D.PHARM • FIRST YEAR

Pharmacognosy

CHAPTER 5

Crude Drugs of Natural Origin



ENGLISH CHAPTER NOTES

DIPLOMA IN PHARMACY

NATURAL LAXATIVES: TYPES AND ACTIONS

DEFINITION

Laxatives facilitate bowel evacuation and are used for constipation.

MAIN TYPES

STIMULANT

- increase intestinal motility and secretion
- Senna, Aloes



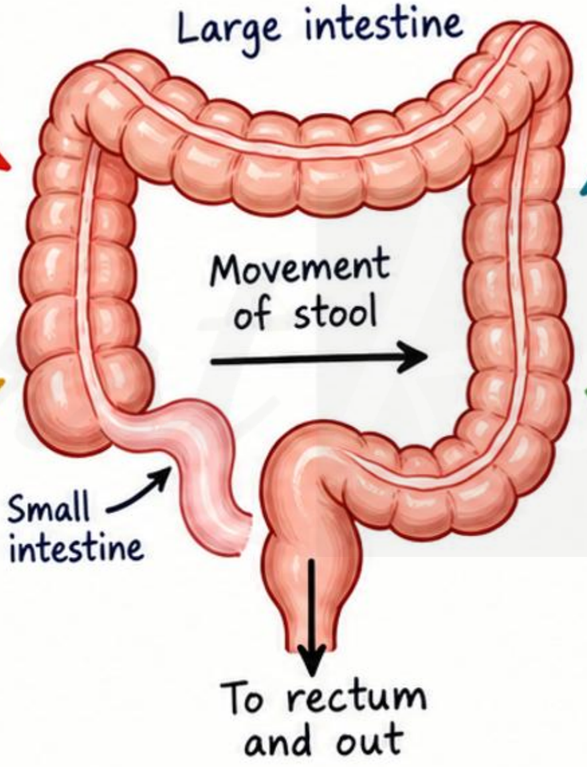
Senna

BULK-FORMING

- absorb water and increase stool bulk
- Ispaghula



Ispaghula



OSMOTIC / SALINE

- retain water in the bowel
- magnesium salts



magnesium salts

LUBRICANT / PURGATIVE OIL

- ease or stimulate passage
- Castor Oil



Castor Oil

KEY CONSTITUENTS

- Anthraquinone glycosides
- mucilage
- fatty acids
- salts

SAFE-USE NOTE

Type, dose, hydration and duration matter; persistent constipation needs clinical assessment.

ALOES AND CASTOR OIL

ALOES

FAMILY: Asphodelaceae

BIOLOGICAL SOURCE

Dried leaf latex of Aloe vera (syn. Aloe barbadensis) or Aloe ferox; keep it distinct from inner Aloe gel.

KEY CONSTITUENTS

Aloin A and B (barbaloin), aloe-emodin derivatives

IDENTITY / ACTION

Anthraquinone glycosides; stimulant laxative action after colonic conversion.

PHARMACEUTICAL USES

Short-term laxative preparations; Aloe gel is used separately in skin-care products.



CASTOR OIL

FAMILY: Euphorbiaceae

BIOLOGICAL SOURCE

Purified fixed oil obtained from seeds of Ricinus communis, commonly by cold expression.

