have established their localized knowledge of medicinal plant use, management, and conservation through millennia. Medicinal and aromatic plants are being used for the treatment of various stomach ailments by the local peoples since earliest times.

This paper consists of 287 plant taxa which are used for treatment stomach ailments in Turkey ethnobotany or traditional medicine. It is expected that this study will contribute to other studies on the subject.

Keywords: ethnobotany, plant, stomach, traditional medicine, Turkey.

1. Introduction

Medicinal and aromatic plants have played an essential role in the development of human culture and they used for hundreds of years in ethnobotany in many countries and Turkey. Medicinal plants are resources of traditional medicines. Traditional medicine has remained the most economical and easily accessible therapeutic option in primary health care system for the local people, local people have a long history of traditional plant usage for medicinal and different purposes. Medicinal and aromatic plants is an important element of indigenous medical systems in all over the world. Ethnobotany is a very important discipline, which provides a rich resource for natural drug research and development (Farnsworth, 1990).

Turkey has a rich population of ethnic people who still maintain a traditional knowledge of medicinal plants that are used in the treatment of some illnesses. Nowadays, because of different life style, varying food consume and other factors, caused number of stomach disorder like indigestion, stomachache, dyspepsia, laxative, constipation, ulcer, intestinal worms, vermifuge, infection, flatulence and others. Almost all people are exposed to common digestive problems.

Stomach disorders are important morbidity among Turkey tribe people. The knowledge of the uses of some plants as a source of medicine in stomach related diseases is very common among the local people. The review study was therefore, carried out to document the plant species used against stomach disorders, plant parts used application procedure, to contribute related literatures.

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2. Materials and methods

This research was carried out by thorough searching of different ethnobotany researches of Turkey. As a result of this study, taxa were determined from the literature survey and showed in Table 1.

3. Results

Table 1 was arranged by specifying the family of the plant, the local name, the part of the plant used and the way of use, based on the region where the plants are used.

Table 1. Some plants used for stomach ailments in Turkey ethnobotany

Disease	Family	Taxon Name	Local Name	Used Part	Usage
Heartburn	Acoraceae	<i>Acorus calamus</i> L.	Eğir kökü, Hazanbel	Root	Infusion (Akan, Bakır-Sade, 2015)
Stomach disease	Amaranthaceae	<i>Amaranthus retroflexus</i>	Selmik, Horozibiği, Leğendur	Leaves Aerial part	Decoction (Polat et al., 2013) Infusion (Kılıç, 2016)
Ulcer	Anacardiaceae	<i>Pistacia khinjuk</i> Stocks	Bıttım Gezan, Buttum	Mastic	Unspecified (Akan et al., 2008) Eaten (Kaval, 2011)
Gastric ulcer	Anacardiaceae	<i>Pistacia lentiscus</i> L. var. <i>latifolius</i> Coss.	Damla sakızı	Mastic	Pill (Çömlekçiöğlü, Karaman, 2008)
Stomachache İndigestion	Anacardiaceae	<i>Pistacia terebinthus</i> L.	Menengiç, Çitlenbik	Fruit, Mastic, Leaves	Decoction (Akan, Bakır-Sade, 2015; Kültür, 2007; Gürbüz et al., 2005; Polat et al., 2013) Eaten (Çakılcıoğlu et al., 2007) Chewed (Tuzlacı, Eryaşar-Aymaz, 2001p; Tetik, 2011)
Ulcer	Anacardiaceae	<i>Rhus coriaria</i> L.	Sumak, Usmak, Mavru, Mavri	Aerial parts, Seed, Mastic	Unspecified (Akan, Bakır-Sade, 2015; Doğanoğlu et al., 2006) Decoction (Kaval, 2011; Kilic, Bağcı, 2013)
Ulcer, Stomachache	Anacardiaceae	<i>Cotinus coggyria</i> Scop.	Tetere ağacı, Tetra, Tetre, Tetere,	Branches, Leaves	Decoction (Yeşilyurt et al., 2017; Kültür, 2007; Ecevit-Genç, Özhatay, 2006)
Stomach ailments	Apiaceae	<i>Smyrniolum olusatrum</i> L.	Ğelendor, Yabancı kereviz	Fruit	Eaten (Kaval, 2011)
Stomachache	Apiaceae	<i>Eryngium billardieri</i> Delar.	Tüsü	Root	Decoction (Kaval, 2011)
Stomachache	Apiaceae	<i>Grammosciadium platycarpum</i> Boiss.	Rizyane	Aerial parts	Decoction (Kaval, 2011)

		& Hausskn			
Indigestion	Apiaceae	Cuminum cyminum L.	Kimyon	Fruit, Seed	Swallowed as powder or consumed with honey, İnf. (Akan, Bakır-Sade, 2015) Decoction (Korkmaz, Karakurt, 2014)
Stomach ailments	Apiaceae	Ferula orientalis L.	Heliz, Çağsır	Whole plant	Decoction or infusion (Altundag, Ozturk, 2011; Kaval, 2011)
Stomach ailments	Apiaceae	Foeniculum vulgare Mill.	Rezene, Arap saçı	Flowers, Fruit, Leaves	Unspecified (Akan, Bakır- Sade, 2015) Decoction (Çömlekçiöğlü, Karaman, 2008; Kaval, 2011; Pieroni et al., 2005; Bağcı et. al., 2006) İnfusion (Ugulu et al., 2009; Ugurlu, Secmen, 2008)
Stomachache	Apiaceae	Ferula caspica Bieb.	Gırmızı bolu	Whole plant	Decoction (Altundag, Ozturk, 2011)
Stomachache	Apiaceae	Heracleum trachyloma Fisch. & Mey.	Baldırgan	Stem	Decoction (Altundag, Ozturk, 2011)
Stomachache	Apiaceae	Anthriscus cerefolium (L.) Hoffm.	Mende, Mendu, Menda	Levae	Decoction (Polat et al., 2013)
Stomachache	Apiaceae	Eryngium campestre L. var. campestre (L.) Hudson	Diken	Whole plant	Decoction (Akyol, Altan, 2013)
Stomachache	Apiaceae	Pimpinella anisum L	Anason	Seed	Powdered and decoction (Ugulu et al., 2009)
Stomachache	Apiaceae	Anethum graveolens L.	Meletura, Dereotu	Aerial part, Seed	İnfusion (Sargın, 2015) Cooked, eaten (Bulut et al., 2017) Decoction (Ugulu et al., 2009) Fresh, eaten (Akaydın et al., 2013)
Stomache diseases	Apiaceae	Bifora radians Bieb.	Yabani kişniş otu	Aerial part	Decoction (Özdemir, Alpınar, 2015)
Ulcer	Apiaceae	Echinophora tenuifolia L. subsp. sibthorpiana (Guss.) Tutin	Çörtük, Tarhana otu	Aerial part	İnfusion (Çakılcıoğlü et al., 2007)

Stomach ailments	Araceae	Arum detrunctum C.A.Mey. ex Schott var. detrunctum	Navic	Leaves	İnfusion (Altundag, Ozturk, 2011)
Ulcer	Araliaceae	Hedera helix L.	Duvar sarmaşığı	Leaves	Decoction (Ugulu et al., 2009)
Stomachache	Arecaceae	Myristica fragrans Gronov.	Hint cevizi, Muskat	Fruit	It is ground and consumed with honey (Akan, Bakır-Sade, 2015)
Stomach ailments	Asteraceae	Arctium minus (Hill) Bernh	Dulavrat otu, Galabak	Leaves	Unspecified (Tetik, 2011)
Stomach ailments	Asteraceae	Carduus nutans L.	Eşek dikeni, Devedikeni	Flowers	İnfusion (Tetik, 2011)
Stomach ailments	Asteraceae	Centaurea iberica Trev. ex Spreng.	Kelebesk, Çakır dikeni	Kapitulum	İnfusion (Kaval, 2011; Ugurlu, Secmen, 2008)
Stomach ailments	Asteraceae	Cichorium intybus L.	Kanis, Sakız otu, Hindiba	Root, Latex, Peduncle	Decoction (Kaval, 2011) Chewed (Kocyiğit, Özhatay, 2006; Ugulu et al., 2009) İnfusion (Tetik, 2011)
Stomachache	Asteraceae	Artemisia spicigera C.Koch.	Giyabend, Pelinotu	Aerial parts	Decoction (Kaval, 2011)
Stomachache	Asteraceae	Scorzonera pseudolanata Grossheim	Panm, Tulu, Siveh	Bump	Eaten (Balos, Akan, 2007)
Gastritis	Asteraceae	Achillea wilhelmsii C.Koch.	Kedi tırnağı, Civanperçemi	Whole plant, Flowers	Decoction (Sarper et al., 2009; Altundag, Ozturk, 2011) İnfusion (Altundag, Ozturk, 2011; Kılıç, 2016; Tetik, 2011)
Nauseation	Asteraceae	Anacyclus clavatus (Desf.) Pers	Papatya	Flowers	Decoction (Yeşilyurt et al., 2017)
Stomach ailments	Asteraceae	Centaurea virgata Lam	Şaladir	Whole plant	İnfusion (Altundag, Ozturk, 2011)
Stomach ailments	Asteraceae	Achillea cappadocica Hausskn. & Bornm.	Buyucan	Leaves	Decoction or infusion (Altundag, Ozturk, 2011)
Stomach ailments	Asteraceae	Achillea setacea Waldst. & Kit.	Ğirtkesan	Whole plant	Decoction or infusion (Altundag, Ozturk, 2011)
Stomach ailments	Asteraceae	Achillea vermicularis Trin.	Civanperçemi	Whole plant	Decoction or infusion (Altundag, Ozturk, 2011)
Stomach ailments	Asteraceae	Artemisia abrotanum L.	Pelin	Whole plant	İnfusion (Altundag, Ozturk, 2011)

