

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