



PG 102 - p

Staff Members of

Pharmacognosy Department



Practical Pharmacognosy (2) PG102

Lab (1)

Scheme for description of Seeds

I) Linseed

- **Name:** Semen Lini-Linseed-بذور الكتان
- **Origin:** It is the dried ripe seeds of *Linum usitatissimum* Family: Linaceae.

- **Morphology:**

Condition: Entire ripe seeds

Shape: Elongated ovate, nearly flat rounded at one end & pointed at the other

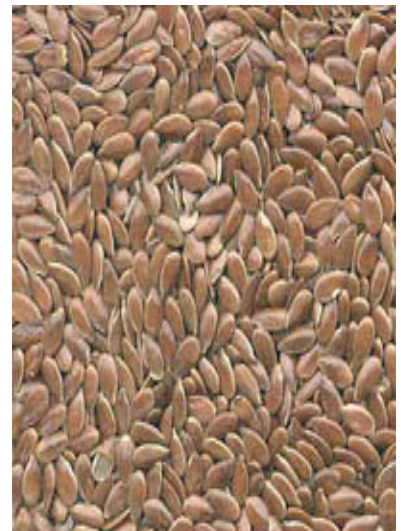
Size: 4-6 mm length, 2-2.5 mm width

Colour: Glossy reddish brown

Odour: Characteristic odour after crushing

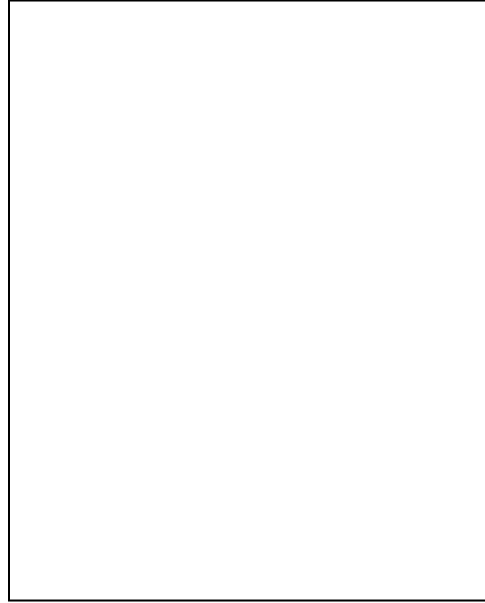
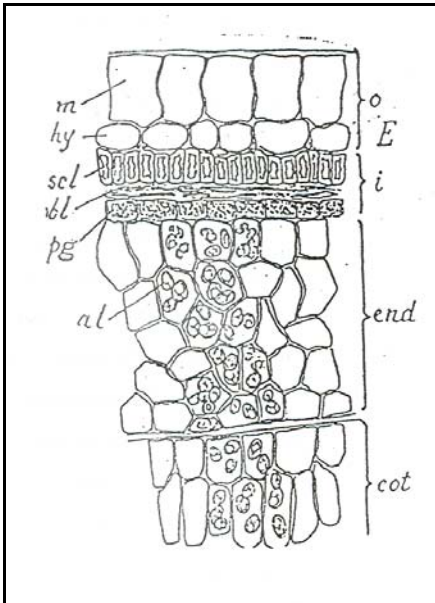
Taste: Mucilaginous oily taste

Kind: Albuminous seed



- **Histology:**

1- T.S.



2- Examination of Powder

•Physical Characters:

