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# A REVIEW SKIN AND HAIR BENEFITS OF LICORICE (GLYCYRRHIZA GLABRA LINN)

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## ABSTRACT

This review explores the diverse skin and hair benefits associated with liquorice, delving into its phytochemical constituents and their effects on various dermatological aspects. The document analyzes existing studies on liquorice's anti-inflammatory, antioxidant, and antimicrobial properties, shedding light on its potential in treating conditions like acne, eczema, and dandruff. Additionally, it discusses the impact of liquorice on skin pigmentation, collagen synthesis, and hair growth, providing a comprehensive overview of its therapeutic applications in dermatology.

**Keywords-** Liquorice, Dandruff, Anti-inflammatory, Dermatology, Antioxidant

## I. INTRODUCTION

Glycyrrhiza glabra, family Leguminoseae, is a plant which grows in Egypt and other countries of the World. Its roots possess some nutritive value and medicinal properties. Glycyrrhiza glabra Linn, a Commonly used herb in ayurvedic medicine. Studies indicate that Glycyrrhiza glabra Linn possesses Antibacterial, antioxidant, antimalerial, antispasmodic, antiinflammatory and anti hyper glycemic Properties. Various other effects like antiulcer, antiviral, antihapatotoxic, antifungal and herpes simplex Have also been studies. One of the most commonly reported side effects with licorice supplementation is Elevated blood pressure Licorice (Glycyrrhiza glabra Linn) As a Valuable Medicinal Plant.

**Scientific Classification**

| | |
|---|---|
| Synonyms | Glycyrrhiza brachycarpa, Glycyrrhiza hirsuta |
| Family | Leguminosae |
| Kingdom | Plantae |
| Division | Angiospermae |
| Class | Dicotyledoneae |
| Order | Order |
| Genus | Glycyrrhiza |
| Species | glabra Linn |
| Binomial Name | Glycyrrhiza glabra Linn |

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## II. PHARMACOGNOSY

Glycyrrhiza glabra Linn is a hardy perennial shrub, attaining a height up to 2.5 m. The leaves are Compound, imparipinnate, alternate, having 4-7 pairs of oblong, elliptical or lanceolate leaflets.The Flowers are narrow,typically papilionaceous, borne in axillary spikes, lavender to violet in colour. The Calyx is short, campanulate, with lanceolate tips and bearing glandular hairs.

The fruit is a Compressed legume or pod, up to 1.5 cm long, erect, glabrous, somewhat reticulately pitted, and Usually contains 3-5 brown, reniform seeds. The taproot is approximately 1.5 cm long and subdivides Into 3-5 subsidiary roots, about 1.25 cm long, from which the horizontal woody stolons arise. These May reach 8 m and when dried and cut, together with the root, constitute commercial liquorice.It May be found peeled or unpeeled. The pieces of root break with a fibrous fracture, revealing the Yellowish interior with a characteristic odour and sweet taste.

## III. REPORTED PHYTOCHEMICALS

The roots of Glycyrrhiza glabra Linn contain glycyrrhizin, which is a saponin that is 60 times Sweeter than cane sugar; Flavonoid rich fractions include liquirtin, isoliquertin liquiritigenin and Rhamnoliquirilin and five new flavonoids- glucoliquiritin apioside, prenyllicoflavone A, shinflavanone, Shinpterocarpin and 1-methoxyphaseolin (Rastogi RP and Mehrotra BN) isolated from dried roots. Isolation and structure determination of licopyranocoumarin, licoarylcoumarin, glisoflavone and New coumarin-GU-12 also isolated. Four new isoprenoidsubstituted phenolic constituents semilicoisoflavone B,1-methoxyficifolinol, isoangustone A, and licoriphenone isolated from roots. (Rastogi RP and Mehrotra BN) A new prenylated isoflavan derivative, kanzonol R was also isolated .

The presence of many volatile components such as pentanol, hexanol, linalool oxide A and B, tetramethyl pyrazine, terpinen-4-ol, αterpineol, geraniol and others in the roots is reported. Presence of propionic acid, benzoic acid, ethyl linoleate, methyl ethyl ketine, 2,3-butanediol,furfuraldehyde, furfuryl formate, 1-methyl2-formylpyrrole, trimethylpyrazie,maltol and any other compounds is also isolated from the essential oil. The Indian roots show various 2-methyliso flavones, and an unusual coumarin, C liquocoumarin, 6 - acetyl- 5, hydroxy- 4 - methyl coumarin. Asparagine is also found. Glycyrrhizin (glycyrrhizic acid; glycyrrhizinate) constitutes 10–25% of licorice root extract and is considered the primary active ingredient. Glycyrrhizin (Figure 2) is a saponin compound comprised of a triterpenoid aglycone, glycyrrhetic acid (glycyrrhetinic acid; enoxolone) conjugated to a disaccharide of glucuronic acid. Both glycyrrhizin and glycyrrhetic acid can exist in the 18α and 18β stereoisomers.

Keywords::. Glycyrrhiza glabra, environmental and soil analysis, phytochemical variation, Antioxidant activity.