Stomach ailments	Asteraceae	<i>Chondrilla juncea</i> L. var. <i>acantholepis</i> (Boiss.) Boiss	Ağ sakız	Lateks	Chewed (Altunda, Ozturk, 2011)
Stomach ailments	Asteraceae	<i>Helichrysum plicatum</i> DC. subsp. <i>plicatum</i>	Herdemtaze, Sarı çiçek	Whole plant	Decoction or infusion (Altundag, Ozturk, 2011; Yeşil, Akalın, 2009)
Stomach ailments	Asteraceae	<i>Reichardia glauca</i> Matthews	Gara sakgız	Latex	Eaten (Altundag, Ozturk, 2011)
Stomach ailments	Asteraceae	<i>Scorzonera tomentosa</i> L.	Neraband, Yara sakızı	Root, latex	Pounded (Altundag, Ozturk, 2011) Chewed (Yeşil, Akalın, 2009)
Stomach ailments	Asteraceae	<i>Tanacetum balsamita</i> L.	Marsuvan otu	Whole plant	Infusion (Altundag, Ozturk, 2011)
Stomach ailments	Asteraceae	<i>Taraxacum androssovii</i> Schischkin	Zeze	Leaves	Infusion (Altundag, Ozturk, 2011)
Stomach ailments	Asteraceae	<i>Tragopogon aureus</i> Boiss.	Yemlik	Leaves	Eaten fresh (Özgen et al., 2012)
Stomach ailments	Asteraceae	<i>Tragopogon buphtalmoides</i> (DC.) Boiss. var. <i>buphtalmoides</i>	Yemlik	Latex, Whole plant	Eaten fresh (Altundag, Ozturk, 2011) (Kaval, 2011)
Stomach ailments	Asteraceae	<i>Tragopogon latifolius</i> Boiss. var. <i>latifolius</i> L.	Yemlik	Aerial parts	Eaten (Savran et al., 2008)
Stomach ulcer	Asteraceae	<i>Helichrysum arenarium</i> (L.) Moench subsp. <i>rubicundum</i> (C. Koch.) Davis & Kupicha	Sarı çiçek	Flowers	It is ground and consumed with honey. (Özgen et al., 2012)
Stomachache	Asteraceae	<i>Anthemis cotula</i> L.	Hozan çiçeği	Whole plant	Infusion (Altundag, Ozturk, 2011)
Stomachache	Asteraceae	<i>Anthemis nobilis</i> L.	Sarı papatya	Flowers	Infusion (Altundag, Ozturk, 2011)
Stomachache	Asteraceae	<i>Anthemis pseudocotula</i> Boiss.	Papatya	Flowers	Infusion (Altundag, Ozturk, 2011)
Stomachache	Asteraceae	<i>Anthemis tinctoria</i> L. var. <i>pallida</i> DC	Papatya	Flowers	Decoction or infusion (Altundag, Ozturk, 2011)
Stomachache	Asteraceae	<i>Artemisia absinthium</i> L.	Acı Yavşan, Pelin, Pelin Otu, Acı Pelin, Ak Pelin, Halep horasani, Doğu Horasani.	Leaves, Aerial parts	Infusion (Yaldız et al., 2010; Kaval, 2011) (Ugurlu, Secmen, 2008; Kültür, 2007) Decoction (Ugulu et al., 2009)

Stomachache	Asteraceae	<i>Bellis perennis</i> L.	Yoğurt çiçeği, Papatya	Flowers, Whole plant, Capitulum	İnfusion (Demirci, Özhatay, 2012; Ecevit-Genç, Özhatay, 2006) Decoction (Şimşek et al., 2004)
Stomachache	Asteraceae	<i>Tragopogon coloratus</i> C. A. Meyer	At yemliği	Whole plant	Eaten fresh (Altundag, Ozturk, 2011)
Stomachache	Asteraceae	<i>Tragopogon dubius</i> Scop.	Yemlik	Whole plant	Eaten fresh (Altundag, Ozturk, 2011)
Stomachache	Asteraceae	<i>Tripleuospermum oreades</i> (Boiss.) Rech var. <i>oreades</i>	Papatya, Oşoş	Whole plant	Dekok. (Özgen et al., 2012)
Stomachache	Asteraceae	<i>Anthemis cretica</i> L. subsp. <i>leucanthemoides</i>	Papatya, Akbabasca	Fruit, Aerial parts	İnfusion (Ugurlu, Secmen, 2008) Unspecified (Kültür, 2007)
Stomachache	Asteraceae	<i>Anthemis tinctoria</i> L. var. <i>tinctoria</i>	Boyacı papatyası, Sarı papatya	Flowers	İnfusion (Altundag, Ozturk, 2011; Kılıç, 2016; Tetik, 2011)
Stomachache	Asteraceae	<i>Centaurea solstitialis</i> L. subsp. <i>solstitialis</i>	Zerdali diken	Root	Decoction (Akyol, Altan, 2013)
Stomachache	Asteraceae	<i>Chardinia orientalis</i> (L.) O. Kuntze	Çağla otu	Aerial part	Decoction (Çaklıoğlu et al., 2007)
Stomachache	Asteraceae	<i>Gundelia tournefortii</i> L. var. <i>tournefortii</i>	Kenger	Mastic	Chewed (Çaklıoğlu et al., 2007)
Stomachache	Asteraceae	<i>Scolymus hispanicus</i> L.	Şevketi bostan	Root, Seed	İnfusion (Ugurlu, Secmen, 2008) Decoction (Ugulu et al., 2009)
Stomachache	Asteraceae	<i>Achillea biebersteinii</i>	Civanperçemi	Aerial parts	İnfusion (Kılıç, 2016)
Stomachache	Asteraceae	<i>Achillea millefolium</i> subsp. <i>pannonica</i>	Civanperçemi	Flowers, Aerial parts	İnfusion (Kılıç, 2016) Eaten dried flowers once a day for 4 days (Kültür, 2007)
Stomachache	Asteraceae	<i>Achillea nobilis</i> L. subsp. <i>sipylea</i>	Civan meeçe- mi, Civan perçemi	Aerial part	İnfusion (Sargin, 2015)
Stomachache	Asteraceae	<i>Filago arvensis</i> L.	Paryavşan otu, Çayır güzeli	Aerial part	İnfusion (Sargin et al., 2015)
Stomachache	Asteraceae	<i>Helichrysum arenarium</i> (L.) Moench subsp. <i>aucherii</i> (Boiss.)	Gözlübabaotu, Daşdüşüren ot, Altın otu, Kayaotu, Üzümcük.	Flowering branches, Aerial part	İnfusion (Sargin et al., 2015)
Stomachache	Asteraceae	<i>Helycrysium plicatum</i> DC.	Amel otu, Altın otu, Saribaş, Yayla çiçeği	Aerial part	İnfusion (Özdemir, Alpınar, 2015)

