

# Use of *Thymbra* Species Spreading in the Flora of Turkey for Medicinal Purposes

**Cenk Pasa\***

Departments of Plant and Animal Production, Balikesir University, Turkey



**\*Corresponding author:** Cenk Pasa, Balikesir University, Altinoluk Vocational School, Departments of Plant and Animal Production, Medicinal and Aromatical Plant Programme, Altinoluk, Edremit, Balikesir, Turkey

**Submission:** 📅 December 13, 2021

**Published:** 📅 January 21, 2022

Volume 9 - Issue 4

**How to cite this article:** Cenk Pasa\*. Use of *Thymbra* Species Spreading in the Flora of Turkey for Medicinal Purposes. Res Med Eng Sci. 9(4). RMES.000718. 2022. DOI: [10.31031/RMES.2022.09.000718](https://doi.org/10.31031/RMES.2022.09.000718)

**Copyright@** Cenk Pasa\*, This article is distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use and redistribution provided that the original author and source are credited.

## Abstract

In terms of richness of plant species, Turkey has an important position in the world. It contains about 9,000 plant species and 11,500 taxa. Moreover, more than 1,000 plant species are used as medicinal and aromatic plants in our country. Medicinal plants are mostly evaluated by gathering from nature. *Lamiaceae* family covers many well-known and economically important medicinal types such as mint, sage, balm, thyme, lavender, basil. These plants, with wide adaptation limits, are well adapted to temperate and tropical regions. Although it is found in the natural flora of almost every region in our country, the Aegean and Mediterranean regions have an important position in terms of endemic species of the family. Although there are many aromatic plant species belonging to the family *Lamiaceae* described as thyme in Turkey, especially species containing the essential oil carvacrol and thymol compounds are considered as "thyme".

Recent studies have shown that these plants can be evaluated in many ways both in agriculture and various industrial fields. Essential oils obtained from plants are used in the supply of raw materials in a wide range of industries (paint, toothpaste, chewing gum, etc.), especially in medicine and pharmacy, chemistry, food, cosmetics and agricultural struggle.

There are *Thymbra spicata* L. (zahter), *Thymbra capitata* (L.) Cav. (acı kekik) and *Thymbra sintonisii* Bornm. & Azn. (ak zahter) species, and *Thymbra spicata* subsp. *spicata* L. (zahter), *Thymbra spicata* subsp. *intricata* (P.H.Davis) R. Morales (güvey kekiği), *Thymbra sintonisii* subsp. *isaurica* P.H.Davis (eşek zahteri) and *Thymbra sintonisii* subsp. *sintonisii* Bornm.&Azn. (ak zahter) taxa of these genus in Turkey. With this study, the medicinal and aromatic use of *Thymbra* taxa, spreading in the flora of Turkey, has been investigated in detail based on the literature.

**Keywords:** *Thymbra*, *Lamiaceae*, Zahter, Carvacrol

## Introduction

### *Thymbra spicata* L

*Thymbra spicata* L. species has been widely used by the public as both spice and medicine since ancient times [1,2]. *T. spicata* var. *spicata* dried leaves and flowers are used as spice and herbal tea (zahter) in the Southeastern Anatolia Region, especially in Kilis, Hatay and Gaziantep provinces, and its fresh shoots are used as salad material. It is also used in winter by making brine with lemon juice or preserving in olive oil. The mixture prepared with various nuts (chickpeas, pineapple, wheat, watermelon-melon seeds, peanuts) and other spices (cumin, coriander, fennel, anise, sesame, sumac, dried vermicelli, etc.) is known as 'breakfast zahter' and is consumed with olive oil for breakfast [1,3-6]. It is stated that *T. spicata* var. *spicata* is also used in the production of various foods such as meat products, drinks, canned food, tomato paste sauces and sausage [1]. The use of *T. spicata* as a folk medicine and for medical purposes is used in the traditional medicine systems of Turks, Greeks, Egyptians and Romans in the treatment of asthma and bronchitis [7], and today it is used for colds, asthma, bronchitis, cough, colic. It has been reported that it is used as herbal tea in diarrhea and diarrhea [8,9]. The tea of the plant, which is stated to have antiseptic and stimulating effects, is used by the people living in Kilis and Gaziantep as a cholesterol-lowering and digestive aid [3,6]. Many scientific studies have been conducted to date on *T. spicata*, which is generally used as a spice and herbal tea, both in Turkey and in other countries where the plant grows, and as a result of these studies, antimicrobial, antioxidant, cholesterol-lowering, liver protective effects of

