



ALFALFA

Also Known As:

Feuille De Luzerne, Lucerne, Medicago, Phytoestrogen, Purple Medick.

Scientific Name:

Medicago sativa.

Family: Fabaceae/Leguminosae.

People Use This For:

Orally, alfalfa is used as a diuretic, for kidney conditions, bladder and prostate conditions, asthma, arthritis, rheumatoid arthritis, diabetes, indigestion, and thrombocytopenic purpura. It is also used orally as a source of vitamins A, C, E, and K4; and minerals calcium, potassium, phosphorous, and iron.

Safety:

POSSIBLY SAFE ...when the leaves are used orally and appropriately (4, 6, 12).
LIKELY UNSAFE ...when excessive amounts of seeds are used long-term. Chronic ingestion of alfalfa seeds has been associated with pancytopenia and drug-induced lupus effects (381, 14828).

PREGNANCY AND LACTATION: POSSIBLY UNSAFE ...when used orally in medicinal amounts. Alfalfa contains constituents with possible estrogenic activity (4, 11).

Effectiveness:

POSSIBLY EFFECTIVE

Hypercholesterolemia. Taking alfalfa seeds orally seems to lower total cholesterol and low-density lipoprotein (LDL) cholesterol in patients with high cholesterol levels (5816).

There is insufficient reliable information available about the effectiveness of alfalfa for its other uses.

Mechanism of Action:

The applicable parts of alfalfa are the above ground parts. The leaves and sprouts contain saponins. The saponins appear to decrease serum cholesterol, but not triglycerides, by binding cholesterol and decreasing its absorption (14832, 14833). Alfalfa seeds contain the amino acid L-canavanine (12174, 14829). L-canavanine is metabolized to produce canaline and urea. Canaline seems to bind pyridoxine phosphate, a cofactor in the metabolism of amino acids, potentially decreasing amino acid enzyme activity (14827, 14831).

L-canavanine is thought to be responsible for the immunostimulatory effects of alfalfa (12174). Preliminary research suggests the L-canavanine increases immune responses either by decreasing T cell regulation of B cells or by directly binding B cells. Increased activity of B cells can lead to an increase in auto-antibody production and drug induced lupus symptoms (14828, 14829). Animals fed alfalfa seeds for 6 months developed drug induced lupus symptoms including increased antinuclear antibodies, dermatitis, anemia, and glomerulonephritis (14831).

In animal models of diabetes alfalfa can significantly decrease basal glucose levels and polyphagia, as well as decreasing insulin deficiency initially. Alfalfa contains manganese which might be responsible for reported hypoglycemic effects (14907). Alfalfa leaves also contain triterpene glycosides including medicagol, which appear to have antifungal and antibacterial activity (14834, 14835). The isoflavonoids coumetrol, genistein, biochanin A, and daidzein have also been isolated and may be responsible for alfalfas reported estrogenic effects (11).

Adverse Reactions:

Orally, alfalfa seems to be well tolerated (4, 6, 12). Alfalfa has been linked to reports of photosensitivity reactions (605).

There is one case of pancytopenia and splenomegaly after ingestion of alfalfa seeds for 8 weeks (381). Long-term use may also trigger drug-induced lupus symptoms after taking alfalfa tablets (14828). Tell patients with a history of systemic lupus erythematosus (SLE) or drug-induced lupus reactions to avoid alfalfa seed products until more information is known. The stems and leaves have not been associated with lupus reactions (12174, 14828, 14829).

There is one case report of listeriosis traced to the consumption of contaminated alfalfa tablets from which *Listeria monocytogenes* was isolated (5600).

Interactions with Herbs & Supplements:

VITAMIN E: Alfalfa contains saponins which interfere with the absorption or activity of vitamin E (11).

Interactions with Drugs:

CONTRACEPTIVE DRUGS

Interaction Rating = **Moderate** Be cautious with this combination
Severity = High • Occurrence = Possible • Level of Evidence = D

Excessive doses of alfalfa may interfere with contraceptive drugs. Alfalfa contains isoflavonoids with estrogenic effects (4).

ESTROGENS

Interaction Rating = **Moderate** Be cautious with this combination
Severity = Moderate • Occurrence = Possible • Level of Evidence = D

Excessive doses of alfalfa may interfere with hormone therapy due to estrogenic effects of isoflavonoids alfalfa (4).

IMMUNOSUPPRESSANTS

Interaction Rating = **Moderate** Be cautious with this combination
Severity = High • Occurrence = Possible • Level of Evidence = D

Alfalfa seems to stimulate immune responses (12174, 14828, 14829). Theoretically, alfalfa might interfere with immunosuppressive therapy. Immunosuppressant drugs include azathioprine (Imuran), basiliximab (Simulect), cyclosporine (Neoral, Sandimmune), daclizumab (Zenapax), muromonab-CD3 (OKT3, Orthoclone OKT3), mycophenolate (CellCept), tacrolimus (FK506, Prograf), sirolimus (Rapamune), prednisone (Deltasone, Orasone), corticosteroids (glucocorticoids), and others.

PHOTOSENSITIZING DRUGS

Interaction Rating = **Moderate** Be cautious with this combination
Severity = Moderate • Occurrence = Possible • Level of Evidence = D

Excessive doses of alfalfa may potentiate drug-induced photosensitivity (605).

WARFARIN (Coumadin)

Interaction Rating = **Major** Do not use this combination
Severity = High • Occurrence = Probable • Level of Evidence = D

Alfalfa contains large amount of vitamin K (4, 6). Concomitant use can reduce the anticoagulant activity of warfarin.

Interactions with Foods:

None known.

Interactions with Lab Tests:

CHOLESTEROL: Alfalfa seed might lower serum cholesterol concentrations and test results in individuals with type II hyperlipoproteinemia (4).

Interactions with Diseases or Conditions:

AUTOIMMUNE DISEASES: Preliminary evidence suggests that alfalfa might have immunostimulant effects (12174, 14828, 14829). Theoretically, alfalfa might exacerbate autoimmune diseases by stimulating disease activity. Advise patients with autoimmune diseases such as multiple sclerosis (MS), systemic lupus erythematosus (SLE), or rheumatoid arthritis (RA), to avoid alfalfa or use it with caution.

DIABETES: Alfalfa might reduce blood sugar levels; monitor closely (4).

HORMONE SENSITIVE CANCERS/CONDITIONS: Because alfalfa seems to have estrogenic effects (11), women with hormone sensitive conditions should avoid alfalfa. Some of these conditions include breast, uterine, and ovarian cancer, and endometriosis and uterine fibroids.

KIDNEY TRANSPLANT: There is one report of acute kidney transplant rejection following the use of black cohosh and an alfalfa supplement for 3 months. This interaction is more likely due to alfalfa than black cohosh. Alfalfa is thought to have immune stimulating effects that might counteract the immunosuppressant effects of cyclosporine (12174).

SYSTEMIC LUPUS ERYTHEMATOSUS (SLE): Long-term use of alfalfa seed products may reactivate latent SLE. There are two case reports of patients experiencing disease flare after taking alfalfa seed products long-term (14830). Tell patients with a history of SLE or drug-induced lupus reactions to avoid alfalfa products until more information is known.

Dosage/Administration:

ORAL: A typical dosage is 5-10 grams, or as steeped strained tea, three times a day (4). Liquid extract (1:1 in 25% alcohol) 5-10 mL three times a day has also been used (4).

Editor's Comments:

None.

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