Condition: Fine powder

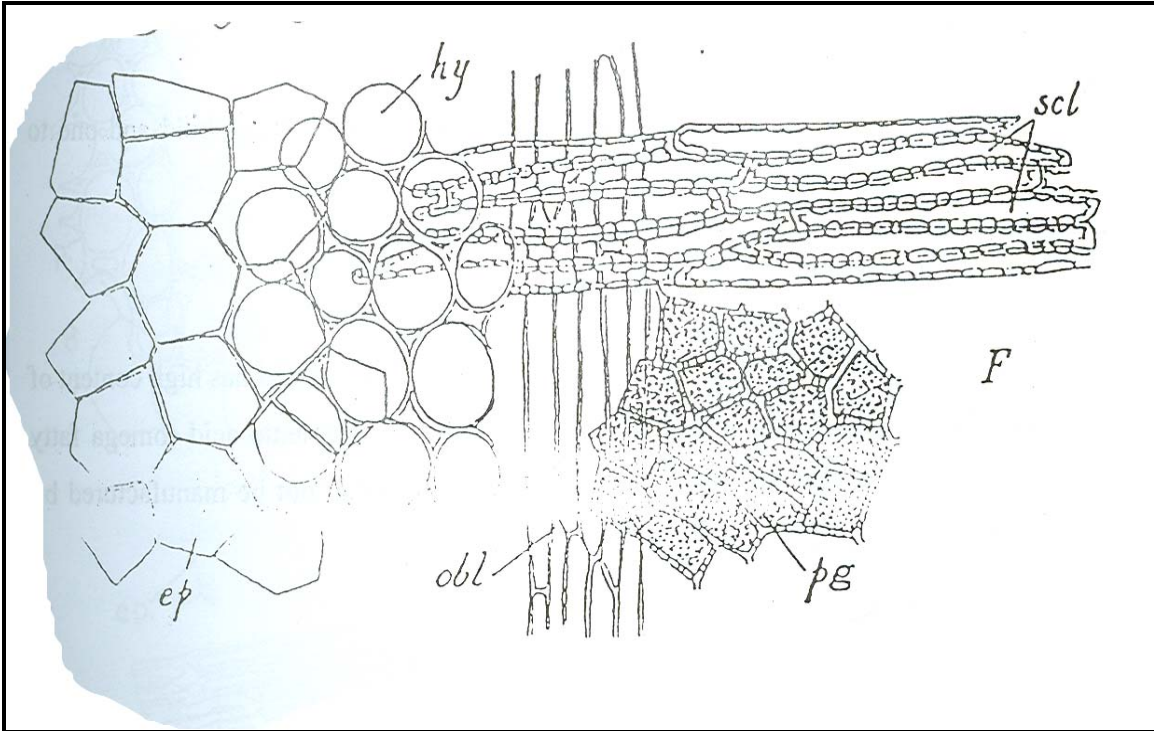
Homogeneity: Homogenous

Colour: Buff with visible dark brown fragments

Odour: Characteristic odour

Taste: Mucilaginous oily taste

- **Microscopical Examination:**



- **Work sheet**

,

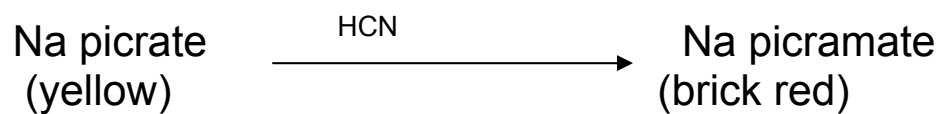
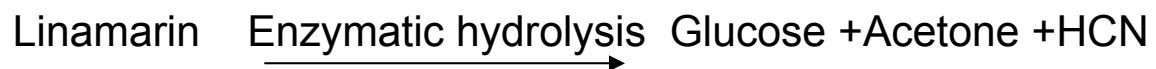
Key elements:



Grade:
Signature:

- **Confirmatory chemical test:**

It changes the colour of paper wet with Guignard's reagent from yellow to brick red due to presence of Linamarin glycoside



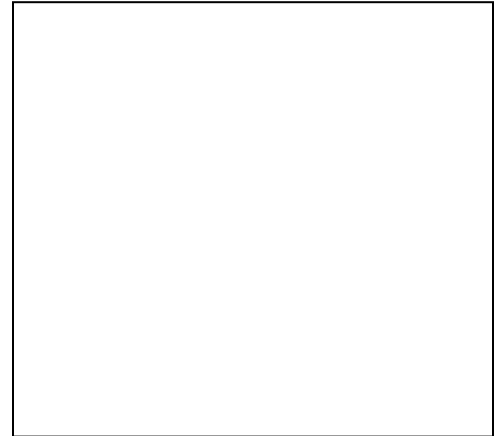
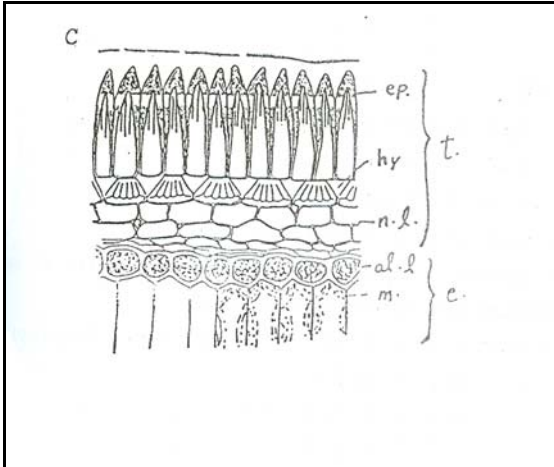
2)Foenugreek Seed

- **Name:** Semen Foenugraeci- Foenugreek Seed- بذور الحلبه
- **Origin:** It is the dried ripe seeds of *Trigonella foenugraecum* Family: Leguminosae
- **Morphology:**
 - Condition:**
 - Shape:**
 - Size:**
 - Colour:**
 - Odour:**
 - Taste:**
 - Kind:**Albuminous seed



- **Histology :**

- 1)T.S.**



- 2) Examination of powder:**

- Physical Characters:**

Condition:

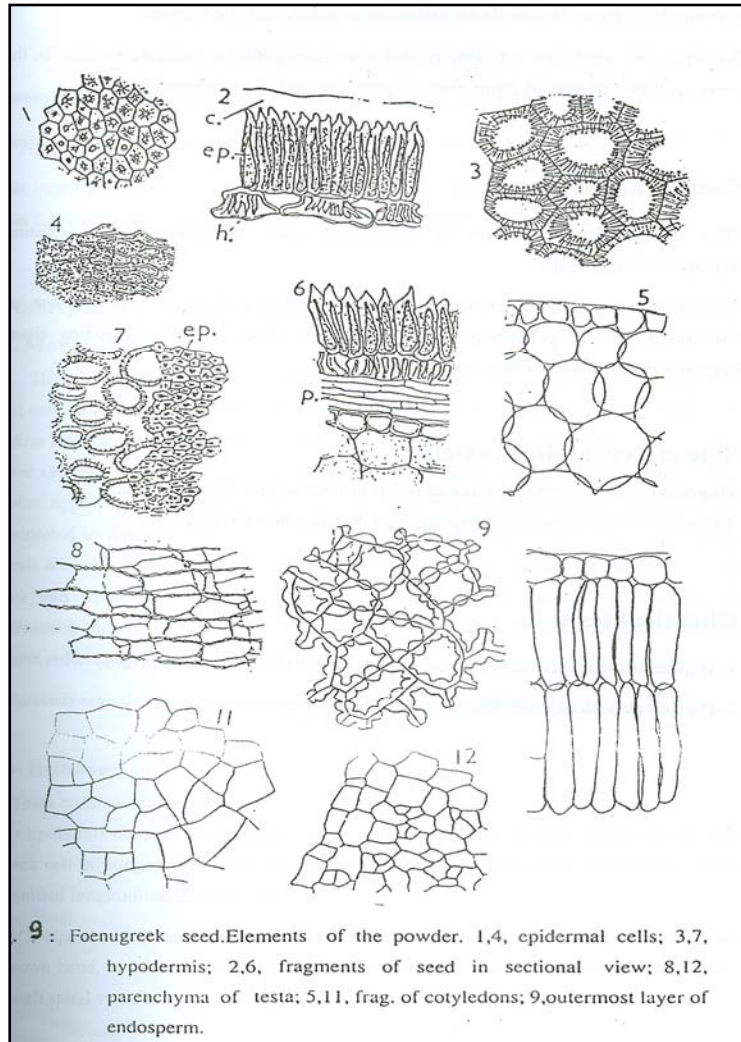
Homogeneity:

Colour:

Odour:

Taste:

- **Microscopical Examination:**



- **Work Sheet**

Key elements:



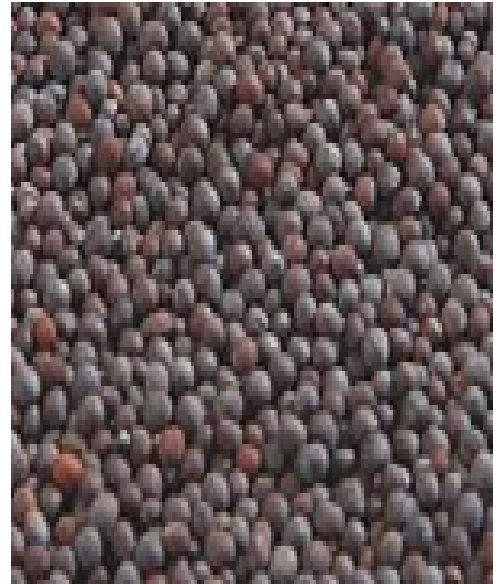
Grade:

Signature:

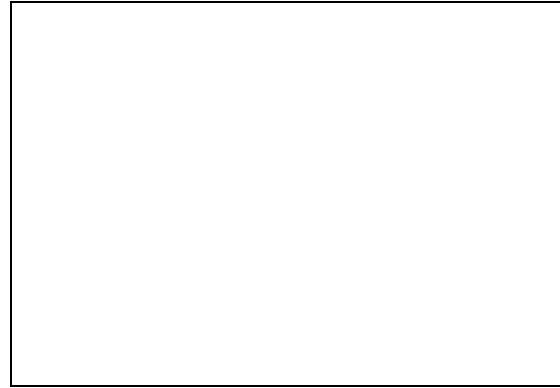
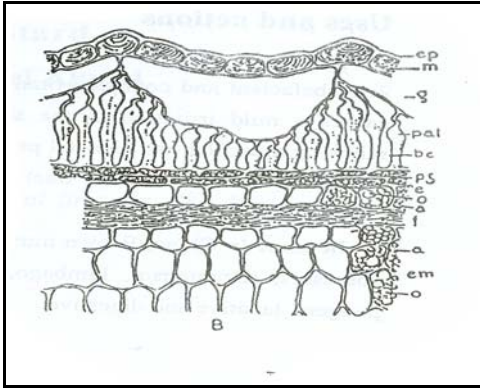
Lab 2

3)Black Mustard Seed

- **Name:** Black mustard- Brassica nigra- بذور الخردل الأسود
- **Origin:** It is the dried ripe seeds of *Brassica nigra* Family Cruciferae (Brassicaceae)
- **Morphology:**
 - Condition:**
 - Shape:**
 - Size:**
 - Colour:**
 - Odour:**
 - Taste:**
 - Kind:** Exalbuminous



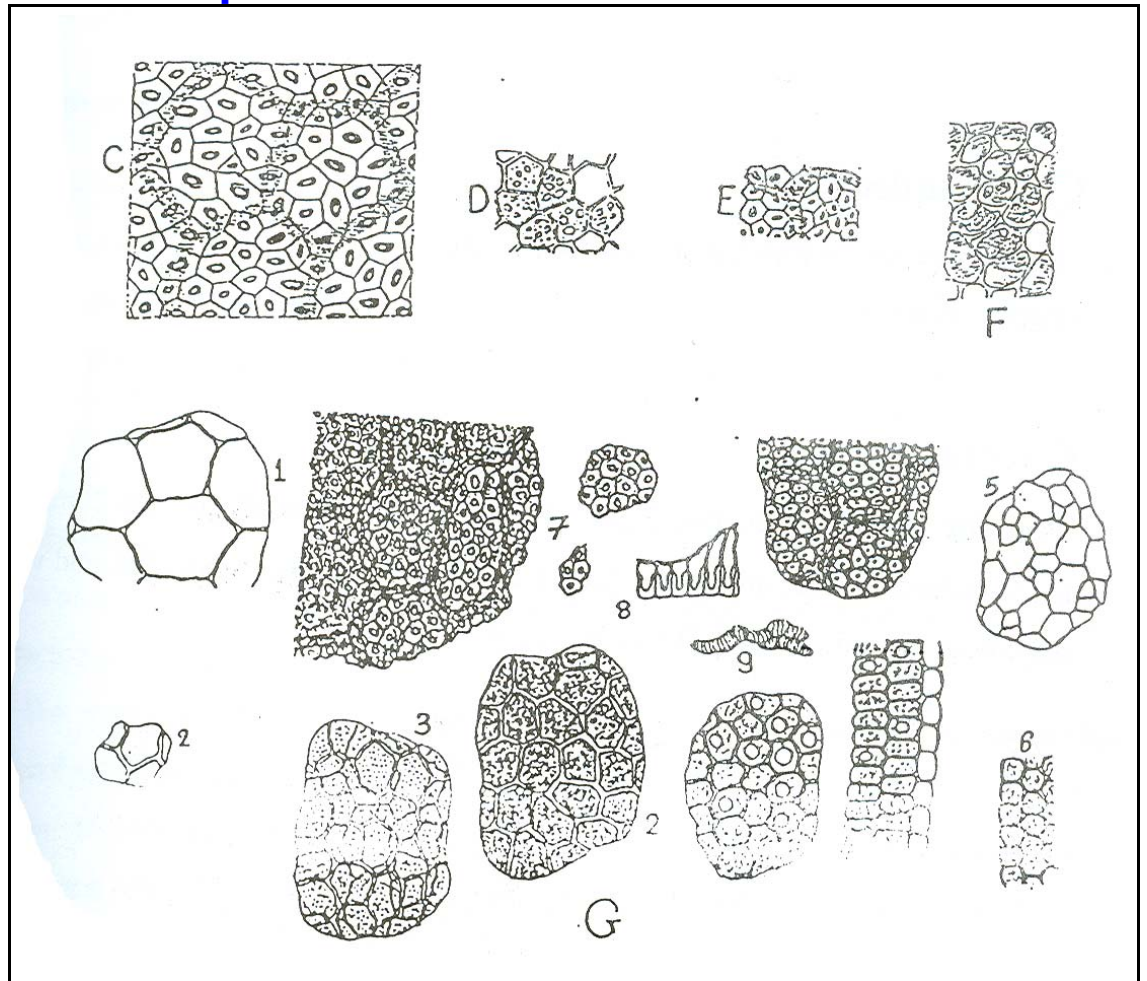
- **Histology:**
1) **T.S:**



- 2) **Examination of powder:**

- **Physical Characters:**
Condition:
Homogeneity:
Colour:
Odour:
Taste:

- Microscopical examination:



- **Work Sheet**

Key elements:



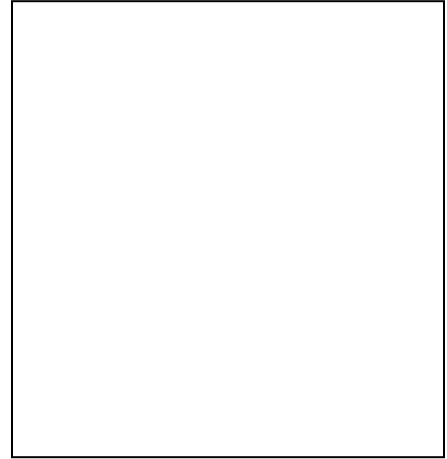
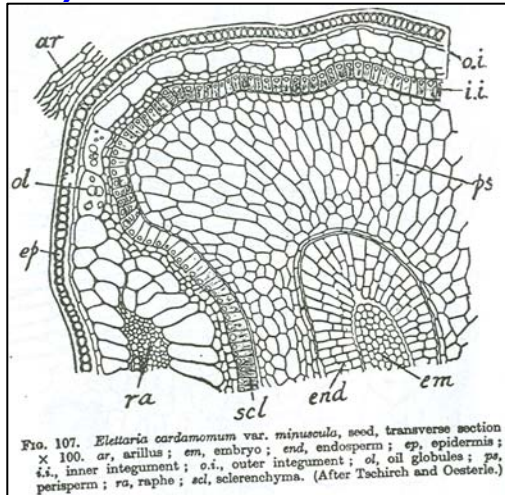
Grade:
Signature:

4)Cardamom Seed

- **Name:** Cardamom seed بذر الحبهان
- **Origin:** It is the dried ripe seeds of *Elettaria cardamomum* Family: Zingiberaceae, recently separated from the fruit.
- **Morphology:**
 - Condition:**
 - Shape:**
 - Size:**
 - Colour:**
 - Odour:**
 - Taste:**
 - Kind:**Albuminous seed



- **Histology:**
1) **T.S**



2) Examination of powder:

- **Physical Characters:**

Condition:

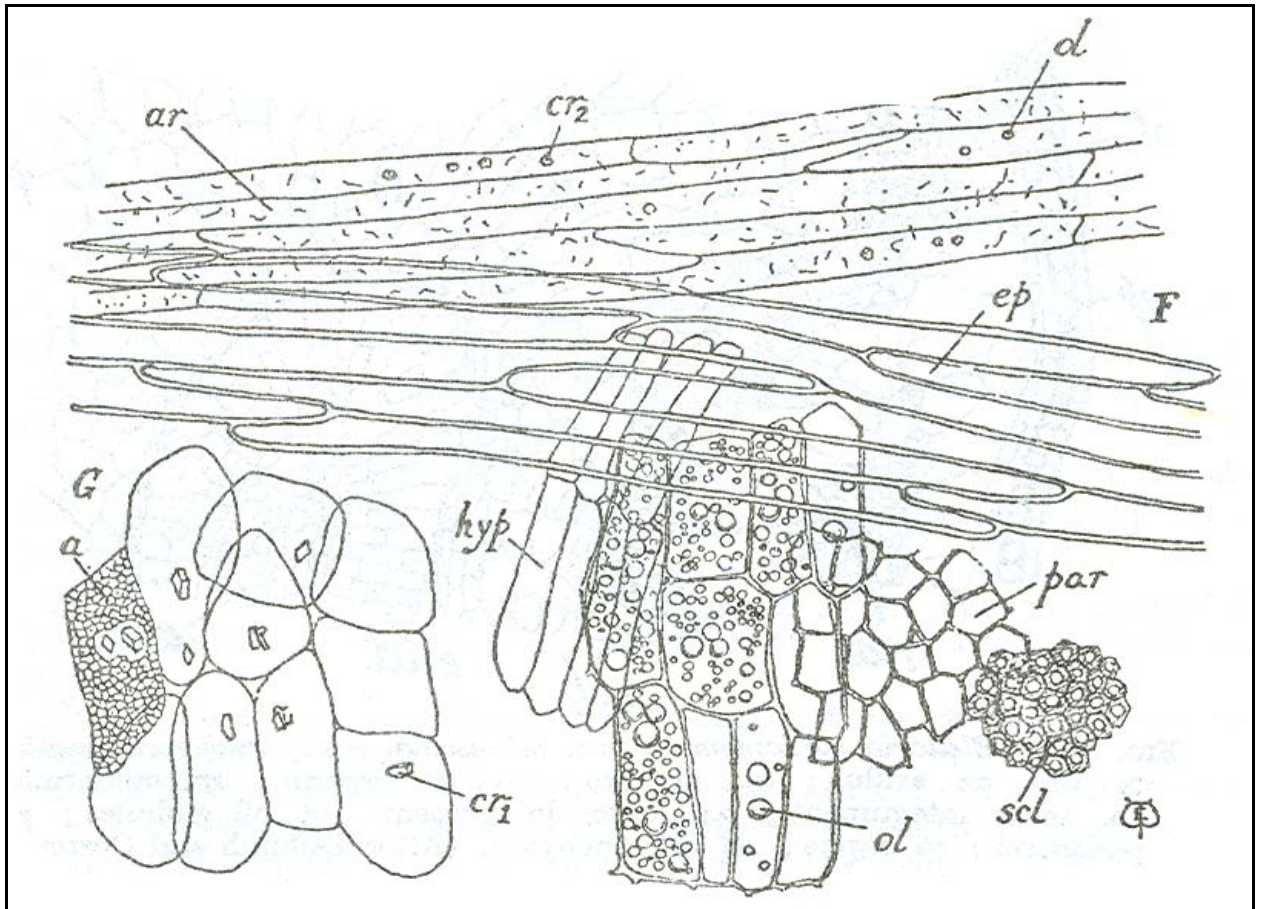
Homogeneity:

Colour:

Odour:

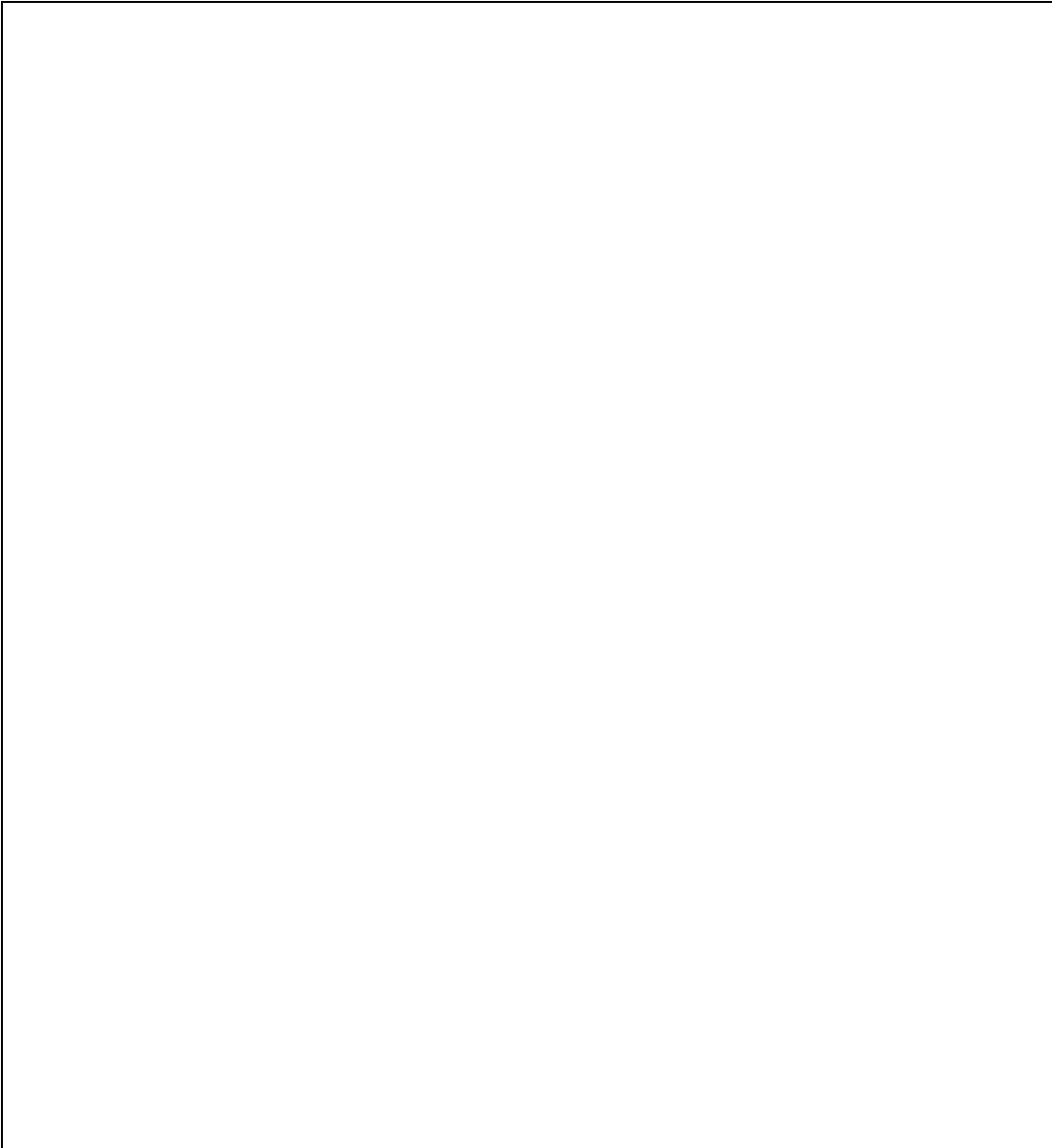
Taste:

- **Microscopical Examination:**



- **Work Sheet**

Key elements:

A large, empty rectangular box with a thin black border, occupying the central portion of the page. It is intended for the user to provide key elements related to the 'Work Sheet' topic.

Grade:
Signature:

Lab 3

Scheme for description of Fruits

1) Fennel Fruit

- **Name:** Fennel Fruit-Fructus Foeniculi- ثمر الشمر
- **Origin:** It is the dried ripe fruit of *Foeniculum vulgare*
Family: Apiaceae (Umbelliferae)

