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YASHTIMADHU (GLYCYRRHIZA GLABRA) - A REVIEW

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ABSTRACT *Yashtimadhu (Glycyrrhiza glabra Linn) commonly known as liquorice is an important drug described in Ayurveda. It is a herb or under shrub mainly cultivated in Punjab, Jammu Kashmir etc.The drug is well known from vedic period itself.It is used in many Ayurvedic formulations like eladi gutika, kumkumadi taila etc. It is proven with properties such as memory enhancing, anti-oxidant etc. The present review covers the properties and uses of yashtimadhu along with its categorization, reseach studies etc.*

Yashtimadhu is a widely used drug mentioned in Ayurveda classics. The drug is commonly known as liquorice. It is used in a large number of Ayurvedic formulations like *dasamoolarishtam, pinda taila, eladi gulika, phala ghrita* etc.

KEYWORDS : Yashtimadhu, Glycyrrhiza glabra

1. Etymology [1]

Yashtyam madhu madhuryamasya |
It has sweet taste like that of honey.

2. Historic Background [2]

Yashtimadhu is known since vedic period itself in different names such as *madhvashteela* etc. It is mentioned in *Brahman*as, *Atharvaveda* and *Kousika sootra*. Commentators like *Sayana* identified *madhuka* with *Yashtimadhu*. *Brhatrayees* (Elite three of Ayurveda:Charaka samhitha, Susrutha samhitha and Ashtanga Samgraha) mentioned the use of this herb extensively in therapeutics. *Acharya Charaka* included it in many of kashaya yogas and also emphasized its utility among rasayana drugs. It is one among the four *medhya rasayana* (intellect promoting) drugs.

3. Synonyms

There are about 22 synonyms of *Yashtimadhu* mentioned in ayurvedic classics. Of these *Yashtimadhu, madhuka, yashti, madhuyashti* are mentioned in almost all *nighantus* (ayurveda lexicions). Other synonyms include Jalaja Kleethakam Klitana Kleethanakam Klitika Madhoolika Madhuparni Madhusrava Madhuvalli Soshanasini Virasa etc…

Synonyms	Interpretation
Athirasa	Having more madhura
Kleethakam, Kleethanakam	That which cures male infertility
Madhuka, Madhuyashtika, Yashtimadhuka, Madhoolika, Madhurasa, Madhuyashti, Madhusrava	The drug is sweet like Honey
Soshanasini	That which cures sosha
Soumya	That which is sita in virya
Yashtimadhu, Yashti, Yashtika, Yashtiyahva	Having sweet stem

4. Categorization of *Yashtimadhu* in different Ayurveda classics

Drugs are categorized into different vargas (groups) based on the similarity in pharmacological action. It is included in Hareethakyadi Varga, Asthapanopaga, Anjanadi Jeevaneeya, Saribadi,Vamanopaga,Varnya etc..

5. Pharmacological Properties of *Yashtimadhu*

Rasa: Madhura (Kinchit Tikta according to Raja Nighantu)
Guna: Guru, Snigdha
Virya: Sita
Vipaka: Madhura
Dosa Karma: Tridoshahara
Dhatu Karma: Balavarnakrit ,Chakshushya .Kesya, Vrishya ,Varnyaetc..
Roga Karma: Chardi, Sosha, Trsna, Vrana etc…

6. Therapeutic Uses

1. Rasayana
Intake of yashtimadhu powder mixed with milk acts as *medhya* rasayana (intellect-promoting). (Ch.Chi 1/30-31)

2. Vajikarana
. Madhuka powder(1 karsha) added with ghee and honey followed by drinking milk daily makes a man sexually potent. (AS.U.50/43)

3. Arsas
After application of kshara, ghee mixed with yashtimadhu should be applied on haemorrhoids. (Su.Sa.Chi.6/4)

4. Hoarseness of voice
Yashtimadhu payasa added with ghee can be taken. (Su.Sa.U.53/13)

8. Fistula-in-ano
Madhuka taila is beneficial in wound healing. (Su.Sa.Chi.8/18)

11. Wasting of Foetus
Milk boiled by adding Sarkara, Kasmarya and Madhuka promotes growth of foetus. (Ch.Chi.28/96)

7. Formulations [3-5]

Eladi Gulika
Mahamayoora ghrita
Madhuyashtyadi Taila
Kumkumadi Taila
Bijaka Arishta

8. Dose: [5]

2-4 g of the drug in powder form

9. Botanical Identity [5]

In Ayurvedic Pharmacopoeia of India, *Yashtimadhu* is identified as *Glycyrrhiza glabra Linn* belonging to the family Fabaceae

10. Vernacular Names [5]

Sanskrit: Yashtimadhuka, Yashtika, Madhuka, Madhuyashti, Yashtyahva
English: Liquorice root
Hindi: Mulethi, Mulathi, Muleti, Jethimadhu, Jethimadh
Malayalam: Irattimadhuram
Punjabi: Jethimadh, Mulathi
Tamil: Athimadhuram

11. Distribution: [6,7]

Cultivated in Jammu and Kashmir, Punjab and sub-Himalayan tracts.

