

5.1 LAXATIVES

CASTOR OIL

Synonyms

Castor bean oil, Castor oil seed, Ricinus oil.

Biological Source

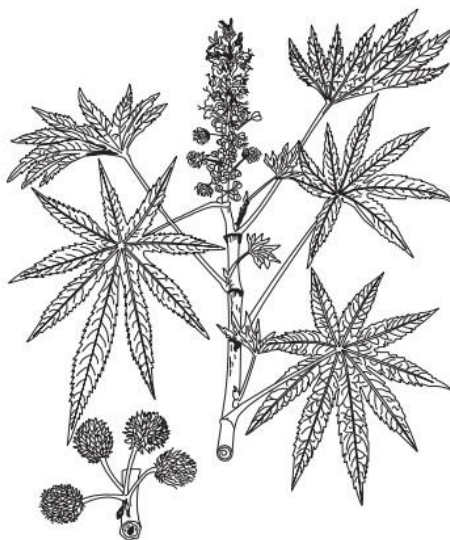
Castor oil is the fixed oil obtained by cold expression of the seeds of *Ricinus communis* Linn., belonging to family Euphorbiaceae.

Geographical Source

It is mainly found in India, Brazil, America, China, Thai-land; in India it is cultivated in Gujarat, Andhra Pradesh, and Karnataka.

Preparation

Castor oil is obtained from castor seeds. The oil is obtained by two ways; either after the removal of the seed coat or with the seed coat. The kernels are fed in oil expellers and at room temperature they are expressed with 1 to 2 tons pressure per square inch till about 30% oil is obtained. The oil is filtered, steamed 80–100°C to facilitate the coagulation and precipitation. Oil is then filtered and this oil with 1% acidity is used for medical purpose.



Ricinus communis

Characteristics

- Medicinal or the first grade or Pale pressed castor oil is colourless or slightly yellow coloured.
- It is a viscid liquid which has slight odour with slightly acrid taste.

- Castor oil is soluble in absolute alcohol in all proportions;
- Specific gravity is 0.958 to 0.969, refractive index at 40°C is 1.4695 to 1.4730, acid value not more than 2, saponification value 177 to 187, and acetyl value is about 150.

Chemical Constituents

1. Castor oil consists of glyceride of ricinoleic acid, isoricinoleic, stearic, and dihydroxy stearic acids.
2. Ricinoleic acid is responsible for laxative property.
3. Castor oil also contains vitamin F. 90% of the fatty acid content is ricinoleic acid.
4. The ricinoleic acid is an 18-carbon acid having a double bond in the 9–10 position and a hydroxyl group on the 12th carbon. This combination of hydroxyl group and unsaturation occurs only in castor oil.

Identification Tests

Approx. 5 ml of light petroleum (50° to 60°) when mixed with 10 ml of castor oil at 15.5° shows a clear solution, but if the amount of light petroleum is increased to 15 ml, the mixture becomes turbid. This test is not shown by other oils.

Uses

- Castor oil is mild purgative, fungistatic, used as an ointment base, as plasticizer, wetting agents, as a lubricating agent.
- Ricinoleic acid is used in contraceptive creams and jellies; it is also used as an emollient in the preparation of lipsticks, in tooth formulation, as an ingredient in hair oil.
- The main use of castor oil is the industrial production of coatings, also employed to make pharmaceuticals and cosmetics in the textile and leather industries and for manufacturing plastics and fibres.
- The dehydrated oil is used in the manufacture of linoleum and alkyl resin.