

A Short Review on Ayurvedic Herb - Mulethi (Yashtimadhu)

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ABSTRACT

Mulethi is also called Yashtimadhu in Ayurveda. It is an important herb used in Indian medicines, home remedies, folk medicines and Ayurveda. The health benefits of Mulethi include its use in hyperacidity, ulcer, general debility, joint pains and some other diseases. It is beneficial in these diseases due to its medicinal properties. It is a good anti-inflammatory and analgesic agent. It also acts as antacid and aphrodisiac.

INTRODUCTION

Mulethi [Yashtimadhu] is botanically Glycyrrhiza Glabra that belongs to Fabaceae family [peas and legumes family]. In Tamil Language, it is known as ATHIMATHURAM. It is a herbaceous perennial plant bearing sweet roots, that are used for therapeutic purposes.

Common Names

Botanical Synonym	Glycyrrhiza Glabra
English Name	Cultivated Licorice, Liquorice, Licorice
Hindi Name	Mulethi
Sanskrit Name	Yashtimadhu
Ayurvedic Name	Yashtimadhu
Also Spelled As	MULATHI, YASHTI-MADHU, YASHTI-MADHUKA, JETHI MADH

Botanical Classification [Plant Taxonomy]

Kingdom	Plantae
Sub-Kingdom	Viridiplantae
Infra Kingdom	Streptophyta [Land Plants]
Super Division	Embryophyta
Division	Tracheophyta [Tracheophytes or Vascular Plants]
Sub Division	Spermatophytina [Spermatophytes or Seed Plants]
Class	Magnoliopsida
Super Order	Rosanae
Order	Fabales
Family	Fabaceae [peas & legumes]
Genus	Glycyrrhiza
Species	Glycyrrhiza Glabra [Cultivated Licorice]

Plant Description

Type of Plant	Herbaceous Perennial Plant
Native Range	India, Asia, Southern Europe
Height [grows up to]	Grows up to 1 meter in height
Habitat [type of environment]	Dry, hot and sunny climates with low annual rainfall are

	best for liquorice growth. However, adequate soil moisture is also necessary for its growth.
Roots	Stoloniferous
Leaves	Pinnate leaves [70 to 150 mm long] bearing 9–17 leaflets
Flowers	Purple to pale whitish blue [8 to 12 mm long]
Fruits	Oblong pod [20 to 30 mm]
Seeds	Fruits contains several seeds

Medicinal Parts of Liquorice Plant

In Ayurveda, Mulethi [Yashtimadhu] **roots** are best for medicinal uses. It has all therapeutic properties.

Phytochemistry [Chemical Composition]

Mulethi [Yashtimadhu] contains a sweet substance and a saponin glycoside, **glycyrrhizin** [also known as **glycyrrhizic acid**]. It is 30 to 50 times sweeter than sugar and taste of sweetness in mouth lasts longer than sugar. On hydrolysis, glycoside converts into aglycone glycyrrhetic acid and loses its sweetness. Yellow color of liquorice is due to Chalcone Glycoside Isoliquiritin.

Medicinal Properties

Mulethi [Yashtimadhu] has following healing properties.

- 1) Antacid
- 2) Anti-ulcerogenic
- 3) Anti-inflammatory
- 4) Anti-oxidant
- 5) Anti-Alzheimer's
- 6) Anti-obesogenic
- 7) Anti-adipogenic
- 8) Anti-atherogenic
- 9) Anticancer
- 10) Anti-angiogenic [in cancer or Tumors]
- 11) Anti-proliferative [in cancer or Tumors]
- 12) Anti-asthmatic
- 13) Antibacterial
- 14) Adaptogenic
- 15) Analgesic
- 16) Anti-arthritis
- 17) Antidepressant
- 18) Antioxidant
- 19) Anti-stress
- 20) Antitussive
- 21) Aphrodisiac
- 22) Demulcent
- 23) Expectorant
- 24) Immuno-modulator
- 25) Mild estrogenic – It might influence estrogen level in women.

Ayurvedic Properties

Taste – RASA	MADHURA [Sweet]
Main Quality – GUNA	GURU [Heavy] & SNIGADH or SNEHA [Unctuous or Oily]
Potency – VIRYA	SHEETA [Cold]
Resultant – VIPAKA	MADHURA [Sweet]
Therapeutic Effect – PRABHAVA	Rejuvenation & Supplement
DOSHA KARMA [Effect on Humors]	Pacifies VATA & PITTA
Dhatu [Tissue] Effect	All – RASA, RAKTA, MAMSA, MEDAS, ASTHI, MAJJA & SHUKRA
Beneficial for Organs	Stomach, Intestines, Liver, Brain, Heart & Blood Vessels

Therapeutic Indications

Mulethi is helpful in following health conditions.