Stomachache	Asteraceae	Onopordum anatolicum (Boiss.) Eig.	Galgan	Stem	Decoction (Arı et al., 2015)
Stomachache Stomach ailments	Asteraceae	Chondrilla juncea L. var. juncea	Karakavut, Çengel sakızı, Çitlik, Sakız otu	Mastik Lateks	Chewed (Ünsal et al., 2010) (Çakılcıoğlu et al., 2007; Altundag, Ozturk, 2011; Özdemir, Alpınar, 2015)
Stomachache Ulcer, Gastritis	Asteraceae	Achillea biebersteinii Afan.	Pazıma, Pazvanat, Pazvana, Paspanos, Ormaderen, Sarı civanperçemi	Flowers, Whole plant	It is ground and consumed with honey (Özgen et al., 2012) Decoction (Altundag, Ozturk, 2011; Sezik et al., 2001; Korkmaz, Karakurt, 2014) Infusion (Yeşil, Akalm, 2009)
Ulcer	Asteraceae	Achillea millefolium L.	Civan perçemi, Binbir yaprak otu, Kandil çiçeği, Beyaz civanperçemi	Flowers, Branches, Leaves	Infusion (Yaldız et al., 2010) Decoction (Altundag, Ozturk, 2011; Güler et al., 2015; Bağcı et al., 2006; Korkmaz, Karakurt, 2014)
Ulcer	Asteraceae	Matricaria chamomilla L.	Papatya, Tıbbi papatya, Mayıs papatyası	Capitulum	Decoction (Yaldız et al., 2010; Kaval, 2011; Savran et al., 2008; Polat et al., 2015) Infusion (Bulut, Tuzlacı, 2015)
Stomach ailments	Berberidaceae	Berberis vulgaris L.	Hanım tuzluğu	Unspecified	Unspecified (Bağcı et al., 2006)
Stomach ailments	Betulaceae	Alnus glutinosa (L.) Gaertn. subsp. barbata (C.A. Mey.) Yalt.	Kızılağaç	Seed, Stem	Decoction (Polat et al., 2015)
Stomach ailments	Boraginaceae	Alkanna froedinii Rech. F.	Güzrik, Mijmjok	Root	Decoction (Kaval, 2011)
Stomachache	Boraginaceae	Onosma armeniacum Klokov	Havacıva	Root	It is kept in olive oil, filtered and consumed (Özgen et al., 2012)
Stomach ailments	Boraginaceae	Anchusa azurea Mill. var. azurea	Goruz, Pancar, Guruz, Guriz	Flowers, Leaves	Infusion (Kilic, Bağcı, 2013) Eaten by cooking (Balos, Akan, 2007) Drink one tea glass of the plant two times a day (Çakılcıoğlu et al., 2011)

Ulcer	Boraginaceae	Symphytum officinale L.	Karakafes otu, Eşek otu	Leaves	İnfusion (Güler et al., 2015)
Stomach ailments	Brassicaceae	Alyssum pateri Nyár. subsp. pateri	Keselmehmut	Aerial parts	Decoction (Kaval, 2011)
Stomachache	Brassicaceae	Eruca vesicaria (L) Cav.	Roka tohumu	Seed	Unspecified (Akan, Bakır-Sade, 2015)
Gastritis	Brassicaceae	Capsella bursa-pastoris (L.) Medik	Kediçırnağı, Çoban çantası, Çıngırdak otu, Çıngıldak, Kuşkuş otu	Whole plant	Eaten fresh (Sarper et al., 2009) Unspecified (Doğanoğlu et al., 2006) İnfusion (Köse et al., 2005; Tetik, 2011)
Stomach ailments	Brassicaceae	Nasturtium officinale R.Br.	Suteresi	Aerial part	İnfusion (Polat et al., 2015)
Stomachache	Brassicaceae	Calepina irregularis (Asso) Thellung	Unspecified	Leaves	Decoction (Kızılarşlan, Özhatay, 2012)
Stomachache	Brassicaceae	Sinapis alba L.	Hardal	Whole plant	Boiled in water (Akyol, Altan, 2013)
Stomachache Gastric ulcers	Brassicaceae	Aurinia saxatilis (L.) Desv subsp. orientalis (Ard.) T.R. Dudley	Örselli çayı	Whole plant	Decoction (Akyol, Altan, 2013)
Gastric ulcer	Burseraceae	Boswellia serrata Roxb.	Akgünlük	Mastic	Crude eaten (Çömlekçiöğ lu, Karaman, 2008)
Ulcer	Burseraceae	Boswellia serrata Triana & Planch.	Akgünlük	Whole plant	Mixed with honey and eaten (Akan, Bakır-Sade, 2015)
Stomachache	Cactaceae	Opuntia ficus-indica (L.) Miller	Eşek inciri, Dikenli incir, Frenk yemişi	Fruits	Eaten fresh (Akaydin et al., 2013)
İndigestion	Cannabaceae	Humulus lupulus L.	Şerbetçi otu, Ömerotu, Mayaotu, Bira Çiçeği	Leaves, Flowers, Cone	Unspecified (Akan, Bakır-Sade, 2015) İnf. (Yaldız et al., 2010)
Gastric Ulcer	Capparaceae	Capparis spinosa L.	Kebere, Gebreotu	Buds	Decoction (Ugulu et al., 2009)
Stomachache	Caprifoliaceae	Sambucus ebulus L.	Lor, Lüver, Piran, Sultan, Şahmelek, Şahmelekotu, Sultan otu	Fruits, Aerial parts	A handful is swallowed in the morning (Kızılarşlan, Özhatay, 2012) Decoction (Kültür, 2007)
Stomachache	Caprifoliaceae	Sambucus nigra L.	Zince, Mürver	Flowers	İnf. (Polat, Satil, 2012)
Stomachache	Chenopodiaceae	Beta vulgaris L.	Pancar	Root, Tuber	Powdered (Güler et al., 2015)
Stomachache Ulcer	Clusiaceae	Hypericum montbretii Spach.	Kantaron, Soluk kantaron	Aerial parts	It is consumed by keeping it in olive oil (Polat, Satil, 2012)

Nauseation	Compositae	<i>Achillea nobilis</i> L.	Ayvadane, Ayvadana, Ayva otu	Aerial parts	Unspecified (Dođanođlu et al., 2006)
Stomach ailments	Compositae	<i>Gundelia tournefortii</i> L. var. <i>armata</i>	Kenger, Kenger zer	Root, Trunk	Unspecified (Tuzlacı, Şenkardeş, 2011) Roots and stems are eaten raw when young, after peeling (Kaval, 2011); Chewed (Tetik, 2011)
Stomachache	Compositae	<i>Taraxacum officinale</i> Web.	Hindiba, Aslan diři, Köpek marulu, Radika, Aslan çiçeđi, Sarı çiçek	Whole plant	Unspecified (Dođanođlu et al., 2006)
Ulcer	Compositae	<i>Onopordum carduchorum</i> Bornm.	Kangal dikenı	Fruit	Dekok (Tuzlacı, Şenkardeş, 2011)
Stomach ailments	Convolvulaceae	<i>Convolvulus arvensis</i> L.	Dolařkan, Tarla sarmařıđı	Leaves, Root	Porridge is consumed (Altundag, Ozturk, 2011) Chewed (Cakilcioglu et al., 2011)
Stomach ailments	Cucurbitaceae	<i>Bryonia multiflora</i> Boiss. & Heldr.	Abdulselam- Daraling, Akasma kökü	Root	Decoction (Kaval, 2011)
Stomachache	Cucurbitaceae	<i>Cupressus sempervirens</i> L.	Kobelek	Cone	Decoction (Yeřilyurt et al., 2017)
Stomachache Gastric ulcer	Cucurbitaceae	<i>Momardica charantia</i> L.	Kudret narı	Fruits	Keeped in Olive oil (Ugulu et al., 2009; Polat, Satıl, 2012; Çömlekçioglu, Karaman, 2008; Şimşek et al., 2004; Akaydın et al., 2013)
Stomach ailments	Cupressaceae	<i>Juniperus oxycedrus</i> L. subsp. <i>oxycedrus</i>	Ardıç	Cones, Fruit	Decoction (Han, Bulut, 2015; Sezik et al., 2001)
Stomach ailments	Cupressaceae	<i>Thuja articulata</i> Vahl.	Sandaloz sakızı	Mastic	Grind and eat with apple cider vinegar (Akan, Bakır-Sade, 2015)
Ulcer	Cupressaceae	<i>Thuja arborvitae</i> L.	Mazı	Fruit	Its powder is consumed mixed with milk (Akan, Bakır-Sade, 2015)
Stomachache	Cyperaceae	<i>Cyperus longus</i> L.	Sanfır, Sembellik, Topalak, Karatopalak	Yumru	Decoction (Kaval, 2011)

