

Master data ingredient / monograph

Ingredient/plant: Calendula (*Calendula officinalis*)

Scientific name: *Calendula officinalis*
Division: Magnoliophyta
Class: Magnoliopsida
Order: Asterales
Family: Asteraceae (Korbblütengewächse)
Subfamily: Calenduleae
Genus: *Calendula*
Species: *Calendula officinalis*

Description:

***Calendula* (pot marigold;** German: Ringelblume) is a genus of about 12-20 species of annual or perennial herbeaceous plants in the daisy family Asteraceae, native to the area from Macaronesia east through theMediterranean region to Iran. It is also the flower of the month October.

The name *Calendula* stems from the Latin kalendae, meaning first day of the month, presumably because pot marigolds are in bloom at the start of most months of the year. The common name marigold probably refers to the Virgin Mary, or its old Saxon name 'ymbglidegold', which means 'it turns with the sun'. Marigolds are hardy plants that typically bloom quickly (in under two months) in bright yellows, reds, and oranges throughout the summer and well into the fall.

Marigolds are considered by many gardening experts as one of the most versatile flowers to grow in a garden, especially since it is hardy and easy to grow. Seeds sown in the spring, in any soil, will germinate freely in sunny or half-sunny locations. They do best, however, if planted in sunny locations with rich, well-drained soil. The leaves are spirally arranged, 5-18 cm long, simple, and slightly hairy. The flower heads range from pastel yellow to deep orange, and are 3-7 cm across, with both ray florets and disc florets. They have a spicy aroma and are produced from spring to autumn in temperate climates. It is recommended to deadhead (removal of dying flower heads) the plants regularly to maintain even blossom production.

Marigolds are used as food plants by the larvae of some Lepidoptera species including Cabbage Moth, The Gothic, Large Yellow Underwing and Setaceous Hebrew Character.

Marigold petals are considered edible. They are often used to add color to salads, and marigold extract is commonly added to chicken feed to produce darker egg yolks. Their aroma, however, is not sweet, and resembles the smell ofhops in beer. The oil from its seed contains calenic acid.

Properties:

The ointment of this herb is thought to cure a range of skin problems from burns to acne as it has properties that reduces inflammation, controls bleeding and soothes irritated tissue. Use internally or topically for minor wounds, eczemas and cysts as well as diaper rash and cradle cap in infants. Also, when planted near tomato plants in the garden, Marigolds help to eliminate aphids.

Pharmacological properties:

Calendic acid (sometimes: α -Calendic acid) is an unsaturated fatty acid, named for the pot marigold (genus: *Calendula*), from which it is obtained. It is chemically similar to the conjugated linoleic acids; laboratory work suggests it may have similar health benefits (Kinney T. 2007).

Calendic acid is an omega-6 fatty acid though not usually listed with this group. Calendic acid (8t,10t,12c-18:3) is synthesised in *Calendula officinalis* from linoleate (9c,12c-18:2) by an unusual Δ 12-oleate desaturase (a FAD 2 variant) that converts the cis-double bond in position 9 to a trans,trans-conjugated double bond system (8t,10t), (Christie W.W. 2007). An *all-trans* beta isomer has been described (Kinney T. 2007).

Active ingredients

Dried flower heads contain:

- triterpensaponines 2-10 %
- triterpenalcohols
- flavonoids 0,3 – 0,8 %
- hydroxycumarines
- carotinoides
- essential oils 0,2 %
- water soluble polysaccharides 15 %

Preclinical studies revealed different effects:

a) stimulation of wound healing

Studies of Patrick K.F.M. et al. revealed an wound healing stimulating effect (Patrick K.F.M. et al. 1996).

b) anti-inflammatory properties

Several studies showed anti-inflammatory effects (Della Loggia et al. 1994, Akihisa et al. 1996, Zitterl-Eglseer et al. 1997). The study of Della Loggia in 2000 revealed as active principle of the anti-inflammatory properties the content of faradiol esters (Della Loggia 2000).

c) antimicrobial, antifungal and virucide properties

Terpene alcohols and terpene lactones of the essential oil show antimicrobial, antifungal and virucide activities, revealed by different studies (Kasiram K. et al. 2000; Kalvatchev Z. et al. 1997; De Tommasi N. et al. 1990).

Topical and Cosmetic properties:

Calendula is an important ingredient of many cosmetic preparations, especially for cosmetic care of sensitive and dry skin. It is very likely that the above mentioned activities are responsible for the benefits of Calendula in skin care.

Recent cosmetic studies revealed interesting results. They show that Calendula stimulates the regeneration of skin cells and exerts a calming and relaxing effect, especially in irritated and inflamed skin. Therefore many cosmetic preparations, like face lotions, sun protection products and skin care preparations for babies contain Calendula (Vogelsang K.).

It is also used in homeopathic medicine (in a gel form) as a way to promote the healing of minor burns, scrapes and skin irritations.

Gargle with cool tea for inflamed tonsils or canker sores.

Ointment is used on scabs, eczema and psoriasis.

Tincture or spray can be applied to rashes, cuts, scrapes, or acne with a cotton ball. Spraying is good for sunburns, vaginitis and pinworms.

Possible interactions:

Not known

Use:

Calendula is a very well known and often used herb in medicinal and cosmetic applications since many centuries.

Due to this fact the German Commission E strongly recommends in their monograph, dated 1986, the external use of Calendula. Also the ESCOP recommends Calendula in their monograph of 1996, especially in the skin care. The ESCOP monograph highlights in detail the stimulation effect of wound healing.

Limits of administration:

External use of Calendula is undoubtedly considered as safe.

In case of a very regular skin contact a slight tendency to sensitization might occur. The study of Reider and coworkers with 443 human subjects showed, that 9 persons develop a contact sensitization (Reider N. et al. 2001).

Assessment/safety factors and toxicity:

Until now no risks and contraindications are known. The use of Calendula as intended can be declared as safe and harmless for human health.

Further remarks and characteristics:

None.

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