Egyptian Herbal Monograph

Volume 3

Herbal Formulations Used in Egypt

Egyptian Drug Authority (EDA)

2026

Egyptian Herbal Monograph

Medicinal Plants Used in Egypt

Guava, Thyme, Tilia, Fennel, Eucalyptus **جوافة / زعتر/ تليو/ شمر/ كافور**

1. Names & Synonyms

Guava (1)

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

Thyme

***Thymus vulgaris* L.** (2)
Syns.: *Origanum thymus* Kuntze, *Thymus collinus* Salisb.
Family: Lamiaceae (Labiatae).
Arabic: Za'ater زعتر
English name: English Thyme, Garden Thyme.

***Thymus zygis* L.** (3)
Syns.: *Origanum zygis* (L.) Kuntze, *Thymus angustifolius* Salisb.
Family: Lamiaceae (Labiatae).
Arabic: Za'ater زعتر
English name: Spanish Thyme.

Tilia (4,5)

***Tilia cordata* Mill.**
Family: Tiliaceae (Malvaceae).
Arabic: Tilio تيليو

English: Lime flower (6), Linden, Tilia and small leaf linden, small leaf lime (7).

***Tilia platyphyllos* Scop.**
Family: Tiliaceae (Malvaceae)
Arabic: Tilio تيليو
English: Lime flower (6), 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 (7).

Fennel (8)

***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

Eucalyptus (9)

***Eucalyptus globulus* Labill.**

Family*:* Myrtaceae*.*
Syns.: *Eucalyptus maidenii* subsp. globulus (Labill.) J.B.Kirkp.
Arabic name*:* Kafur كافور (10)
English name*:* Eucalyptus (11).

2. Parts used for medicinal purpose

Guava: Dried leaves (1).
Thyme: Dried and fresh herb (12,13).
Tilia: Flowers (6,7,14).
Fennel: Dried ripe fruits (15).
Eucalyptus: Fresh /dried leaves (11,16).

Major chemical constituents

Guava

Phenolic Compounds (17)

- 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 (18,19)

- *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 (17)

- 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 (13).
- **Flavonoids:** apigenin, narigenin, kaempferol, and luteolin (and its glycosides) (20).

- **Phenolic acids**: salvianolic, rosmarinic, cinnamic, ferulic, caffeic and gallic acids (20).
- **Others**: monoterpene glycosides.

Tilia (5)

- **Flavonoids:** Kaempferol, quercetin, myricetin and their glycosides (mainly Kaempferol-3-*O*-*β*-D-(6″-E-*p*-coumaroyl)-glucopyranoside "tiliroside") and proanthocyanidins (6,21).
- **Phenolic acids:** Caffeic, chlorogenic and p-coumaric acids (6,21).
- **Essential oil:** Alkanes (mainly tricosane) (20), phenolic alcohols and esters, and terpenes including citral, citronellal, citronellol, eugenol, limonene, nerol, *α*-pinene and terpineol (monoterpenes), and farnesol (sesquiterpene) (6).
- **Others:** Mucilage, tocopherol (phytosterol) and amino acids (6).

Fennel (22)

- **Essential oil**: *trans*-anethole (+)-fenchone, estragole (methylchavicol), limonene, *p*-anisaldehyde, *α*-pinene and *α*-phellandrene.
- **Phenolic acids**: rosmarinic acid and caffeoylquinic acid derivatives.
- **Flavonoids** :eriodictyol-7-rutinoside, quercetin-3-rutinoside.
- **Others**: triterpenes, smaller terpenes (monoterpenoids, sesquiterpenoids and diterpenoids) and reducing sugars.

Eucalyptus

- **Essential oils**: 1,8-Cineole (eucalyptol), *p*-cymene, *α*-pinene and *α*–limonene (23).
- **Others**: Chlorogenic and ellagic acids, quercetin, quercetin 3-glucuronide, luteolin and rutin (24).

3. Medicinal Uses (Indications)

- Productive cough associated with cold.

4. Herbal preparations correlated to medicinal use

Combination of aqueous extracts of guava, thyme, tilia, fennel and eucalyptus.

Herbal preparations are in pharmaceutical dosage forms. The pharmaceutical form should be described by the pharmacopoeia full standard term.

5. Posology and method of administration correlated to medicinal use

Adults and Adolescents: Combination of 0.375g of guava extract, 0.15g of thyme extract, 0.1875g of tilia extract, 0.15g of fennel extract and 0.075g of eucalyptus extract, 3 times daily.

