



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

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Committee on Herbal Medicinal Products (HMPC)

European Union herbal monograph on *Foeniculum vulgare* Miller subsp. *vulgare* var. *vulgare*, fructus

Draft – Revision 1

Initial assessment	
Discussion in Working Party on European Union monographs and European Union list (MLWP)	May 2006 September 2006 October 2006
Adoption by Committee on Herbal Medicinal Products (HMPC) for release for consultation	26 October 2006
End of consultation (deadline for comments).	28 February 2007
Rediscussion in MLWP	May 2007 July 2007
Adoption by HMPC Monograph (EMA/HMPC/137428/2006) Assessment Report (EMA/HMPC/137426/2006) List of references (EMA/HMPC/456740/2006) Overview of comments received during the public consultation (EMA/HMPC/200856/2007) HMPC Opinion (EMA/HMPC/280039/2007)	5 July 2007
First systematic revision	
Discussion in MLWP/HMPC	April 2016 May/June 2016 January 2021 March 2021 July 2021 September 2021 January 2022 March 2022 May 2022 July 2022
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End of consultation (deadline for comments). Comments should be provided using this template to hmpc.secretariat@ema.europa.eu .	30 November 2022
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Keywords	Herbal medicinal products; HMP; European Union herbal monographs; traditional use; <i>Foeniculum vulgare</i> Miller subsp. <i>vulgare</i> var. <i>vulgare</i> ; <i>Foeniculi amari fructus</i> ; Bitter fennel
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BG (bulgarski): Горчиво резене, плод	LT (lietuvių kalba): Kartieji pankolių vaisiai
CS (čeština): plod fenýklu obecného pravého	LV (latviešu valoda): Rūgtā fenheļa augļi
DA (dansk): Fennikel, bitter	MT (Malti): frotta tal-Busbies morr
DE (Deutsch): Bitterer Fenchel	NL (Nederlands): Bittere Venkel
EL (elliniká): μαραθου πικρου καρπος	PL (polski): Owoc kopru włoskiego (odmiany gorzkiej)
EN (English): Bitter fennel	PT (português): funcho amargo, fruto
ES (español): hinojo amargo, fruto de	RO (română): fruct de fenicul amar
ET (eesti keel): mõru apteegitilli vili	SK (slovenčina): plod fenikla horkého
FI (suomi): karvasfenkoli, hedelmä	SL (slovenščina): plod grenkega navadnega komarčka
FR (français): fenouil amer (fruit de)	SV (svenska): bitterfänkål, frukt
HR (hrvatski): plod gorkog komorača	IS (íslenska): Bitur fennel aldin
HU (magyar): keserű édeskömény termés	NO (norsk): bitter fennikel
IT (italiano): Finocchio amaro (o selvatico), frutto	

European Union herbal monograph on *Foeniculum vulgare* Miller subsp. *vulgare* var. *vulgare*, fructus.

1. Name of the medicinal product

To be specified for the individual finished product.

2. Qualitative and quantitative composition^{1, 2}

Well-established use	Traditional use
	With regard to the registration application of Article 16d(1) of Directive 2001/83/EC <i>Foeniculum vulgare</i> Miller subsp. <i>vulgare</i> var. <i>vulgare</i> , fructus (Bitter fennel) i) Herbal substance Fresh or dry fruit ii) Herbal preparations Not applicable

3. Pharmaceutical form

Well-established use	Traditional use
	Herbal substance as herbal tea for oral use. The pharmaceutical form should be described by the European Pharmacopoeia full standard term.

4. Clinical particulars

4.1. Therapeutic indications

Well-established use	Traditional use
	Indication 1) Traditional herbal medicinal product for symptomatic treatment of mild, spasmodic gastrointestinal complaints including bloating and

¹ The declaration of the active substance(s) for an individual finished product should be in accordance with relevant herbal quality guidance.

² The material complies with the Ph. Eur. monograph (ref.: 04/2013:0824).

Well-established use	Traditional use
	<p>flatulence.</p> <p>Indication 2)</p> <p>Traditional herbal medicinal product for symptomatic treatment of minor spasm associated with menstrual periods.</p> <p>Indication 3)</p> <p>Traditional herbal medicinal product used as an expectorant in cough associated with cold.</p> <p>The product is a traditional herbal medicinal product for use in specified indications exclusively based upon long-standing use.</p>

4.2. Posology and method of administration³

Well-established use	Traditional use
	<p>Posology</p> <p>Indications 1) and 3)</p> <p><i>Adults and adolescents</i></p> <p>Single dose</p> <p>Herbal tea: 1.5 g of herbal substance in 250 ml of boiling water (steep for 15 minutes) as a herbal infusion 3 times daily.</p> <p>Daily dose: 4.5 g</p> <p><i>Children between 4 and 12 years of age</i></p> <p>Single dose</p> <p>Herbal tea: 1.0 g of the herbal substance in 100 ml boiling water (steep for 15 minutes) as a herbal infusion, 3 times daily.</p> <p>Daily dose: 3.0 g</p> <p>For further information on the use in children between 4 and 12 years of age, see section 4.4 'Special warnings and precautions for use'.</p> <p>The use is not recommended in children under 4 years of age (see section 4.4 'Special warnings and precautions for use').</p>

³ For guidance on herbal substance/herbal preparation administered as herbal tea or as infusion/decoction/macerate preparation, please refer to the HMPC 'Glossary on herbal teas' (EMA/HMPC/5829/2010 Rev.1).

