

The edible and miscellaneous useful plants in Marmaris (Southwest Turkey)

Bahar Gürdal*, Şükran Kültür

Department of Pharmaceutical Botany, Faculty of Pharmacy, Istanbul University,
34116 Istanbul, Turkey

Abstract: In the ethnobotanical study of Marmaris district (Muğla, Southwest Turkey) the edible and miscellaneous useful (broom, animal food, decorative etc.) plants are documented. During the field studies used parts and uses of plants are recorded. In the study area 80 species belonging to 35 families have edible and miscellaneous uses and among them 68 species are wild and 12 species are cultivated plants. 53 taxa are used as edibles and 33 taxa are used for different purposes. The collected plants were identified and prepared voucher specimens were kept in the The Herbarium of the Faculty of Pharmacy of Istanbul University (ISTE).

Key words: edible plants, decorative plants, animal food, Marmaris, Muğla, Turkey

Introduction

Marmaris is located in the Muğla province of south-west Anatolia and it has thirteen villages. The Marmaris district is comprised of 866 km² characterized by highly diverse Mediterranean-type vegetation and is located within the ‘Bozburun and Datça Peninsulas’ Important Plant Area (IPA) (1). Stretching from the Datça Peninsula and Gökova Bay in the west to Mount Balan and Karadağ in the east, and from the district of Ula in the north to the Mediterranean sea in the south (Figure 1). The Marmaris district has a Mediterranean climate, with warm, rainy winters and hot, dry summers. The annual precipitation is 848 mm. The aim of this study was to collect and to preserve for future generations information about traditional plant uses in the Marmaris (Muğla) province of south-west Anatolia. This is part of a master thesis entitled “Ethnobotanical Study in Marmaris District (Muğla)” and supported by Istanbul University Scientific Research Projects (2). The other part of project, which deals with the medicinal plants of Marmaris, has been recently published (3). In this paper, priority goes to the description of useful plants in the Marmaris district.



Figure 1. Map of Marmaris district

Material and methods

We carried out semi-structured ethnobotanical interviews (4) between December 2008 - August 2010 with individuals native to and still residing in the study area. A total of 98 individuals (51 men, 47 women) were interviewed in 13 villages (Adaköy, Bayır, Çamlı, Çetibeli, Hisarönü, Karaca, Orhaniye, Osmaniye, Selimiye, Söğüt, Taşlıca, Turgut and Yeşilbelde). The interviewees ranged in age from 25-92 years. We either transcribed or tape-recorded all interviews and deposited the recordings in ISTE (The Herbarium of the Faculty of Pharmacy of Istanbul University).

Interview questions aimed at understanding traditional uses of plants, including information on local plant names, parts of the plants used. We accompanied interviewees into the field to collect specimens of the plants they referred to. We identified the collected specimens using "Flora of Turkey and the East Aegean Islands" (5, 6, 7) and compared the plants with the specimens deposited in the ISTE. We also deposited the plant materials collected in our study as herbarium samples in ISTE.

Results and discussion

In the study area 80 species belonging to 35 families have edible and miscellaneous uses and among them 68 species are wild and 12 species are cultivated plants. Among these plants, 53 species are used as edible plants (Table 1), 33 species are used for different purposes (Table 2). Ethnobotanical uses of the plants are given under their botanical names, in alphabetical order. In the respective columns are which parts of the plants are used. The last column shows their application. The most-used plant families are the Labiatae (10 species), Compositae and Rosaceae (5 species each), Liliaceae and Leguminosae (4 species each).

In the edible plants, 41 species were used for food; 8 species for tea; 7 species for spice. Most commonly used parts are fruit, leaf and aerial part (Figure 2). Some of the wild plants apparently were collected by villagers for commercial purposes: *Lavandula stoechas*, *Origanum onites*, *Pistacia terebinthus*, *Salvia fruticosa*, *Sideritis leptoclada*, *Sideritis libanotica* and *Thymus cilicicus*. Villagers sold these plants in markets and public bazaars. Spice plants are generally dried before using.

34 edible plants overlap between Marmaris and the neighboring districts of Bodrum (8). In the Table 1, underlined plants are also used as edible in Bodrum district.

In the study area 33 species have miscellaneous uses, these are 9 species as broom/ basketry; 7 species for animal fodder; 4 species as decorative; 2 species as fuel; and 18 species for different purposes.