plant essential oil and different extracts have been shown. In a study conducted in mice fed a high-fat diet using diethyl ether and ethyl acetate extracts of the aerial part of *spicata* and the remaining aqueous extract, it was determined that the extracts had different levels of antihypercholesterolemic, antioxidant and liver protective effects [10-14].

### ***Thymbra sintenisii* Bornm. & Azn**

*Thymbra sintenisii* Bornm. & Azn. species is popularly known as “ak zahter” among the people. It is one of the species of the *Lamiaceae* family, used for medicinal purposes, belonging to the Mediterranean basin. It has been used in folk medicine since ancient times and is also used as a spice and condiment in herbal teas and meals [15]. This species is used for its antiparasitic, antiseptic and effect on blood circulation. In Southeastern Anatolia, the dried leaves and bunches of the plant are used for its antiseptic and stimulating tea effect. As a result of some studies, it has been shown to have antioxidant, antibacterial, insecticide, anthelmintic, cholesterol-lowering, analgesic, antifungal, liver protective and anti-carcinogenic properties [10,12-14].

### ***Thymbra sintenisii* subsp. *isaurica* P.H.Davis**

*T. sintenisii* subsp. *isaurica* is known as “eşek zahteri” in our country. It is an endemic subspecies that grows in Alanya, Antalya, Turkey. In studies, it has been observed that the essential oil of this species has antimicrobial activity [16].

### ***Thymbra capitata* (L.) Cav**

*Thymbra capitata* (L.) Cav. the species has been used for many years to treat all kinds of diseases. It is a species that spreads in a wide spectrum in the Mediterranean region. Its local name is known as “acı kekik” and it is used as herbal tea, condiment and food additive. The oil obtained from the plant is also used by adding to salads, soups, ice creams and pastries. It is used in folk medicine for colic, ulcer and hypertension [17,18]. It also has the feature of removing warts, diuretic and stimulating menstrual flow. When the leaves and flowers of the plant are evaluated as an infusion, it has been used against diarrhea, respiratory and digestive system disorders. In addition, its leaves have antiseptic and cleansing properties. *Thymbra capitata* (L) species is mainly known for its antibacterial, antioxidant, antimycotic and spasmolytic activities. It is widely used in the cosmetics, pharmaceutical and food industries due to its terpene and phenol content [19-22].

## **Results**

Tea or essential oils of the species *Thymbra spicata* is used for analgesis effect on stomach pain and is also used for its antiseptic and antiparasitic effects. The infusion prepared from aboveground parts of the plant by the local people living in Ida Mountains is consumed as tea both in order to balance blood sugar and against the common cold. It is also known that *Thymbra spicata* essential oil has the effect of increasing bile acids. *Thymbra capitata* is used as a preservative in some foodstuffs due to its antimicrobial and

antioxidant properties. *Thymbra sintenisii* species are used as herbal tea and antiseptic.

