



Centurion
UNIVERSITY

Shaping Lives...
Empowering Communities...

EXPERIMENT NO: 6

Rhubarb rhizomes: Radix Rhei

Latin name: *Rheum officinale* or *Rheum rhaponticum* L. (Japanese Rhubarb)
Rheum palmatum S.L. (Chinese Rhubarb)

Family: *Polygonaceae*



Rheum officinale

- ✓ Perennial trees with large roots and rhizomes.
- ✓ Colour: pale brown or brown color.
- ✓ Odourless.
- ✓ Taste: astringent and bitter.
- ✓ Origin : China, Japan.
- ✓ **Chemical constituents :**
- ✓ 1. Anthraquinone. (Free State).
 - a. emodin anthraquinone.
 - b. aloe emodine anthraquinone.
 - c. rhein anthraquinone.
 - d. rhein anthrones.
 - e. chrysophanol anthraquinones.
- 2. Tannins:
 - a. Gallic acid (pseudo tannin).
 - b. Glucogallin (true tannin hydrolysable group).

Uses:

In small doses = 1g → stomachic, antidiarrheal, astringent and haemostatic.

In large doses > 1-3 g → purgative.

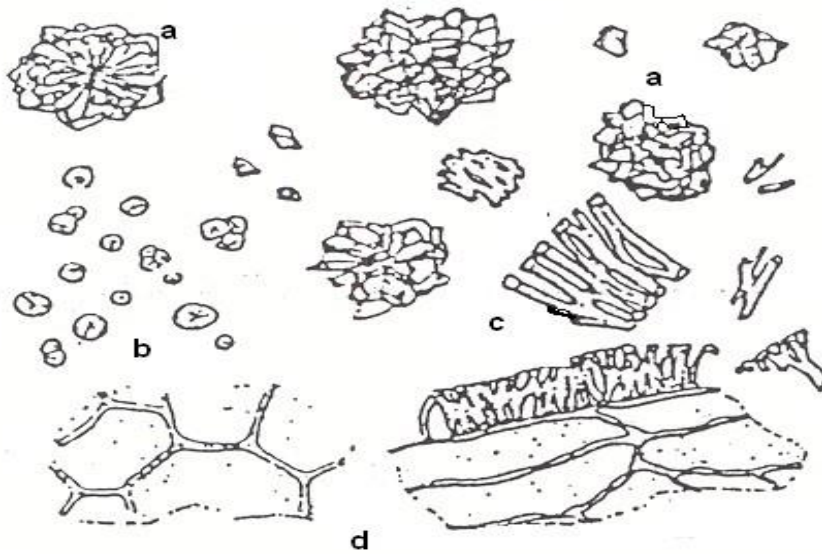
Identification test:

Test for anthraquinone (Brontrager test); Powder + H₂O + KOH → intensive red colour.

Microscopical examination

The characteristic key elements are:

1. Calcium oxalate druses (a).
2. Pitted reticular vessels(c).
3. Elongated or rounded –polygonal, thin-walled parenchyma cells.



- a) Calcium oxalate druses & their fragments
- b) Starch grains
- c) Fragments of very wide, coarsely pitted reticular vessels
(No wood reaction with phloroglucin hydrochloric acid)
- d) Fragments from the parenchyma, elongated or rounded –polygonal, thin- walled cells, frequently with many starch grains.