

Part A: Materia Medica



Calendula officinalis



Taraxacum officinale

Calendula officinalis

Marigold

Often referred to as pot marigold or garden marigold, *Calendula officinalis* has been used for medicinal purposes for centuries. Folk medicine healers in Europe used *Calendula* to induce menstruation, produce sweat during fevers, and cure jaundice. During the 19th century, preparations were also used in the United States to treat stomach ulcers, liver complaints, conjunctivitis and wounds. Recognized for its antiseptic and vulnerary properties, today *Calendula* flowers are used in the form of infusions, tincture, fluid extracts, cold infused oil and ointments to promote the granulation and facilitate healing of skin inflammations, wounds, burns, bruises, and cuts, as well as prevent the spread of infection.

Botanical Name: *Calendula officinalis*

Common Name(s)

Calendula, field marigold, garden marigold, poet's marigold, goldbloom, holligold, maravilla, marybud, marygold, pot marigold, ruddes, Oculus Christi, Fiore d'ogni mese, Solis Sponsa, Ringelblumen.¹⁻³

In old English *Calendula* was known as "golds", and was associated first with the Virgin Mary and then with Queen Mary; hence the name "Mary's gold."¹

Family: Asteraceae / Compositae

Part(s) Used: Flower (dried petals)

Plant Description

Calendula is a self-seeding annual plant that thrives in virtually any soil. It grows to a height of 30 to 60 cm with multiple branching stems. Its leaves are spatulate or oblanceolate, sessile, with widely spaced tiny teeth on the borders, and the whole leaf is covered with very short fine hairs. *Calendula* has single flowerheads situated on a green crown-shaped receptacle. The inner portion of the flowerhead consists of orange-yellow, tubular florets (often called petals). As the petals fall off, a circular corona of seeds remains in view.^{1,3}

Habitat

Native to Egypt and the Mediterranean, *Calendula* is cultivated in temperate regions around the world. Easily naturalized, it grows readily in sunny locations throughout North America and Europe. It prefers previously cultivated positions.^{3,4}

Cultivation

The seeds are sown in spring, in any soil in sunny locations. Other than keeping them free from weeds and spreading them out where too close, they require no other cultivation. The flowers begin to open in early summer, and continue flowering until the frost kills them. They will spread rapidly in subsequent years, if allowed to seed themselves. The seeds ripen in autumn, and if permitted to scatter, will furnish a supply of young plants in the spring.²⁻⁴

Harvesting

The flowers are collected throughout the long flowering season on dry sunny days.³

Related Species

There are about 20 species in the *Calendula* genus. *Calendula arvensis*, a wild species, may have similar therapeutic properties to *Calendula officinalis*.^{1,4}

History of Use

Used medicinally since the 12th century, *Calendula* has been cultivated by the Egyptians, Greeks, Hindus and Arabs. It also grew in Europe, where it was cultivated in the kitchen garden for the flowers, which are dried for broth, and said to comfort the heart and spirits. Its name is derived from the Latin word, *calends*, meaning the first day of every calendar month as *Calendula* flowers open as the sun rises and can be found blooming in some parts of the world every month. As the flowers follow the sun, Culpeper linked it to the astrological sign of summer, Leo, and to treating the heart and conditions caused by heat. Traditionally, *Calendula* was taken internally to treat fevers, promote menstruation and treat jaundice. Topically, the flowers were made into extracts, tinctures, balms and salves and applied directly to the skin to help heal wounds and to soothe inflamed and damaged skin.^{1,2}

In Italian folk medicine, *Calendula* is used as an antipyretic and anti-inflammatory. *Calendula* tea is used as eye washes, gargles or compresses to treat conjunctivitis, pharyngitis, aphthous stomatitis and gingivostomatitis, diaper rashes and other inflammatory conditions of the skin and mucous membranes. In India, it is used topically to treat hemorrhoids. *Calendula* cream is also a favorite homeopathic remedy to treat abrasions and minor burns.^{1,2}

Dried *Calendula* petals are used in the spice trade as an inexpensive alternative to saffron and are used in many ointments to enhance their appearance by adding a gold color. Formerly its flowers were also used to give cheese a yellow colour. Like other members of the daisy family, the dried flowers have also been used as an insect repellent.^{1,2}

