Species (Family)
*Lactuca virosa* L. (Asteraceae/Compositae)

Synonym(s)
Bitter Lettuce, Lettuce Opium

Related *Lactuca* species include *Lactuca sativa* (Garden Lettuce), *Lactuca scariola* (Prickly Lettuce), *Lactuca altissima* and *Lactuca canadensis* (Wild Lettuce of America)

Part(s) Used
Leaf, latex

Pharmacopoeial and Other Monographs
BHC 1992
BHP 1996
Martindale 32nd edition
PDR for Herbal Medicines 2nd edition

Legal Category (Licensed Products)
GSL

Constituents
All parts of the plant contain a milky, white latex (sap) which, when collected and dried, forms the drug known as lactucarium.

Acids
Citric, malic and oxalic (up to 1%) acids; cichoric acid (phenolic).

Alkaloids
Hyoscyamine, later disputed N-methyl-β-phenethylamine, also disputed. N-methyl-β-phenethylamine, also disputed. N-methyl-β-phenethylamine, also disputed. N-methyl-β-phenethylamine, also disputed. N-methyl-β-phenethylamine, also disputed.

Cumarins
Aesculin, cichorin.

Flavonoids
Flavones (e.g. apigenin, luteolin), flavonols (e.g. quercetin) and their glycosides.

Terpenoids
Bitter principles including the sesquiterpene lactones lactucin and lactupicrin (lactucopicrin); β-amyrin, germanicol, and lactucone (lactucerin). Lactucone is a mixture of α- and β-lactucerol acetates, β-lactucerol being identical to taraxasterol.

Other constituents
Mannitol, proteins, resins and sugars.

Food Use
Wild lettuce is not used in foods, although the related species *L. sativa* is commonly used as a salad ingredient.

Herbal Use
Wild lettuce is stated to possess mild sedative, anodyne and hypnotic properties. Traditionally, it has been used for insomnia, restlessness and excitability in children, pertussis, irritable cough, priapism, dysmenorrhoea, nymphomania, muscular or articular pains, and specifically for irritable cough and insomnia.

Dosage
Dried leaves 0.5–3.0 g or by infusion three times daily.

Liquid extract 0.5–3.0 mL (1:1 in 25% alcohol) three times daily.

*Lactucarium* (dried latex extract) (BPC 1934) 0.3–1.0 g three times daily.

Soft extract (BPC 1934) 0.3–1.0 g three times daily.

Pharmacological Actions

In vitro and animal studies
*Lactucarium* has been noted to induce mydriasis. This effect may be attributable to hyoscyamine, although the dried sap is reportedly devoid of this alkaloid.

An alcoholic extract of a related species, *L. sativa*, has exhibited a sedative effect in toads, causing a reduction in motor activity and behaviour. Higher doses resulted in flaccid paralysis. In addition, an antispasmodic action on isolated smooth and striated muscle, and *in vitro* negative chronotropic and inotropic effects on normal and stressed (tachycardic) hearts were observed. The antispasmodic action was noted to be antagonised by calcium.
Lactucin, lactupicrin and hyoscyamine have all been proposed as the sedative components in wild lettuce. However in the above study,\(^{(3)}\) the active component was uncharacterised and acted mainly peripherally, not readily crossing the blood–brain barrier. The suggested mode of action was via interference with basic excitatory processes common to neural and muscular functions, and not via a neuromuscular block.

Low amounts (nanograms) of morphine have been detected in *Lactuca* species, although the concentrations involved are considered too low to exert any obvious pharmacological effect.\(^{(G60)}\)

**Side-effects, Toxicity**

None documented for *L. virosa*. Wild lettuce contains sesquiterpene lactones which are potentially allergenic.\(^{(G19)}\) Occupational dermatitis has been documented for *L. sativa* together with an urticarial eruption after ingestion of the leaves.\(^{(4–6,G51)}\) The milky sap of *L. sativa* is reported to be irritant.\(^{(G51)}\)

The toxicity of wild lettuce is stated to be low.

Consumption of large amounts of *L. scariola* has caused poisoning in cattle, who developed pulmonary emphysema, severe dyspnoea, and weakness.\(^{(7)}\) Only the immature plants were reported to be toxic.

*L. sativa* has been reported to produce only negative responses when tested for mutagenicity using the Ames test (*Salmonella typhimurium TA98, TA100*).\(^{(8)}\)

**Contra-indications, Warnings**

Overdosage may produce poisoning\(^{(G42)}\) involving stupor, depressed respiration, coma and even death. Wild lettuce may cause an allergic reaction in sensitive individuals, in particular those with an existing sensitivity to other members of the Asteraceae/Compositae family.

**Pregnancy and lactation** The safety of wild lettuce has not been established. In view of the lack of toxicity data and the possibility of allergic reactions, excessive use of wild lettuce during pregnancy and lactation should be avoided.

**Pharmaceutical Comment**

The chemistry of wild lettuce is well documented although it is not clear which constituents represent the active components. Early reports of hyoscyamine as a constituent have not been substantiated by subsequent study. No published information was found to support the traditional herbal uses of wild lettuce, although a sedative action in toads has been reported for a related species *L. sativa*. In view of the potential allergenicity of wild lettuce and the lack of toxicity data, excessive use should be avoided.

**References**

See also General References G6, G9, G10, G19, G22, G31, G33, G36, G37, G42, G43, G48, G51, G60 and G64.