

# **Egyptian Herbal Monograph**

## **Volume 3**

### **Medicinal Plants used in Egypt**

**Egyptian Drug Authority (EDA)**

**2024**



# Egyptian Herbal Monograph

## Medicinal Plants Used in Egypt

***Thymus vulgaris* L.**

زعتر

### 1. Names & Synonyms

***Thymus vulgaris* L. (1)**

**Syns.:** *Origanum thymus* Kuntze, *Thymus collinus* Salisb.

**Family:** Lamiaceae (Labiatae).

**Arabic:** Za'ater زعتر

**English name:** English Thyme, Garden Thyme.

***Thymus zygis* L. (2)**

**Syns.:** *Origanum zygis* (L.) Kuntze, *Thymus angustifolius* Salisb.

**Family:** Lamiaceae (Labiatae).

**Arabic:** Za'ater زعتر

**English name:** Spanish Thyme.

### 2. Parts used for medicinal purpose

Dried and fresh herb (3, 4).

### 3. Major chemical constituents

- **Essential oil:** the main components are thymol, carvacrol, *p*-cymene,  $\alpha$  and  $\beta$ -terpinene, linalool, terpinen-4-ol, borneol, 1,8- cineole,  $\alpha$ -thujene,  $\alpha$ -pinene, and caryophyllene (4).
- **Flavonoids:** apigenin, narigenin, kaempferol, and luteolin (and its glycosides) (5).
- **Phenolic acids:** salvianolic, rosmarinic, cinnamic, ferulic, caffeic and gallic acids (5).
- **Others:** monoterpene glycosides.

### 4. Medicinal Uses (Indications)

- A. Cough associated with cold (4,10).
- B. Symptoms of bronchitis, whooping cough and catarrh of the upper respiratory tract (6-8,10).
- C. Indigestion, flatulence, dyspepsia and colic (carminative) (9).
- D. Acne (11,12).
- E. Topically for warts and inflamed swellings (13).

## 5. Herbal preparations correlated to medicinal use

### 1. Comminuted herbal substance as infusion

1.1 Comminuted herbal substance (1-2 g) in a cup of 150 ml of boiling water (4).  
One teaspoonful of the comminuted herbal substance is equivalent to 1.4 g drug (8).

1.2 Topical compresses: using a 5% infusion (8).

### 2. Extracts (4):

#### 2.1 Liquid extract

- a) Extraction solvent: ammonia solution 10% (m/m), glycerol 85% (m/m), ethanol 90% (V/V), water (1:20:70:109).
- b) Extraction solvent: water (of fresh herb and often referred as expressed juice).
- c) Extraction solvent: ethanol 24% (V/V).

#### 2.2 Dry extract

- d) Extraction solvent: ethanol 70%.
- e) Extraction solvent: ethanol 96%.
- f) Extraction solvent: water.

#### 2.3 Soft extract

- g) Extraction solvent: ethanol 25% - 30% (V/V).

#### 2.4 Tincture

- h) Tincture (1:10), extraction solvent: ethanol 70% (V/V).
- i) Tincture (1:5), extraction solvent: ethanol 70% (V/V).

### 3. Thyme oil

Herbal preparations (2-3) are in pharmaceutical dosage forms. The pharmaceutical form should be described by the pharmacopoeia full standard term.

## 6. Posology and method of administration correlated to medicinal use

### General Daily Dosage (8)

The recommended daily dose is 10 g drug (with 0.03% phenols, calculated as thymol).

#### Preparation 1

##### Indications A, B, C and E

**Preparation 1.1.** Oral Herbal tea: 1-2 g, 3-4 times daily (4).

**Preparation 1.2.** Topical: 5% infusion, 3 times daily (8).



**Method of administration:** Oral and topical use.

**Preparation 2 (4)**

**Indications A, B, C and E**

**Preparation 2.1.**

**- Adolescents, adults and elderly**

- a) Single dose 1-4 g, 1-7 times daily, maximum daily dose 14 g.
- b) Single dose 10 ml, 3-4 times daily.
- c) Single dose: 1-2 ml, 3-4 times daily.

**- Children between 4 and 12 years of age**

- a) Single dose 0.5-0.9 ml, 3-5 times daily
- b) Single dose 7-10 ml, 2-3 times daily

**Preparation 2.2.**

**- Adolescents, adults and elderly**

- d) Single dose 75-200 mg, 3 times daily.
- e) Single dose 135 mg, 1-3 times daily.
- f) Single dose 100 – 200 mg, 3-4 times daily.

**Preparation 2.3.**

**- Adolescents, adults and elderly**

- g) Single dose 50 mg, 6 times daily

**Preparation 2.4.**

**- Adolescents, adults and elderly**

- h) Single dose 40 drops, 3 times daily.
- i) Single dose 2-6 ml, 3 times daily.

**Method of administration:** Oral use.

**Preparation 3 (8,10)**

**Indication A**

**1. Oral**

**Adults and elderly:**

Single dose: 0.2-0.25 ml, 3-5 times daily  
Daily dose: 0.6-1.25 ml

**2. Topical use**

**2.1 Cutaneous use: Adults and elderly:** in liquid and semi-solid dosage forms in concentrations up to 10%; apply up to 3 times daily.

**2.2 Bath additive:**

**Adolescents, Adults and elderly:** 0.007-0.025 g per litre.

**Children 6-12 years:** 0.0035-0.017 g per litre.



**Children 3-6 years:** 0.0017-0.0082 g per litre.

One bath every day or every second day (10).

