



## EXPERIMENT NO: 17

### **Cardamom fruits: Fructus Cardamomi**

**Latin name:** *Elettaria cardamomum* White and Maeon.

**Family:** *Zingiberaceae*

- Perennial small trees (2-3) m.
- The plant has very large leaves.
- Fruits form: capsule.
- Fruits color: pale green to yellow.
- Seeds: brownish black.
- Taste and odor: aromatic.
- Indigenous: India & Sri Lanka.



**Elettaria cardamomum**

### **Chemical constituents:**

- 1- Volatile oil: a- Terpenyl acetate b- borneol c- cineole d- limonene
- 2- Fixed oil
3. Starch

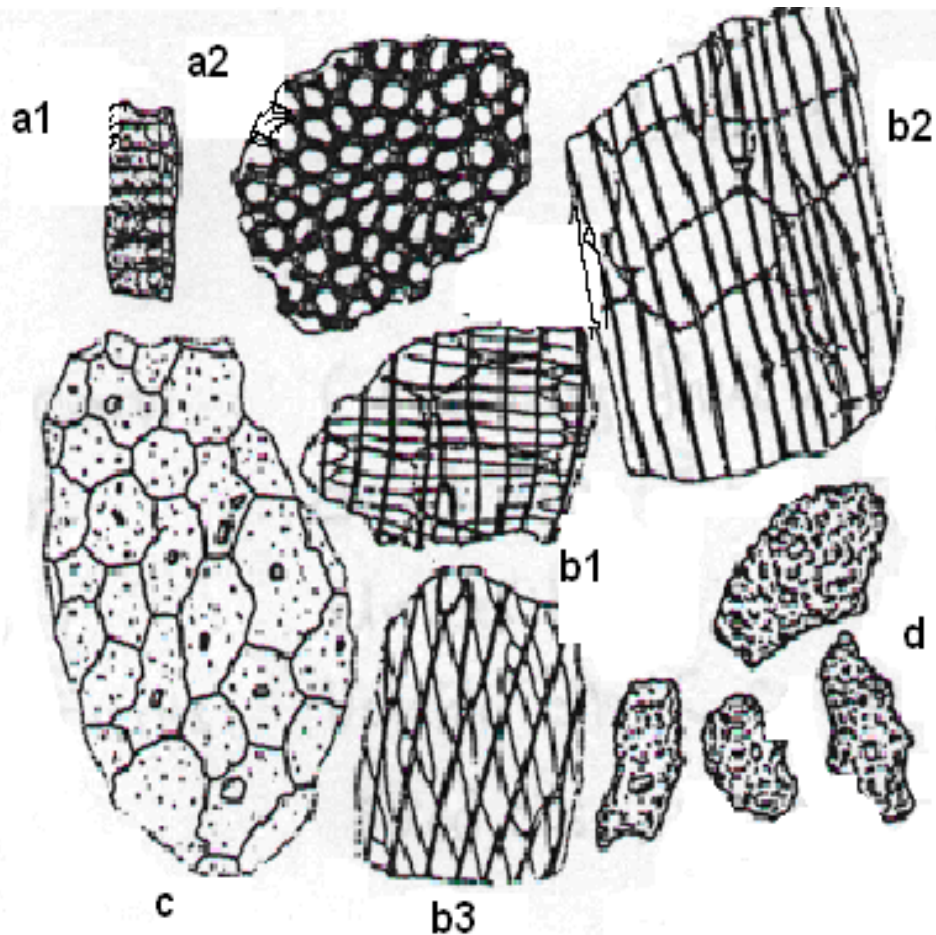
### **Uses:**

Flavoring agent, carminative, condiment, antibacterial activity and halitosis treatment.

### Microscopical examination

#### The characteristic microscopical features:

1. Stone cell layer (a1).
2. Cells from the endosperm with calcium oxalate single crystals (c).
3. Perisperm fragments containing starch (d).



- a1) Stone cell layer of the seed pod in side view, the cell walls dark brown.
- a2) Like a1 but in top view.
- b1) seed pod with lightly pitted epidermis cells, with the delicate walled cell layer, and large cells of excretory cell layer in top view.
- b2) like b1 without transverse layer.
- b3) like b2 without excretory cell layer.
- c) Cells from the endosperm with calcium oxalate single crystals.
- d) Perisperm fragments containing starch.