Egyptian Herbal Monograph

Volume 3

Herbal Formulations Used in Egypt

Egyptian Drug Authority (EDA)

2026

Egyptian Herbal Monograph

Herbal Formulations Used in Egypt

Fennel oil, Guava, Thyme, Tilia **زيت الشمر / جوافة / زعتر / تيليو**

1. Names & Synonyms

Fennel (1)

***Foeniculum vulgare* Mill.**
Family: Apiaceae (Umbelliferae).
Syns: *Anethum foeniculum* Clairv., *A. foeniculum* L., *A. rupestre* Salisb., *Feniculum commune* Bubani., *F. azoricum* Mill., *F. capillaceum* Gilib., *F. dulce* DC., *F. foeniculum* L. H. Karst., *F. officinale* All., *F. panmorium*DC., *F. piperitum* DC., *F. sativum* Bertol., *Ligusticum divaricatum* Hoffmannsegg et Link, L., *Foeniculum* Crantz., *Meum foeniculum* L. Spreng., *Ozodia foeniculacea* Wight et Arn., *Selinum foeniculum* L. E.H.L.Krause.
Arabic: Shamar شمر
English: Fennel

Guava (2)

***Psidium guajava* L.**
Family: Myrtaceae.
Syns.: *Psidium aromaticum*, *P. cujavillus* Burm, *P. pomiferum*, *P. pyriferum*, *P. pumilum*.
Arabic: Gawafa جوافة
English: Guava.

Thyme

***Thymus vulgaris* L.** (3)
Syns.: *Origanum thymus* Kuntze, *Thymus collinus* Salisb.
Family: Lamiaceae (Labiatae).
Arabic: Za'ater زعتر
English: English Thyme, Garden Thyme.

***Thymus zygis* L.** (4)
Syns.: *Origanum zygis* (L.) Kuntze, *Thymus angustifolius* Salisb.
Family: Lamiaceae (Labiatae).
Arabic: Za'ater زعتر
English: Spanish Thyme.

Tilia (5,6)

***Tilia cordata* Mill.**
Family: Tiliaceae (Malvaceae).
Arabic: Tilio تيليو
English: Lime flower (7), Linden, Tilia and small leaf linden, small leaf lime (8).

***Tilia platyphyllos* Scop.**
Family: Tiliaceae (Malvaceae)
Arabic: Tilio تيليو
English: Lime flower (7), Linden, Tilia and large-leaf Linden

***Tilia x vulgaris* Heyne**
Naturally-occurring hybrid of *T. cordata* and *T. platyphyllos* Scop.
Family: Tiliaceae (Malvaceae)
Syn: *T. europaea* auct. non L.
Arabic: Tilio تيليو
English: European linden, European lime tree, Linden and Tilia (8).

2. Parts used for medicinal purpose

Fennel oil: Dried ripe fruits (9)
Guava: Dried Leaves (2)
Thyme: Herb (10,11)
Tilia: Flowers (6-8)

3. Major chemical constituents

Fennel oil (12)

trans-anethole (+)-fenchone, estragole (methylchavicol), limonene, *p*-anisaldehyde, *α*-pinene and *α*-phellandrene.

Guava

Phenolic Compounds (13)

- Flavonoids: Quercetin and its glycosides, avicularin, apigenin, guaijaverin, kaempferol, kaempferol-3-arabofuranoside, hyperin, myricetin, rutin, catechin, epicatechin, epigallocatechin gallate and proanthocyanidins.

- Phenolic acids: Gallic acid and caffeic acid.

Essential Oil (14,15)

- *β*-Caryophyllene, 4*α*-selin-7 (11)-enol, *β*-caryophyllene oxide, *α*-selinene, *β*-selinene, *δ*-cadinene, daucol, cubenol, 1,8-cineole (eucalyptol) and aromadendrene.

