CHICKWEED

Stellaria media (L.) Vill.

Family

Caryophyllaceae.

Parts Used

Aerial parts (leaves, stems and flowers).

Description

Chickweed is a creeping, annual herb which has a variety of common names including Starweed and Mouse Ear. Although it is native to Britain, it is widely distributed with different genus types of chickweed found throughout the world in most temperate regions. Chickweed is a succulent herb and favours cool, moist conditions, often dying out quickly during hot summers. The pale green leaves are ovate and all species have small, white, star-shaped flowers. The thin, fleshy, green stems are covered with fine hairs found uniformly down one side of the stem in a single band – a distinguishing feature in identification.[1]

Traditional Use

Considered a ubiquitous garden weed, chickweed has been historically used as a potage herb being favoured in soups and stews amongst peasants and nobles alike. It was often included in spring tonic remedies for its nutritive value.

Chickweed is best known for its topical emollient and vulnerary action as a fresh plant compress in itchy and inflamed skin conditions such as eczema. The plant is rich in saponins and soothing mucilage that cool and reduce inflammation. It was also used for digestive upsets, ulcers and constipation. Chickweed was also employed in cases of hoarseness, coughs and sore throats. Its Latin name

Stellaria comes from the Swedish botanist Linnaeus, who noted the star-like shape of the delicate white flowers. It makes a wholesome addition to the diet of chickens and other caged birds. Chickweed water is an old wives' remedy for obesity however recent studies may be one step closer to scientifically proving this (see pharmacological activity below for more information).[2,3]

17th Century botanist Nicholas Culpeper says:

'The herb bruised, or the juice applied (with cloths or sponges dipped therein) to the region of the liver, and as they dry, to have it fresh applied, doth wonderfully temperate the heat of the liver, and is effectual for all imposthumes and swellings whatsoever, for all redness in the face, wheals, pushes, itch scabs; the juice either simply used, or boiled with hog's grease and applied, helps cramps, convulsions and palsy. The juice, or distilled water, is of much good use for all heats and redness in the eyes, to drop some thereof into them; as also into the ears, to ease pains in them; and is of good effect to ease pains from the heat and sharpness of the blood in the piles, and generally all pains in the body that arise of heat. It is used also in hot and virulent ulcers and sores in the privy parts of men and women, or on the legs, or elsewhere.' [4]

In energetic medicine chickweed is classed as a yin tonic with cold, moist, sweet and salty qualities which signal therapeutic actions that nourish the yin, moisten dryness and clear deficiency heat. The genus has been listed in Chinese medicine since the Grand Materia Medica (1596 A.D.) [5]

Constituents

The major constituents are coumarins, genistein, triterpenoid saponins, gamma-linolenic-acid, flavonoids (mainly apigenin C-gylcosides, rutin), phytosterols, hentriacontanol and lychnos. Chickweed also has a range of nutrients including most of the B complex (including thiamine, riboflavin and niacin), magnesium, oleic-acid, ascorbic-acid, carotenoids (including beta-carotene), calcium, iron, sodium, phosphorus, potassium, selenium, molybdenum and zinc.[6,7,8,9]

Actions

Antirheumatic, demulcent, expectorant, antitussive. Topically: vulnerary, emollient, antipruritic.[10,11]

Pharmacological Activity

The pharmacological actions of chickweed have not been significantly investigated so traditional use is used. The saponin content of the herb is suspected to contribute to chickweed's expectorant, antitussive and demulcent activity when used internally.

Antiproliferative, Hepatoprotective, Antibacterial, Antitumour, Antiobesity, Antiviral and Antioxidant Activity

A 2013 report has found in chickweed, for the first time, an anti-herpes simplex virus type 2 (HSV-2) protein with antiproliferative and peroxidase activities. A novel antiviral protein, designated as Stellarmedin A, was purified from chickweed by using ammonium sulfate precipitation, cation-exchange chromatography system. This protein inhibited herpes simplex virus type 2 (HSV-2) replication ***in vitro***. It was demonstrated that Stellarmedin A affects the initial stage of HSV-2 infection and is able to inhibit the proliferation of promyelocytic leukemia HL-60 and colon carcinoma LoVo cells.[12]

