LICORICE

**Glycyrrhiza glabra**
[gly-ky-RY-zuh GLAY-bruh]

**Family:** Fabaceae

**Names:** Spanish licorice; Russian licorice, liquorice; réglisse (French); Lakritze, Süßholz (German); Spanish Juice, Black Sugar, Liquorice; Radix Liquiritiae (root), Succus Liquiritiae (extract); Arpsous, Arq-sous (Arabic); Jashtimodhu (Bengali); Noekiyu (Burmese); Kan tsau, Gancao (Chinese); Lakrids, Lakridsplante (Danish); Zoethout (Dutch); Lagritsa-magusjuur (Estonian); Shirin bajan (Farsi); Lakritksavvi, Lakritsi (Finnish); Süßholz (German); Glikoriza, Jiampoli (Greek); Jethimadh (Gujrati); Jethimadh, Mulhathi (Hindi); Édesfa, Igazi édesgyökér (Hungarian); Lakkris (Icelandic); Liquirizia (Italian); Kanzou (Japanese); Yasthimadhuca (Kannada); Sa em (Laotian); Yashtimadhukam (Malayalam); Jesthamadha (Marathi); Lakrisrot (Norwegian); Lukrecja gladka (Polish); Muleti (Punjabi); Lakrichnik (Russian); Madhuka, Yashtimadhu (Sanskrit); Atimaduram (Singhalese); Orozuz, Ragaliz (Spanish); Susu (Swahili); Lakris (Swedish); Atimaduram (Tamil); Atimadhuramu (Telugu); regaliz, Yerba Dulce, Palo Cuate, Coahtli

**Description:** Licorice is one of the most widely used medicinal plants. Pencil-like pieces of the dried runners consisting of yellow fibrous wood are chewed for their sweetness. The plant is perennial, reaching 2 m in height from a root system of taproots, branch roots, and meter long runners. It often covers large areas in southern Italy, Spain, and Russia and other countries east of the Mediterranean as far as Persia. It’s occasionally found growing wild in dry, open habitats but more often found extensively cultivated. The woody stems bear a graceful foliage of dark green leaves, with pairs of narrow, lance-shaped leaflets on a stalk terminating in one odd leaflet. Licorice has a thick, dark reddish-brown root, which is yellowish inside, from which spring horizontal stolons and very long rootlets. It grows to a height of 60 in and has leaves divided into several pairs of almost opposite leaflets with a central, apical leaflet, and they contain numerous oil glands which make them sticky.
The bluish-purple flower spikes spring from the leaf axils and bloom from July to September, succeeded by small, smooth pods containing dark, oval seeds.

Cultivation: Requires a deep well cultivated fertile moisture-retentive soil for good root production. Prefers a sandy soil with abundant moisture and does not flourish in clay. Slightly alkaline conditions produce the best plants. The plant thrives in a maritime climate. Plants are hardy to about 17°F. Liquorice is often cultivated for its edible root which is widely used in medicine and as a flavoring. There are some named varieties. The ssp glandulifera grows in Russia and produces adventitious roots up to 10 cm thick. Yields of 10 - 12 ton per hectare were considered good in the early 20th century, this only being attained in the fourth year of growth. Unless seed is required, the plant is usually prevented from flowering so that it puts more energy into producing good quality roots. The bruised root has a characteristic sweet pungent smell. Plants are slow to settle in and do not produce much growth in their first two years after being moved. The young growth is also very susceptible to damage by slugs and so the plant will require some protection for its first few years. A fairly deep-rooting plant, the roots are up to 120cm long. It can be difficult to eradicate once it is established. This species has a symbiotic relationship with certain soil bacteria, these bacteria form nodules on the roots and fix atmospheric nitrogen. Some of this nitrogen is utilized by the growing plant but some can also be used by other plants growing nearby.

