

### 7.1.6. Linseed

Linseed oil is extracted from flax seeds. The seeds are used for industrial purposes and paint jobs, while the oil is for human consumption.

#### Synonyms

Flax seed, Alsi, Linum, and Semina Lini.

#### Biological Source

Linseed is the dried, ripe seed of *Linum usitatissimum* Linn. Linseed oil is obtained by expression of linseeds.

#### Family

Linaceae

#### Occurrence and Distribution

The plant is native to India but is grown all over the world for its fibres, seeds, and oil. In Russia, Afghanistan, Greece, Italy, Spain, and Algeria, it is cultivated abundantly.

#### Organoleptic Evaluation

The annual plant is erect and grows up to a height of 1.2m (3ft 11in) with slender stems (figure 7.5).

- 1) **Leaves:** Glaucous green in colour; slender lanceolate; 20-40mm long and 3mm broad.
- 2) **Flowers:** Pure pale blue or bright red in colour; 15-25mm in diameter and has five petals.
- 3) **Fruits:** Round, dry capsules; 5-9mm in diameter; contains several glossy brown seeds.
- 4) **Seeds:** Oval, flattened, elongated, rounded at one end; obliquely pointed at the other end; 4-6mm long



Figure 7.5: A Twig of Linseed Plant

and 2-3mm wide; odourless but has an oily and mucilaginous taste; testa is glossy, smooth, reddish-brown in colour, and has minutely pitted surface; the pointed end has the hilum and micropyle in a slight depression; raphe is present along one edge; endosperm is narrow and encircles the embryo, which bears two thick flattened, plano-convex cotyledons, and a radicle (figure 7.6).

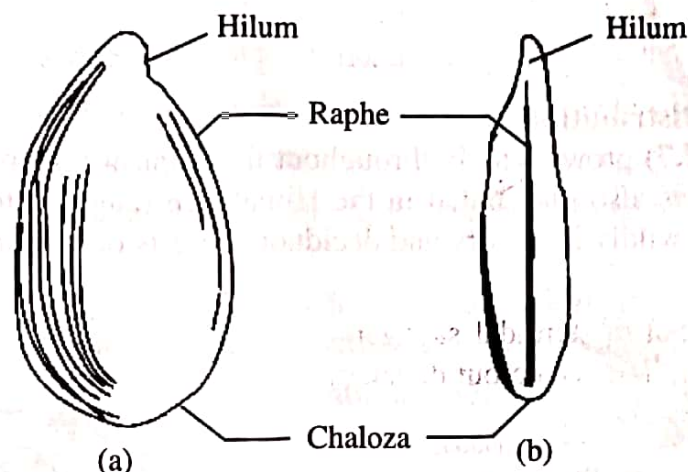
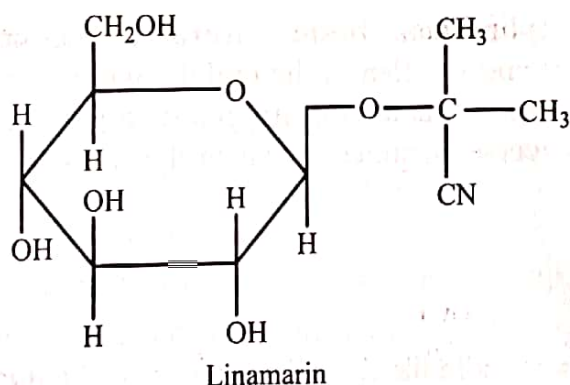


Figure 7.6: Linseed (a) External Surface of Seed and (b) Lateral View of Seed

### Chemical Constituents

Linseed contains **fixed oil** (30-40%), **mucilage** (6%), **proteins** (25%) (linin and colinin), small amount of **enzyme lipase**, and **linamarin** (a cyanogenetic glycoside). Sucrose, raffinose, and cellulose are also present in linseed. Unripe seeds contain starch which converts into mucilage when the seeds ripen. Mucilage contains calcium salts of linseed acids which hydrolyse into arabinose, rhamnose, galactose, galacturonic acid, and xylose. Linamarin hydrolyses into acetone, hydrocyanic acid, and glucose. Phytin, lecithin, wax, resin, pigments, and malic acid are the other constituents.



### Chemical Test

On treating with ruthenium red solution, the mucilage of linseed gives a distinct red colour.

### Therapeutic Efficacy

- 1) It is used as a demulcent and as poultices for gouty and rheumatic swellings.
- 2) It is used internally for gonorrhoea and irritation of the genito-urinary system.
- 3) Its oil has emollient, expectorant, diuretic, demulcent, and laxative properties.
- 4) Its oil is externally used in lotions and liniments.
- 5) Its mucilaginous infusion is internally used as a demulcent in colds, coughs and bronchial affections, inflammation of the urinary tract, gonorrhoea, and diarrhoea. (27)