



Egyptian Herbal Monograph

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Volume 3

Herbal Formulations Used in Egypt

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Medicinal Plants Used in Egypt

عرقسوس / زعتر / زيت الينسون / زيت الشمر Licorice, Thyme, Anise oil, Fennel oil

1. Names & Synonyms

Licorice (1)

***Glycyrrhiza glabra* L. and its varieties or *Glycyrrhiza uralensis* Fisch.**

Syn. *Liquiritae officinalis* Moench.

Family: Fabaceae (Leguminosae).

Arabic: Irksos, Erqsos عرقسوس

English: licorice, licorice root, liquorice, liquorice root, sweet root and sweet wood.

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.

Anise (4)

***Pimpinella anisum* L.**



Family: Apiaceae (Umbelliferae)

Syns: *Anisum officinarum* Moench., *A. vulgare* Gaertn., *Apium anisum* L. Crantz., *Carum anisum* L. Baill., *Pimpinella anisum* cultum Alef., *P. aromatica* Bieb., *Selinum anisum* L. E.H.L. Krause., *Sison anisum* Spreng., *Tragium anisum* Link.

Arabic: Yansoon ينسون

English: Anise, Aniseed.

Fennel (5)

***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

Licorice: Dried Root (6, 7-10) and rhizome (6, 10).

Thyme: Dried and fresh herb (11,12).

Anise: Dried ripe fruits (4).

Fennel: Dried ripe fruits (13).

3. Major chemical constituents

Licorice (14)

- **Saponins:** Glycyrrhizin and glycyrrhizic acid (glycyrrhizinic acid), as a mixture of potassium and calcium salts.

- **Flavonoids:** glycosides of liquiritigenin and isoliquiritigenin, such as liquiritin, isoliquiritin, liquiritin apioside and licuraside (15).



- **Others:** Essential oil (mainly geraniol and geranyl hexanolate) and sterols (β -sitosterol, dihydrostigmasterol) (15).

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.

Anise oil (4)

contains mainly *trans*-anethole, estragole (methylchavicol, isoanethole), β -anisaldehyde, α -terpenol, *cis*-anethole.

Fennel oil (17)

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

4. Medicinal Uses (Indications)

- Expectorant in cough associated with cold (11,13,7,8,10,18,19).
- Relief of upper respiratory tract catarrh (18, 20-22).

5. Herbal preparations correlated to medicinal use

Combination of licorice powder extract (extraction solvent: water, alcohol or hydroalcoholic), thyme aqueous extract, anise and fennel oils.

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

Adults: Combination of 1200mg of licorice extract, 750mg of thyme extract, 7.5mg of anise oil and 0.15mg of fennel oil, three times daily.

Adolescents 12-18 years: Combination of 400mg of Licorice extract, 250mg of Thyme extract, 2.5mg of Anise oil and 0.05mg of Fennel oil, 3 times daily.

Children 8-12 years: Combination of 400mg of Licorice extract, 250mg of Thyme extract, 2.5mg of Anise oil and 0.05mg of Fennel oil, twice daily.

Children 4-8 years: Combination of 200mg of Licorice extract, 125mg of Thyme extract, 1.25mg of Anise oil and 0.025mg of Fennel oil, twice daily.

Duration of use: Not to be used more than one week. If the symptoms persist longer than one week, a doctor or a pharmacist should be consulted.

Method of administration: Oral use.

7. Contraindications.

- Hypersensitivity to the active substances, to any other plants of the same families.
- Cholestatic liver disorders, liver cirrhosis, hypertonia, hypokalemia, severe kidney insufficiency and cardiovascular-related disorder, because licorice ingestion has resulted in symptoms of primary hyperaldosteronism, such as water and sodium retention and hypokalemia (23).
- Not to be used concomitantly with diuretics, cardiac glycosides, corticosteroids, stimulant laxatives or other medications which may aggravate electrolyte imbalance (7,10,24,24).

8. 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 (11,16,20).



- This medication is not recommended to be used in patients affected by hypertension, kidney diseases, liver or cardiovascular disorders or hypokalemia, as they are more sensitive to the adverse effects of licorice (10).
- Patients taking this medication should not take other licorice containing products as serious adverse events may occur such as water retention, hypokalemia, hypertension, cardiac rhythm disorders (10).
- The use is not recommended for children under 4 years of age (11).

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

- Not to be used concomitantly with diuretics, cardiac glycosides, corticosteroids, stimulant laxatives or other medications which may aggravate electrolyte imbalance (10).
- The product may counteract antihypertensive action of prescribed medications (7).
- **Azole antifungals:** Licorice may increase the levels of azole antifungals; avoid concurrent use (8).
- Concurrent use with grapefruit juice may increase corticosteroid action of licorice (10).
- **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 (9).

10. Fertility, pregnancy and lactation

- The use during pregnancy and lactation should be avoided (23).
- 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 system and gastrointestinal tract may occur (10).
- Gastric disorders may occur (11).
- If adverse effects occur, a doctor or a pharmacist should be consulted.

13. Overdose (7, 24)

Prolonged use (more than 4 weeks) and/or intake of high amount of the product, may lead to overdose, which could result in symptoms such as water retention, hypokalemia, hypertension, cardiac rhythm disorders, hypertensive encephalopathy and in rare cases, myoglobinuria.

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

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