Allergy	Allergic rhinitis or hay fever
Brain & Mind Health	Depression, emotional stress, memory loss
Digestive Health	Acidity, Chronic Gastritis, Canker sores, Constipation, duodenal ulcer, gingivitis, heartburn, indigestion, peptic ulcer, mouth ulcer, tooth decay, Ulcerative colitis, hepatitis and inflammation of gallbladder,
Heart Health	High Cholesterol level
Hormones	Addison's disease
Joint, Muscle & Bones	Arthritis, Bursitis, Fibromyalgia, Gout
Respiratory Health	Cough, Asthma, Bronchitis,
Skin & Hairs	Baldness, Eczema, Psoriasis,

OTHERS

General Indications	General debility, Chronic Fatigue, Physical exhaustion
Infections	Athlete's foot, Intestinal infections, Conjunctivitis, sore throat
Women Health	Menopause, Excessive uterine bleeding,
Men Health	Prostate enlargement

Mulethi [Yashtimadhu] Benefits & Medicinal Uses

The main beneficial effects of Mulethi [Yashtimadhu] are on digestive system and respiratory system. It helps in relieving gastric symptoms such as heartburn, burning sensation in the abdomen, peptic and duodenal ulcer, abdominal colic, GERD and chronic gastritis. Mulethi contains Glycyrrhizin, which is sweet in taste and reduces inflammation of gastrointestinal tract. It benefits in following diseases related to digestive system.

Hyperacidity and Gastritis

Mulethi acts as an antacid and reduces free and total HCL levels in the stomach. It decreases acidic irritation to peptic mucosa. It is effective in acute as well as chronic gastritis. [1, 2]. In Indian Medicine, Mulethi [Yashtimadhu] is used with amla powder [Indian Gooseberry], coriander seed powder, giloy and nut grass powder for relieving gastritis and hyperacidity.

Stomach ulcers

Mulethi has anti-inflammatory effects and anti-ulcer properties. It decreases the inflammation of stomach linings. Various studies have shown its significant anti-ulcer and anti-inflammatory properties. [3, 4, 5]. It has protective effects against stomach ulcer. It reduces the chances of gastric ulceration induced by aspirin and other NSAIDs. [6, 7]. In duodenal ulcer, deglycyrrhizinized licorice [Yashtimadhu] has ulcer healing properties. It corrects the gastric mucosa and reduces ulcerations. [8].

Helicobacter pylori infection induced peptic ulcer

Mulethi extract has some flavonoids, which act as Anti-Helicobacter pylori. The flavonoids such as glabridin and glabrene found in Yashtimadhu have inhibitory effects against H. pylori. Therefore, Yashtimadhu can be used against H. pylori infection and peptic ulcer caused due to H. pylori. [9]

Apthous ulcers or Mouth ulcers or Canker sores

Mulethi can provide 50 to 75% relief from Apthous ulcers within one day and complete remission of ulcers within three days. [10]. Canker sores are a common type of mouth ulcers characterized by pain and tenderness. These are white or yellow in appearance surrounded by red area. Yashtimadhu water or tea reduces the pain and tenderness. Its gargle is also effective in reducing the size of canker sores.

Ulcerative colitis

Mulethi contains a Glabridin compound, which reduces colonic inflammation. It can speed up healing process in inflamed mucosa and prevent ulceration of mucosa of the intestines. [11, 12, 13]. In Ayurveda, It is used with Indian gooseberry, Bamboo Manna [vanshlochan] and Giloy satva for ulcerative colitis treatment.

Nonalcoholic fatty liver disease

Mulethi can help in nonalcoholic fatty liver disease. It reduces elevated liver enzymes [14, 15]. According to Ayurveda, yashtimadhu is not a potent remedy for liver diseases, but it can help in this condition when taken with other hepatic protective herbs such as Punarnava, Bhringraj, Giloy, Patha etc.

Use of Mulethi in Cough

Mulethi is therapeutically helpful in sore throat, throat irritation, cough and bronchitis. Yashtimadhu has expectorant properties. It also eases in coughing up the thick yellow sputum accumulated in the lungs. Due to antibacterial properties, it also reduces infection of upper respiratory tract. It reduces throat irritation and helps in chronic cough.

Bronchitis & Asthma

Mulethi attenuates the inflammation of bronchi and soothes respiratory tract, thus it helps in bronchitis. Due to anti-inflammatory effects, it is effective in many inflammatory diseases including bronchitis and arthritis. It can also be beneficial in allergic asthma, according to studies [16, 17, 18]. In asthma, it can be used with Pushkarmool powder and honey.

High cholesterol

Mulethi has potency to reduce serum cholesterol levels and hepatic cholesterol. The possible action of Yashtimadhu might be associated with conversion of cholesterol into the bile. [19, 20]

Atherosclerosis

Mulethi root or mulethi has anti-atherosclerotic characteristics. The effects can be due to reduction of serum cholesterol and plaque formation in the blood vessels. Another antioxidant property can also potentiate its effects in preventing cardiovascular diseases. [21, 22, 23]

Hormones

Mulethi is known for its effects on adrenal gland. It improves the adrenal gland functions. It can be helpful in people who take steroid drugs, because steroids suppress important adrenal gland functions and result in adrenal insufficiency. It assists adrenal gland to recover its natural functions and stimulates adrenal hormones.