KEY CONSTITUENTS

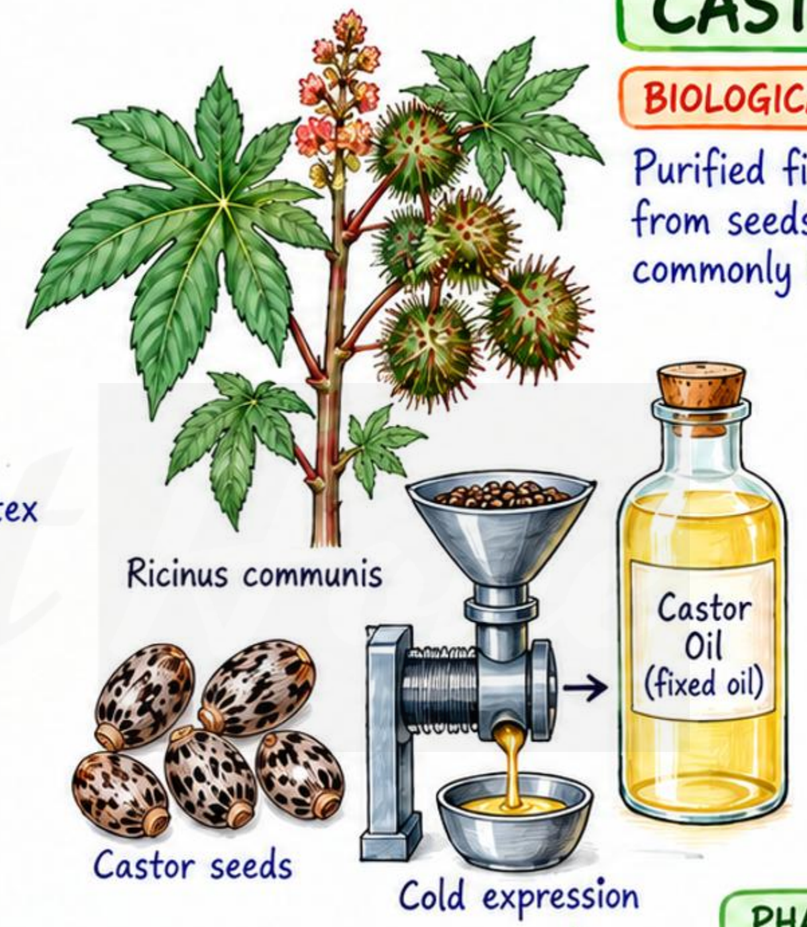
Triglycerides rich in ricinoleic acid; minor oleic, linoleic and stearic acids

IDENTITY / ACTION

Ricinoleic acid produces stimulant-purgative action. Toxic ricin is in raw seed, not properly purified oil.

PHARMACEUTICAL USES

Purgative under professional guidance; pharmaceutical vehicle and cosmetic emollient.



KEY DIFFERENCE

Aloes is dried leaf latex rich in anthraquinone glycosides;

Castor Oil is a purified fixed oil rich in ricinoleate.

ISPAGHULA AND SENNA

ISPAGHULA

BIOLOGICAL SOURCE
Husk from the dried seeds of *Plantago ovata*.

FAMILY: Plantaginaceae

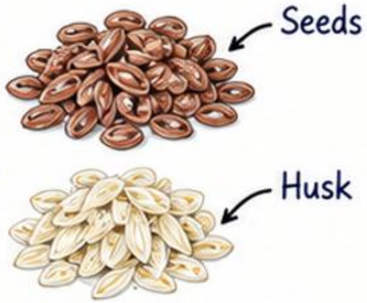
KEY CONSTITUENTS
20–30% hydrophilic mucilage containing arabinose, xylose and uronic-acid polysaccharides

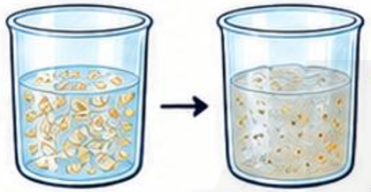
IDENTITY / ACTION
Absorbs water and swells to form a gel, increasing stool bulk and moisture.

PHARMACEUTICAL USES
Bulk-forming laxative; bowel-regulating fibre in powders, granules and capsules.



Plantago ovata





KEY DIFFERENCE

Ispaghula is a water-swelling bulk laxative; Senna is an anthraquinone stimulant laxative.



Dried leaflets



Stimulates peristalsis in colon

SENNA

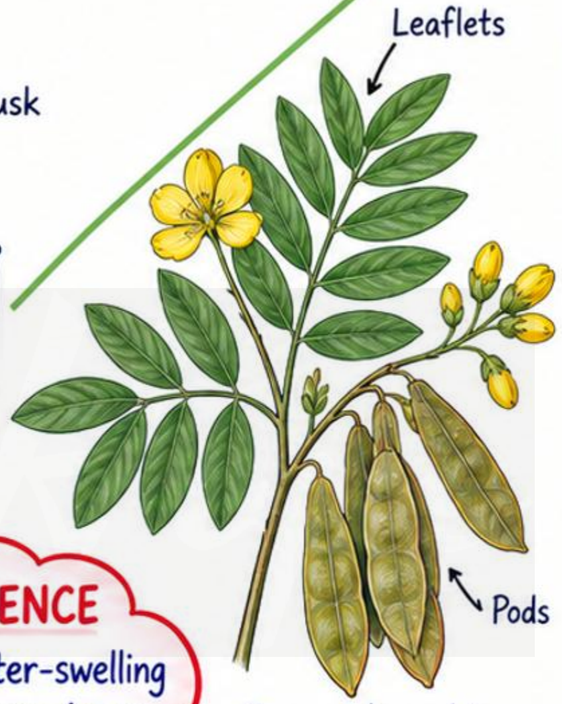
BIOLOGICAL SOURCE
Dried leaflets and pods of Senna alexandrina (syn. Cassia angustifolia/ C. acutifolia).