**CULTIVATION OF LICORICE**

Licorice can be cultivated or obtained from Wild plants. The plants are known to grow well in deep fertile sandy soils near streams In the subtropics. Dry seasons are beneficial To the crop and thrives well in warm regions Where the annual rainfall is not more than 50cm.

Fertile sandy of sandy-loan soils Devoid of any stones are optimal for licorice. Manuring is not required unless the soil is not fertile [Singh et al 1984]. G.uralensis,Another species of Glycyrrhiiza known to Yield commercial products was reported by Nadezhina et al [1981] to grow in dense Sands. G.glabra was found to exist under wide Range of soil salinity [Mirkin et al 1971]. Drought resistant variety of G. glabra was reported by Aprasidi [1978] from the flood Plains of river Amudarya. Khafizova [1978] recorded the highest yield of roots and top Growth of Golodnaya steppe and Amudarya Populations of licorice in chloride sulphate Soils of Uzbek, USSR. Mohammad and Rehman [1985] compared the cultivation of licorice in irrigated and Rainfed sanddunes. Survival percentage was more in irrigated sands.

To achieve stable Yields of licorice, irrigation of G.glabra was a must in oasis region sands [Durmeshev 1986]. It was reported by Osipov [1987] that variations in the yield of root mass of Licorice was caused by different Hydrogeologic regimes of Amudarya flood Plain. Increase growth was recorded where Subsoil waters were at a depth from 177cm To 195cm. Reclamation of desert sands upon Cultivation of licorice was demonstrated in Sands adjacent to oases in the Russian desers [Kel'dzhaev and Gladyshev 1982]. A study Carried out by Varganov and Gladyshev [1981] revealed the utility of cultivation ofLicroce on oasis sands in stabilization of

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Sand and quick improvement of soil. Similar report was also on record [Mohammad and Rehman 1985] which Shows the stabilization of sanddunes after Cultivation of licorice.

Though inter-plantation of carrot, potato or Cabbage crops along with licorice is feasible For the first two years, it is discouraged in The view of the increase in weed population [Singh et al 1984].Reports are available on the cultivation of Licorice in India. It was found to grow well In Patiala, Hissar of Haryana State [Singh 1964], Uttar Pradesh [Uniyal et al 1978] and In South India [Ahmad and Khaleefathullah 1986]. Abrus precatorius Linn. Is commonly called as wild licorice, Indian licorice or licorice bush. Though the roots of this plant are found as a substitute for genuine roots, it was not recommended byChopra et al [1958] due to the toxic Properties associated

**MECHANISM OF ACTION**

The beneficial effects of licorice can be attributed to a number of mechanisms. Glycyrrhizin and Glycyrrhizic acid have been shown to inhibit growth and cytopathology of numerous RNA and DNA Viruses, including hepatitis A9 and C, (Van Rossu et alm ,1999) herpes zoster ,HIV, (Hattori et al, 1989) Herpes simplex and CMV. Glycyrrhizin and its metabolites inhibit hepatic metabolism of aldosterone and Suppress 5-ßreductase, propReported Phytochemicalserties responsible for the well-documented pseudoal dosterone syndrome.

The Similarity in structure of glycyrrhetic acid to the structure of hormones secreted by the adrenal cortex Accounts for the mineralocorticoid and glucocorticoid activity of glycyrrhizic acid.18 Licorice Constituents also exhibit steroidlike anti-inflammatory activity, similar to the action of hydrocortisone. This is due, in part, to inhibition of phospholipase A2 activity, an enzyme critical to numerous Inflammatory processes. In vitro research has also demonstrated glycyrrhizic acid inhibits Cyclooxygenase activity and prostaglandin formation (specifically prostaglandin E2), as well as indirectly Inhibiting platelet aggregation, all factors in the inflammatory process (Okimasu et al, 1983).

**REPORTED PHYTOCHEMICALS**

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**BENEFITS HAIR AND SKIN**

- Brightens complexion
- Fades blemishes
- Has antioxidants properties
- Stimulates hair growth
- Relieves arthritis pain
- Enhances liver health
- Helps control' diabetes
- Boosts immunity
- Treats cough cold and flu
- Aids weight Reduction
- Assist Cancer treatment
- Cleneses your Respiratory systems
- It helps acidity and acts as mild laxative
- Hair loss prevention and dandruff treatment
- Heals different skin condition

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## IV. CONCLUSION

Licorice (Glycyrrhiza glabra Linn) root and its extract such as glycyrrhizin have a long history of use in Traditional medicines, folk remedies, and as a sweetening and flavoring agent. Pharmacological studies Have evaluated several of the traditional health claims behind licorice use although many of these reports Have produced inconsistent results. Carbenoxolone, an analog of glycyrrhetic acid, has shown success in Clinical trials for gastric and duodenal ulcers, but thepotential development of pseudoaldosteronism has Limited its use. DeglycyrrhizinatedlicoriceHas also shown some effect in the treatment of gastrointestinal ulcers, suggesting the presence ofActive ingredients other than glycyrrhizin, although other studies have shown has no bbeneficia Effects.

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