

Diploma in Pharmacy 1st Year

Pharmacognosy Practical

To perform the physical and chemical tests of Benzoin

Aim:

To perform the physical and chemical tests of Benzoin.

Reference :

Dr. Gupta G.D , Dr. Sharma Shailesh , Kaur Navjit , “Practical Manual of Pharmacognosy” Published by Nirali Prakashan , Pg.No 115 - 119

Biological Source :

Benzoin occurs in two forms, ie., Sumatra and Siam. The balsamic resin is derived from *Styrax benzoin* Dryand or *Styrax paralleloneurus* Perkins and another species of *Styrax* marketed under the name of Sumatra Benzoin. It may also have the balsamic resin obtained from *Styrax tonkinensis* and other species known as Siam Benzoin on a commercial scale it should contain not less than 25% of total balsamic acids calculated in terms of dry alcohol soluble matter. It belongs to family *Styracaceae*.

Materials and Apparatus Required

Test tube, conical flask, beaker, drug sample, litmus paper, porcelain dish, microscope, glass slide, alcoholic solution, water, benzoin, ether, conc. sulphuric acid, potassium permanganate solution, and ferric chloride solution (alcoholic).

Theory

Benzoin has four varieties and their names are Sumatra, Palembang, Penang, and Siam benzoin. They are easily identified by their specific look. Sumatra, Penang and Siam benzoin are the three derivatives which are derived from three different plants.

Physical Tests

1) Sumatra Benzoin

- i) **Colour:** Greyish-brown or grey.
- ii) **Odour:** Aromatic and characteristic.
- iii) **Taste:** Sweetish and slightly acid.
- iv) **Shape:** Lumps of varying sizes or tears, which are yellowish and milky white in colour.
- v) **Surface:** Uneven.
- vi) **Extra Feature:** On heating, it produces fumes of benzoic and cinnamic acids.

2) Siam Benzoin

- i) **Colour:** Yellowish-brown to rusty-brown.
- ii) **Odour:** Agreeable and vanilla-like.
- iii) **Taste:** Sweetish and slightly acid.
- iv) **Shape:** Hard and brittle masses.
- v) **Extra Feature:** On heating, it softens into plastic.

Chemical Constituents

- 1) Benzoin contains free balsamic acids and esters of balsamic acids.
- 2) **Sumatra Benzoin:** This variety of benzoin has benzoic acid (18% or more) and cinnamic acid (20%). Cinnamic acid is partially free and partially combined with benzoic acid and sumarisinotannin. It also has vanillin (1%), styrol, styracin, phenyl-propyl cinnamate, and

3)Siam Benzoin: Benzoic acid (38%) is the main component of this variety of benzoin. It is partially free and partially combined with benzoic resin and cinnamic acid. It also consists of vanillin and an oily aromatic liquid. In its pure form, it should be completely soluble in alcohol and form traces of ash.

Uses

- 1) It acts as an irritating expectorant, a carminative, and diuretic.
- 2) It is used externally as an antiseptic.
- 3) It is used in the form of compound tincture of benzoin, and as an inhalation for treating upper respiratory tract infection.
- 4) It is used to delay the rancidity of fats and oil in the preparation of benzoate lard.

Result :

The physical and chemical test of Benzoin was performed successfully.