12. Taxonomical Description (5,6,7)
Habit: It is a hard, semi-perennial, erect herb or under shrub.

Morphology
Roots: Thick, much branched, with yellow or reddish skin and yellowish inside

Leaves: Imparipinnate
Leaflets: Ovate-lanceolate
Inflorescence: Axillary Spikes
Flowers: Lavender to violet in colour
Fruits: Pods, red to brown in colour
Seeds: reniform

12. Part Used: (5,6)
Root and Rhizome

13. Dose: (5)
2-4 g of the drug in powder form.

14. Flowering Season: (5-8)
March

15. Fruiting Season: (5-8)
August

16. Toxicity and Safety Aspects: (9-10)
The intake of higher doses of liquorice (above 50 g/day) over an extended period may cause sodium retention, hypertension and cardiac complaints. If taken in excessive amounts it can cause metabolic disturbances known as pseudoaldosteronism (due to mineralocorticoid effect of glycyrrhizin) leading to oedema, hypertension and weight gain.

The drug when used within the recommended dosage and the treatment period is devoid of any adverse reactions.

17. Economic Uses: (11)
It is used throughout country in various recipies. It is also used as a sweetening agent in different syrups. It is used to flavour soy sauce in china and to flavour tobacco products in the United States.

18. Chemical Constituents: (5-8,9)
Most important of these are glycyrrhizin, glycyrrhetic acid and 24-hydroxyglycyrrhizin and these constitute over 90% of the total terpenoids. Characteristic compouds are triterpenoides (5-15%) and flavonoids including chalcones(0.3-0.8%).More than 50 flavonoids which are biologically important such as lichochalcone-A, methylglabrol etc are present. Root essential oil composition includes thymol, phenylethyl alcohol,γ-hexalactone.

19. Identity, Purity and Strength: (5)
Total Ash: Not more than 10 per cent
Acid-insoluble ash: Not more than 2.5 per cent
Alcohol-soluble extractive: Not less than 10 per cent
Water-soluble extractive: Not less than 20 per cent

20. Cultivation Technology: (12)
It can be propagated by seeds, shoot cuttings, root cutting and by tissue culture. The traditional method of perpetuation is by utilizing the cuttings prepared from the old crown of the lifted roots. The plants are also produced from runners or underground stems. These cuttings are kept in moist sphagnum moss for about 8-10 days and afterwards, when their buds start sprouting, they are planted in the main field. The crop occupies the land for a period of 4 to 5 years, and the growth is slow during the first 2 years.

21. Harvesting and Storage (12)
The crop is ready for uprooting about 3 to 4 years after planting and just before the plants have become fruit. The plants are lifted in autumn (November-December) after the rains. Roots and underground stems are cut into pieces and are dried alternately in the shade and sun, this may take several months. The drying process reduces the weight to 50% and the moisture from 50-60%. Artificial drying can also be done at 30-400C by using mechanical driers.

22. Adulterants/Substitutes: (3,10,11)
The roots of Indian liquorice (*Abrus precatorius* Linn, Leguminosae) is a common adulterant. It is very toxic due to an alkaloid abrine. The distinguishing property is that it possesses a disagreeable odour and bitter acrid flavour leaving faintly sweet after-taste. Macroscopically the adulterant is characterized by stone cells.

23. Research reviews:
1. Protective activity of *Glycyrrhiza glabra* Linn. on carbon tetrachloride- induced peroxidative damage. (13)
2. Evaluation of antioxidant and anti-atherogenic properties of Glycyrrhiza glabra root using in vitro models. (14)
3. Randomized placebo-controlled clinical study on enhancement of *Medha* (intelligence quotient) in school going children with *Yashtimadhu* granules. (15)
4. An Extract of *Glycyrrhiza glabra* (GutGard) Alleviates Symptoms of Dyspepsia: A Randomized, Double-Blind, Placebo-Controlled Study. (16)


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