- **Morphology:**

Condition: Entire ripe fruits

Shape: Oval to oblong

Size: 4-10 mm long, up to 4 mm wide

Colour: Yellowish brown

Odour: Aromatic agreeable odour

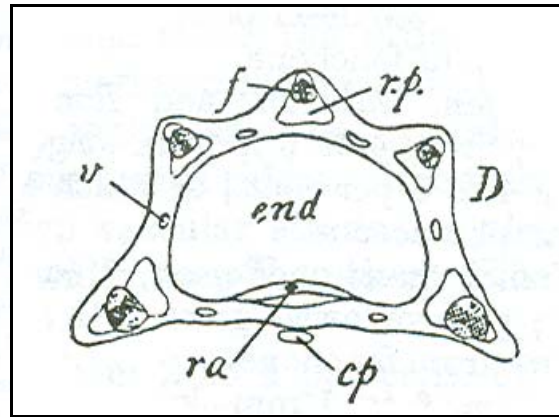
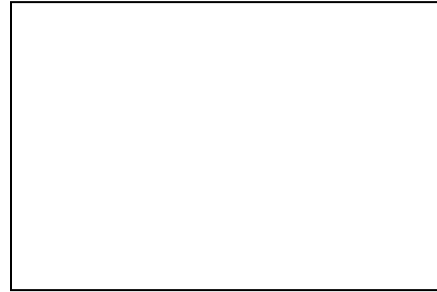
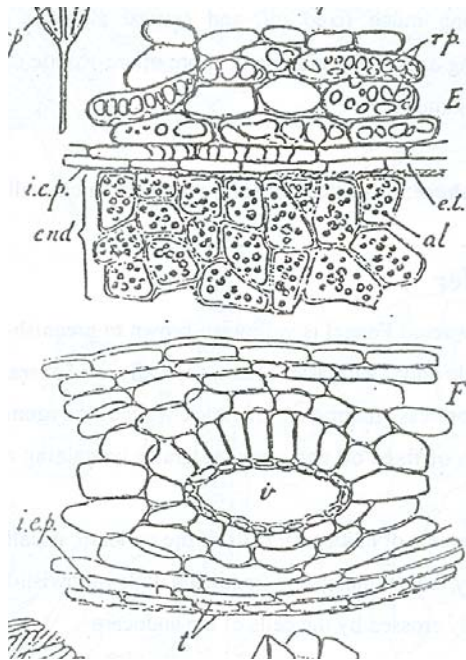
Taste: Sweet aromatic taste

Kind: True, Simple, Dry, Schizocarpic fruit



- **Histology**

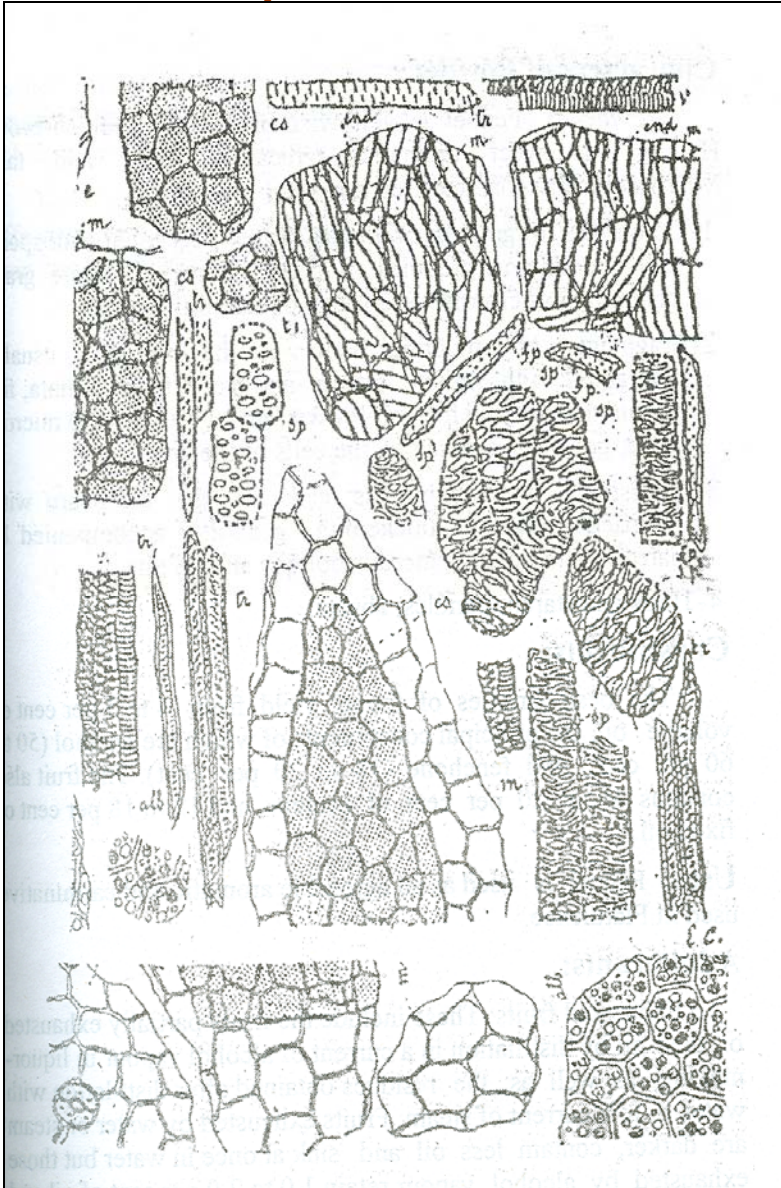
1) T.S.



