White lily

**BOTANY**

*Lilium candidum* L. belongs to the Liliaceae family and its common name is white lily.

White lily is a perennial plant growing up to 60-150 cm in height. It’s a bulb species with large scaly white bulbs, about 1 m tall stalks, and linear leaves; some leaves attached to the base of the stalk, spreading around it, other leaves erect, lanceolate, with slightly dentate margins.

Inflorescences are terminal racemes composed of 3 to 10 flowers. Flowers are rather large and strikingly white. Each flower has six slightly curved petals and six stamens with white filaments and long yellow anthers.

The strongly aromatic white lilies bloom from May on. Seeds can be harvested from August to September. Bulbs are odourless, with a bitter and mucilagenous taste.

It grows throughout the Mediterranean regions and western Asia. It probably originated in Persia and Syria. Although often cultivated as a garden plant, it can be found spontaneously growing in the fields around gardens and country houses.

White Lily extract is obtained from the bulbs and flowers of *Lilium candidum* L.

**CHEMISTRY**

The essential oil, extracted from flowers (0.3%), is rich in vanillin (up to 2.5%), π-hydroxy-m-methoxytoluene (up to 50%), π-cresol, linalol, terpineol, phenylethyl alcohol and its esters with acetic, palmitic, benzoic, propionic and cinnamic acids (Council of Europe, 2001). Flowers also contain flavonoids (kaempherol and its derivatives), lilaline, jatrophine and carotenoids (Peris, J.B., 2001).

Bulbs contain starch, soluble polysaccharides (glucomannan) (Gruenwald, J., 1998), phytosterols, pyrrolic alkaloids, amino acids such as γ-methylene glutamic acid and tannins (Council of Europe, 2001). δ- methylene glutamic acid can be found in the bulb scales. By blooming time, bulbs and roots contain abundant amounts of the later acid together with its lactone derivative (α-methylene-butyrolactone), mineral salts and some boron. Novel saponins of the spirostanol and furostanol types have been identified in *Lilium candidum* bulbs (Mimaki, Y., 1999).
TRADITIONAL USES

Bulbs have traditionally been applied as a poultice for its properties as a demulcent and abscess or boil reliever. It has also been used to treat ulcers, wounds and burnt skin. White lily vinegar is popularly used against warts.

Some recent studies propose that the saponins present in the bulbs of *Lilium candidum* L. can inhibit epidermal promoters of serious skin illnesses (Vachálková, A., 2000).

COSMETIC PROPERTIES

Lily flowers extract is used in cosmetics to treat cuperosis (Peris, J.B., 2001). Essential oil is used in the perfume industry.

The chemical composition of bulbs (saponins and polysaccharides) gives the extract soothing, anti-inflammatory and protective properties. The extract has also hydrating and emollient properties (polysaccharides). Therefore, it can be added to all types of formulations aimed at dry, irritated or sensitive skin (Council of Europe, 2001). Soluble polysaccharides have a filmogenic action on skin, which promotes skin hydration. They act by holding water, consequently maintaining the right moisture level in the horny layer, which in turn improves skin flexibility.

Polysaccharides are included in the group of hydrocolloids and they act by increasing viscosity, stabilizing emulsions and maintaining optimal moisture levels.

RECOMMENDED DOSAGE

The recommended dosage ranges from 0.5 to 5%.

BIBLIOGRAPHY


Web sites:


[www.lsbu.ac.uk/water/hydro.html](http://www.lsbu.ac.uk/water/hydro.html)