Stomachache	Dioscoreaceae	<i>Tamus communis</i> L. ssp. <i>cretica</i> (L.) Kit Tan	Acı ot	Filiz, Root	Decoction (Ertuğ, 2002)
Stomachache	Dioscoreaceae	<i>Dioscorea communis</i> (L.)	Sarmaşık, Vicirne, Mıdır, Mıcık, Bıcık, Bıcık otu, Kapırcık, Kapurecuk, Kediye.	Root	Decoction (Sargin et al., 2015)
Stomach ailments	Elaeagnaceae	<i>Hippophae rhamnoides</i> L.	Yalancı iğde, Cıcılık, Çay diken	Flowers	Jam or infusion. (Yaldız et al., 2010)
Stomach bleeding	Equisetaceae	<i>Equisetum ramosissimum</i> Desf.	Atkuyruğu, Binbir kilit otu	Aerial parts	Infusion (Tetik, 2011)
Stomachache	Equisetaceae	<i>Equisetum telmateia</i> Ehrh.	Kırkkilit, Su otu, Çöl otu, kırkkilit otu	Aerial parts	Infusion (Bulut, 2011) Decoction (Tuzlacı, Tolon, 2000 ; Tuzlacı, Eryaşar-Aymaz, 2001)
Stomach ailments	Ericaceae	<i>Arbutus unedo</i> L.	Andrana, Dagyemişi, Kocakarıyemişi, Kocayemişi, Ormançileği, Piyadin	Fruit	Eaten (Kızılarşlan, Özhatay, 2012)
Ulcer	Euphorbiaceae	<i>Euphorbia macroclada</i> Boiss.	Sütleşen	Lateks	Unspecified (Tuzlacı, Şenkardes, 2011)
Stomachache	Fabaceae	<i>Argyrolobium crotalarioides</i> Jaub. et Spach.	Ververk, Ca'de	Petal, Fresh leaves	Eaten raw (Balos, Akan, 2007)
Stomachache Stomach ailments	Fabaceae	<i>Trifolium repens</i> L. var. <i>giganteum</i> Lag-Foss.	Sebelk, Nefel, Beyaz yonca, Giyamembel	Aerial parts, Whole plant	Decoction (Kaval, 2011 ; Altundag, Ozturk, 2011)
Stomach ailments	Fabaceae	<i>Ceratoniasiliqua</i> L.	Keçiboynuzu	Fruit, Seed, Leaves, Branches	Eaten alone or with molasses, with honey (Akan, Bakır-Sade, 2015)
Stomach ailments	Fabaceae	<i>Astragalus microcephalus</i> Willd.	Geven	Leaves	Infusion (Korkmaz, Karakurt, 2014)
Stomach ailments	Fabaceae	<i>Glycyrrhiza echinata</i> L.	Dikenli meyan	Rhizome	Decoction (Altundag, Ozturk, 2011)
Stomachache	Fabaceae	<i>Astragalus aureus</i> Willd.	Geven	Mastic	Chewed (Altundag, Ozturk, 2011)
Stomachache	Fabaceae	<i>Glycyrrhiza glabra</i> L. var. <i>glandulifera</i>	Meyan	Root	Decoction (Ünsal et al., 2010)
Stomachache	Fabaceae	<i>Lotus corniculatus</i> L. subsp. <i>corniculatus</i> (Bieb.) Arc.	Gazalboynuzu	Whole plant	Decoction (Altundag, Ozturk, 2011)
Stomachache	Fabaceae	<i>Cercis siliquastrum</i> L.	Erguvan	Stembark, Root	Infusion (Güler et al., 2015)

Stomachache	Fabaceae	<i>Trifolium repens</i> L.var. <i>repens</i> .	Beyaz, Yonca	Aerial parts	Decoction (Kilic, Bagci, 2013)
Ulcer	Fabaceae	<i>Astragalus lamarckii</i> Boiss.	Cuni	Root	Decoction (Polat et al., 2013)
Ulcer, Gastrit	Fabaceae	<i>Glycyrrhiza glabra</i> L. var. <i>glabra</i>	Meyan, Biyan, Sus, Meyan kökü, Kukisüsü, Boyan	Root	İnfusion (Akan et al., 2008 ; Sargin et al., 2015) Decoction (Akan, Bakır-Sade, 2015 ; Altundag, Ozturk, 2011 ; Şimşek et al., 2004 ; Sargin et al., 2015 ; Arican et al., 2013 ; Tetik, 2011)
Stomach ailments	Fagaceae	<i>Quercus aucheri</i> Jaub. et Spach.	Pıynar	Fruit	Cooked and eaten (Arican et al., 2013)
Stomachache	Fumariaceae	<i>Fumaria vailantii</i> Loisel.	Şahtere	Whole plant	Decoction (Özgen et al., 2012)
Stomachache Gastric ulcer	Gentianaceae	<i>Centaurium erythraea</i> Rafn. ssp. <i>rhodense</i> (Boiss. et Reuter) Melderis	Pembe kantaron	Flowering branches	İnfusion (Ertuğ, 2002) (Tuzlacı, Eryaşar-Aymaz, 2001) Decoction (Ecevit-Genç, Özhatay, 2006)
Stomachache Ulcer	Gentianaceae	<i>Centaurium erythraea</i> Rafn	Kantaron, Kırmızı kantaron	Flowering branches, Whole plant	It is consumed by keeping it in honey (Polat, Satıl, 2012) İnfusion (Tuzlacı, Tolon, 2000)
Stomach ailments	Geraniaceae	<i>Erodium cicutarium</i> L. subsp. <i>cicutarium</i>	Danadili	Aerial parts	Decoction (Han, Bulut, 2015)
Stomach ailments	Hypericaceae	<i>Hypericum lydiium</i> Boiss.	Sancı otu, Mayasıl otu	Whole plant	İnfusion (Altundag, Ozturk, 2011 ; Yeşil, Akalın, 2009) Decoction (Savran et al., 2008)
Stomach ailments	Hypericaceae	<i>Hypericum olympicum</i> f. <i>olympicum</i>	Sarı kantaron, Kantaron	Flower	İnfusion (Kalankan et al., 2015)
Stomach ailments	Hypericaceae	<i>Hypericum retusum</i> Aucher	Koyun kıran, Binbirdelik otu	Leaves, Flowers	Unspecified (Yapıcı et al., 2009)
Stomach ailments, Ulcer	Hypericaceae	<i>Hypericum montbretii</i> Spach	Çay otu	Whole plant	Decoction (Altundag, Ozturk, 2011)
Stomach ailments, Ulcer	Hypericaceae	<i>Hypericum scabrum</i> L.	Sancı otu, Giyasork	Whole plant	Decoction (Altundag, Ozturk, 2011 ; Bulut et al., 2016) İnfusion (Yeşil, Akalın, 2009 ; Tetik, 2011)

Stomachache	Hypericaceae	<i>Hypericum avicularii</i> Jaub. et. Spach.	Mide otu	Aerial part	İnfusion (Ünsal et al., 2010)
Stomachache	Hypericaceae	<i>Lavandula stoechas</i> L.	Karabaşotu	Leaves, Fresh shoot	Unspecified (Özçelik, Balabanlı, 2005)
Ulcer, Stomachache	Hypericaceae	<i>Hypericum perforatum</i> L.	Sarı kantaron, Kantaron, Bağtov, Kanterçiçeği, Binbirdelikot, Koyunkıran, Yara otu, Boya otu, Kanotu	Aerial part, Flowers, Flowering branches	Consumed with oil (Ünsal et al., 2010; Kızıllarlan, Özhatay, 2012) Decoction (Akan, Bakır-Sade, 2015; Altundag, Ozturk, 2011; Yeşilyurt et al., 2017; Özgökçe, Özçelik, 2004; Koçyiğit, Özhatay, 2006; Ugulu et al., 2009; Doğanoglu et al., 2006) İnfusion (Polat, Satıl, 2012; Güler et al., 2015; Bulut et al., 2017; Bulut, Tuzlacı, 2009; Bulut, Tuzlacı, 2015; Kalankan et al., 2015; Tuzlacı, Eryaşar-Aymaz, 2001) It is kept in water and eaten when hungry. (Bulut, 2011) It is kept in olive oil for 40 days and consumed. (Polat, Satıl, 2012)
Stomach ailments	Iridaceae	<i>Crocus sativus</i> L.	Safran	Unspecified	Unspecified (Yaldız et al., 2010)
Stomach ailments	Kandil Çayı	<i>Sideritis athoa</i> Papan. & Kokkini.	Kandil Çayı	Flower	İnfusion (Kalankan et al., 2015)
Gastric ulcer	Labiatae	<i>Prunella vulgaris</i> L.	Bumbur otu	Flowers	İnfusion (Sağiroğlu et al., 2012)
Stomach ailments	Labiatae	<i>Mentha piperita</i> L.	Bahçe Nanesi, Nane	Leaves, Branches	İnfusion (Yaldız et al., 2010; Ugurlu, Secmen, 2008) (Tetik, 2011) Decoction (Yeşilyurt et al., 2017; Akdag, Dogu, 2016; Savran et al., 2008)
Stomach ailments	Labiatae	<i>Salvia cryptantha</i> Montbret et	Ada çayı Ballık otu	Aerial parts	İnfusion (Tuzlacı, Şenkardes, 2011)