Pre-soak the seed for 24 hours in warm water and then sow spring or autumn in a greenhouse. Prick out the seedlings into individual pots when they are large enough to handle, and grow them on for their first winter in a greenhouse. Plant out in late spring or early summer when in active growth. Plants are rather slow to grow from seed. Division of the root in spring or autumn. Each division must have at least one growth bud. Autumn divisions can either be replanted immediately or stored in clamps until the spring and then be planted out. It is best to put up the smaller divisions and grow them on in a cold frame until they are established before planting them out in the spring or summer. Growth will be slow for two years but once established licorice grows luxuriantly. Harvest roots in the third or fourth autumn, wash, trim and dry for future use. Soil should be dug to a depth of two feet or more and manured well the autumn prior to planting. A moist, fairly rich, well-drained sandy loam is best. Soil pH should be slightly alkaline. Licorice is a plant for southern climates, dying in a hard freeze. Warm regions and mild climates insure vigorous growth. It is best to harvest plants that haven’t gone to seed as the sweet sap is exhausted by the flowering process. Pinch flowers back as they develop. An acre has been reported to produce 2 ½ to 5 tons of root. The main root should be split as it is slow to dry.

History: The first mention of licorice was recorded on ancient Assyrian tablets and Egyptian papyri. The Greeks learned about the sweet root from the Scythians, so Theophrastus named it Scythian in the 3rd C bc, declaring it god for lung disease. Later it descriptively became glycyrrhiza (glykys, meaning “sweet,” and rhiza, “root”). The specific name glabra, ’smooth’, is a reference to the smooth seed pods. Widely cultivated in 15th-century Italy, it was sold in apothecaries and it remains a common pharmaceutical sweetener and pill binder today. The Latin liquoritia turned into lycorys in Old French. The Dominican Black Friars introduced it into England, where lycorys extract was later sold as lozenges called “pomfrey cakes.”

Licorice has been used medicinally for many centuries; the ancient Egyptians, Greeks and Romans, all recognized how beneficial it was for coughs, colds and chills. Licorice was often called scythic by the ancients because the Scythians, redoubtable
warriors, were reputed to be able to go for ten days without other food or water by eating licorice. Licorice has been used medicinally since at least 500 B.C. and still features in official pharmacopoeia as a "drug" for stomach ulcers. G. glabra originates in the Mediterranean and the Middle East and has been cultivated in Europe since at least the 16th century. In China, G. uralensis or gan cao is used; it is called the "great detoxifier" and is thought to drive poisons from the system. It is also an important tonic, often called "the grandfather of herbs."

The roots became popular chewing sticks in Italy, Spain, the West Indies, and other places where the plant grows. Liquorice has an ancient reputation as an aphrodisiac; the Kama Sutra and Ananga Ranga contain numerous recipes for increasing sexual vigor which include licorice.

**Constituents:** Triterpenes of the oleanane type, mainly glycyrrhizin and its aglycone glycyrrhetinic acid, liquiritic acid, glycyrrhetol, glabrolide, isoblabrolide, licoric acid, and phytosterols; Flavonoids and isoflavonoids: liquiritigenin, liquiritin, rhamnoliquiritin, neoliquiritin, licoflavones A and B, licoisoflavaneone, formononetin, glabrol, glabrone, glyxarin, kumatakenin and others; Courmarines: liqcoumarin, umbelliferone, herniarin glycyrin; Chalcones: liquiritigenin, isooliquiritigenin, neosoliquiritin, rhamnoliquiritin, licuraside, licochalcones A and B, echinatin and others; Polysaccharides, mainly glucans; Volatile oil, containing fenchone, linalool, furfuryl alcohol, benzaldehyde and others and references; starch, sugars, amino acid. It is for the glycoside glycyrrhizin that the root is cultivated. The amount of glycyrrhizin varies greatly ranging from 7% to 10% depending on growing conditions.