Well-established use	Traditional use
	<p>See section 6 for content of estragole.</p> <p>Indication 2)</p> <p><i>Adults and adolescents</i></p> <p>Single dose</p> <p>Herbal tea: 1.5 g of herbal substance in 250 ml of boiling water (steep for 15 minutes) as a herbal infusion 3 times daily.</p> <p>Daily dose: 4.5 g</p> <p>The use in children under 12 years of age is not recommended (see section 4.4 'Special warnings and precautions for use').</p> <p>See section 6 for the content of estragole.</p> <p>Duration of use</p> <p>Indications 1), 2) and 3)</p> <p><i>Adults and adolescents</i></p> <p>Not to be taken for more than 2 weeks.</p> <p>Indications 1) and 3)</p> <p><i>Children between 4 and 12 years of age</i></p> <p>For short-term use in mild transitory symptoms only (less than 1 week).</p> <p>If the symptoms persist during the use of the medicinal product, a doctor or a qualified health care practitioner should be consulted.</p> <p>Method of administration</p> <p>Oral use.</p>

4.3. Contraindications

Well-established use	Traditional use
	<p>Hypersensitivity to the active substance or to Apiaceae (Umbelliferae) family (aniseed, caraway, celery, coriander and dill) or to anethole.</p> <p>Hypersensitivity to mugwort pollen, due to cross-reactivity with fennel.</p>

4.4. Special warnings and precautions for use

Well-established use	Traditional use
	<p>Indications 1) and 3)</p> <p>The use in children between 4 and 12 years of age is not recommended if the daily intake of estragole exceeds the guidance value of 1.0 µg/kg bw, unless justified by a risk assessment based on adequate safety data (see section 5.3 'Preclinical safety data').</p> <p>The use is not recommended in children under 4 years of age without the advice of a paediatrician.</p> <p>Indication 2)</p> <p>The use in children under 12 years of age has not been established due to lack of adequate data.</p> <p>If the symptoms worsen during the use of the medicinal product, a doctor or a qualified health care practitioner should be consulted.</p>

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

Well-established use	Traditional use
	None reported.

4.6. Fertility, pregnancy and lactation

Well-established use	Traditional use
	<p>Safety during pregnancy and lactation has not been established (see section 5.3 and 6 regarding preclinical safety data related to the content of estragole).</p> <p>In the absence of sufficient data, the use during pregnancy and lactation is not recommended.</p> <p>There is evidence that <i>trans</i>-anethole is excreted in human breast milk.</p> <p>No fertility data available.</p>

4.7. Effects on ability to drive and use machines

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

4.8. Undesirable effects

Well-established use	Traditional use
	Allergic reactions to fennel, affecting the skin or the respiratory system may occur. The frequency is not known. If other adverse reactions not mentioned above occur, a doctor or a qualified health care practitioner should be consulted.

4.9. Overdose

Well-established use	Traditional use
	No cases of overdose have been reported.

5. Pharmacological properties

5.1. Pharmacodynamic properties

Well-established use	Traditional use
	Not required as per Article 16c(1)(a)(iii) of Directive 2001/83/EC.

5.2. Pharmacokinetic properties

Well-established use	Traditional use
	Not required as per Article 16c(1)(a)(iii) of Directive 2001/83/EC.

5.3. Preclinical safety data⁴

Well-established use	Traditional use
	Not required as per Article 16c(1)(a)(iii) of Directive 2001/83/EC, unless necessary for the safe use of the product.

⁴ Where herbal preparations from *Foeniculi amari fructus* are used, the total exposure to estragole should be considered from a safety standpoint.

Well-established use	Traditional use
	<p>A fennel aqueous extract was tested in an Ames test on <i>Salmonella typhimurium</i> strains TA98, TA100 and turned out as negative. Results from studies carried out in laboratory animals showed a weak mutagenic activity of anethole.</p> <p>Several studies have shown the carcinogenic effects of estragole and some of its metabolites in mice (liver tumours) and displayed suggestive but indirect evidence of carcinogenicity in rats. Estragole is considered a genotoxic carcinogen in rodents (see section 6 for further details).</p> <p>An aqueous extract of fennel seeds given daily to 24 female BALB/c mice from day 6 to day 15 of pregnancy showed a dose-dependent teratogenic effect. The embryotoxic effect resulted in morphological changes, skeletal disorders, and cellular alterations. The relevance of the observed effects is limited by the small number of animals tested.</p> <p>Adequate tests on reproductive toxicity have not been performed.</p>

6. Pharmaceutical particulars

Well-established use	Traditional use
	<p>The amount of estragole has to be specified in herbal preparation for oral use.</p> <p>Because of the generally accepted evidence of genotoxic carcinogenicity, exposure to estragole should be kept as low as practically achievable.</p> <p>In pregnant and breast-feeding women, the daily intake of estragole has to be below 0.05 mg/person per day.</p> <p>In children below 12 years of age, the daily intake of estragole has to be below 1.0 µg/kg bw.</p> <p>For further details see "Public statement on the use of herbal medicinal products containing estragole" (EMA/HMPC/137212/2005 Rev 1).</p>

7. Date of compilation/last revision

20 July 2022