

EXPERIMENT NO: 14

Clove buds: Flos Caryophylli

Latin name: *Eugenia caryophyllus* (Sprengel) or
Eugenia caryophyllata (Thunberg)

Family: *Myrtaceae*

- .Perennial large trees (15) m height.
- .The buds collected when their colour changed from green to red.
- .Dried clove buds colour: reddish brown.
- .Taste: pungent & acrid.
- .Odor: aromatic like the odor of Pepper and Cinnamon together.
- .Origin: Madagascar & Sumatra.



Eugenia caryophyllus



Chemical constituents:

1- Volatile oil (Clove oil) 14%-20%.

A- Eugenol 70%-90%.

B- Vanillin.

C- Caryophyllene 1%.

D- Acetyl eugenol 4%.

2- Tannin: Gallotannic acid 10-13%.

Uses:

1. Condiment.
2. Carminative.
3. Clove oil which contains high percentage of eugenol used commercially to produce Vanillin.
4. Antiseptic.
5. Flavoring agent.
6. Dental uses: as filling material with ZnO.
7. Local anesthetic (dental analgesic).

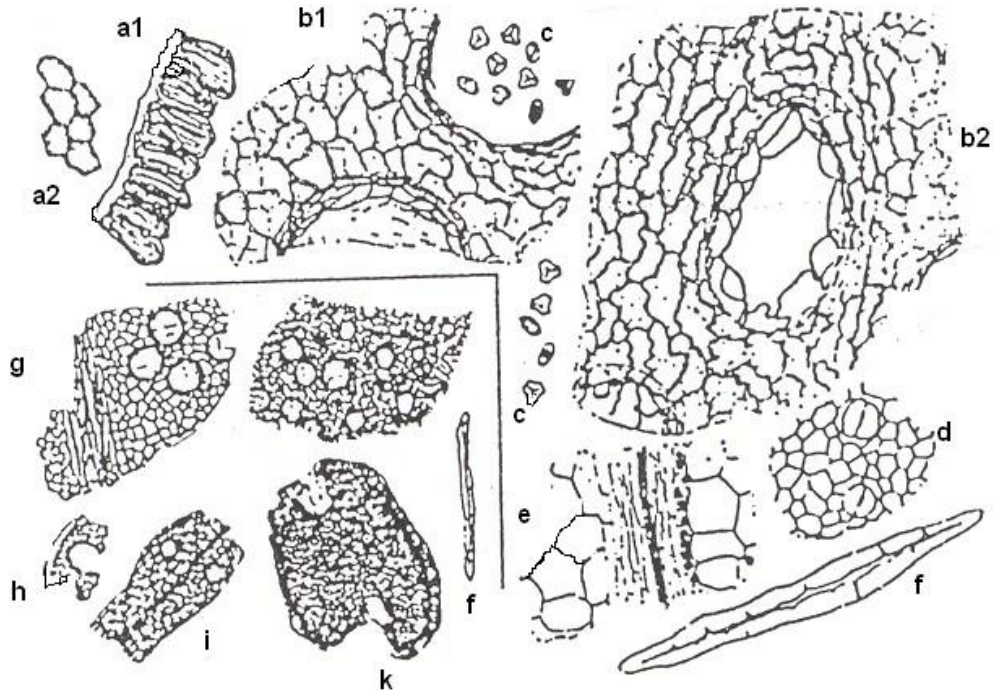
Drugs:

- Dento drops.
- Dentin drops.

Microscopical examination

Characteristic microscopical features:

1. Sclerenchymatose fiber from the bud (f).
2. Secretory glands (b2).
3. Pollen grains with 3 emergences(C).



- a1) Anther fragment in side view 1. Epidermis 2. Fiber cells.
a2) Anther fragment, fiber cells of anther in top view.
b1, b2) Fragments from the bud parenchyma with secretory glands (b2) & residues of two Secretory glands (b1) in the center of (b2).
c) Pollen grains with 3 emergences.
d) Epidermis fragment with 2 large somatal apertures in top view.
e) Tissue fragment from the bud with vascular bundle & neighboring crystal cell layer.
f) Schlerenchyma fiber from the bud.
g) Tissue fragment with numerous secretory glands & vessels, left fragment with schlerenchyma fibers.
h) Fragment from the bud wall, residue from a secretory gland.
i) Style fragment with central vascular bundle & 2 secretory glands.
k) Anther (torn) with numerous pollen grains in the interior.