Known Active Constituents

- ◆ Sesquiterpene and flavonol glycosides
- ◆ Triterpenoid saponins (sapogenin: oleonic acid)
- ◆ Triterpene alcohols
- ◆ Flavonoids, carotenoids and xanthophylls
- ◆ Phenolic acids
- ◆ Other: volatile oil, phytosterols, mucilage, tocopherols, calendulin, bitters, resin^{1, 3-5}

Known Pharmacology

Gastrointestinal/Hepatic: Chronic colitis and ulcers

Human data: In a case series of 24 adults with non-specific chronic colitis treated with an herbal tea that included *Calendula*, 96% had improved symptoms within two weeks. Defecation was normalised in patients with diarrhoea symptoms.⁶ In another series of 170 patients with duodenal ulcers and/or gastroduodenitis, treatment with a herbal combination that included *Calendula* was shown to lead to improvements in 90% of the patients.⁶ No controlled trials have been reported.

Neuro-psychiatric: Sedative

Animal data: Several animal studies suggest that *Calendula* extracts have mild sedative effects and synergistic effects with sedative medications such as barbiturates.⁷⁻¹⁰

Reproductive: Estrogenic and uterotonic effects

In vitro data: *Calendula* extracts exhibited moderate uterotonic effects in isolated rabbit and guinea pig uterine horn tissues.¹¹

Animal data: Two Polish abstracts from the early 1960s reported that *Calendula* extracts had some estrogenic activity in ovariectomized mice.^{12,13}

Immune modulation: Immunostimulant, anti-inflammatory

a. Immunostimulant

In vitro data: *Calendula's* polysaccharides may stimulate phagocytosis.¹⁴

b. Anti-inflammatory

In vitro data: *Calendula's* glycosides inhibited lipxygenase activity *in vitro*.¹⁵

Animal data: In several studies, *Calendula's* triterpenoids (especially the faradiol monoester) reduced experimentally induced inflammation in mice.¹⁶⁻¹⁹ Oral doses of aqueous ethanolic extract of *Calendula* produced anti-inflammatory activity in carrageenan-induced rat paw oedema. The activity was much milder than that with indomethacin.²⁰ Rats with long-standing ocular inflammation improved when treated with *Calendula* eyewashes; however, there was no comparison group in this study.²¹

Human data: Anecdotal cases report decreased pain and inflammation in postmastectomy patients and in children with chronic suppurative otitis media.^{22,23} No controlled trials have been reported.

Calendula extract suppressed the inflammatory process and leukocyte infiltration caused by carrageenan and prostaglandin E1.²⁴

Antimicrobial: Antiviral, antibacterial, antifungal

a. Antiviral

In vitro data: Data are conflicting. *Calendula's* sesquiterpene glycosides inhibited replication of rhinovirus and Herpes I virus^{25,26}; *Calendula* extracts also displayed some anti-HIV activity, including a dose-response effect against reverse transcriptase activity²⁷; another study demonstrated activity against Herpes simplex and influenza viruses.²⁸ However, other studies showed no antiviral activity against polio, vaccinia, influenza or Herpes viruses.²⁹

b. Antibacterial

In vitro data: Data are conflicting. Some studies showed antibacterial effects against *B. subtilis*, *E. coli*, and *Staph aureus*^{30,31}; the arvensosides B & D were mildly active against *Trypanosoma brucei*.³² In other studies, *Calendula* was inactive against *Aerobacter aerogenes*, *Bacillus subtilis*, *E. coli*, *Klebsiella pneumonia*, *Proteusmorganii*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Serratia marcescens*, *Strep faecalis*, *Staphylococcus aureus*.^{30, 31, 33-35}

c. Antifungal

In vitro data: *Calendula* was not active against *Candida albicans* in one study³³, but was in another.³¹

Antineoplastic: Antimutagenic

In vitro data: *Calendula's* saponins were antimutagenic for benzo(a)pyrene with a dose-effect relationship *in vitro*.³⁶

Animal data: *Calendula's* saponins displayed cytotoxic and antitumor activity against mouse Ehrlich carcinoma.^{37,38}

Skin and Mucous Membranes: Vulnerary

In vitro data: *Calendula* extract has demonstrated angiogenic activity. One study reported enhanced vascularization in tissue cultures treated with a freeze-dried aqueous extract of *Calendula*.³⁹

