

ASAFOETIDA

Synonyms: Asafoetida, Gum Asafoetida, Devil's dung, Hing

Biological Source: Asafoetida is the oleo-gum resin obtained by making incision from living rhizomes and roots of *Ferula foetida* Regel, *Ferula rubricaulis* Boiss and other species of *Ferula*, belonging to family Umbelliferae.

Geographical Distribution: It is a genus of perennial herbs distributed from mediterranean region to Central Asia, specifically Persia and Afghanistan. Three species of *Ferula* are found in India, *Ferula narthex* occurs in Kashmir.

Chemical Constituents:

- Asafoetida contains resin (40 to 65 %), gum (20 to 25 %), and volatile oil (4 to 20 %).
- The resin of the drug consist chiefly asaresinotannol in the free or combined form with ferulic acid.
- Free umbelliferone is absent in drug (distinction from galbanum).
- Ferulic acid on treatment with hydrochloric acid is converted into umbellic acid which looses water to form umbelliferone.
- Oil of asafoetida is obtained by steam distillation of oleo-gum resin.
- The chief constituents of oil are secondary butyl propyl disulphide.
- Other constituents of oil are di- and trisulphides, pinene and other terpenes.
- The specific odour of drug is due to sulphur compounds.

Identification:

1. Fractured surface of the drug, if treated with sulphuric acid forms red or reddish- brown colour.
2. When treated with 50 % nitric acid, the drug gives green colour.
3. When triturated with water, it forms yellowish-orange emulsion.
4. Triturate about 0.5 g of the drug with sand and 5 ml of hydrochloric acid, to it, add little quantity of water, filter and to the filtrate add equal volume of ammonia. A blue fluorescence is produced due to presence of umbelliferone.

Uses:

It is used as carminative, nervine tonic, flavouring agent, and intestinal antiseptic. Also used in veterinary medicine and for culinary purposes.

NUTMEG

Synonyms: Myristica, Nux Moschata, Jaiphal.

Biological Source: Nutmeg consists of dried kernels of seeds of *Myristica fragrans* Houtt, belongs to family Myristicaceae. The seeds are freed from their arillus and seed-coat. It contains not less than 5% (v/w) volatile oil.

Geographical Distribution: Netmeg is indigenous to Molucca islands and cultivated in Indonesia, West Indies, and other tropical countries. In India, it is cultivated in Kerala and Tamil Nadu.

Chemical Constituents:

- Nutmeg contains 5 to 15 % of volatile oil, and about 30 % of fat.
- The volatile oil contains about 4 to 8 % myristicin, elemicin and saffrole.
- The fatty acid constituents of the fined oil are myristic (about 60 %), palmitic, oleic, lauric and other acids.
- The fat of nutmeg is also known as nutmeg butter.
- The other constituents of the drug are protein and starch.
- Myristicín (methoxy saffrole) is very poisonous and the narcotic effect of the drug is said to be due to myristicin.
- Geraniol, terpineol, camphene etc. are the other constituents of volatle oil of nutmeg.

Uses:

It is used as an aromatic, stimulant and carminative. It is used as a flavouring agent, too. The fat (nutmeg butter), is used in soap industries. The fat and volatile oil of nutmeg are used in the treatment of rheumatism.