		Aucher ex Bentham	Kokulu ot Sarı şabla		
Stomach ailments	Labiatae	Stachys cretica L. subsp. anatolica Rech. fil.	Çaya çe, Dağ çayı	Aerial part	Decoction (Yeşil, Akalın, 2009)
Stomach ailments	Labiatae	Thymus pseudopulegioides Klokov et Des.	Kekik	Flowers, Leaves	Infusion (Yıldız et al., 2010) Decoction (Han, Bulut, 2015; Bağcı et. al., 2006; Savran et al., 2008)
Stomachache	Labiatae	Thymus sipyleus Boiss. subsp. rosulans	Kekik	Aerial parts	Infusion (Tuzlacı, Şenkardes, 2011) (Çömlekçioğlu, Karaman, 2008) Decoction (Savran et al., 2008)
Stomachache	Labiatae	Phlomis pungens Willd.	Ayı kulağı, Ayı çalbası, Ayı şalbası, Büyük yapraklı şalba, Tüylü şalba	Aerial parts	Unspecified (Doğanoğlu et al., 2006)
Stomachache	Labiatae	Sideritis libanotica Labill.	Dağ çayı, Dağ şalbası, Eşek şalbası, Çalba, Çay otu	Aerial parts	Unspecified (Doğanoğlu et al., 2006)
Ulcer, Stomachache	Labiatae	Mentha x piperita L.	Nane	Aerial parts	The decoction is made with lemon and consumed. (Tuzlacı, Şenkardes, 2011)
Stomach ailments	Lamiaceae	Salvia multicaulis Vahl	Ada çayı, dağ çayı	Flowers, Leaves	Infusion (Tetik, 2011)
Ulcer	Lamiaceae	Sideritis caesarea L.	Dagçayı	Aerial parts	Fresh herb is ingested and decoction (Gürbüz et al., 2005)
Nauseation	Lamiaceae	Mentha aquatica L.	Toros nanesi	Leaves	Decoction (Bağcı et. al., 2006)
Nauseation, Ulcer	Lamiaceae	Ocimum basilicum L.	Fesleğen, Reyhan	Aerial parts	Decoction (Akan, Bakır-Sade, 2015)
Stomach ailments	Lamiaceae	Mentha longifolia (L.) Hudson subsp. typhoides (Briq.) Harley var. typhoides	Nane, Yabaninane, Yabannanesi	Leaves	Decoction (Kızılarşlan, Özhatay, 2012; Ezer, Avcı, 2004; Kilic, Bağcı, 2013) Eaten (Sağroğlu et al., 2012)
Stomach ailments	Lamiaceae	Lavandula stoechas L. subsp.stoechas	Karabaş, Karabaşotu, Ebebört	Flower, Aerial parts	Infusion (Kalankan et al., 2015; Arıcan et al., 2013)
Stomach ailments	Lamiaceae	Mentha pulegium L.	Filiskin, Mentollü adaçayı, Yarpuz, Pung, Yayla nanesi, Deli nane	Aerial parts	Infusion (Polat, Satıl, 2012; Balos, Akan, 2007; Bulut, Tuzlacı, 2015) Powdered with honey (Ecevit-

					Genç, Özhatay, 2006)
Stomach ailments	Lamiaceae	<i>Mentha spicata</i> L.	Pünk	Whole plant	Decoction (Altundag, Ozturk, 2011)
Stomach ailments	Lamiaceae	<i>Nepeta cataria</i> L.	Kedinanesi	Whole plant	Decoction (Altundag, Ozturk, 2011)
Stomach ailments	Lamiaceae	<i>Origanum majorana</i> L.	Mercanköşk	Whole plant	Eaten fresh (Altundag, Ozturk, 2011)
Stomach ailments	Lamiaceae	<i>Salvia hydrangea</i> DC. ex Bentham	Koç otu	Whole plant	Infusion (Altundag, Ozturk, 2011)
Stomach ailments	Lamiaceae	<i>Stachys cretica</i> L. subsp. <i>mersinaea</i> (Boiss.) Rech. fil.	Dağ çayı	Whole plant	Infusion or Decoction (Altundag, Ozturk, 2011)
Stomach ailments	Lamiaceae	<i>Stachys cretica</i> subsp. <i>anatolica</i>	Dağ çayı	Whole plant	Infusion or Decoction (Altundag, Ozturk, 2011)
Stomach ailments	Lamiaceae	<i>Teucrium chamaedrys</i> L.	Yer meşesi, Kısacıkmahmut, Kısamahmut otu	Whole plant, Aerial parts	Infusion (Altundag, Ozturk, 2011; Sezik et al., 2001; Tuzlacı, Eryaşar-Aymaz, 2001)
Stomach ailments	Lamiaceae	<i>Teucrium chamaedrys</i> L. subsp. <i>chamaedrys</i>	Peryavşanı	Branches, Leaves	Decoction (Savran et al., 2008)
Stomach ailments	Lamiaceae	<i>Thymus longicaulis</i> C. Presl subsp. <i>longicaulis</i> var. <i>subisophyllus</i>	Kekik, Keklik otu	Aerial parts	Infusion (Kızırlarlan, Özhatay, 2012; Bulut, 2011) Decoction (Savran et al., 2008)
Stomach ailments	Lamiaceae	<i>Thymus longicaulis</i> C. Presl. subsp. <i>chambardii</i> (Rechb.f.) Jalas	Limon Kekiği	Aerial parts	Infusion (Kalankan et al., 2015)
Stomach ailments	Lamiaceae	<i>Thymus praecox</i> Opiz. subsp. <i>skorpilii</i> (Velen) Jalas	Kekik, Kekük	Leaves	Decoction (Ezer, Avcı, 2004; Savran et al., 2008)
Stomach ailments,	Lamiaceae	<i>Mentha longifolia</i> (L.) Huds. subsp. <i>longifolia</i>	Yarpuz, Filiskin	Aerial parts Whole plant	Decoction (Özgen et al., 2012) Infusion (Kalankan et al., 2015) Decoction or Infusion (Altundag, Ozturk, 2011)
Stomachache	Lamiaceae	<i>Lavandula stoechas</i> L. subsp. <i>stoechas</i>	Karabaş otu, Karabaş	Flowering branches	Infusion (Polat, Satıl, 2012)
Stomachache	Lamiaceae	<i>Mentha longifolia</i> L.	Nane, Yabani nane	Flowering branches	Infusion (Polat, Satıl, 2012)

Stomachache	Lamiaceae	<i>Mentha spicata</i> L. subsp. <i>spicata</i>	Yabani nane, Yarpuz	Leaves	İnfusion (Bulut, 2011; Çakılcıoğlu et al., 2007) Decoction (Pieroni et al., 2005)
Stomachache	Lamiaceae	<i>Origanum vulgare</i> L. subsp. <i>gracile</i> (C. Koch)	Eşek kekiği	Whole plant	Decoction or Infusion (Altundag, Ozturk, 2011)
Stomachache	Lamiaceae	<i>Origanum x majoricum</i> L.	Mercanköşk	Aerial parts	İnfusion (Polat, Satil, 2012)
Stomachache	Lamiaceae	<i>Salvia viridis</i> L.	Çobandöseği	Aerial parts	Decoction (Akan et al., 2008)
Stomachache	Lamiaceae	<i>Sideritis trojana</i> Bornm.	Sarıköz çayı, Dağ çayı, Cılbak çayı	Aerial parts	İnfusion (Polat, Satil, 2012; Çakılcıoğlu et al., 2007)
Stomachache	Lamiaceae	<i>Stachys cretica</i> L.	Dağ çayı	Flowering branches	İnfusion (Polat, Satil, 2012)
Stomachache	Lamiaceae	<i>Stachys iberica</i> Bieb. subsp. <i>stenostacya</i> (Boiss.) Rech. fil.	Dağ çayı	Whole plant	Decoction (Altundag, Ozturk, 2011)
Stomachache	Lamiaceae	<i>Teucrium polium</i> L.	Acı yavşan, Peri yavşan, Merven, Topalan otu, Keselmahmut, Ürper yavşağı, Meyremxort	Aerial parts, Flowers, Leaves	Unspecified (Ünsal et al., 2010; Özçelik, Balabanlı, 2005; Yapıcı et al., 2009) İnfusion (Demirci, Özhatay, 2012; Sezik et al., 2001; Bulut et al., 2017; Çakılcıoğlu et al., 2007; Tetik, 2011) Decoction (Altundag, Ozturk, 2011; Akdag, Dogu, 2016; Kilic, Bagci, 2013; Akaydin et al., 2013)
Stomachache	Lamiaceae	<i>Thymbra spicata</i> L.	Kara kekik, Zahter, Cahter, Caatri, Yaban kekiği, Dağ kekiği, Deli kekik	Aerial parts, Leaves	İnfusion (Ünsal et al., 2010; Kalankan et al., 2015) Decoction (Akan, Bakır-Sade, 2015; Şimşek et al., 2004; Polat et al., 2013)
Stomachache	Lamiaceae	<i>Thymbra spicata</i> L. var. <i>spicata</i>	Esek zahteri	Leaves	Decoction (Akan et al., 2008)
Stomachache	Lamiaceae	<i>Thymus fallax</i> Fisch. & Mey.	Kekik otu	Whole plant	Decoction (Özgen et al., 2012; Savran et al., 2008)
Stomachache	Lamiaceae	<i>Ziziphora clinopodioides</i> Lam.	Reyhan	Whole plant	Decoction or Infusion (Altundag,