Animal data: Among rats with surgical wounds, an ointment containing 5% of the flower extract of *Calendula* plus allantoin significantly speeded healing by stimulating physiological regeneration and epithelialisation.⁴⁰ Unfortunately, as there was more than one active ingredient in the ointment, the researchers were unable to tell how much of the benefit was attributable to *Calendula*. Other studies in rats showed improved wound healing with a 60% alcohol solution of *Calendula* flowers. The solution was found to facilitate the collagen maturation phase of wound healing and influenced epithelial cell proliferation and migration.⁴¹ Topical application of a *Calendula* glyceextract had a vasoprotective activity on normal animal skin by decreasing capillary activity.⁴²

Human data: There is a long tradition and numerous case reports of using *Calendula*-based ointments for wound healing and hemorrhoids.^{21,43,44} Among adults suffering from leprosy, an ointment containing 10% *Calendula* extract appeared to help heal chronic skin sores and prevent additional infections.⁴⁵ However, it is not clear whether the enhanced healing was due to *Calendula* or other ingredients in the salve. *Calendula* was beneficial as an adjuvant therapy for rendering scar tissue more supple in patients with cleft lip and palate who were undergoing dermatography.⁴⁶

Actions

Primary

Vulnerary
Anti-inflammatory
Astringent
Styptic
Antiseptic
Antifungal
Antibacterial
Anti-viral

Secondary

Antispasmodic
Alterative
Diaphoretic
Lymphatic
Emmenagogue

Tertiary

Sedative
Oestrogenic
Hypolipidaemic
Antimutagenic
Anti-tumour
Cholagogue
Choleretic
Diuretic
Bitter tonic

Indications

Internal Uses:

Acne
Benign breast disease
Candida
Cervicitis
Chickenpox
Conjunctivitis
Colitis
Dysmenorrhoea
Eczema

Flu
Gastrointestinal infections
Gastritis
Gallbladder problems
Glandular Swelling
Haemorrhoids
Herpes
Hypercholesterolaemia
Indigestion

Measles
Mumps
Psoriasis
Peptic ulcers
Regional ileitis
Skin infections
Ulcers
Worms
Yeast Infection

Topical Uses:

Athlete's foot
Acne
Bruises
Conjunctivitis
Cradle cap
Cuts
Earaches
Eczema

Gingivitis
Haemorrhoids
Inflammation
Insect bites and stings
Minor burns
Nettle rash
Nappy rash
Ringworm

Sore nipples
Scalds
Skin Ulcers
Sinusitis
Sunburn
Thrush
Varicose veins
Wounds

Contraindications

Known allergy.⁴⁷

Cautions

- ♦ Although rare, skin contact with *Calendula* preparations may result in an allergic reaction to the herb. Those with known sensitivity to other members of the Asteraceae family should avoid topical applications of *Calendula* or *Calendula* products.⁴⁷
- ♦ Sensitisation to *Calendula* and allergic contact reactions have been reported.^{48,49}
- ♦ There have also been incidents of anaphylactic shock after gargling with an infusion of *Calendula*.⁵⁰

Possible Interactions

Due to animal studies suggesting increased sleep time in animals given *Calendula* with sedative medications, some herbalists caution against internal use of *Calendula* by patients who are taking sedatives. No studies have evaluated this potential interaction in humans.¹

Use in pregnancy and lactation:

Not tested. Presumed safe for topical use. Internal use of *Calendula* is traditionally contraindicated during pregnancy due to its presumed uterinstimulant effects. No studies have evaluated its safety during lactation or childhood.^{1,51}

Preparation

Fresh or dried *Calendula* petals are available in tinctures, liquid extracts, infusions, ointments, and creams.

Calendula products should always be protected from light and moisture, and should not be used after three years of storage.

Dosage

Recommended adult doses are as follows:

Infusion: 1-2 tsp dried florets in 1 cup of boiling water; steep 10-15 minutes
This should be drunk three times per day.⁵

Fluid extract (1:2 in 90% alcohol): 1.5-4.5 ml per day⁴⁷

Tincture (1:9 in 20% alcohol): 2-4 ml per ¼-½ cup of water⁵²

Ointment: 2-5 g crude drug in 100 g ointment⁵²

Taraxacum officinale

Dandelion

While commonly perceived as a pesky weed, herbalists consider *Taraxacum officinale* a valuable herb with many culinary and medicinal uses. Being a rich source of vitamins A, B complex, C, and D, as well as minerals such as iron, potassium, and zinc, it is widely consumed as a salad green. The roots are roasted and used as a coffee substitute, and the flowers are used to make certain wines.

