

## 1. Names & Synonyms

***Foeniculum vulgare* Mill.**

**Arabic:** Shamar

**English:** Fennel.

**Family:** Apiaceae (Umbellifereae).

**Other Names:** Large Fennel, Fenkel, Sweet Fennel, Wild Fennel, Bitter Fennel.



## 2. Parts used.

Dried ripe fruits .

## 3. DESCRIPTION

- The dried ripe fruit and Fennel seeds of *Foeniculum vulgare*.
- The inflorescence is large umbels, and the flowers are small with yellow petals.
- The fruit is glabrous, brownish, or greenish gray, long cylindrical with strongly domed.

## 4. Major chemical constituents

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

## 5. Medicinal uses (Indications)

1. Spasmodic gastro-intestinal complaints as bloating and flatulence.
2. Spasm associated with menstrual periods.
3. Expectorant in cough associated with cold.

## 6. Herbal preparations correlated to medicinal use

1. Whole or comminuted dried ripe fruits (freshly comminuted fennel fruits) in herbal tea bags with 0.25 L of boiling water (brew for 15 minutes).
2. Fennel powder.
3. Fennel liquid extract, using water as solvent.
4. Fennel dry extract, using mixture of ethanol and water in different concentrations
5. Fennel oil.

## 7. Examples of drugs in the market

1. Herbana dietary supplement capsules.
2. After Meals Capsules.
3. Digest Eze Capsules.
4. Royal Regime Herbal Tea bags.

## 8. Posology and method of administration

**Doses:** for (12 years and older) the acceptable daily intake of estragole/day =  $10 \mu\text{g} \times \text{body weight (kg)}$

**Duration of use:** Not to be taken for more than two weeks for adults and one week for children with mild transitory symptoms and under medical supervision.

## 9. Side Effects (Toxicity)

-**Allergic reactions to fennel**, affecting the skin or the respiratory system may Occur, if adverse reactions occur a doctor or a pharmacist should be consulted.

-**Allergic reactions to fennel oil**, affecting the skin, the respiratory and gastrointestinal system, seizures, hallucinations, nausea, vomiting or anorexia may occur.

## 10. Contraindications

-Hypersensitivity to active substances.

-Pharmaceutical preparations containing 0.05gm fennel oil are contraindicated in children under the age of 1 year.

## 11. Special warnings and precautions for use

1. If the symptoms worsen during the use of the medicinal product, a doctor or pharmacist should be consulted.
2. Patients with known hypersensitivity to Asteraceae (Compositae) should avoid the use of fennel and its preparations.
3. The pure essential oil from the fruits may cause inflammation and irritant action on the gastrointestinal tract.
4. Bleeding disorders: Fennel might slow blood clotting, taking fennel might increase the risk of bleeding.
5. Because of its estrogenic activity, excessive doses of fennel oil may affect hormone therapy, oral contraceptive pill, and hormone replacement therapy.
6. children under 4 years of age should be used under medical Supervision owing to the danger of laryngeal spasm, dyspnea, and central nervous system excitation.

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

**Anticonvulsants:** Fennel may increase the risk of seizures.

**Ciprofloxacin:** Fennel affects the absorption, distribution, and elimination of ciprofloxacin. If the two are used concurrently, their dosages should be separated by at least 2 hours.

## 13. Fertility, pregnancy, and lactation

-Fennel fruit may be used during pregnancy and lactation at the recommended dosage, as infusions only

- No fertility data available.

## 14. Effects on ability to drive and use machines

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

## 15. References

1. WHO monographs on selected medicinal plants (2007). Monographs on selected medicinal plants, **3**, 136-144.
2. Community Herbal Monograph on *Foeniculum vulgare* Miller Subsp. *vulgare*, Fructus (2007). Committee on herbal Medicine Products (HMPC).
3. 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.
4. Community Herbal Monograph on *Foeniculum vulgare* Miller Subsp. *vulgare*, Aetheroleum (2007). Committee on herbal Medicine Products (HMPC).
5. <https://escop.com/wp-content/uploads/edd/2019/03/Foeniculi-fructus-ESCOP2019.pdf>
6. Mosby's Handbook of Herbs and Natural Supplements .4th ed., ISBN: 978-0-323-05741-7
7. <http://webprod.hc-sc.gc.ca/nhp/nd-bdipsn/monoReq.do?id=50&lang=eng>
8. <https://www.webmd.com/vitamins/ai/ingredientmono-311/fennel>
9. [https://www.ema.europa.eu/en/documents/public-statement/publicstatement-use-herbal-medicinal-products-containing-estragole\\_en.pdf](https://www.ema.europa.eu/en/documents/public-statement/publicstatement-use-herbal-medicinal-products-containing-estragole_en.pdf)
10. PV safety report on fennel oil. EPVC-EDA, 12/6/2022.
11. PDR for Herbal Medicines (2002). Montvale, NJ: Medical Economics Company, 2<sup>nd</sup> ed., ISBN 1-56363-361-2.
12. <https://www.rxlist.com/fennel/supplements.htm>