

**HORSEWEED
FOR HOMOEOPATHIC PREPARATIONS**

**ERIGERON CANADENSIS
FOR HOMOEOPATHIC PREPARATIONS**

***Conyza canadensis* ad praeparationes homoeopathicas**

Other Latin name used in homoeopathy: **Erigeron**

DEFINITION

Fresh, blooming aerial part of *Conyza canadensis* (L.) Cronq. (*Erigeron canadensis* L.).

CHARACTERS

Macroscopic and microscopic characters described under identification tests A and B.

IDENTIFICATION

- A. Caulinary leaves, scattered or alternate, pale ash green, with lanceolate to linear shape, about 8 cm long and 8 mm large with acute apex and entire or slightly indented margins, bearing rough hairs. Hemispherical capitulae, 3-5 mm in diameter, gathered in small bunches shaping an elongated, terminal panicle. Involucre bracts, almost glabrous, linear, interwoven and with membranous margins. Flat and almost bare receptacle. Female flowers on the periphery, whitish, slightly ligulate, just taller than the involucre, inserted on several rows. Centre flowers, tubular, yellowish, hermaphrodite; their anthers lack a base appendage.
- B. Examine a fragment of abaxial epidermis of the leaf, under a microscope using *chloral hydrate solution R*. Epidermis covered with a striated cuticle. Markedly lobed-cells between the veins. Numerous stomata of anomocytic type (2.8.3), surrounded by 3-5 subsidiary cells. Covering and secretory trichomes. Covering trichomes, uniseriate and multicellular, some are stiff with slightly thickened cell-walls, striated at the base then pitted, the others flexuous, composed of a basal part with 3-4 short cells and a flagellate, distal cell. Very scarce secretory trichomes, sessile and biseriate of Asteraceae type.

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

Horseweed mother tincture complies with the requirements of the general technique for the preparation of the mother tincture (see *Homeopathic Preparations (1038)* and French Pharmacopoeia Supplement). The mother tincture is prepared with ethanol (65 per cent V/V), using the fresh, blooming aerial part of *Conyza canadensis* (L.) Cronq.

Content: minimum 0.02 per cent *m/m* of total flavonoids, expressed as apigenin (C₁₅H₁₀O₅; M_r 270.2).

CHARACTERS

Appearance: greenish-brown liquid.

IDENTIFICATION

Thin-layer chromatography (2.2.27).

Test solution. Mother tincture.

Reference solution. Dissolve 10 mg of *rutin R* and 10 mg of *quercitroside R* in 30 mL of *methanol R*.

Plate: TLC silica gel plate *R*.

Mobile phase: anhydrous formic acid *R*, water *R*, ethyl acetate *R* (10:10:80 V/V/V).

Application: 30 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 for about 30 min. Examine in ultraviolet light at 365 nm.

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.

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

Top of the plate	
Quercitroside: an orange zone ----- ----- Rutin: an orange zone	A yellowish-orange zone A greenish-blue zone A greenish-blue zone A greenish-blue zone A greenish-blue zone An orange-yellow zone ----- -----
Reference solution	Test solution

TESTS

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

Dry residue (2.8.16): minimum 1.0 per cent *m/m*.

ASSAY

Ultraviolet and visible absorption spectrophotometry (2.2.25).

Stock solution. Place 10.000 g of mother tincture into a 50.0 mL volumetric flask 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 stock solution, 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 stock solution and dilute to 25.0 mL with *methanol R*.

Twenty-five min later, measure the absorbance of the test solution at 389 nm, in comparison with the compensation liquid.

Calculate the percentage content of total flavonoids, expressed as apigenin, from the expression:

$$\frac{A \times 625}{488 \times m}$$

i.e. taking the specific absorbance of apigenin, to be 488 at 389 nm.

A = absorbance of the test solution at 389 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.

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