**Properties:** anti-inflammatory, anti-arthritic, tonic stimulant for adrenal cortex, lowers blood cholesterol, soothes gastric mucous membranes, possibly anti-allergenic, cooling, expectorant, demulcent, laxative, spasmyloytic, hepatoprotectant, hepatorestorative, antiviral

**Energetics:** sweet, neutral, moist, cool

**Meridians/Organs affected:** spleen, lung

**Medicinal Uses:** Since Hippocrates’ day licorice has been prescribed for dropsy because it does, indeed, prevent thirst--probably the only sweet thing that does. The chief medicinal action of licorice is as a demulcent and emollient. Its soothing properties make it excellent in throat and chest complaints and it is a very common ingredient in throat pastilles and cough mixtures. It is also widely used in other medicines to counteract bitter tastes and make them more palatable. Recent research has shown that it has a pain-killing effect on stomach ulcers and prolonged use raises the blood pressure. Medicinally the dried peeled root has been decocted to allay coughs, sore throat, laryngitis, and urinary and intestinal irritations. The root is expectorant, diuretic, demulcent, antitussive, anti-inflammatory, and mildly laxative. It has proven helpful in inflammatory upper respiratory disease, Addison's disease, and gastric and duodenal ulcers. Side effects may develop in ulcer treatment. Licorice may increase venous and systolic arterial pressure causing some people to experience edema, and hypertension. In some countries, licorice has been used to treat cancers. Licorice stick, the sweet earthy flavored stolons, are chewed. Licorice chew sticks blackened Napoleon's teeth. In the 1940s Dutch physicians tested licorice's reputation as an aid for indigestion. They came up with a derivative drug, carbenoxolone, that promised to help peptic ulcer patients by either increasing the life span of epithelial cells in the stomach or inhibiting digestive activity in general. Many cures were achieved in the experiments, but negative side effects--the patients' faces and limbs swelled uncomfortably--outweighed the cures.
Certain agents in licorice have recently been credited with antibacterial and mild antiviral effects; licorice may be useful in treating dermatitis, colds, and infections. It also has been used in a medicinal dandruff shampoo. Other modern-day research found that the herb can reduce arthritic activity.

An extract of licorice is made by crushing the fresh or stored roots, then boiling or passing steam through them and evaporating the liquid, leaving a thick paste or solid black glossy substance with a sharp fracture. The active ingredient Glycyrrhizin may cause hypertension from potassium loss, sodium retention, and in increase of extracellular fluid and plasma volume. It is fifty times sweeter than sugar. Licorice also reportedly contains steroid hormones, but their relation to licorice’s biological activity is yet to be determined, though extracts have been shown to be estrogenic in laboratory animals. Perhaps the most common medicinal use is in cough syrups and cough drops; licorice soothes the chest and helps bring up phlegm. Licorice has also been used to treat ulcers, to relieve rheumatism and arthritis, and to induce menstruation. In this country it was used in powder form as a laxative.

Licorice root is being used today in France and China in eye drops that relieve inflammation. Sodium salts of glycyrrhinic acid are extracted from the root and added to the eye drop formula. The cortisone like action of the licorice root extract is responsible for its healing effects.

**Tincture:** Use as an anti-inflammatory for arthritic or allergic conditions, as a digestive stimulant, or allergic conditions, as a digestive stimulant, or for lung disorders. Prescribed for gastric inflammation or to encourage adrenal function after steroid therapy. Helps disguise the flavor or other medicines.

**Decoction:** Prescribed to reduce stomach acidity in ulceration

**Syrup:** Take a syrup made from the decoction as a soothing expectorant for asthma and bronchitis.

**Fluid Extract:** Let juice sticks dissolve slowly in an equal volume of water to produce a strong extract that can be used as the decoction, tincture or syrup

**Research:** Glycyrrhizin has been found effective in the treatment of AIDS, and in the prevention of progression of HIV+ patients to AIDS in several Japanese clinical trials. Glycyrrhizin is also used routinely in Japan to treat liver dysfunction, a benefit for many AIDS patients.

Glycyrrhizin showed antiviral properties in initial laboratory tests. It inhibited replication of HIV virus, interfered with virus binding to cell walls, inhibited cell-to-cell infection, suppressed clumping of infected cells and induced interferon activity. Interferon raises cell resistance to infection. Although the number of patients in these clinical trials is small, results are consistent in all of them.