Children (4-12 years old): Under medical supervision.

Combination of 0.125g of guava extract, 0.05g of thyme extract, 0.0625g of tilia extract, 0.05g of fennel extract and0.025g of eucalyptus extract, 3-4 times daily.

Duration of use: 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.

6. Contraindications.

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

7. Special warnings and precautions for use

- If the symptoms worsen or if dyspnoea, fever or purulent sputum occurs during the use of the medicinal product, a doctor or a pharmacist should be consulted (11, 25).
- The use in children under 12 years of age is under medical supervision (6).
- Keep out of reach of children

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

- Non reported.

9. 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.

10. Effects on ability to drive and use machines

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

11. Undesirable effects

- Allergic reactions affecting the skin, the respiratory or and gastro-intestinal system may occur (15).
- Gastric disorders may occur (13).
- If adverse reactions occur, a doctor or pharmacist should be consulted.

12. Overdose

- No case of overdose has been reported.

13. Relevant biological activities

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

14. Additional information

-

15. Date of compilation/last revision

27/04/2026

References

1	WHO monographs on selected medicinal plants (2007). Monographs on selected medicinal plants, **4**, 127-139.
2	https://www.gbif.org/species/5341442
3	https://www.gbif.org/species/7793938
4	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).
5	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.
6	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).
7	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.
8	WHO monographs on selected medicinal plants (2007). Monographs on selected medicinal plants, **3**, 136-144.
9	https://powo.science.kew.org.
10	Quattrocchi, U. (2016). CRC World Dictionary of Medicinal and Poisonous Plants. Common Names, Scientific Names, Eponyms, Synonyms, and Etymology (5 Volumes Set). CRC Press, https://doi.org/10.1201/b16504. E-book ISBN 9780429171482.
11	European Union herbal monograph on *Eucalyptus globulus* Labill., folium (2013). EMA/HMPC/892618/2011. Committee on Herbal Medicinal Products (HMPC).
12	WHO monographs on selected medicinal plants (2007). Monographs on selected medicinal plants, **3**, 259-266
13	Community Herbal Monograph on *Thymus vulgaris* L. and *Thymus zygis* L., Herba. EMA/HMPC/342332/2013. Committee on Herbal Medicinal Products (HMPC).
14	Evans, W. C., Evans, D., & Trease, G. E. (2009). Trease and Evans Pharmacognosy (16th ed.). Edinburgh; New York: Saunders/Elsevier. ISBN 9780702029332.
15	European Union Herbal Monograph on *Foeniculum vulgare* Miller subsp. *vulgare* var. *vulgare*, fructus (2024). Committee on Herbal Medicine Products (HMPC).

16	WHO monographs on selected medicinal plants (2002). Monographs on Selected Medicinal Plants, **2**, 97 - 113.
17	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.
18	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.
19	El-Ahmady, S. H, Ashour, M. L. and Wink, M. (2013). Chemical composition and antiinflammatory activity of the essential oils of *Psidium guajava* fruits and leaves. The Journal of Essential Oil Research, http://dx.doi.org/10.1080/10412905.2013.796498. 25(6), 475–481.
20	Sarfaraz, D., Rahimmalek, M. and Saeidi, G. (2021). Polyphenolic and molecular variation in Thymus species using HPLC and SRAP analyses. Sci. Rep., 11, 5019.
21	Evans, W. C., Evans, D., & Trease, G. E. (2009). Trease and Evans Pharmacognosy (16th ed.). Edinburgh; New York: Saunders/Elsevier. ISBN 9780702029332.
22	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.
23	Čmiková, N., Galovičová, L., Schwarzová, M., Vukic, M. D., Vukovic, N. L., Kowalczewski, P. Ł., Bakay, L., Kluz, M. I., Puchalski, C. and Kačániová, M. (2023). Chemical composition and biological activities of *Eucalyptus globulus* essential oil. Plants (Basel), 12(5), 1076. doi: 10.3390/plants12051076. PMID: 36903935, PMCID: PMC10004840.
24	Shala, A. Y. and Gururani, M. A. (2021). Phytochemical properties and diverse beneficial roles of *Eucalyptus globulus* Labill.: A https://doi.org/10.3390/horticulturae7110450.
25	European Union herbal monograph on *Eucalyptus globulus* Labill., *Eucalyptus polybractea* R.T. and/or Eucalyptus smithii R.T. Baker, aetheroleum (2014). EMA/HMPC/307781/2012. Committee on Herbal Medicinal Products (HMPC).