					Ozturk, 2011)
Stomachache	Lamiaceae	<i>Marrubium vulgare</i> L.	Keklik otu	Flowering branches	Infusion (Tuzlacı, Eryaşar-Aymaz, 2001)
Stomachache	Lamiaceae	<i>Origanum vulgare</i> L. subsp. <i>gracile</i> (C. Koch) <i>letsuaart</i>	Catır	Whole plant	Decoction (Özgökçe, Özçelik, 2004)
Stomachache	Lamiaceae	<i>Origanum onites</i> L.	Kekik, Salman kekik, İncir kekiği	Flowering branches	İnfusion (Ertuğ, 2002)
Stomachache	Lamiaceae	<i>Rosmarinus officinalis</i> L.	Biberiye	Seed, Aerial parts	İnfusion (Güler et al., 2015 ; Bulut et al., 2017)
Stomachache	Lamiaceae	<i>Salvia fruticosa</i> Mill	Ada cayı, Kara ot	Leaves, Stem	Decoction (Pieroni et. al., 2005)
Stomachache	Lamiaceae	<i>Salvia tomentosa</i> Miller	Adaçayı, Boş yaprağı, Moşabla	Aerial parts, Leaves	Decoction (Akyol, Altan, 2013) İnfusion (Kalankan et al., 2015)
Stomachache	Lamiaceae	<i>Stachys cretica</i> L. subsp. <i>smyrnaea</i> Rech. Fil.	Çay gayfası	Aerial parts	Decoction (Akyol, Altan, 2013)
Stomachache	Lamiaceae	<i>Teucrium chamaedrys</i> Lb. Subsp. <i>sinuatum</i> (Celak) Rech. fil.	Derman, Keselmahmut	Whole plant, Aerial parts	Decoction (Özgökçe, Özçelik, 2004 ; Kilic, Bagci, 2013 ; Çaklıcıoğlu et al., 2007)
Stomachache	Lamiaceae	<i>Thymus longicaulis</i> C.Presl subsp. <i>longicaulis</i> var. <i>Subisophyllus</i> (Borbas) <i>Jalas</i>	Yer kekiği	Whole plant	Decoction (Ecevit-Genç, Özhatay, 2006)
Stomachache	Lamiaceae	<i>Thymus sibthorpii</i> Bentham	Kekik, Keklikotu	Aerial parts	İnfusion (Ecevit-Genç, Özhatay, 2006)
Stomachache	Lamiaceae	<i>Ziziphora taurica</i> Bieb. subsp. <i>taurica</i>	Dağ reyhanı	Aerial part	İnfusion (Çaklıcıoğlu et al., 2007)
Stomachache İndigestion	Lamiaceae	<i>Melissa officinalis</i> L.	Melisa Oğulotu, Limon nanesi	Leaves, Branches	Decoction (Pieroni et. al., 2005) (Savran et al., 2008) Unspecified (Yaldız et al., 2010)
Stomachache Ulcer	Lamiaceae	<i>Melissa officinalis</i> L. subsp. <i>altissima</i> (Sm.) <i>Arcangeli</i>	Oğulotu, Saçkiran, Yabansırganı, Yabanidereotu	Leaves, Flowering branches	It is boiled with starch and consumed in pill form 3 times a day. (Kızılarslan, Özhatay, 2012) İnfusion (Polat, Satıl, 2012 ; Kalankan et al., 2015)
Stomache diseases	Lamiaceae	<i>Stachys lavandifolia</i> Vahl.	Dağ çayı	Leaves, Flower	Decoction (Çömlekçioğlu,

					Karaman, 2008)
Gas reliever	Lauraceae	<i>Cinnamomum zeylanicum</i> L.	Tarçın	Shell	Eaten in powder form or with honey (Akan, Bakır-Sade, 2015)
Stomachache	Lauraceae	<i>Laurus nobilis</i> L.	Defne	Leaves, Fruit, Flower buds	İnfusion (Güler et al., 2015 ; Bulut, Tuzlacı, 2015) Decoction (Tuzlacı, Eryaşar-Aymaz, 2001)
Stomach ailments	Liliaceae	<i>Galanthus ikariae</i> L.	Kardelen, Akdaş	Bump	The porridge is made (Yaldız et al., 2010)
Stomach ailments, Gastric ulcer	Liliaceae	<i>Allium cepa</i> L.	Karacasogan, Soğan	Seed, Root	Unspecified (Akan, Bakır-Sade, 2015) Cooked in embers and ingested (Sezik et al., 2001)
Stomachache	Liliaceae	<i>Smilax excelsa</i> L.	Gıcır	Fruit	Cehewed (Koçyiğit, Özhatay, 2006)
Stomachache Ulcer, Stomach ailments	Liliaceae	<i>Asphodelus aestivus</i> Brot.	Deve soğanı, Çirişlik, Kirişlik, Kiriş otu , Hıdırellez kamçısı	Root	Decoction (Polat, Satıl, 2012 ; Sargin et al., 2015) Eaten (Bulut, Tuzlacı, 2015)
Stomach ailments	Linaceae	<i>Linum usitatissimum</i> L.	Keten tohumu, Bızıktan tohumu, Siyalek, Zergenek tohumu	Seed	Unspecified (Akan, Bakır-Sade, 2015)
Stomach shrinker	Lythraceae	<i>Punica granatum</i> L.	Nar	Fruit, Shell	Decoction (Akan, Bakır-Sade, 2015)
Stomach ailments	Malvaceae	<i>Malva sylvestris</i> L.	Ebegömeç, Ebegümeçi, Molaşa, Molaşaotu	Leaves, Flowers	Dekok. (Kızılarslan, Özhatay, 2012 ; Bağcı et al., 2006) İnfusion (Bulut, 2011 ; Güler et al., 2015 ; Ugurlu, Secmen, 2008) Unspecified (Doğanoglu et al., 2006)
Stomach ailments	Malvaceae	<i>Alcea apterocarpa</i> (Fenzl) Boiss.	Huri, Gülhatun çiçeği, Gül hatmi	Whole plant, Root	Decoction or infusion (Altundag, Ozturk, 2011 ; Çömlekçioğlu, Karaman, 2008)
Stomach ailments	Malvaceae	<i>Alcea calvertii</i> (Boiss.) Boiss.	Hayro	Whole plant	Decoction or infusion (Altundag, Ozturk, 2011)

Stomach cancer	Malvaceae	Hibiscus sabdariffa L.	Habiskus, Medine gülü	Leaves	infusion (Akan, Bakır-Sade, 2015)
Stomachache Gastric ulcer	Malvaceae	Malva neglecta Wallr.	Ebemkömeyi, Ebemkömeci, Ebengümece, Ebegümece, Cobanyatağı	Whole plant, Fruit, Leaves	Eaten fresh (Özgen et al., 2012) Unspecified (Çakılcıoğlu et al., 2007) Decoction (Özgen et al., 2012; Altundag, Ozturk, 2011; Çömlekçioğlu, Karaman, 2008; Şimşek et al., 2004; Yeşilyurt et al., 2017; Gürbüz et al., 2005; Tetik, 2011)
Stomachache, Nauseation	Malvaceae	Althea officinalis L.	Hatmi, Gülhatmi	Flowers	İnfusion (Bağcı et al., 2006; Polat, Satıl, 2012)
Stomach ailments, Gastric ulcer	Moraceae	Morus alba L.	Dut	Fruit	Decoction (Altundag, Ozturk, 2011; Yeşilyurt et al., 2017)
Stomachache	Moraceae	Ficus carica L. subsp. carica	İncir ağacı	Leaves	Decoction (Tuzlacı, Tolon, 2000)
Stomachache	Oleaceae	Olea europaea L.	Zeytin, Delice	Flowers + Leaves	Decoction (Polat, Satıl, 2012)
Stomachache	Papaveraceae	Fumaria officinalis L.	Şahtere, Tilki kişnişi	Aerial parts, Flowers	İnfusion (Akan, Bakır-Sade, 2015; Cakilcioglu et al., 2011)
Gastric ulcer Stomachache	Pinaceae	Abies cilicica (Ant. et Kotschy) Carr.	Mejda, Köknar, Gökknar, Mezla, Mezda	Mastic	Majoon with Honey (Çömlekçioğlu, Karaman, 2008) Chewed (Sezik et al., 2001)
Stomach ailments	Pinaceae	Pinus nigra Arn. subs. pallasiana (Lamb.) Holombœ	Çam sakızı	Mastic, Cone	In decoction, it is drunk when the stomach is empty (Akan, Bakır-Sade, 2015)
Stomach ailments	Pinaceae	Abies nordmanniana (Stev.) Spach subsp. equi-trojani	Andız çam	Cones	Decoction (Bulut, Tuzlacı, 2015)
Stomachache	Pinaceae	Cedrus libani A. Rich.	Katran ağacı, Sedir, Sedir ağacı	Mastic, Cambium,	Decoction and Resins chewed (Sargin, 2015) (Sezik et al., 2001)
Ulcer, Stomachache	Pinaceae	Pinus brutia Ten.	Çam, Kızılçam	Reçine, Cone	Consumed with hot water (Polat, Satıl, 2012) İnfusion (Ugurlu, Secmen, 2008; Arıcan et al.,