The major historical uses for *Taraxacum* are as a diuretic and liver tonic. Native Americans used *Taraxacum* decoctions to treat kidney disease, swelling, skin problems, heartburn, and stomach upset. Chinese medicinal practitioners traditionally used it to treat digestive disorders, appendicitis, and breast problems. In Europe, herbalists incorporated it into remedies for fever, boils, eye problems, diabetes, and diarrhea.

Today, *Taraxacum* roots are primarily used as an appetite stimulant and digestive aid while *Taraxacum* leaves are used as a diuretic to stimulate the excretion of urine.

Botanical Name: *Taraxacum officinale*

Common Name(s)

Priest's crown, swine's snout, blowball, canker wart, fairy clock, lion's tooth, piss-in-bed, wet-a-bed, white endive, wild endive; tarassaco (Italian); lowenzahnwurzel, pfaffenrohrlein (German); dent-de-lion, pissenlit (French); pu gong ying (Chinese).¹⁻³

Family: Asteraceae / Compositae

Part(s) Used: Root and leaves

Plant Description

Sometimes referred to as a weed, *Taraxacum* is a variable perennial, which grows to a height of 12 inches. The dentate shaped leaves grow close to the ground in a rosette. They are deeply toothed, shiny and hairless. From the center of the rosette arises a hollow stem, which terminates in a yellow capitulate flowerhead made up of 200 or more yellow ligulate bisexual florets. The yellow flowers are sensitive to light and weather, opening during the day and in dry weather and closing during the night and in rainy weather. When the flower matures, the petals wither, and it becomes a globular mass of the familiar pappi with seeds. The breeze disperses the seeds. The long tap root extends from a short rhizome, and is covered by a dark-brown bark.^{1,3,4}

Habitat

A native of Central Asia, *Taraxacum* now grows amazingly well throughout most of the world. It prefers nitrogen-rich, moist soils in yards, gardens, fields, roadsides, open meadows and waste ground. Favouring the cooler climates, most species are found in the temperate zones of the northern hemisphere, with the largest concentration in north-west Europe.^{1,3,4}

Cultivation

Taraxacum is propagated by sowing the seed or diving the roots. However, the cultivated form was found to be less medicinally active than the wild plant. The crops should be kept clean by hoeing, and because the plant spreads rapidly, all flower-heads should be picked off as soon as they appear in order to contain its growth.^{2,4,5}

Harvesting

While traditionally harvested in autumn, the roots should preferably be collected in early spring. They are found to be more bitter at this time, as the plant uses up the slightly sweet and starchy inulin during the winter months. However, the root should be at least two years old before it is collected. In spring, the young leaves are picked and used in tonic salads and later as a medicine.^{2,4}

Related Species

Pu gong ying (*Taraxacum mongolicum*) is employed in traditional Chinese medicine to “clear heat” and relieve toxicity, especially of the liver. Europeans have developed over 100 specialized varieties for salads, cooking, wine, and as a coffee substitute.^{1,5}

History of Use

Taraxacum was first referred to as a medicine in the works of the Arabic physicians of the tenth and eleventh centuries. They relied on it as a liver tonic, laxative and diuretic. In the Middle Ages, European physicians like Gerard and Parkinson continued to value its leaves and roots in the treatment of liver and gall bladder diseases. It is thought that its use for liver complaints was largely based on the doctrine of signatures, with its bright yellow flowers resembling yellow bile. *Taraxacum*'s effects as a liver tonic was also recognised by the folk medicines of China, India and Russia. Traditional Chinese Medicine uses it in mixes to treat hepatitis, to enhance the immune response to upper respiratory tract infections, bronchitis and pneumonia, and as a topical compress to treat mastitis.^{1,2,4}

Taraxacum has also long been used medicinally as a diuretic. Its French name, “pissenlit”, means “to wet the bed.” It was included as a diuretic in the US pharmacopeia from 1831 to 1926. Based on this action, it is often included in herbal weight loss and premenstrual syndrome remedies. It has also been recommended for preventing atherosclerosis, and as a tonic for chronic osteoarthritis and gallstones. The German Commission E also approves it for use as a diuretic and to treat dyspepsia, liver and gallbladder complaints and appetite loss.^{1,2,4}

In addition, *Taraxacum* was used as a bitter tonic in atonic dyspepsia, and as a mild laxative in habitual constipation. Grievess recommends its use for an irritated stomach, and for increasing appetite and promoting digestion. Combined with other ingredients, it was used in Europe in cases of dropsy, phthisis, scurvy, scrofula, eczema and all eruptions on the surface of the body.²