Some plants are used as food and also miscellaneous purpose. These plants are *Ceratonia siliqua*, *Cistus creticus*, *Myrtus communis* subsp. *communis*, *Papaver rhoeas*, *Pistacia terebinthus* subsp. *palaestina* and *Smilax aspera*.

The people of the study area sometimes use the same name for different plant species with similar morphological features. For example, *Cistus creticus* and *C. salviifolius* are both called ‘pamukluk’ or ‘pamuklu’; *Origanum onites* and *Satureja thymbra* are called ‘kekik’; *Sideritis leptoclada* and *Sideritis libanotica* are both referred to as ‘dağçayı’ or ‘anababakokusu’; and *Malva sylvestris* and *M. nicaeensis* are both called ‘kabaot’ or ‘ebegümeçi’.

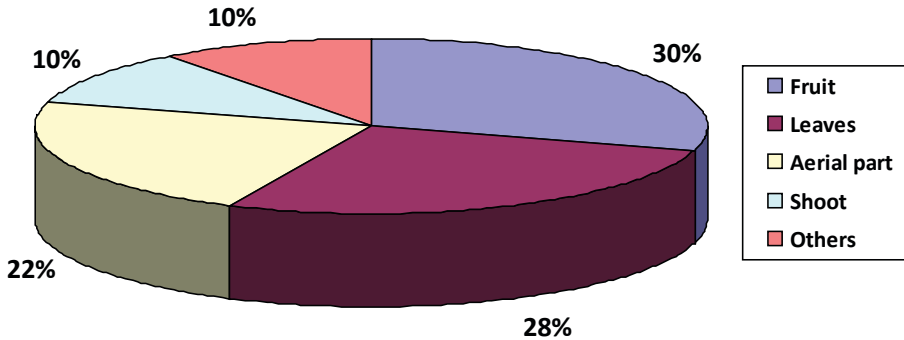


Figure 2. The used part of edible plants

Table 1. Edible plants in Marmaris (Underlined plants are also used as edible in Bodrum district)

Botanical name / Family/ (Voucher number)	Vernacular names	Plant part used	Uses
<u>Allium subhirsutum</u> L. / Liliaceae / (ISTE 91430)	Körmen, Köremen	Young leaf, freshy bulb	Cooked for pastry
<u>Amygdalus communis</u> L. / Rosaceae/ (BG 320)	Badem	Seed	Eaten fresh or dried
<u>Anethum graveolens</u> L. / Umbelliferae/ (ISTE 91420)	Dereotu	Leaf	Spice
<u>Arbutus unedo</u> L. / Ericaceae/ (ISTE 91379)	Dağ çileği, ayıçileği, kocayemiş, çilek	Fruit	Eaten fresh or as jam
<u>Asparagus acutifolius</u> L. / Liliaceae / (ISTE 85888)	Tilkişen, tilki, gıcık	Shoot	Roasted and eaten as a meal
<u>Capparis spinosa</u> L. var. <u>spinosa</u> / Capparaceae / (ISTE 91391)	Gebere	Bud, leaf	As pickled
<u>Celtis australis</u> L. / Ulmaceae / (ISTE 91415)	Çıtlık	Fruit	Eaten fresh
<u>Ceratonia siliqua</u> L. / Leguminosae / (ISTE 91427)	Harnup, keçiboynuzu, harıp, harup	Fruit	Eaten
<u>Chrysanthemum coronarium</u> L. / Compositae / (ISTE 91385)	Gömeç, sarı papatya	Leaf	Boiled and eaten as a meal
<u>Cistus creticus</u> L. / Cistaceae/ (ISTE 91389)	Pamukluk, pamuklu	Leaf	Herbal tea
<u>Citrus limon</u> (L.) Burm. fil / Rutaceae / (BG 324)	Pamukluk, pamuklu	Fruit	Eaten fresh
<u>Citrus sinensis</u> (L.) Osbeck / Rutaceae / (BG 325)	Portakal	Fruit	Eaten fresh
<u>Crataegus aronia</u> (L.) Bosc. ex DC. var. <u>aronia</u> / Rosaceae / (ISTE 91411)	Ahlat, alıç	Fruit	Eaten fresh
<u>Cucurbita pepo</u> L. / Cucurbitaceae/ (BG 312)	Sarı kabak, kabak	Flower	Wrapped around a stuffing mixture made from rice and cooked
<u>Erodium acaule</u> (L.) Becherer et Thell. / Geraniaceae/ (ISTE 91372)	İğnelik	Leafy shoot	Cooked as a meal
<u>Erodium malacoides</u> (L.) L'Herit./ Geraniaceae/ (ISTE 91371)	İğnelik	Leafy shoot	Cooked as a meal
<u>Erodium moschatum</u> L. / Geraniaceae/ (ISTE 91373)	İğnelik	Leafy shoot	Cooked as a meal