2) Examination of powder

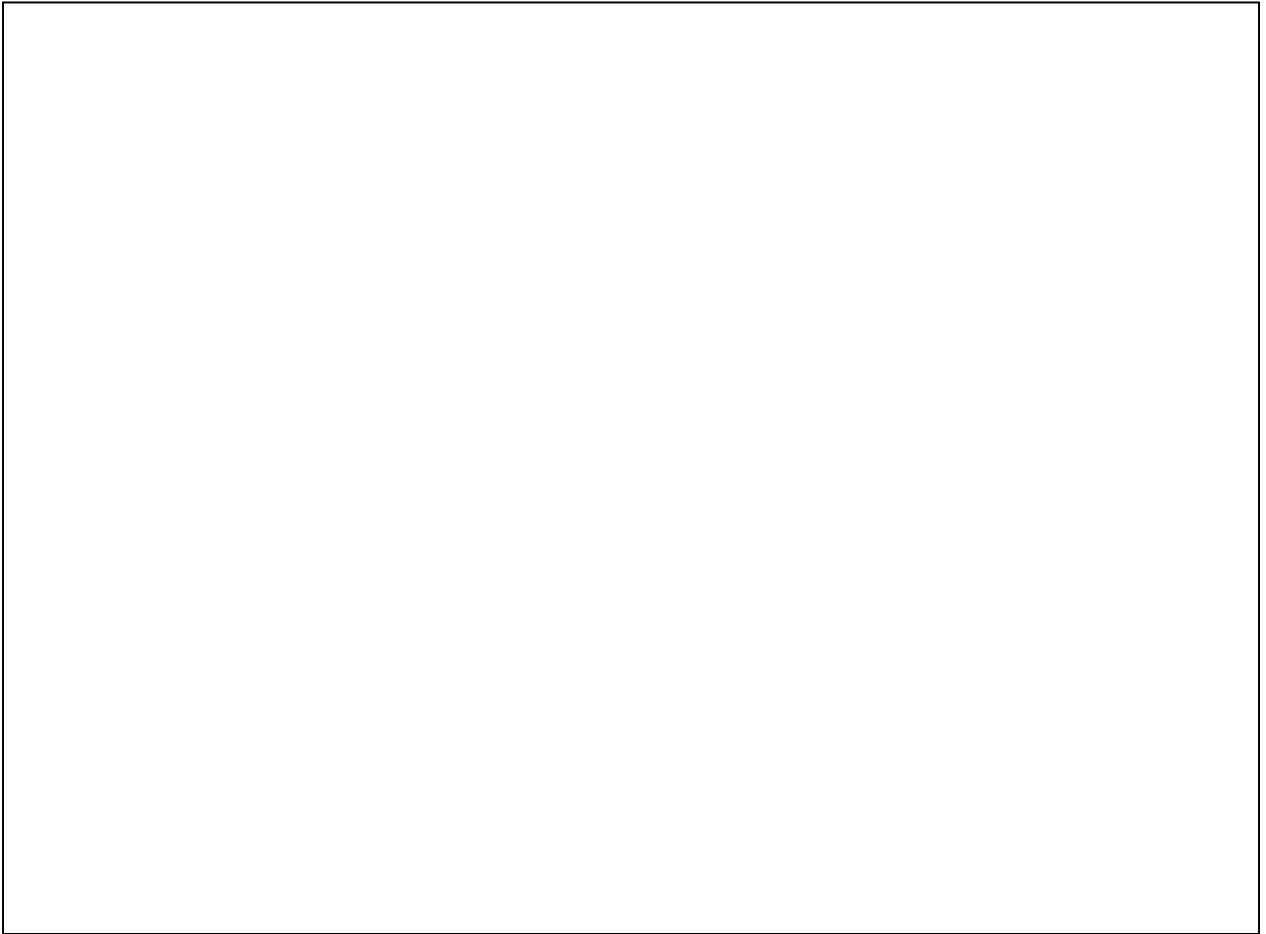
- **Physical Characters:**
 - Condition:** Fine powder
 - Homogeneity:** Homogenous
 - Colour:** Yellowish brown
 - Odour:** Aromatic agreeable odour
 - Taste:** Sweet aromatic taste

- **Microscopical Examination:**



- **Work sheet**

Key elements:

A large, empty rectangular box with a thin black border, intended for listing key elements. It occupies the central portion of the page.

Grade:
Signature:

2) Anise Fruit

- **Name:**
- **Origin:**
- **Morphology:**

Condition:

Shape:

Size:

Colour:

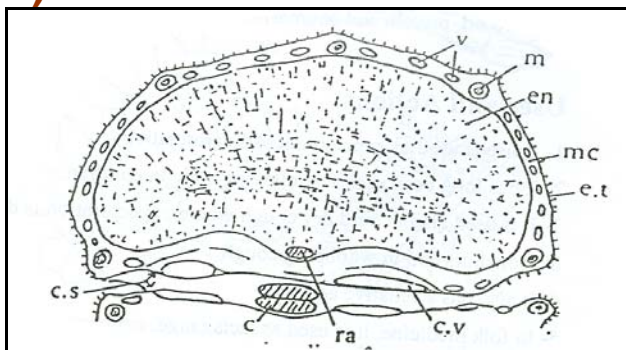
Odour:

Taste:

Kind: True, Simple, Dry, Schizocarpic fruit

Histology:

1) T.S.



2) Examination of powder

- **Physical Characters:**

Condition:

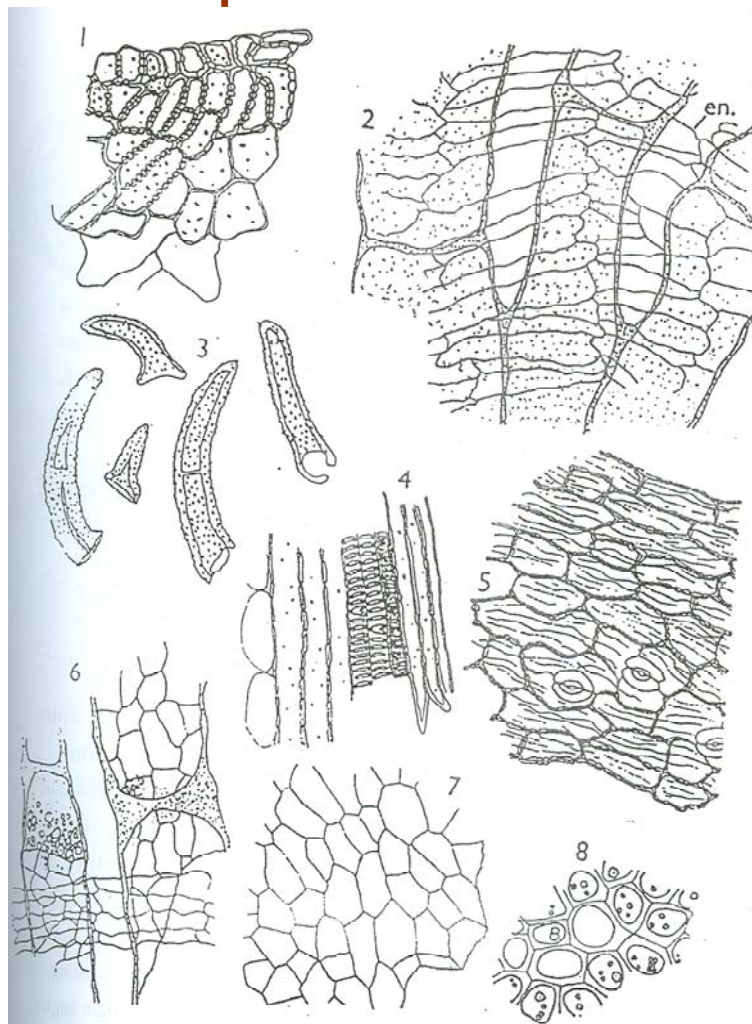
Homogeneity:

