

Native American Botanics

Echinacea - Native Medicine of the Prairies



Scientific Name

Echinacea Spp.

Common Name(s)

Purple coneflower, narrow-leafed purple coneflower, pale purple coneflower, American coneflower, black susan, comb flower, hedgehog, Indian head, Kansas snakeroot, scurvy root

Plant Parts Used

Root, rhizome; aerial (above-ground) parts; whole plant, including root

Overview

Echinacea species are native to the mid-western region of North America between Saskatchewan and Texas. Plants in this genus were used by Native Americans as blood purifiers and therapies for numerous conditions -- infections, dyspepsia, pain, wounds, sores, eczema, rheumatism, migraine, tumors, syphilis, and hemorrhoids. In the 1900s, European and American herbalists used echinacea to treat snakebites and infectious diseases such as typhus and diphtheria. Echinacea eventually lost popularity in the 1920's when sulfa drugs became the standard therapy for treating infections. Today, however, echinacea has become one of the most widely used remedies for low immunity, common cold, infections, and cancer.

In scientific studies, echinacea has been shown to decrease the symptoms and duration of respiratory disorders such as colds, flu, and respiratory tract infections. It is also effective for treating lower urinary tract infections. Pharmacological and clinical studies suggest that it has nonspecific, immune-stimulant effects that can help increase resistance to infection. As a topical agent, Echinacea can promote healing of chronic or slow-healing wounds.

Botanical Description

The purple coneflowers of *Echinacea species* are native to North America and belong to the Aster, or Daisy, family. Many *Echinacea spp.* are found in very restricted ranges and no longer widely available. These plant populations are currently threatened by over-harvesting and encroaching urban development.

Echinacea is a small perennial with a showy display of colored petals surrounding a bristly center that resembles a cone. This distinctive seed head is responsible for many of the common names for the plants, including "coneflower" and "comb flower", a reference to the way in which ancient people combed their hair.

Chemical Constituents

Polysaccharides, flavonoids, caffeic acid derivatives (echinoside, cichoric acid, chlorogenic acid, and isochlorogenic acids), essential oils, polyacetylenes, alkylamides, alkaloids

Medicinal Uses/Therapeutic Indications

Traditional Uses: infection, inflammation, wounds, sores, abscesses, alterative.

Clinical Applications: Furunculosis and boils, septicemia, nasopharyngeal inflammation, anti-inflammatory, pyorrhea, tonsillitis, carbuncles, abscesses; antimicrobial, immunostimulant, and anti-infective for chronic respiratory infection, colds, flu and other viral, fungal, and bacterial diseases; topical application for wounds and dermal ulceration..

Pharmacological Findings

Echinacea spp. extracts have immune-stimulant, anti-inflammatory, antiviral, and antibacterial effects that are mediated largely through nonspecific activation of the immune system. In in vitro experiments, *Echinacea* showed immune-stimulating activity via non-specific T-cell activation. This activity accounts for the ability of echinacea to fight off chronic and acute infections, including common cold, influenza, whooping cough, bronchitis, *staphylococcus* infections, impetigo, candidiasis, topical and internal *Herpes* infections, and urinary tract infections such as cystitis and urethritis.

Echinacea was found to increase phagocytosis, activate T lymphocytes, inhibit hyaluronidase; and

stimulate the adrenal cortex. It also induces phagocytosis by macrophages to stimulate tumor necrosis factor which in turn destroys tumor cells. Mouse cells injected with echinacea extracts and then incubated showed a 24-hour period of resistance to influenza, herpes, and vesicular viruses, presumably due to nonspecific T-cell activation.

In in vivo studies, polysaccharides in echinacea promote tissue regeneration. Polyacetylenes isolated from echinacea have anti-inflammatory effects when they are injected in test animals. Echinacea also has spasmolytic activity against acetylcholine-induced spasm. And Z-1,8-pentadecadiene, a lipid-soluble alkene found in echinacea, has anticancer effects in rats with Walker tumors and in mice with P388 leukemia.

Several human studies provide evidence for the clinical efficacy of echinacea. In a double-blind trial, 100 patients were given an initial 2-day dose of 30 ml of echinacea followed by 15 ml for 4 additional days. The duration of a cold was decreased from 10 to 7 days in the subjects taking echinacea. In a double-blind, placebo-controlled trial of 180 patients, patients receiving 900 mg of echinacea reported significant relief from flu. In another double-blind, placebo-controlled trial, echinacea significantly decreased the recurrence of colds. In an uncontrolled study, echinacea reduced rheumatoid inflammation up to nearly 22% and without the adverse effects of cortisone and prednisone. Numerous pharmacological and clinical studies have confirmed that echinacea is a valuable adjunct therapy for increasing immunity and improving health conditions associated with immune function.

Dosage Range and Duration of Administration

Dried root/rhizome: 1 g as infusion or decoction 3 times per day

Safety

Echinacea is generally safe when taken as directed.

Side Effects

Side effects are rare when echinacea is taken in the recommended dose. Susceptible individuals may have adverse skin reactions to echinacea and should first consult a health care provider before using it.

Warnings/Contraindications/Precautions

Echinacea should not be used by persons who have in systemic diseases (tuberculosis, leukoses, diabetes, collagenosis, multiple sclerosis, AIDS, HIV infection, other autoimmune diseases). Should not be used while receiving immunosuppressant therapy. Pregnant and lactating women should avoid this herb.

Interactions

Echinacea may interfere with cyclophosphamide and immunosuppressive medications.

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