					2013) Chewed (Tuzlacı, Eryaşar-Aymaz, 2001)
Stomach ailments, Ulcer	Plantaginaceae	Plantago lanceolata L.	Sinir otu, Siğil otu, Sinirli ot, Yedidamar otu	Flowers Leaves	Decoction (Altundag, Ozturk, 2011; Ezer, Avcı, 2004; Ecevit-Genç, Özhatay, 2006; Tuzlacı, Tolon, 2000) İnfusion (Polat et al., 2015)
Stomach ailments, Ulcer	Plantaginaceae	Plantago major L. subsp. intermedia (Gilib.)	Bağa yaprağı	Leaves	Decoction (Altundag, Ozturk, 2011)
Stomachache	Plantaginaceae	Plantago coronopus subsp. coronopus L.	Çay otu	Aerial part	İnfusion (Ugurlu, Secmen, 2008)
Stomachache Gastric ulcer	Plantaginaceae	Plantago major L. subsp. major	Balazagva, Damarliot, Damarotu, Kirksinirotu, Sinirliot, Sinirotu, Damar otu, Singir otu	Leaves, Whole plant	Decoction (Kızılarıslan, Özhatay, 2012; Özgen et al., 2012; Sağıroğlu et al., 2012) Dried herb is mixed with honey and ingested (Ezer, Arısan, 2006) Freshly eaten (Yeşil, Akalın, 2009)
Ulcer, Stomachache	Plantaginaceae	Plantago major L.	Büyük yapraklı sinir otu, Büyük sinirli ot, Sinir otu, Damar otu, Sinirli ot, Sinir otu, Beşparmak otu	Seed, Leaves	İnfusion (Yaldız et al., 2010) Decoction (Polat, Satıl, 2012; Altundag, Ozturk, 2011)
Stomach ailments	Poaceae	Zea mays L.	Mısır	Crest	İnfusion (Tetik, 2011)
Stomachache	Poaceae	Cynodon dactylon (L.) Pers. var. villosus Regel	Ayrıkotu	Rhizome	Decoction (Yeşilyurt et al., 2017)
Stomachache	Poaceae	Elymus repens (L.)	Ayrık otu, Ayrık, Çayır, Çayır otu	Rhizome	İnfusion (Sargin et al., 2015)
Ulcer	Polygonaceae	Rumex patientia	Ebelik, Yalmukcayı, Yilki kulak	Fruits	Decoction (Gürbüz et al., 2005)
Gastric ulcer	Polygonaceae	Polygonum cognatum Meisn.	Cacık, Kadımalak, Madımalak, Ebemekmeği, Kuşekmeği, Madımak	Whole plant, Leaves	It is consumed by cooking (Özgen et al., 2012) Eaten fresh (Sarper et al., 2009)

Stomach ailments	Polygonaceae	Rumex acetosella L.	Kuzukulağı	Leaves	Decoction and Raw (Kilic, Bagci, 2013)
Stomach ailments, Ulcer	Polygonaceae	Rheum ribes L.	Işgın	Root, shoots	Decoction (Altundag, Ozturk, 2011) Infusion (Tetik, 2011)
Stomachache	Polygonaceae	Rumex crispus L.	Evelik	Leaves	Decoction (Özgen et al., 2012)
Stomachache	Polygonaceae	Polygonum aviculare L.	Kuşekmeği	Leaves	Decoction (Çakılcıoğlu et al., 2011)
Stomach ailments	Portulacaceae	Portulaca oleracea L.	Semizotu	Whole plant	Decoction (Altundag, Ozturk, 2011) Eaten as salad (Arcan et al., 2013)
Stomach ailments	Primulaceae	Primula auriculata Lam.	Mustafa çiçeği	Whole plant	Infusion (Altundag, Ozturk, 2011)
Stomach ailments	Ranunculaceae	Nigella sativa L.	Çörekotu	Seed	Mixed with honey is eaten (Savran et al., 2008)
Stomachache	Ranunculaceae	Ranunculus pinardii (Stev.) Boiss.	Karaz, Gazyağı otu	Whole plant	Infusion (Altundag, Ozturk, 2011; Yeşil, Akalm, 2009)
Stomach ailments	Resedaceae	Reseda lutea L. var. lutea	Mubabbet çiçeği, Eşşek turpu, Sarı muhabbet çiçeği	Root	Decoction (Altundag, Ozturk, 2011) Eaten raw (Çakılcıoğlu et al., 2007)
İndigestion	Rhamnaceae	Rhamnus frangula Mill.	Barut ağacı	Shell	Unspecified (Akan, Bakır-Sade, 2015)
Stomachache	Rosaceae	Cerasus mahaleb (L.) Miller	Melem ağacı	Fruits	Infusion (Tetik, 2011)
Stomachache	Rosaceae	Rubus sanctus Schreber	Böğürtlen	Fruit, Root, Flowers, Leaves	Infusion (Tetik, 2011)
Ulcer	Rosaceae	Potentilla reptans	Resatinotu	Leaves	Decoction (Gürbüz et al., 2005)
Ulcer	Rosaceae	Sanguisorba minor ssp. muricata	Yanikotu, Mideotu	Aerial parts	Decoction (Gürbüz et al., 2005)
Gastric ulcer	Rosaceae	Rosa dumalis Bechst. subsp. boissieri (Crép.) Ö. Nilsson	Kuşburnu	Root, Fruit	Decoction (Özgen et al., 2012)
Gastritis	Rosaceae	Sorbus domestica L.	Üvez, Övez	Leaves	Decoction (Çömlekçiöğlu, Karaman, 2008)
Stomach ailments	Rosaceae	Crataegus monogyna Jacq.	Alıç çiçeği, Guviç	Fruit, Flowers,	Unspecified (Akan, Bakır-

		subsp. monogyna		Leaves,	Sade, 2015; Savran et al., 2008)
Stomach ailments	Rosaceae	Cotoneaster nummularia Fisch. & Mey	Dağ muşmulası	Fruit	Decoction (Altundag, Ozturk, 2011; Çakılcıoğlu et al., 2007)
Stomach ailments	Rosaceae	Crataegus szovitsii Pojark	Alıç	Leaves	Decoction (Tuzlacı, Şenkardeş, 2011)
Stomach ailments	Rosaceae	Crataegus tanacetifolia (Lam.) Pers.	Alıç	Leaves, Flowers	Decoction (Han, Bulut, 2015)
Stomach ailments	Rosaceae	Geum urbanum L.	Su karanfili, Dağ karanfili, Karanfil kökü, Yellice otu	Whole plant, Root	Unspecified (Doğanoğlu et al., 2006) İnfusion (Çakılcıoğlu et al., 2007)
Stomach ailments	Rosaceae	Sanguisorba minor Scop.	Çayır düğmesi, Küçük çayır düğmesi	Whole plant	Decoction (Altundag, Ozturk, 2011) Unspecified (Tetik, 2011)
Stomach ailments, Stomachache	Rosaceae	Rosa canina L.	Kuşburnu, Şilan, Köpek gülü, Yaban gülü, Yabani gül	Flowers, Fruit, Root	Unspecified (Akan, Bakır-Sade, 2015) İnfusion (Bulut, 2011; Savran et al., 2008) Decoction (Altundag, Ozturk, 2011; Han, Bulut, 2015; Tuzlacı, Tolon, 2000) Eaten as marmalade (Yeşilyurt et al., 2017; Bağcı et al., 2006)
Stomach ulcer	Rosaceae	Prunus spinosa L.	Güvem	Fruit	Decoction (Yeşilyurt et al., 2017)
Stomachache	Rosaceae	Crataegus aronia (L.)	Ardıç	Fruit, Leaves	Jam (Demirci, Özhatay, 2012) Decoction (Ecevit-Genç, Özhatay, 2006)
Stomachache	Rosaceae	Cydonia oblonga Miller	Ayva	Leaves	İnfusion (Bulut, 2011) Decoction (Tuzlacı, Şenkardeş, 2011; Bulut et al., 2017)
Stomachache	Rosaceae	Pyrus syriaca Boiss. var. syriaca	Adi armut	Fruit	İnfusion (Altundag, Ozturk, 2011)
Stomachache	Rosaceae	Rosa pimpinellifolia L.	Koyungözü	Fruit, root	Decoction (Altundag,