FAMILY: Fabaceae

KEY CONSTITUENTS
Sennosides A and B; rhein and aloe-emodin derivatives

IDENTITY / ACTION
Anthraquinone glycosides are activated in the colon and stimulate peristalsis.

PHARMACEUTICAL USES
Stimulant laxative in tablets, syrups and granules for short-term constipation.



Senna alexandrina

Ispaghula is a water-swelling bulk laxative; Senna is an anthraquinone stimulant laxative.

CARDIOTONIC AGENTS: CORE CONCEPTS

DEFINITION Cardiotonic or positive inotropic agents increase the force of myocardial contraction.

MAIN GROUPS

CARDIAC GLYCOSIDES

digoxin from Digitalis;
inhibit Na^+/K^+-ATPase → intracellular Ca^{2+} rises

CAUTION: Digoxin has a narrow therapeutic index; dose and interactions require professional control.



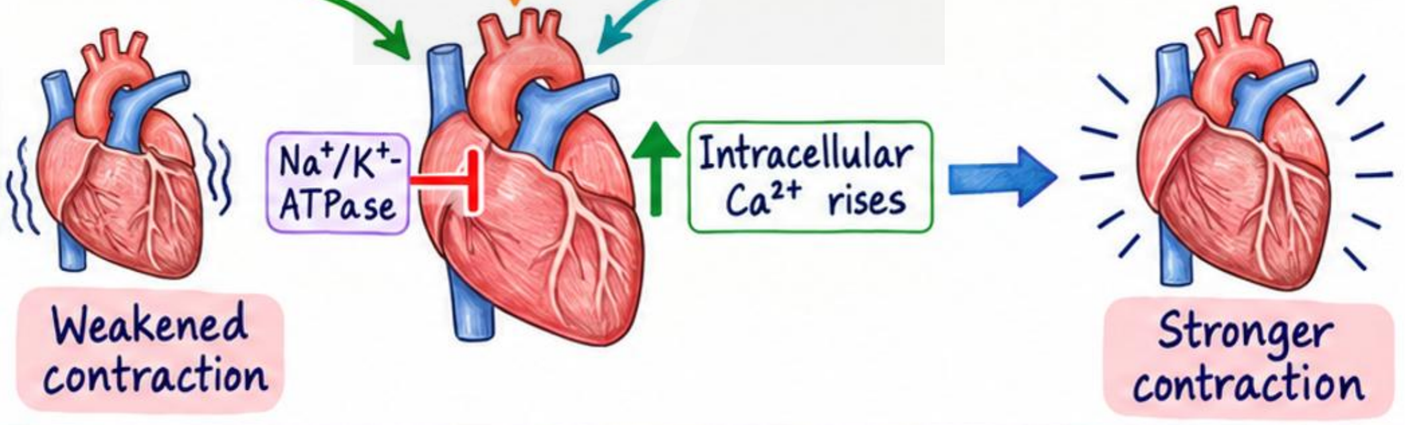
Digitalis

SYMPATHOMIMETIC AMINES

dopamine, dobutamine;
β_1 stimulation increases cAMP and Ca^{2+} entry

PDE-III INHIBITORS

milrinone;
slows cAMP breakdown



CLINICAL RELEVANCE Selected heart-failure, shock and arrhythmia care under close monitoring.

First Hope

FREE PREVIEW

Click here to visit our website

PHARMACY PREMIUM NOTES

Complete subject and semesters are available on FirstHope app only.

Scan or click here

Click here to get the app >

Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

Join our Telegram channel

Click here to join Telegram >

Scan or click here

@FirstHopeNotes

Instagram

@firsthope.official

Click here to follow >

YouTube channel

FirstHope-Pharmacy / Live streams

Click here to watch >

WhatsApp channel

Follow FirstHope on WhatsApp

Click here to join >

FirstHope website

firsthope.co.in

Click here to visit >

B.Pharm / D.Pharm / M.Pharm / Pharm.D

Preview notes. Complete subjects and semesters in the FirstHope app.