Others (13)

- Sugars: Sulphated and unsulphated polysaccharides (uronic acid), minerals (calcium, potassium, sulfur, sodium, iron, boron, magnesium, manganese and zinc), vitamins (C and B) and macronutrients (protein and fat).

Thyme

- Essential oil: the main components are thymol, carvacrol, *p*-cymene**,** *α* and *β*-terpinene, linalool, terpinen-4-ol, borneol, 1,8- cineole**,** *α*-thujene, *α*-pinene, and caryophyllene (11).

- Flavonoids: apigenin, narigenin, kaempferol, and luteolin (and its glycosides) (16).

- Phenolic acids: salvianolic, rosmarinic, cinnamic, ferulic, caffeic and gallic acids (16).

- Others: monoterpene glycosides.

Tilia (6)

- Flavonoids: Kaempferol, quercetin, myricetin and their glycosides (mainly Kaempferol-3-*O*-*β*-D-(6″-E-*p*-coumaroyl)-glucopyranoside "tiliroside") and proanthocyanidins (7, 17).

- Phenolic acids: Caffeic, chlorogenic and p-coumaric acids (7, 17).

- Essential oil: Alkanes (mainly tricosane) (18), phenolic alcohols and esters, and terpenes including citral, citronellal, citronellol, eugenol, limonene, nerol, *α*-pinene and terpineol (monoterpenes), and farnesol (sesquiterpene) (7).

- Others: Mucilage, tocopherol (phytosterol) and amino acids (7).

4. Medicinal Uses (Indications)

A) Expectorant in productive cough associated with common cold.

B) Relief of symptoms associated with common cold.

5. Herbal preparations correlated to medicinal use

Combination of fennel oil, guava aqueous extract, thyme liquid extract (Extraction solvent: ammonia solution 10% (m/m) NH_3, glycerol 85%, ethanol 90% (V/V), and purified water), and tilia liquid extract (Extraction solvent: hydroalcoholic (25%)).

Herbal preparations 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

Adolescents and adults:

- Combination of 0.3–0.45 mg of fennel oil, 83.4–125 mg of guava extract, 333.32–500 mg of thyme extract, and 166.66–250 mg of tilia extract, 2 times daily.
- Only when necessary, the dose can be increased by 0.150 mg of fennel oil, 41.700 mg of guava extract, 166.66 mg of thyme extract, and 83.33 mg of tilia extract daily.
- The doctor should be consulted before use.

Duration of use

- Not to be used more than one week and period between doses must not be less than 4 hours.
- If the symptoms persist longer than one week during the use of the medicinal product, a doctor or a pharmacist should be consulted.

Method of administration: Oral use.

7. Contraindications.

- Hypersensitivity to the active substance(s) or to other plants of the same families.

- Patients with known hypersensitivity to Asteraceae (Compositae) should avoid the use of the product because of cross reactivity risk (9).

8. Special warnings and precautions for use

- If the symptoms worsen during the use or if dyspnoea, fever or purulent sputum occurs, a doctor or a pharmacist should be consulted (11, 19).
- Do not exceed the recommended dose or duration of treatment.

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

- **Ciprofloxacin:** The medicinal product may affect the absorption, distribution, and elimination of ciprofloxacin. If the two are used concurrently, their dosages should be separated by at least 2 hours (19).
- If the patient is on other medications, he/she should seek medical advice.

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.
- No fertility data available.

11. Effects on ability to drive and use machines

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

12. Undesirable effects

- Allergic reactions affecting the skin, the respiratory or and gastro-intestinal system may occur (11, 19).
- Gastric disorders may occur (11).
- If adverse reactions occur, a doctor or a pharmacist should be consulted.

13. Overdose

No case of overdose has been reported.

14. Relevant biological activities

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

15. Additional information

-

16. Date of compilation/last revision

27/04/2026.