					Ozturk, 2011)
Stomachache	Rosaceae	<i>Crataegus orientalis</i> (Mill.)	Sinz, Sez, Risok	Flowers, Fruit, Leaves	Infusion (Polat et al., 2013)
Stomachache	Rosaceae	<i>Prunus cerasus</i> L.	Vişne	Fruit	Eaten (Güler et al., 2015)
Stomachache	Rosaceae	<i>Prunus domestica</i> L.	Erik, Dağ eriği	Fruit	Eaten (Güler et al., 2015) Stewed fruits are eaten (Akaydın et al., 2013)
Stomache diseases	Rosaceae	<i>Lauracerasus officinalis</i> Roemer	Kastanicça karamişi	All parts	Eaten (Sağiroğlu et al., 2012)
Ulcer, Stomachache	Rosaceae	<i>Mespilus germanica</i> L.	Muşmula	Leaves	Decoction (Tuzlacı, Şenkardes, 2011)
Stomachache	Rutaceae	<i>Citrus limon</i> (L.)Burm.f.	Limon	Fruits	Drunk with mint (Sağiroğlu et al., 2012)
Stomachache	Rutaceae	<i>Citrus sinensis</i> (L.) Osbeck	Portakal	Leaves, Fruit, Flowers, Stembark	Infusion (Güler et al., 2015)
Stomach cancer	Salicaceae	<i>Populus nigra</i> L. subsp. nigra	Kavak	Bitki özü (köklerden elde edilir),	Unspecified (Tuzlacı, Şenkardes, 2011)
Stomache diseases	Salicaceae	<i>Salix alba</i> L.	Söğüt	Leaves	Infusion (Arı et al., 2015)
Stomach ailments	Santalaceae	<i>Viscum album</i> L. subsp. album	Kökçe, Ökseotu	Leaves	Decoction (Han, Bulut, 2015)
Ulcer	Scrophulariaceae	<i>Verbascum cheiranthifolium</i> var. <i>cheiranthifolium</i>	Calba, Yalangi	Flowers	Decoction (Gürbüz et al., 2005)
Gastrospasm	Scrophulariaceae	<i>Verbascum</i> sp	Sığır kuyruğu, Ayı kulağı, Yünotu	Flowers, Branches	Infusion (Yaldız et al., 2010 ; Han, Bulut, 2015)
Stomachache	Scrophulariaceae	<i>Verbascum cherianthifolium</i> . Boiss. var. <i>cherianthifolium</i>	Gırç	Flowers	Decoction (Özgen et al., 2012)
Stomache diseases	Solanaceae	<i>Solanum tuberosum</i> L.	Patates	Stem	Crushed and drunk (Sağiroğlu et al., 2012)
Stomach ailments	Theaceae	<i>Camellia sinensis</i> (L.) Kuntze	Yeşil çay	Leaves	Unspecified (Akan, Bakır-Sade, 2015)
Ulcer	Thymelaeaceae	<i>Daphne pontica</i> L.	Karadeniz defnesi	Unspecified	Unspecified (Yaldız et al., 2010)
Stomachache	Tiliaceae	<i>Tilia cordata</i> Mill.	Ahmur, İhlamur, İhramil, İkrampur	Flowers, Leaves	Decoction (Pieroni et al., 2005)
Ulcer	Ulmaceae	<i>Celtis australis</i> L.	Çıtlık, Çitlembik, Çitlenbik, Menengeç, Melengeç.	Fruit	Fruits are eaten by chewing (Sargin et al., 2015)

Stomach ailments	Umbelliferae	Petroselinum crispum (Miller) A. W. Hill	Maydanoz	Leaves, Aerial parts	Eaten (Tuzlacı, Şenkardeş, 2011) Decoction (Han, Bulut, 2015; Savran et al., 2008; Akaydın et al., 2013)
Gastritis	Urticaceae	Urtica urens L.	Isırganotu	Leaves	Decoction (Sarper et al., 2009)
Stomach ailments	Urticaceae	Urtica pilulifera L.	Isırgan	Aerial parts	Decoction (Bağcı et al., 2006)
Stomachache Gastric ulcer	Urticaceae	Urtica dioica L.	Isırgan	Aerial parts, Leaves, Seed	Decoction (Akan, Bakır-Sade, 2015; Özgen et al., 2012; Ezer, Arısan, 2006; Ezer, Avcı, 2004; Ecevit-Genç, Özhatay, 2006; Savran et al., 2008; Tuzlacı, Tolon, 2000) Infusion (Bulut, 2011; Özdemir, Alpınar, 2015; Tetik, 2011) Eaten with honey (Tuzlacı, Eryaşar-Aymaz, 2001)
Stomach ailments	Vitaceae	Vitis sylvestris L.	Asma, Üzüm	Fruits, Leaves	Decoction and Raw (Kilic, Bağcı, 2013)
Heartburn	Zingiberaceae	Alpinia officinarum Hance	Havlıcan	Root	Unspecified (Akan, Bakır-Sade, 2015)
Stomach ailments	Zingiberaceae	Curcuma longa L.	Zerdeçal	Root	Consumed with honey or with meals (Akan, Bakır-Sade, 2015)
Stomach ailments	Zingiberaceae	Zingiber officinale Roscoe	Zencefil	Root, Aerial parts	It is consumed with decoction, honey or meals (Akan, Bakır-Sade, 2015)
Stomach ailments	Zygophyllaceae	Tribulus terrestris L.	Demir pıtırağı	Roots	Decoction (Bulut et al., 2017)
Stomachache	Zygophyllaceae	Peganum harmala L.	Üzerlik, Ozerlik, Harmal, Bogir, Bohal meleg	Seed	Unspecified (Özçelik, Balabanlı, 2005) (Balos, Akan, 2007)

4. Discussion

Traditional medicine and ethnobotanical information play an important role in scientific research, however, unfortunately information relating to the medicinally useful plant taxa and their uses along with traditional knowledge and practices are scattered and sparsed. Medicinal and aromatic plants play an important role in providing knowledge to the researchers in the field of ethnopharmacology.

In a study, 32 plant taxa were documented which are used for the problems of digestive disorders; in this research plants used for the treatment of digestive disorders are listed with their botanical names, local name, mode of administration, status of plants and the tribes associated

(Devi Prasad et al., 2013). In another study, 36 medicinal plant taxa belonging to 24 families and 31 genera were used to treat digestive system disorders (Tangjitman et al., 2015). 43 plant taxa used to stomachache, indigestion, constipation, dyspepsia, ulcer, dysentery, diarrhoea, gastric, hyperacidity, emesis, nausea, worm infection, flatulence (Biswakarma et al., 2017). In this study, a total of 287 plant taxa have been documented for their therapeutic and traditional herbal care against stomach disease. Details about these plants, their families, usage patterns and used parts are shown in Table 1.

Traditional medicinal plant usage are rapidly disappearing due to a lack of interest among young people in learning traditional knowledge from elder tribal medical practitioners, destruction of forests, grazing, modernization, environmental pollution, urbanization, industrialization, etc.

Scientific researches about medicinal properties for digestive system disorders plants need to be carried out in various pharmaceutical industries develop new natural medicines and drugs. It is important to develop strong collaboration between medicinal plant researchers, ethnobotanists, traditional medicine practitioners, and industrialists; to benefit more efficiency.

5. Conclusion

Stomach disorders have a high prevalence in terms of the morbidity rate among Turkey people. Traditional knowledge and application procedure of these economic valuable plants for cure of different stomach disorders can be useful tools for preservation and conservation of indigenous knowledge and cultural significance of these plants. Unfortunately, many plant taxa used by indigenous traditional medicine in many countries have not been studied in depth. There is a urgent need for documentation and take attention of plants which were uses in ethnobotany of Turkey. Traditional medicine and ethnobotany is the most ancient method of curing diseases. We hope that this review will help you better comprehend and utilize particular herbs to help patients with various ailments, especially stomach disorders.

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