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MISCELLANEOUS DRUGS

LIQUORICE

Synonyms : Radix Glycyrrhizae, Sweet liquorice.

Biological Source : Liquorice consists of peeled and unpeeled stolons, roots and stems of *Glycyrrhiza glabra* Linn, and other species of *Glycyrrhiza*.

Family : Leguminosae.

Geographical Source : It is mainly found in China, Europe, India, Iraq, Japan, Kurdistan, Spain, Turkey, and the United States.

Characteristics :

- Liquorice root is in long, straight, nearly cylindrical, unpeeled pieces.
- Several feet in length, varying in thickness from 1/4 inch to about 1 inch, longitudinally wrinkled.
- Externally greyish brown to dark brown, internally tawny yellow.
- Taste sweet, very slightly acrid.



Chemical Constituents :

The chief constituent of liquorice root is **Glycyrrhizin** (6–8%), obtainable in the form of a sweet, which is 50 times sweeter than sucrose, white crystalline powder, consisting of the calcium and potassium salts of glycyrrhizic acid. Glycyrrhizic acid on hydrolysis yields glycyrrhetic or glycyrrhetic acid.

Chemical Test :

When 80% sulphuric acid is added to a section or powder of the drug orange yellow colour is produced due to transformation of flavone glycoside liquiritin to chalcone glycoside isoliquiritin.

Uses :

- Used as a sweetening agent.
- Used in bronchial problems such as catarrh, bronchitis, cold, flu and coughs.
- It reduces irritation of the throat and yet has an expectorant action.
- It produces its demulcent and expectorant effects.
- It is used in relieving stress.
- It is a potent healing agent for tuberculosis.

GARLIC

Synonyms : Allium; Lasan (Hindi).

Biological Source : Garlic is the ripe bulb of *Allium sativum* Linn.

Family : Liliaceae.

Geographical Source : Garlic occurs in central Asia, southern Europe, and United States. It is widely cultivated in India.

Characteristics : It is a perennial herb having bulbs with several cloves, enclosed in a silky white or pink membraneous envelope.



Chemical Constituents :

- **Allicin**, a yellow liquid responsible for the odour of garlic, is the active principle of the drug. It is miscible with alcohol, ether, and benzene and decomposes on distilling.
- The other constituents reported in Garlic are **alliin**, volatile and fatty oils, mucilage and albumin. Alliin, another active principle, is odourless, crystallized from water acetone and practically insoluble in absolute alcohol, chloroform, acetone, ether, and benzene. Upon cleavage by the specific enzyme alliinase, an odour of garlic develops, and the fission products show antibacterial action similar to allicin.

Uses :

- Garlic is carminative, aphrodisiac, expectorant, stimulant.
- Used in fevers, coughs, febrifuge in intermittent fevers, respiratory diseases such as chronic bronchitis, bronchial asthma, whooping cough, and tuberculosis.
- It is also used in atherosclerosis and hypertension.

PICRORHIZA

Synonyms : Kami; Kuru (Hindi); Katvee.

Biological Source : It consists of dried rhizome of *Picrorhiza kurroa* Royle ex Benth., cut into small pieces and freed from attached root-lets.

Family : Scrophulariaceae.

Geographical Source : The plant is common on the alpine Himalayas from Kashmir to Sikkim between 3,000 and 5,000 m.

Characteristics :

- Colour is greyish-brown,
- Cylindrical, straight or slightly curved,
- Wrinkled longitudinally,
- Odour slightly unpleasant,
- Taste very bitter.



Chemical Constituents :

- The active constituent of picrorhiza is **picrorhizin**, a glucoside which yields picrorhizetin and dextrose on hydrolysis.
- It also contains kutkin, a glucosidal bitter principle, picroside-I, picroside-II, picroside-III, D-mannitol, vanilic acid, kutkoside etc.

Uses :

- Picrorhiza is bitter, cathartic, stomachic.
- Used in fever and dyspepsia and in purgative preparations.
- It is reputed as febrifuge and antimalarial.
- Different types of jaundice are cured with Picrorhiza.
- It removes kidney stone.
- Used as emetic, abortifacient, antidote for dog bite.

DIOSCOREA

Synonym : Yam.

Biological Source : Dioscorea is the dried rhizome of several species of *Dioscorea* like *D. villosa*, *D. prazeri* Prain and Burk; *D. composite*; *D. spiculiflora*; *D. deltoidea* and *D. floribunda*.

Family : Dioscoreaceae.

Geographical Source : It is mainly found in North America, Mexico, India (Hima-layas from Kashmir and Punjab up to an altitude of 3,000 m), Nepal and China.

Characteristics :

- The colour of the plant is slightly brown.
- Odourless.
- Bitter taste and vary in size.



Chemical Constituents :

- The roots contain diosgenin (4–6%) a steroidal sapogenin and its glycoside smilagenin, epismilagenin and beta isomer yammogenin.
- It also contains sapogenase (enzyme), phenolic compounds and starch (75%).

Uses :

- It is a main source of diosgenin.
- This is widely used in modern medicine in order to manufacture progesterone and other steroid drugs.

TOBACCO

Synonyms : Tobacco, Tabaci Folia.

Biological Source : It consists of dried leaves of *Nicotiana tobaccum*.

Family : Solanaceae.

Geographical Source : It is mainly found in India, United States, China, Brazil, Russia, Turkey and Italy.

Characteristics :

Colour	Green or slightly brown
Odour	Characteristic to Nicotine
Taste	Bitter
Shape	Ovate, elliptic or lanceolate
Size	60–80 cm in length 35–45 cm in width



Fresh Leaves



Dried Leaves

Chemical Constituents :

The most important constituent is the alkaloids **nicotine**, nicotianin, nicotinine, nicotine, nicoteline. After leaves are smoked the nicotine decomposes into pyridine, furfurool, collidine, hydrocyanic acid, carbon monoxide, etc. The poisonous effects of Tobacco smoke are due to these substances of decomposed nicotine.

Uses :

- It is used as a sedative, diuretic, expectorant, discutient and sialagogue.
- The leaves in combination with the leaves of belladonna or stramonium make an excellent application for obstinate ulcers, painful tremors and spasmodic affections.
- Tobacco leaves are made wet and applied for piles.
- Externally nicotine is an antiseptic.
- Nicotine exerts stimulant effects on heart and nervous system.