

**FOOL'S PARSLEY
FOR HOMOEOPATHIC PREPARATIONS**

**AETHUSA CYNAPIUM
FOR HOMOEOPATHIC PREPARATIONS**

***Aethusa cynapium* ad praeparationes homoeopathicas**

DEFINITION

Whole, fresh plant, *Aethusa cynapium* L., harvested at the end of the flowering season.

CHARACTERS

Unpleasant and nauseous odour.

IDENTIFICATION

- A. Glabrous, herbaceous, annual plant of various size from 20 cm to 1 m high. Highly ramified, fistular stem, longitudinally grooved, it sometimes shows reddish striations. The outline of the dark green leaves is usually triangular, but the lamina is finely bi or tri pinnatisect (pinnatisect); oval-lanceolate segments, divided into acute lobes. The petiolate basal leaves are about 8 cm long on average. Very small white flowers, gathered at the top of the stems in umbels with 5-12 uneven, striated rays, farther ramified into umbellules. The involucre is either absent or consists of a single bract, each involucre consists of 3-5 inverted, lacinate bracteoles, longer than the umbellules and grouped on one side. Flowers, with a degenerated calyx and a corolla with 5 free, white, emarginate petals with inward-curving tips; androecium consisting of 5 stamens; inferior ovary composed of 2 uniovulate carpels topped by very short styles and depressed and curved stylopodes. Ovoid to subglobular, non-compressed fruit consisting of 2 mericarps, each with 5 protruding ribs, each rib is thick, carinate, the most marginal being somewhat larger.
- B. Take a sample of epidermis from the underside of the leaf. Examine under a microscope, using *chloral hydrate solution R*: the abaxial epidermis of the vein, covered with a striated cuticle, is composed of elongated cells with more or less stiff cell-walls. The abaxial epidermis of the lamina, glabrous, covered with a striated cuticle, is composed of lobe-outlined cells, anomocytic stomata usually surrounded by 3 to 4 subsidiary cells (2.8.3).

TESTS

Foreign matter (2.8.2): maximum 5 per cent.

Loss on drying (2.2.32): minimum 60.0 per cent, determined on 5.0 g of finely-cut drug, by drying in an oven at 105 °C for 2 h.

The General Chapters and General Monographs of the European Pharmacopoeia and Preamble of the French Pharmacopoeia apply.

STOCK

DEFINITION

Fool's parsley mother tincture is prepared with ethanol (65 per cent V/V), using the whole, fresh plant, *Aethusa cynapium* L., harvested at the end of the flowering season.

Content: minimum 0.05 per cent *m/m* of total flavonoids, expressed as narcissin (C₂₈H₃₂O₁₆; M_r 625).

PRODUCTION

Method 1.1.10 (2371). Drug fragmented into segments inferior to 10 cm. Maceration time: about 3 weeks.

CHARACTERS

Appearance: greenish-brown liquid.

Odour reminiscent of carrot aerial parts.

IDENTIFICATION

Thin layer chromatography (2.2.27).

Test solution. Mother tincture.

Reference solution. Dissolve 10 mg of *rutin R* and 10 mg of *narcissin R* in 20 mL of *ethanol (60 per cent) R*.

Plate: TLC silica gel plate *R*.

Mobile phase: water *R*, methanol *R*, glacial acetic acid *R*, methylene chloride *R* (8:12:32:60 V/V/V/V).

Application: 20 µL, as bands.

Development: over a path of 10 cm.

Drying: in air.

Detection: first spray with a 10 g/L solution of *diphenylboric acid aminoethyl ester R* in *methanol R* then with a 50 g/L solution of *macrogol 400 R* in *methanol R*. Allow the plate to dry in air for about 30 min. Examine in ultraviolet light at 365 nm.

The General Chapters and General Monographs of the European Pharmacopoeia and Preamble of the French Pharmacopoeia apply.

Results: see below the sequence of fluorescent zones present in the chromatograms obtained with the reference solution and the test solution. Furthermore other faint fluorescent zones may be present in the chromatogram obtained with the test solution.

Top of the plate	
-----	A greenish zone
Narcissin: a greenish-yellow zone Rutin: an orange zone	A greenish-yellow zone (narcissin) An orange-yellow zone
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A greenish-blue zone	
Reference solution	Test solution

TESTS

Ethanol (2.9.10): 60 per cent V/V to 70 per cent V/V.

Conium maculatum

Thin layer chromatography (2.2.27).

Test solution. Mother tincture.

Reference solution. Dissolve 20 mg of *coniine R* and 20 mg of *senecionine R* in 10 mL of *methanol R*.

Plate: TLC silica gel plate R.

Mobile phase: glacial acetic acid R, water R, butanol R (10:10:40 V/V/V).

Application: 40 µL, as bands.

Development: over a path of 10 cm.

Drying: in air.

Detection: spray with *potassium iodobismuthate solution R*. Examine in daylight.

Results: see below the sequence of zones present in the chromatograms obtained with the reference solution and the test solution. Furthermore other faint zones may be present in the chromatogram obtained with the test solution.

Top of the plate	
-----	-----
Coniine: an orange zone Senecionine: an orange zone	
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Reference solution	Test solution

The General Chapters and General Monographs of the European Pharmacopoeia and Preamble of the French Pharmacopoeia apply.

The presence of an orange zone in the bottom third of the chromatogram shows adulteration by mother tincture of *Conium maculatum* L.

Dry residue (2.8.16): minimum 0.9 per cent *m/m*.

ASSAY

Ultraviolet and visible absorption spectrophotometry (2.2.25).

Stock solution. In a 50.0 mL volumetric flask, place 10.0 g of mother tincture accurately weighed and dilute to 50.0 mL with *ethanol (60 per cent V/V) R*.

Test solution. In a 25.0 mL volumetric flask, place 2.0 mL of mother tincture, 2.0 mL of a 20 g/L solution of *aluminium chloride R* in *methanol R* and dilute to 25.0 mL with *methanol R*.

Compensation liquid. In a 25.0 mL volumetric flask, place 2.0 mL of mother tincture and dilute to 25.0 mL with *methanol R*.

Twenty five min after the addition of the last reagent, measure the absorbance of the test solution at 408 nm in comparison with the compensation liquid.

Calculate the percentage content *m/m* of total flavonoids, expressed as narcissin from the expression:

$$\frac{A \times 625}{m \times 238}$$

i.e taking the specific absorbance of narcissin to be 208 at 408 nm.

A = absorbance of the test solution at 408 nm,
m = mass of the mother tincture sample, in grams.

The General Chapters and General Monographs of the European Pharmacopoeia and Preamble of the French Pharmacopoeia apply.