A water-soluble polysaccharide fraction, isolated from the terrestrial part of chickweed, has shown hepatoprotective activity. Rats with carbon-tetrachloride induced hepatitis were treated with chickweed's water-soluble polysaccharide fraction in a dose of 100mg/kg. It was shown to reduce serum activities of transaminases (ALT and AST), alkaline phosphatase, bilirubin and the thymol test values. In the liver, the density of inflammatory infiltration of the organ parenchyma (functional parts), total count of necrotic hepatocytes, fatty and protein degeneration were reduced.[13]

A 2013 ***in vitro*** study investigating the antibacterial and antitumor activities of chickweed, prepared with three types of solvents (water, ethanol and methanol), was conducted. Antibacterial activity was evaluated with 10 bacteria including *Streptococcus pyogenes, Staphylococcus aureus, Staphylococcus epidermidis, Escheria coli, Pseudomonas aeruginosa, Salmonella typhimurium, Serratia marcescens, Proteus vulgaris, Enterobacter cloacae* and *Klebsiella pneumonia* by using disc diffusion method. Antitumor activity was evaluated with *Agrobacterium tumefaciens*-induced potato disc tumor assay. The results indicated that alcoholic extracts, especially ethanolic extracts,

exhibited strong antibacterial activity against both gram-positive and gram-negative bacteria.[14]

Obesity is recognized as a social problem, associated with serious health risks and increased mortality. Numerous trials have been conducted to find and develop new anti-obesity drugs through herbal sources to minimize side effects associated with the present anti-obesity drugs. A 2012 study was designed to evaluate the quality control parameters, quantitative phytochemical analysis (total phenolic, total flavonoids and total saponin content) and the anti-obesity effect of lyophilized (freeze dried) juice (LJ) of chickweed by employing ***in vitro*** and ***in vivo*** models. The authors concluded that the anti-obesity effects of LJ in high-fat-diet fed mice may be partly mediated through delaying the intestinal absorption of dietary fat and carbohydrate by inhibiting digestive enzymes.[15] The results of another study showed that a methanolic extract of chickweed was beneficial in suppression of progesterone-induced obesity in mice. The findings suggested that the antiobesity activities produced by chickweed were because of its anorexic properties mediated by saponins and flavonoids, and partly because of its beta-sitosterol content. Beta-sitosterol in the plant extract was confirmed by thin-layer chromatography study. Beta-sitosterol is a plant sterol which has structural similarity with dietary fats and cholesterol, and can inhibit cholesterol absorption in the intestine and reduce fat absorption.[16]

A 2012 Chinese study evaluated the anti-hepatitis B virus (HBV) activity of chickweed ***in vitro***. Fresh chickweed juice samples were prepared using macroporous resin and ultrafiltration technology. The results demonstrated that chickweed possesses potential anti-HBV activity ***in vitro***. This was the first report demonstrating the anti-HBV effects of chickweed, which is currently under early development as a potential anti-HBV drug candidate.[17]

A total of 27 extracts from non-cultivated and weedy vegetables traditionally consumed by ethnic Albanians in southern Italy were tested for their free radical scavenging activity. Extracts from non-cultivated ethanolic chickweed extract showed strong ***in vitro*** inhibition of xanthine oxidase. This suggested that chickweed may be a useful antioxidant of interest in the prevention of ageing related diseases, CNS disorders and as potential sources of phytomedicines against hyperuricaemia (a level of uric acid in the blood that is abnormally high) and gout.[18]

Chickweed was also among 15 plants examined for their potential to inhibit liver cancer cells. Chickweed decoction showed anti-hepatoma activity against several human liver-cancer cell lines ***in vitro***.[19]

Indications

- Inflammatory disorders such as rheumatism, gout and as an adjunct to cancer treatment.
- Digestive disorders - including diarrhoea, constipation, dyspepsia and ulcers.
- Bronchial phlegm, bronchitis, dry coughs, sore throat.
- Topically for eczema, psoriasis, rashes, burns, ulcers, abscess, itchy skin, inflammation of the eye, haemorrhoids and other pruritic skin conditions.[20]

Energetics

Bitter, sweet, cooling.

Use in Pregnancy

Chickweed is generally considered safe in pregnancy when used in dietary amounts however safety is not known when used in larger quantities.[21]

Contraindications

Those with known contact hypersensitivities may need to be careful with topical use of chickweed due to the potential for allergic reactions.

Drug Interactions

None known.

Administration and Dosage

Liquid Extract:	1:1
Alcohol:	25%
Weekly Dosage:[22]	20 to 100mL
Fresh plant succus:	20 to 40mL weekly

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