In addition to its medicinal uses, the ground *Taraxacum* roots are used to replace chicory roots or coffee beans. Being an excellent source of vitamin A, *Taraxacum* leaves are often used as a salad green.¹

Known Active Constituents

Root

- ♦ Bitter sesquiterpene lactones: taraxinic acid (taraxacin), tetrahydroorientin B
- ♦ Triterpenoids: β -amyrin, taraxasterol, taraxerol, cycloartenol
- ♦ Sterols: sitosterin, stigmasterin, phytosterin
- ♦ Vitamins A, C and D and B vitamins, choline
- ♦ Minerals: potassium, calcium
- ♦ Glycosides
- ♦ Phenolic acids: caffeic acid, chlorogenic acid
- ♦ Flavonoids: apigenin, luteolin
- ♦ Other: sugars, tannins, alkaloids, pectin, inulin, starch, caffeic acid, asparagines^{1,4-6}

Leaf

- ♦ Coumarins
- ♦ Carotenoids: lutein, violoxanthin
- ♦ Bitter sesquiterpene lactones: taraxinic acid (taraxacin)
- ♦ Triterpenoids: cycloartenol
- ♦ Vitamins A, B, C and D
- ♦ Minerals: iron, potassium, magnesium, sodium, zinc, manganese, copper, phosphorus
- ♦ Bitters^{1,4-6}

Known Pharmacology

Renal and Electrolyte Balance: Diuretic

Animal data: In rats and mice, *Taraxacum* leaf extracts exerted a diuretic effect that was as potent as furosemide.⁷ However, because *Taraxacum* replaces the potassium that is lost through diuresis, it does not cause the potential side-effects seen with the use of furosemide like hepatic coma and circulatory collapse. It has greater diuretic effects than other herbs such as *Equisetum arvense* and *Juniperis communis*.^{8,9} The diuretic effect accounted for 100% of the weight loss found in these animal studies.

Human data: There are no studies evaluating the diuretic effects of *Taraxacum* leaves or roots in humans or comparing it to standard diuretic medications.

Gastrointestinal/Hepatic: Cholagogue, digestive aid and appetite stimulant, laxative, treatment of hepatitis

a. Cholagogue

Taraxacum has long been used to stimulate bile secretion.¹⁰

Animal data: In German studies, *Taraxacum* leaf extracts increased bile secretion by 40% in rats.¹¹ In French studies, giving dogs a decoction of fresh *Taraxacum* root doubled their bile output.¹²

Human data: Studies in humans have shown that the root enhances the flow of bile, improving conditions like liver congestion, bile duct inflammation, hepatitis, gallstones and jaundice.^{11,13,14} *Taraxacum's* ability to increase the flow of bile is two-fold. On the one hand, it directly stimulates the liver to increase bile production and flow to the gallbladder (choleric), and on the other, it increases the contraction of the gallbladder and hence release of stored bile (cholagogue).³

b. Digestive aid and appetite stimulant

Historically, plants with strong bitter flavors have been regarded as digestion and appetite enhancers.

Animal data: In two Chinese studies of animals with gastric ulcers, gastric metaplasia and hyperplasia, *Taraxacum*-containing herbal combinations led to significant histologic improvement.^{15,16}

c. Laxative

Taraxacum's historical use as a gentle laxative has not been thoroughly evaluated in modern studies.¹⁷ In a case series of 24 adults suffering from chronic colitis, an herbal combination containing *Taraxacum* improved constipation, diarrhea and intestinal cramping in 96% of patients.¹⁸

d. Treatment of Hepatitis

Human data: In 1938, an Italian study was conducted that involved 12 patients with severe liver imbalances, many of them experiencing typical symptoms like anorexia, low energy and jaundice. When treated with a *Taraxacum* extract, 11 of the 12 patients experienced a drop in their cholesterol levels.¹⁹ In another study, *Taraxacum* extract was shown to successfully treat hepatitis, hepatomegaly, jaundice and dyspepsia with insufficient bile secretion.¹³ A Chinese case series also reported that an herbal combination that included *Taraxacum* amongst its ingredients was helpful in treating 96 adults with chronic hepatitis B infection.²⁰

Endocrine: Diabetes

Taraxacum is a traditional European remedy for Type 2 diabetes.