Although administration of glycyrrhizin itself gives a more consistent dose, taking the whole root may have advantages. Reports of the glycyrrhizin content of the whole root vary. The Merck Index lists it as 6% to 14%, and the official German monograph lists it as 4% to 5.3%. The German monograph says that a dose of 5g-15g a day delivers 200mg to 800mg of glycyrrhizin to the digestive tract. This will deliver a consistent dose at or above the dose range used by Ikekomi with HIV+ patients. Having the antiviral and liver-protecting effects of its constituent glycyrrhizin, the whole root is also an expectorant for coughs and bronchitis, and has anti-inflammatory properties. Its isoflavone and saponin constituents also have antiviral and anti-bacterial properties and could help with secondary infections in AIDS. (Medical Herbalism Vol 2 No 4)

**Remedies:** To make a decoction that can be taken for coughs, colds, sore throats and stomach ulcers, put 1 1/2-2 oz liquorice root in
1 1/2 pt of water, boil for 10 to 15 minutes, strain and drink as required.

Dosage (general): powder: 0.6-2 g; tincture: 2-5 ml

For menopause: contains phytoestrogens and steroidal estrogenic saponins capable of balancing female hormones. It is suggested that it is best limited to the first half of the menstrual cycle or in menopause 2-3 weeks out of the month to avoid bloating and water retention.

General menopause formulas:
---2 parts Licorice, 2 parts burdock; 2 parts angelica; 1 part wild yam root; 1 part motherwort. Take two capsules three times a day, or 30 drops of a tincture of the same formula. (Tori Hudson, N.D.)
---2 parts Chaste tree berry; 1 part motherwort; 1 part false unicorn root; 1 part angelica; 1 part St. John's wort; 1-2 parts sage; 1-2 parts black cohosh; ½-1 part licorice; ½ -1 part cramp bark; ½ -1 part alfalfa. Take 304 ml three times a day away from meals and before bed. Can add dandelion or Oregon grape. (Silena Heron)

Toxicity: As noted above, the cortisonelike component of glycyrrhizin increases the retention of salt and water in the body. This causes dangerous side effects, including abnormal heart action and kidney failure, triggered by potassium depletion. Licorice should be avoided by cardiac patients and those who suffer from hypertension, kidney complaints or obesity. Pregnant women, who are especially subject to edema, should also avoid it. In addition, some people are allergic to licorice, even in modest quantities. Cases of toxicity have been reported from less than a gram of glycyrrhizin in chewing tobacco. Licorice has caused paralysis of the limbs, electrolyte imbalance, high blood pressure, and shortness of breath. The toxic manifestations of excess licorice ingestion are well documented. One case documented the ingestion of 30 g to 40 g of licorice per day for 9 months as a diet food. The subject became increasingly lethargic, having flaccid weakness and dulled reflexes. She also suffered from hypokalemia and myoglobinuria. Treatment with potassium supplements reversed her symptoms.

Other documented complications include hypokalemic paraparesis, hypertensive encephalopathy and one case of quadriplegia. Products which contain licorice as a flavoring, such as a chewing tobacco, have also been implicated in cases of toxicity. Hypersensitivity reactions to glycyrrhiza-containing products have also been noted in the literature. Although licorice candy is safe, large doses can cause sodium retention and potassium los, leading to water retention, high blood pressure, headaches and shortness of breath. In a controlled study, 3 ½ oz of licorice twists daily for 1-4 weeks resulted in serious symptoms, which disappeared when discontinued.

Cosmetic Uses: Licorice root is emollient and soothing. Modern-day herbalist Jeanne Rose recommends making a steam facial with licorice, comfrey, and either chamomile or lavender. The licorice helps to open the pores and allows the other cleansing and healing herbs to penetrate the skin. As a shampoo ingredient licorice root suppresses the secretion of scalp sebum for a week after shampooing, thereby postponing the oily sheen. It is also used in mouthwash and toothpaste as a sweetening and flavoring agent. Sometimes it is mixed with anise and used in liqueurs and herbal teas. When used in making beer and stout, it adds flavor, color and a foamy head. Licorice has the power to intensify other flavors, and it is used commercially in pastries, ice cream, puddings, soy sauce, and soy-based meat substitutes.

sachets, carried to attract love, and used in spells to ensure fidelity. Licorice sticks make useful wands.