References

1.	WHO monographs on selected medicinal plants (2007). Monographs on selected medicinal plants, **3**, 136-144.
2.	WHO monographs on selected medicinal plants (2007). Monographs on selected medicinal plants, **4**, 127-139.
3.	https://www.gbif.org/species/5341442
4.	https://www.gbif.org/species/7793938
5.	Assessment Report on *Tilia cordata* Miller, *Tilia platyphyllos* Scop., *Tilia x vulgaris* Heyne or Their Mixtures, Flos (2012). EMA/HMPC/337067/2011. Committee on Herbal Medicinal Products (HMPC)
6.	Barnes, J., Anderson, L. A. and Phillipson, J. D. (2007). Herbal Medicines, 3rd edition. Published by the Pharmaceutical Press. ISBN 978 0 85369 623 0.
7.	Community Herbal Monograph on *Tilia cordata* Miller, *Tilia platyphyllos* Scop., *Tilia x vulgaris* Heyne or Their Mixtures, Flos (2012). EMA/HMPC/337066/2011. Committee on Herbal Medicinal Products (HMPC).
8.	Natural Health Product, Linden, Small Leaf – *Tilia cordata* (2017). Health Canada, http://webprod.hc-sc.gc.ca/nhpid-bdipsn/atReq.do?atid=linden.tilleul.smallleaf.Petitesfeuilles &lang=eng.
9.	European Union Herbal Monograph on *Foeniculum vulgare* Miller subsp. *vulgare* var. *vulgare*, fructus (2024). Committee on Herbal Medicine Products (HMPC).
10.	WHO monographs on selected medicinal plants (2007). Monographs on selected medicinal plants, **3**, 259-266
11.	Community Herbal Monograph on *Thymus vulgaris* L. and *Thymus zygis* L., Herba. EMA/HMPC/342332/2013. Committee on Herbal Medicinal Products (HMPC).
12.	Faudale, M., Viladomat, F., Bastida, J., Poli, F. and Codina, C. (2008). Antioxidant activity and phenolic composition of wild, edible, and medicinal fennel from different Mediterranean countries. *J. Agric. Food Chem.* **56**, 1912–1920.
13.	Kumar, M., Tomar, M., Amarowicz, R., Saurabh, V., Nair, M. S., Maheshwari, C., Sasi, M., Prajapati, U., Hasan, M., Singh, S., Changan, S., Prajapat, R. K, Berwal, M. K. and Satankar, V. (2021). Guava (*Psidium guajava* L.) leaves: Nutritional composition, phytochemical profile, and health-promoting bioactivities. *Foods*, **10**, 752.

14.	Karawya, M. S., Abdel Wahab, S. M., Hifnawy M. S., Azzam S. M. and EL- Gohary H. M. (1999). Essential oil of Egyptian Guajava leaves. Egypt. *J. Pharm. Sci.,* **40**(2), 209-217.
15.	El-Ahmady, S. H, Ashour, M. L. and Wink, M. (2013). Chemical composition and anti-inflammatory activity of the essential oils of *Psidium guajava* fruits and leaves. *The Journal of Essential Oil Research*, **25**(6), 475–481. http://dx.doi.org/10.1080/10412905.2013.796498.
16.	Sarfaraz, D., Rahimmalek, M. and Saeidi, G. (2021). Polyphenolic and molecular variation in *Thymus* species using HPLC and SRAP analyses. *Sci. Rep.,* **11**, 5019.
17.	Evans, W. C., Evans, D., & Trease, G. E. (2009). Trease and Evans Pharmacognosy (16th ed.). Edinburgh; New York: Saunders/Elsevier. ISBN 9780702029332.
18.	Fitsiou, I., Tzakou, O., Hancianu, M. and Poiata, A. (2007). Volatile constituents and antimicrobial activity of *Tilia tomentosa* Moench and *Tilia cordata* Miller oils. *Journal of Essential Oil Research*, **19**, 2, 183-185, DOI: 10.1080/10412905.2007.9699255.
19.	Skidmore-Roth, L. (2010). Mosby's Handbook of Herbs & Natural Supplements. 4th ed. ISBN 9780323057417.