#### **Indication D**

**Topical use (11-12):** 5% Diluted oil is applied to the inflamed area.

**Method of administration:** Oral and topical use.

### **7. Contraindications**

- Hypersensitivity to active substances and to other plants of the same family.
- **Thyme oil** as bath additive full hot baths is contraindicated in case of open wounds, large skin injuries, acute skin diseases, high fever, severe infections, severe circulatory disturbances and cardiac insufficiency (10).

### **8. Special warnings and precautions for use**

- If the symptoms worsen or persist longer than 1 week during the use of the medicinal product, a doctor or a pharmacist should be consulted.
- If dyspnea, fever or purulent sputum occurs, a doctor or a pharmacist should be consulted (4-10).
- **Herbal preparations (a & b):**  
The use in children under 4 years of age is not recommended without medical supervision (4).
- **Herbal preparations (c, d, e, f, g, h and i):**  
The use in children under 12 years of age has not been established (4).
- Although thyme oil has cytotoxic properties in high concentrations and may cause intestinal cell damage when administered orally, no toxicity has been reported at commonly used doses, and it can be considered as a safe drug (14).
- Like other essential oils, thyme oil should not be applied to the face particularly in the nasal area of babies and infants under the age of two years because of the risk of a laryngospasm (10).
- The use of thyme oil in children and adolescents under 18 years of age is not recommended without medical supervision (10).
- The use of thyme oil as bath additive in children under 3 years of age is not recommended without medical supervision (10).
- In cases of hypertension, a full bath should be used with caution (10).

## 9. Interactions with other medicinal products and other forms of interaction

None reported (4).

## 10. Fertility, pregnancy and lactation

- Safety during pregnancy and lactation has not been established. In the absence of sufficient data, the use during pregnancy and lactation is not recommended (4,9,15).
- Thyme oil is not recommended in pregnancy (16).
- No fertility data available (4).

## 11. Effects on ability to drive and use machines (4)

No studies on the effect on the ability to drive and use machines have been performed.

## 12. Undesirable effects

- If adverse reactions occur, a doctor or a pharmacist should be consulted.
- **Internally:** Gastric disorders may occur (4).
- The thyme oil can cause nausea and vomiting, headache, dizziness, convulsions, cardiac or respiratory arrest if taken internally (Newell et al 1996). As such, the crude herb is considered far safer (16).
- **Topically:** Thyme oil is possibly safe when applied to the skin, but in some people can cause skin irritation (7).
- Contact dermatitis reactions have been reported with topical use (16).

## 13. Overdose

No case of overdose has been reported (4).

## 14. Relevant biological activities

Not required as per Egyptian guidelines for registration of herbal medicines.

## 15. Additional Information

-

## 16. Date of compilation/last revision

13/08/2023.

## References

1	<a href="https://www.gbif.org/species/5341442">https://www.gbif.org/species/5341442</a>
2	<a href="https://www.gbif.org/species/7793938">https://www.gbif.org/species/7793938</a>
3	WHO monographs on selected medicinal plants (2007). Monographs on selected medicinal plants, 3, 259-266
4	Community Herbal Monograph on <i>Thymus vulgaris</i> L. and <i>Thymus zygis</i> L., Herba. EMA/HMPC/342332/2013. Committee on Herbal Medicinal Products (HMPC).
5	Sarfaraz, D., Rahimmalek, M. and Saeidi, G. (2021). Polyphenolic and molecular variation in <i>Thymus</i> species using HPLC and SRAP analyses. <i>Sci. Rep.</i> , <b>11</b> , 5019.
6	Blumenthal, M. (1998). The Complete German Commission E Monographs. Austin, Texas: American Botanical Council.
7	<a href="https://www.rxlist.com/thyme/supplements.htm">https://www.rxlist.com/thyme/supplements.htm</a>
8	PDR for Herbal Medicines (2002). Montvale, NJ: Medical Economics Company, 2 <sup>nd</sup> ed., ISBN 1-56363-361-2.
9	<a href="http://webprod.hc-sc.gc.ca/nhp/nd-bdipsn/monoReq.do?id=172">http://webprod.hc-sc.gc.ca/nhp/nd-bdipsn/monoReq.do?id=172</a>
10	European Union Herbal Monograph on <i>Thymus vulgaris</i> L., <i>Thymus zygis</i> L., <i>Aetheroleum</i> . EMA/HMPC/59032/2017. Committee on Herbal Medicinal Products (HMPC).
11	<a href="https://www.healthline.com/health/thyme-oil#benefits-uses">https://www.healthline.com/health/thyme-oil#benefits-uses</a>
12	Chevallier, A. (1996). The Encyclopedia of Medicinal Plants. DK Pub., ISBN: 0789410672, 9780789410672.
13	Fisher, C. and Painter G. (1996). Materia Medica for the Southern Hemisphere. Auckland: Fisher-Painter Publishers.
14	Kowalczyk, A., Przychodna, M., Sopata, S., Bodalska, A. and Fecka, I. (2020). Thymol and thyme essential oil- New insights into selected therapeutic applications. <i>Molecules</i> , <b>9</b> , 25(18), 4125. doi: 10.3390/molecules25184125.
15	Skidmore-Roth, L. Mosby's Handbook of Herbs and Natural Supplements (2010). 4 <sup>th</sup> ed., ISBN: 978-0-323-05741-7.
16	Braun, L. and Cohen, M. (2014). Herbs and Natural Supplements, an Evidence-Based Guide. 3 <sup>rd</sup> ed. ISBN: 978 0 7295 3910 4.