**Other Uses**: Used as foaming agent in fire extinguishers. Licorice products figure as wetting, spreading, and adhesive agents in insecticides and as a medium for culturing food yeast. The pulp is a nitrogen-rich fertilizer and mulch, and it is a component of composition board and insulation. By far the greatest quantity of the licorice, perhaps as much as 90%, ends up in tobacco products.

**Culinary Uses**: A sweetening agent, it is more than 50 times sweeter than sugar and is added to chocolate to extend the sweetness of sugar. This distinctive bittersweet flavor is a classic the world over. Licorice is a popular confection which can be safely eaten by diabetics; Pontefract of Pomfrey cakes are made from liquorice grown around the town of the same name in Yorkshire. Liquorice is used by brewers to give body and color to porter and stout. It is used in making the Irish ale Guinness and to flavor the Italian liqueur sambuca. Licorice increases the foam in beer. Licorice extracts are used to flavor tobacco, chewing gums, confections, soft drinks, liqueurs, ice cream, and baked goods. Pieces of licorice root can also be infused in hot water for a flavorful and soothing tisane, and licorice powder can be used to enliven fruit juices and dried fruit salads. A stick cut from the root is satisfying to gnaw on, especially for those on diets and for those giving up smoking (it can be fiddled with like a cigarette).

**Recipes**:

**Licorice Cookies**

4 Tbsp butter  
½ tsp lemon peel  
1 tsp lemon juice  
½ tsp licorice extract  
½ cup sugar  
2 cups flour  
1 egg  
2 tsp baking powder  
2 Tbsp milk  

Cream butter, lemon peel, lemon juice and extract together with sugar until smooth. Add one cup flour and the egg. Mix baking powder and remaining flour together, then mix in. Ad milk if dough is too dry. Work dough into a smooth ball. Roll out half at a time onto a floured surface to just less than ¼’ thick. Cut out cookies in desired shape and place on lightly greased cookie sheet. Decorate with pieces of licorice candy if desired. Bake at 375F for 12 minutes or until just golden brown around the edges. (The Herb Quarterly No. 19)

**Dried Fruit Salad**

4 oz dried pears  
4 oz dried apricots  
8 oz prunes, pitted  
2 oz sultanas  
¾ pint water  
3 licorice roots, 4 inches each, bruised  
1 Tbsp sambuca or brandy  
1 Tbsp flaked almonds  

Rinse the fruit in cold water and place in a bowl starting with the pears. Bring the water to the boil with the licorice root and pour over the fruit. Bury the root in the fruit. When the fruit is cool, add the sambuca or brandy, cover and refrigerate for 48 hours, turning it two or three times. Transfer to a serving bowl, scatter with the almonds and serve with cream. (Cooking with Spices)

**Licorice Liqueur**

1 fifth vodka  
1 cup sugar  
4 Tbsp licorice root  
½ cup water  

Put the licorice root in the vodka bottle and recap it. Let stand in a dark place for a couple of days, then strain the vodka through a coffee filter. Heat the water and mix in sugar until it dissolves. Add this syrup to the vodka and return to bottles. Tightly cap and store for at least two weeks before using.
Licorice and Banana oatmeal
½ ripe banana, mashed well
1-2 pinches of powdered licorice root
1 bowl of well-cooked oatmeal

Blend the banana and licorice into the bowl of oatmeal. Add a little milk if desired. Helps relieve congestion of the sinuses and lungs as well as supporting the immune system and helping to relieve diarrhea. (Growing 101 Herbs that Heal)

References:
The Illustrated Herb Encyclopedia, Kathi Keville

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