<i>Ficus carica</i> L. subsp. <i>carica</i> / Moraceae/ (BG 318)	İncir	Fruit	Eaten
<i>Juglans regia</i> L. / Juglandaceae/ (BG 316)	Ceviz	Fruit	Eaten dried
<i>Laurus nobilis</i> L. / Lauraceae/ (ISTE 91422)	Defne, tenel, tehnel	Leaf	Spice
<i>Lavandula stoechas</i> L. subsp. <i>stoechas</i> / Labiatae/ (ISTE 91436)	Karahan, karabaş, karabaşotu	Aerial part	Herbal tea
<i>Leontodon tuberosus</i> L. / Compositae/ (ISTE 91382)	Radika, hindibağ	Fresh leaf	Cooked as a meal
<i>Malva nicaeensis</i> All. / Malvaceae/ (ISTE 91432)	Ebegümeçi, kabaot, deli ebegümeçi	Aerial part	Cooked as a meal
<i>Malva sylvestris</i> L. / Malvaceae/ (ISTE 91433)	Ebegümeçi, kabaot, uslu ebegümeçi	Aerial part	Cooked as a meal
<i>Mentha spicata</i> L. subsp. <i>spicata</i> / Labiatae	Nane	Leaf	Spice
<i>Morus nigra</i> L. / Moraceae/ (BG 89)	Dut, karadut	Fruit/ leaf	Eaten fresh/ wrapped around a stuffing mixture made from rice and cooked
<i>Myrtus communis</i> L. subsp. <i>communis</i> / Myrtaceae/ (ISTE 85887)	Mersin, siyah mersin	Fruit	Eaten fresh
<i>Oenanthe pimpinelloides</i> L. / Umbelliferae/ (BG 252)	Kazayak	Leaf	Cooked as a meal
<i>Olea europaea</i> L. var. <i>europaea</i> / Oleaceae/ (ISTE 91396)	Zeytin	Fruit	Eaten
<i>Opuntia ficus-indica</i> (L.) Miller / Cactaceae/ (BG 311)	Mısır inciri	Fruit	Eaten fresh
<i>Origanum onites</i> L. / Labiatae/ (ISTE 91437)	Kekik, eşek kekiği, beyaz kekik, delikekik, karakekik	Aerial part	Herbal tea, spice
<i>Oxalis pes-caprae</i> L. / Oxalidaceae/ (ISTE 91399)	Ekşi yonca	Aerial part	Eaten as a salad
<i>Papaver rhoeas</i> L. / Papaveraceae/ (ISTE 91400)	Gelincik, kamacık, kağma	Aerial part	Cooked as a meal
<i>Pistacia terebinthus</i> L. subsp. <i>palaestina</i> (Boiss.) Engler / Anacardiaceae/ (ISTE 91394)	Meneviş, çitlenbik, melengiç	Fruit/ leaf	Eaten/ boiled and eaten as a meal
<i>Punica granatum</i> L. / Punicaceae/ (ISTE 91403)	Nar	Fruit	Eaten fresh
<i>Pyrus amygdaliformis</i> Vill. var. <i>amygdaliformis</i> / Rosaceae/ (ISTE 91413)	Yaban armudu	Fruit	Eaten fresh

