

➤ **Balsams:**

Balsams are resinous mixtures that contain large proportions of benzoic acid, cinnamic acid, or both, or esters of these acids.

Benzoin is sometimes referred to as a balsamic resin. The medicinal balsams include Tolu balsam, Peru balsam, styrax (Levant and American), and benzoin (Siam and Sumatra).

1- Storax:

Storax is a balsam obtained, from the trunk of *Liquidmbar orientalis* Miller, known in commerce as Levant storax, or of *L. styraciflua* Linné, known in commerce as American storax (F. Hammamelidaceae). Storax is also known as **liquid storax** or styrax.

Constituents: Levant storax consists of about 50% of 2 resin alcohols, α -storesin and β -storesin, which are partly free and partly in combination with cinnamic acid. Storax also contains storesin cinnamate, 10 to 20%; styracin or cinnamyl cinnamate, 5 to 10%, in needle-crystals that are colorless, odorless, and tasteless; phenylpropyl cinnamate, 10%, a liquid with the odor and taste of styrax; volatile oil, 0.5 to 1%; a trace of vanillin; free cinnamic acid, from 2 to 5%; and small amounts of several other substances.

Use. Storax is a pharmaceutical aid for compound benzoin tincture. It has been used as a stimulant, an expectorant, and an antiseptic.

2- Peruvian Balsam (Peru balsam):

Is obtained from *Myrcxylon pereirac* (Royle) Klostzsch (F. Leguminosae). The balsam is a pathologic product and is formed by injury to the trees.

Constituents: The drug contains cinnamein, about 60%, which is a volatile oil consisting chiefly of benzyl cinnamate and a lesser amount of benzyl benzoate; resin esters, 30 to 38%, which are composed mostly of peruresjnotannol cinnamate and benzoate; vanillin; free cinnamic acid; peruviol; and other substances in small amounts.

Uses: Peru balsam is a local protectant and rubefacient; it also is a parasiticide in certain skin diseases. It is an antiseptic and vulnerary and is applied externally either alone, in alcoholic solution, or in the form of an ointment.

3- Tolu Balsam:

Tolu balsam is a balsam obtained from *Myroxylon balsamum* (Linné) Harms (F. Leguminosae). Tolu balsam is sometimes called balsam of Tolu.

Constituents: The drug contains resin esters, 75 to 80%, chiefly tolueresinotannol cinnamate with a small quantity of the benzoate; volatile oil, 7 to 8%, chiefly benzyl benzoate; free cinnamic acid, 12 to 15%; free benzoic acid, 2 to 8 %; vanillin and other constituents in small quantities.

Uses. Tolu balsam is a pharmaceutic aid for compound benzoin tincture. It is sometimes used as an expectorant and is extensively used as a pleasant flavoring in medicinal syrups, confectionery, chewing gum, and perfumery.

4- Benzoin:

Benzoin is the balsamic resin obtained from *Styrax benzoin* (F. Styraceae).

Constituents: Sumatra benzoin contains free balsamic acids chiefly cinnamic 10% and benzoic acid 6%, as well as esters derived from them, triterpene acids especially 19- hydroxyoleanic acid, 16- hydroxycinnamic acid, and vanillin.

Uses: Benzoin possesses anti- septic, diuretic, stimulant, and expectorant properties.