Egyptian Herbal Monograph

Volume 3

Herbal Formulations Used in Egypt

Egyptian Drug Authority (EDA)

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Guava, Thyme, Tilia, Fennel Oil **جوافة / زعتر/ تليو/ زيت الشمر**

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

2. Parts used for medicinal purpose

Guava: Dried Leaves (1)
Thyme: Herb (9,10)
Tilia: Flowers (5-7)
Fennel oil: Dried ripe fruits (11)

3. Major chemical constituents

Guava

Phenolic Compounds (12)

- 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 (13,14)

- *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 (12)

- 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 (10).

- Flavonoids: apigenin, narigenin, kaempferol, and luteolin (and its glycosides) (15).

- Phenolic acids: salvianolic, rosmarinic, cinnamic, ferulic, caffeic and gallic acids (15).

- 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, 16)

- **Phenolic acids:** Caffeic, chlorogenic and p-coumaric acids (6, 16).

- **Essential oil:** Alkanes (mainly tricosane) (17), 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 oil (18)

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

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 guava aqueous extract, thyme liquid extract (extraction solvent: ammonia solution 10% (m/m) NH3, glycerol 85%, ethanol 90% (V/V) and purified water), tilia liquid extract (extraction solvent: hydroalcoholic (25%)) and fennel oil.

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 83.4-125mg of guava extract, 333.32-500mg of thyme extract, 166.66-250mg of tilia extract and 0.3-0.45mg of fennel oil, 2 times daily.
- Only at necessary conditions the dose can be increased by 41.700mg of guava extract, 166.66mg of thyme extract, 83.33mg of tilia extract and 0.150mg of fennel oil 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 substances 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 (11).

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 (10, 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 (10, 19).
- Gastric disorders may occur (10).
- 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

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16. Date of compilation/last revision

27/04/2026

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