<i>Quercus aucheri</i> Jaub. et Spach / Fagaceae/ (ISTE 91375)	Boz pıynar, pelit, pıynar	Fruit	Roasted like chestnut
<i>Raphanus raphanistrum</i> L. / Cruciferae/ (ISTE 91380)	Turpotu	Aerial part	Boiled and eaten as a meal
<i>Romulea tempskyana</i> Freyn. / Iridaceae/ (ISTE 91455)	Çimencik	Corm	After bark is peeled, eaten raw
<i>Rosmarinus officinalis</i> L. / Labiatae/ (BG 30)	Biberiye	Leaf	Spice
<i>Rubus sanctus</i> Schreber / Rosaceae/ (ISTE 91410)	Börtlen, böğürtlen	Fruit	Eaten fresh
<i>Rumex pulcher</i> L. / Polygonaceae/ (ISTE 91401)	Labada	Fresh leaf	Cooked as a meal
<i>Rumex tuberosus</i> L. subsp. <i>creticus</i> (Boiss.) Rech./ Polygonaceae/ (ISTE 91402)	Kuzukulağı	Fresh leaf	Eaten as a salad
<i>Salvia fruticosa</i> Miller / Labiatae/ (ISTE 91439)	Adaçayı, almakeyik, almageyik	Leaf	Herbal tea
<i>Satureja thymbra</i> L. / Labiatae/ (ISTE 91446)	Kekik, peynir kekiği, karakekik	Aerial part	Herbal tea, spice
<i>Scaligeria napiformis</i> (Sprengel) Grande / Umbelliferae/ (ISTE 91419)	Kazayak, kazıyak, kaplunbağ boncuğu	Aerial part	Cooked as a meal
<i>Senecio vernalis</i> Waldst. et Kit. / Compositae/ (ISTE 91386)	Meşe çiçeği, ümülük, ümbülük çiçeği	Fresh leaf, root	Cooked as a meal
<i>Sideritis leptoclada</i> O. Schwarz et P. H. Davis / Labiatae/ (ISTE 91440)	Kızlan çayı, dağçayı, anababakokusu	Aerial part	Herbal tea
<i>Sideritis libanotica</i> Labill. subsp. <i>linearis</i> (Benth) Bornm. / Labiatae/ (ISTE 91441)	Boz çay, dikençayı, dağçayı, anababakokusu	Aerial part	Herbal tea
<i>Silene vulgaris</i> (Moench) Garcke var. <i>vulgaris</i> / Caryophyllaceae/ (ISTE 91390)	Kışkış	Shoot	Cooked as a meal
<i>Smilax aspera</i> L. / Liliaceae/ (ISTE 91429)	Sılcan, deli sılcan, kara sılcan, sulcan	Shoot	Boiled and eaten as a meal
<i>Thymus cilicicus</i> Boiss. et Bal. / Labiatae/ (ISTE 91444)	Limonkekiği, kılçıkkekiği, peynir kekiği	Aerial part	Herbal tea, spice
<i>Urtica membranacea</i> Poriet / Urticaceae/ (ISTE 91416)	Dalan, dalanca, ısırğan	Aerial part	Cooked as a meal