## **References**

1. Kızıl S, Tonçer Ö (2003) The effect of different nitrogen doses on some agronomic and quality traits of blackhead thyme (*Thymbra spicata* var. *spicata* L.) Collected from Flora, Journal of Anadolu Aegean Agricultural Research Institute 13(1): 132-141.
2. Akın M, Oğuz D, Saraçoğlu HT (2010) Antibacterial activity of essential oil from *Thymbra spicata* var. *spicata* L. and *Teucrium polium* (Stapf Brig.), International Journal of Pharmaceutical and Applied Sciences 1(1): 55-58.
3. Baytop T (1999) Herbal treatment in Turkey-past and present, Nobel Medicine Bookstores, Supplemented II Print, Istanbul.
4. Kılıç T (2006) Analysis of essential oil composition of *Thymbra spicata* var. *spicata*: Antifungal, Antibacterial and Antimycobacterial Activities. Publisher of the Journal for Natural Research 61(5-6): 324-328.
5. Şekeroğlu N (2008) Plants used as folk medicine and spice in kilis and its region, Zeytindalı, kilis cultural association kilis branch publication 6(51): 11.
6. Şekeroğlu N (2010) Forgotten tastes, My sacrifice zahter, TAZAR Culture, Art and life magazine.
7. Daneshvar S, Khawar KM, Ozcan S (2009) *In vitro* micropropagation of garden thyme (*Thymbra spicata* L. var. *spicata* L.) collected from southeastern Turkey using cotyledon node, Biotechnology & Biotechnology Equipment 23: 1319-1321.
8. Dirican E, Türkez H, Toğar B (2012) Modulatory effects of *Thymbra spicata* L. different extracts against the mercury induced genotoxicity in human lymphocytes *In vitro*. Cytotechnology 64: 181-186.
9. Kaya DA, Arslan M, İnan M, Başkaya S (2013) Diurnal changes on content and composition of *Thymbra spicata* L. Essential Oil, Research Journal of Biological Sciences 8(1): 6-10.
10. Akkol EK, Avcı G, Küçük Kurt İ, Keleş H, Tamer U, et al. (2009) Cholesterol-reducer, antioxidant and liver protective effects of *Thymbra spicata* L. var. *Spicata*. Journal of Ethnopharmacology 126: 314-319.
11. [https://www.tarimorman.gov.tr/GKGM/Belgeler/DB\\_Risk\\_Degerlendirme/BilimselGorus/Thymbra\\_spicata.pdf](https://www.tarimorman.gov.tr/GKGM/Belgeler/DB_Risk_Degerlendirme/BilimselGorus/Thymbra_spicata.pdf)
12. Fakılı Ö, Özgüven M (2012) Inventory of researches on thyme (*Thymus vulgaris* L) in Turkey. CU Science and Engineering Bil Journal 27: 54-66.
13. Koparal AT, Zeytinoğlu M (2003) Effects of carvacrol on a human Non-Small Cell Lung Cancer (NSCLC) cell line A549. Cytotechnolog 43(1-3): 149-154.
14. Prasanth RV, Ravi VK, Varsha P, Satyan S (2014) Review on thymus *vulgaris* traditional uses and pharmacological properties. Med Aromat Plants 3: 164-167.
15. Gür T, Karahan F, Baş Z and Türkoğlu V (2020) The determination of inhibition effect of extracts of *thymbra sintenisii* bornm. et aznav. subsp on angiotensin converting enzyme. Journal of the Institute of Science and Technology 10(3): 1848-1856.
16. Hepokur C, Mısırs S, Çiçek M, Yaylım İ, Zeybek U (2020) Evaluation of antioxidant and anticancer effects of *thymbra sintenisii* subsp. *isaurica* extract. J Can Res Ther 16(4): 822-827.
17. Bouraoui O (2000) Ph. D Thesis, The University of Medicine of Sousse, Tunisia.
18. Ali IBEH, Guetat A, Boussaiid M (2012) Variation of volatiles in tunisian populations of *Thymbra capitata* (L.) CAV. (Lamiaceae). Chemistry & Biodiversity 9(7): 1272-1285.

19. Bounatirou S, Smiti S, Miguel MG, Faleiro L, Rejeb MN, et al. (2007) Chemical composition, antioxidant and antibacterial activities of the essential oils isolated from Tunisian *Thymus capitatus* Hoff et Link. *Food Chem* 105(1): 146.
20. Giordani R, Hadeif Y, Kaloustian J (2008) Compositions and antifungal activities of essential oils of some Algerian aromatic plants. *Fitoterapia* 79(3): 199-203.
21. Hazzit M, Baaliouamer A, Verissimo AR, Faleiro ML, Miguel MG (2009) Chemical composition and biological activities of Algerian *Thymus* oils. *Food Chem* 116: 714.
22. Stahl B, Saez F (2002) Essential oil chemistry of the genus "Thymus-a global view", in "Thyme: the Genus *Thymus*", Eds. Francis, London, UK, p. 75.

For possible submissions Click below:

[Submit Article](#)