Animal data: It is suggested that since inulin is made up of fructose chains, it may potentially act to buffer blood glucose levels, thus preventing sudden and severe fluctuations.³ *Taraxacum* roots in doses of 500 mg per kg body weight exerted moderate hypoglycemic effects in normal rabbits, but not those with experimentally induced diabetes.²¹ In both normal mice and those with experimentally-induced diabetes, *Taraxacum* extracts exerted no significant effect on blood sugar levels.²²

Immune Modulation: Immunostimulant, anti-inflammatory

a. Immunostimulant

Animal data: In Chinese studies of mice with immunosuppression secondary to scald burns, *Taraxacum* and five other herbs enhanced several measures of immune functioning.²³

b. Anti-inflammatory

An ethanol extract of *Taraxacum* was shown to have analgesic and anti-inflammatory activity when administered by injection.²⁴

Antimicrobial: Antiviral

In vitro data: Like many herbal extracts, *Taraxacum* demonstrated antiviral effects against human herpes virus, type 1 (HHV1) *in vitro*.²⁵

Antineoplastic: Antitumor

Animal data: In 1979, a Japanese study found that *Taraxacum* administered to mice for 10 days markedly inhibited the growth of inoculated Ehrlich ascites cancer cells after a week of treatment.²⁶ In 1979, the Japanese also patented a freeze-dried warm water extract of the root as an antitumor agent, and in 1981, they found Tof-CFr, a glucose polymer, to exhibit anti-tumor actions in mice.¹⁹

In vitro data: Like many herbal extracts, *Taraxacum* has demonstrated antitumor effects *in vitro*.^{27,28}

Skin and Mucous Membranes: Wart remedy.

Direct application of *Taraxacum* juice to the lesion is a popular wart remedy which has not undergone thorough scientific evaluation, but is probably as safe and effective as most other home remedies for warts.²⁹

Actions

Root

Primary

Bitter tonic
Choleretic
Cholagogue

Secondary

Digestive
Hepatotonic
Diuretic

Tertiary

Laxative
Anti-rheumatic
Anti-tumour
Anti-viral
Immunostimulant
Anti-inflammatory
Depurative

Leaf

Primary

Diuretic

Secondary

Nutrient
Bitter
Choleretic

Indications

Internal Uses:

Acne
Anaemia
Anorexia
Arthritis
Bloating (leaf)
Boils
Cellulite (leaf)
Constipation
Cholelithiasis (leaf)
Cholecystitis (leaf)
Diabetes

Dyspepsia
Eczema
Flatulence (leaf)
Gallstones
Gout
Headaches
Hepatitis
High Cholesterol
Hypertension
Irritability
Jaundice

Kidney Stones
Menstrual Problems
Obesity
Oedema (leaf)
Prostate problems (leaf)
Psoriasis
Pulmonary oedema (leaf)
Rheumatism
Tiredness
Urinary infections (leaf)

Topical Uses:

Fungal infections
Skin cancers (sap)

Warts (sap)

Wounds

Contraindications

- ◆ Contraindicated in obstruction of the bile ducts, intestinal obstruction and known allergy.
- ◆ In the case of gallstones, use only after consultation with a physician.³⁰

Cautions

- ◆ Allergic reactions and contact dermatitis to *Taraxacum* have been reported; taraxinic acid appears to be the most allergenic component of the plant.¹
- ◆ People with known sensitivity to other members of the Asteraceae family should avoid topical application of *Taraxacum* leaf or its products.³⁰
- ◆ The milky juice, if sucked excessively by children, could cause nausea, vomiting or diarrhoea.⁶

Possible Interactions

Unknown; none reported. Some herbalists recommend avoiding the combination of *Taraxacum* and diuretic medications, but no adverse effects from this combination have been reported.⁸

Use in pregnancy and lactation:

Unknown. No adverse effects have been reported when taken in doses usually consumed as food.³⁰

Preparation

Taraxacum leaf and root are available fresh or dried in a variety of forms including tinctures, prepared tea, or capsules.

Dosage

Recommended adult doses are as follows:

Root

Dried root: 3 – 5 g or by infusion or decoction

Liquid Extract (1:1 in 30% alcohol): 2 – 8 ml tds

Tincture (1:5 in 45% alcohol): 5 – 10 ml tds

Fresh Juice: 4 – 8 ml tds³¹

Leaf

Dried herb: 4 – 10 g or by infusion tds

Liquid Extract (1:1 in 25% alcohol): 4 – 10 ml tds

Tincture (1:5 in 25% alcohol): 2 – 5 ml tds

Juice from fresh leaf: 5 – 20 ml, twice daily³¹

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