Table 2. Miscellaneous useful plants in Marmaris

Botanical name / Family/ (Voucher number)	Vernacular names	Plant part used	Uses
<i>Anagyris foetida</i> L. / Leguminosae/ (ISTE 91424)	Miğcik, keçi gevisi	Leaf	Animal food (Goat)
		Flower	To sip the sweet nectar
<i>Anemone coronaria</i> L. / Ranunculaceae/ (ISTE 91405)	Lale, yelotu	Flower	Decorative
<i>Arundo donax</i> L. / Poaceae	Kargı	Stem	Basketry, whistle
<i>Asphodelus aestivus</i> Brot. / Liliaceae/ (ISTE 91431)	Çiğriş ağusu, çiriş, çiğriş ağusu, kiriş, givriş, çivriş	Scapus	As toy
<i>Ceratonia siliqua</i> L. / Leguminosae/ (ISTE 91427)	Harnup, keçiboynuzu, harıp, harup	Fruit	Animal food
<i>Cistus creticus</i> L. / Cistaceae/ (ISTE 91389)	Pamukluk, pamuklu	Flower	Bee plant (pollen or nectar source)
<i>Cistus salviifolius</i> L. / Cistaceae/ (BG 238)	Pamukluk, pamuklu	Leaf	Animal food
		Flower	To sip the sweet nectar
<i>Clematis cirrhosa</i> L. / Ranunculaceae/ (ISTE 91407)	Yosun	Young branch	Basketry
<i>Convolvulus althaeoides</i> L. / Convolvulaceae/ (BG 15)	Yaban sarmaşığı, sarmaşık otu	Leafy stem	Animal food
<i>Daphne gnidioides</i> Jaub. et Spach / Thymelaeaceae/ (BG 149)	-	Branch	Broom
<i>Erica manipuliflora</i> Salisb. / Ericaceae/ (ISTE 91378)	Piren, funda	Flower	Bee plant (pollen or nectar source)
<i>Helichrysum orientale</i> (L.) DC. / Compositae / (ISTE 91381)	Yoğurt çiçeği, sarısolmaz, balkaymağı, bozağan çiçeği, sarıçiçek, bohçaçiçeği	Flower	Decorative, against scorpius
<i>Hypericum triquetrifolium</i> Turra / Guttiferae/ (ISTE 91365)	Kızılıcırık, püren	Aerial part	Cleaning the body of animals
		Leafy stem	Broom
<i>Inula viscosa</i> (L.) Aiton / Compositae/ (ISTE 91384)	Sarı ot	Leaf	Cleaning the body of animals
		Fruit	Water bottle
<i>Lagenaria siceraria</i> (Mol.) Standl. / Cucurbitaceae/ (BG 313)	Su kabağı	Fruit	Water bottle
<i>Liquidambar orientalis</i> Miller. / Hamamelidaceae/ (ISTE 91369)	Günlük, sığala, günnük	Cortex	Incense
<i>Myrtus communis</i> L. subsp. <i>communis</i> / Myrtaceae/ (ISTE 85887)	Mersin, siyah mersin	Leaf	Used in the death ceremony

<i>Narcissus tazetta</i> L. / Amarylidaceae/ (ISTE 91428)	Nergis, fatma çiçeği	Flower	Decorative
<i>Nerium oleander</i> L. / Apocynaceae/ (ISTE 91393)	Ay ağacı, zakkum	Leaf	Broom
<i>Osyris alba</i> L. / Santalaceae/ (ISTE 91414)	Dağ süpürgesi	Branch	Broom
<i>Paliurus spina-christi</i> Miller. / Rhamnaceae/ (ISTE 91409)	Çaltı, çaltı diken, çatla	Branch	As agricultural tool
<i>Papaver rhoeas</i> L. / Papaveraceae/ (ISTE 91400)	Gelincik, kamacık, kağma	Flower	Decorative
<i>Phlomis lycia</i> D. Don / Labiatae/ (ISTE 91442)	Çalba, kızıl çalba, tüylü çalba	Aerial part	Washing the dishes
<i>Pinus brutia</i> Ten. / Pinaceae/ (BG 176)	Çam	Cortex	Toy, whistle
<i>Pistacia lentiscus</i> L. / Anacardiaceae/ (ISTE 91456)	Dat, işkonoz	Seed	Animal food (Bird)
<i>Pistacia terebinthus</i> L. subsp. <i>palaestina</i> (Boiss.) Engler / Anacardiaceae/ (ISTE 91394)	Meneviş, çitlenbik, melengiç	Resin	Wax
<i>Quercus coccifera</i> L. / Fagaceae/ (ISTE 91376)	Kızıl pıynar, pıynar	Fruit	Fuel
<i>Sarcopoterium spinosum</i> (L.) Spach / Rosaceae/ (BG 175)	Çeti	Aerial part	Fuel
<i>Smilax aspera</i> L. / Liliaceae/ (ISTE 91429)	Sılcan, deli sılcan, kara sılcan, sulcan	Fruit	Animal food (Bird)
<i>Spartium junceum</i> L. / Leguminosae/ (ISTE 91425)	Süpürgelik, söğsük, gevegen, kovalık, çalgılık	Stem	Broom
<i>Thymelaea tartonraira</i> (L.) All. subsp. <i>argentea</i> (Sm.) Holmboe var. <i>angustifolia</i> (d'Urv.) Meissner / Thymelaeaceae / (ISTE 91454)	Ezeltere	Branch	Broom
<i>Vicia villosa</i> Roth subsp. <i>eriocarpa</i> (Hausskn.) P. W. Ball / Leguminosae/ (ISTE 91423)	Bağla, efek	Aerial part	Animal food
<i>Vitex agnus-castus</i> L. / Verbenaceae/ (ISTE 91421)	Hayıt	Branch	Basketry

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