

CLOVE

Synonyms: Caryophyllum; Clove flower; Clove bud; Laung

Biological Source: Cloves consist of dried flower buds of *Eugenia caryophyllus*, (Family: Myrtaceae). It should contain not less than 15 % (v/w) of clove oil.

Geographical Distribution: It is indigenous to Amboyna and Penang Molucca islands. It is now cultivated chiefly in Zanzibar, Pemba, Madagascar, West Indies, Sri Lanka and India. In India, cloves are grown in Nilgiri, Tenkasi-hills and in Kanyakumari district of Tamil Nadu state. It is also cultivated in Kottayam and Quilon districts of Kerala

Chemical Constituents:

- The drug contains about 15 to 20 % of volatile oil; 10 to 13 % of tannin (gallotannic acid), resin, chromone and eugenin.
- The volatile oil contains eugenol (about 70 to 90 %), eugenol acetate, methylamylketone, caryophyllenes and small quantities of esters and alcohols.

Chemical Test: If the transverse section of clove is treated with strong potassium hydroxide solution, the needle-shaped crystals of potassium eugenate are observed.

Uses: Clove is used as a dental analgesic, carminative, stimulant, flavouring agent, an aromatic and antiseptic. Exhausted cloves are used in preparation of cigarettes. The oil is used in perfumery and also in manufacture of vanillin.

BLACK PEPPER

Biological sources: *Piper nigrum*, also known as black pepper is the member of *Piperaceae* family. It is cultivated for getting its fruit which works as a spice and seasoning agent in many food items.

Chemical constituents: Black pepper contains Piperine. Molecular formula for Piperine is C₁₇H₁₉NO₃.

The most important candidate of p. nigrum is piperine, its concentration varies in different species of p. nigrum. For example the amount of piperine in long pepper varies upto 1-2% and in white and black pepper, it varies upto 5-10% .

The reason behind its very essential therapeutic use is that due to presence of piperine, it increases the bioavailability of many nutrients and drugs by inhibiting various metabolizing enzymes .thus it play an essential role in regulating obesity induced dyslipidemia.

Piperine can be extracted from the unripe fruit of black pepper. It is present in the concentration of 6-9% in the black pepper. In addition to Piperine, it also contains beta-carotene, lauric-acid, palmitic acid, and pepper phellandrene.

piperine is such a dominant constituent of p. nigrum that it is responsible for its pungency i.e. its strong odor and taste property. Also with addition of chavicine, which is an alkaloid with diastereomeric geometric isomers of piperine ,have a synergistic effect on its pungency.

Essential compounds such as steroid, alkaloid, flavonoid ,phenolics ,chalcones and various lignans derivatives ,in addition with terpenes isolated from black pepper.

Uses

- In pharmaceutical sciences, its applications are as follows:
- It works as an analgesic, antipyretic and antioxidant.
- It utilizes as a rubefacient.
- It is also used as a preservative.
- It has application in cosmetic industries and also in the preparation of insecticides.
- It improves appetite, increases digestive power and also has antimicrobial activities.[2]
- It is used in the treatment of fever, colic, dysentery, piles and infections of worms.
- In reduces inflammatory responses by inhibiting lipopolysaccharides.
- Also used as a cure of cold, cough and dyspnea and other diseases of the throat.
- It has a protective effect on the key liver enzymes