Malaria

Chinese licorice roots contain a compound named as LICOCHALCONE. It inhibits the falciparum strain and its effects are similar to chloroquine. The studies have concluded that a new isolated licorice compound has potent anti-malarial properties. [24, 25]

Tuberculosis

Licochalcone found in Chinese licorice roots has inhibitory effects against myco-bacterial species. However, further studies are required to investigate the results of licorice in tuberculosis, although it can help in bacterial lung infections. [26]

Sore throat

Gargle with yashtimadhu water or decoction reduces throat inflammation, irritation and pain. The studies have shown that yashtimadhu gargle reduces incidence of sore throat by 50% in post-extubation coughing and attenuates postoperative sore throat. [27, 28, 29]. In Ayurveda, mulethi root powder is used in sore throat with honey and sitopaldi churna.

High potassium levels

Some research studies conclude that there are certain compounds found in mulethi, that decrease potassium levels in the blood. Hence, it might be effective in cases of high serum potassium in people with kidney diseases and diabetes. The main warning is that it should not be used in cases with low potassium levels and high sodium levels. Otherwise, it may result in severe myopathy due to hypokalemia. [30]

Eczema

Mulethi paste, oil or gel application helps in eczema as well as inflamed and itchy skin. Some herbal creams and gel used for eczema treatment contain licorice extract. It reduces itchiness, redness and swelling. [31]

Hair fall & premature graying of hairs

In Ayurveda, Mulethi is used for preventing hair fall. It is useful orally as well as in herbal shampoos. According to Ayurveda, vitiation in PITTA and VATA humor results in hair fall and premature graying of hairs. Mulethi has effects on both these humors and helps in pacification of these aggravated humor's activities in the body.

Blemishes and dark spots

Generally, blemishes and dark spots are found in PITTA type people or in PITTA aggravation. Mulethi with Indian gooseberry shows promising results in decreasing blemishes and dark spots. According to our experience, it can take up to 3 to 6 months for

complete fading of blemishes and dark spots. However, this herbal combination is more effective in blemishes than dark spots.

Muscle cramps

Mulethi has antispasmodic and muscle relaxant characteristics. It reduces muscle cramps and tenderness in patients with fibromyalgia. Its effects have been mainly noticed in abdominal spasm that occurs during menstruation in women, but it cannot be so potent that it can work alone, so patient may require other medications too. It can also help preventing muscle cramps in patients on hemodialysis. [32]

Osteoarthritis

In ayurvedic medicine, Mulethi is used with Ashwagandha for the treatment of osteoarthritis. Many ayurvedic analgesic preparations contain yashtimadhu and ashwagandha as main ingredient.

Chronic fatigue syndrome [CFS]

Mulethi can help patients with chronic fatigue syndrome. This action might be due to strengthening and antioxidant activities. [33]

Menopausal Hot Flashes

Studies suggest that Mulethi can decrease the severity and frequency of hot flashes during menopause. It is also well acceptable and tolerable in most of the women. [34]

In Ayurveda, Yashtimadhu is used for reducing menopausal symptoms along with SARASWATARISHTA and MUKTA PISHTI.

Oligospermia

Mulethi has cooling effect on the body, according to Ayurveda. It also has great strengthening and rejuvenation effects. It is used with other herbs to boost spermatogenesis and quality of sperm.

Seminal Weakness

However, Mulethi is not recommended in people with loss of libido, but it can help in men suffering with early discharge or seminal weakness. Generally, hyper-excitement or hypersensitivity is a cause of early discharge in men. It reduces excessive excitement and thus helps in treating early discharge problems in men. Sometimes, mind plays a role in early discharge in which yashtimadhu is also effective.

Prostate hypertrophy or cancer

Mulethi is also used in prostate hypertrophy and prostate cancer, but its relevant studies are not yet available on this subject.

Abdominal fat

Mulethi contains some flavonoids, which reduce abdominal fat accumulation. The research suggests that it also has hypoglycemic effects, so mulethi can benefit in diabetes too [35]. It can also help obese people with elevated serum cholesterol levels. We have already discussed the effects of yashtimadhu on cholesterol in heart health section above.

CONCLUSION

Glycyrrhiza glabra Linn (Mulethi) is a common ingredient in many ayurvedic compound formulations and has been in use since times immemorial to treat wide range of indications. It has been subjected to quite extensive phytochemical, experimental and clinical investigations. Experimental studies have demonstrated its antibacterial, anticancer, anticoagulant, antifungal, anti-hyperglycemic, anti-inflammatory, antimalarial, antioxidant, antitussive and expectorant, antiulcer, antiviral, hepatoprotective, immunomodulator, memory enhancing and skin lightening effects. The scientific studies have proved most of the claims of traditional medicines. These results are very encouraging and indicate this drug should be studied more extensively to confirm other potential therapeutic effects. Clinical trials using Mulethi for a variety of conditions should also be conducted to use it judiciously and cautiously in Unani as well as other systems of medicine.

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