Colour:

Odour:

Taste:

- **Microscopical Examination:**



22 Powdered Anise. 1, lignified pitted cells; 2, 6, branched vittae with endocarp cells; 3, covering trichomes; 4, fragment of vascular strand; 5, epicarp cells; 7, testa in surface view; 8, endosperm.

- **Work sheet**

Key elements:

A large, empty rectangular box with a thin black border, intended for listing key elements. It occupies the central portion of the page.

Grade:
Signature:

Lab 4

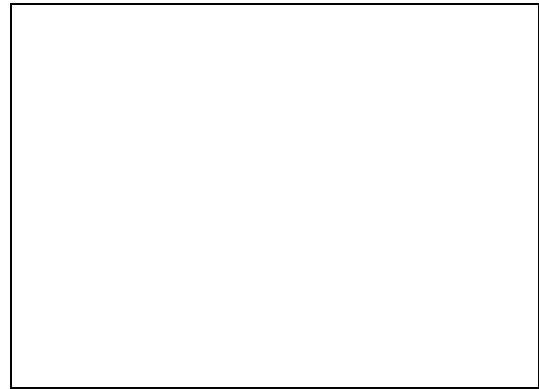
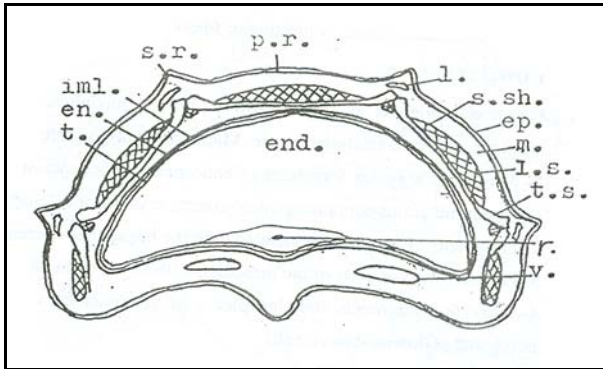
3) Coriander Fruit

- **Name:** Coriander fruit-Fructus coriandrum-ثمر الكزبرة
- **Origin:** It is the dried ripe fruit of *Coriandrum sativum*.
Family: Umbelliferae
- **Morphology:**
 - Condition:**
 - Shape:**
 - Size:**
 - Colour:**
 - Odour:**
 - Taste:**
 - Kind:** True, Simple, Dry, Schizocarpic fruit



- **Histology**

1) T.S.



2) Examination of powder

- **Physical Characters:**

Condition:

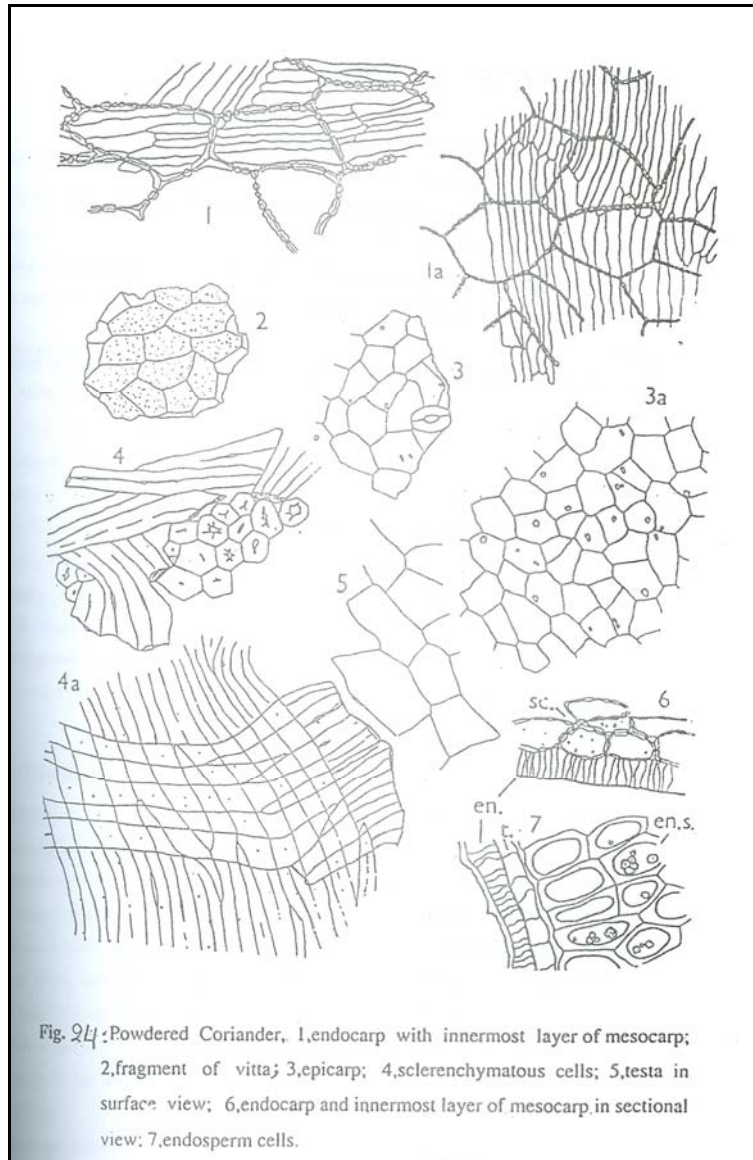
Homogeneity:

Colour:

Odour:

Taste:

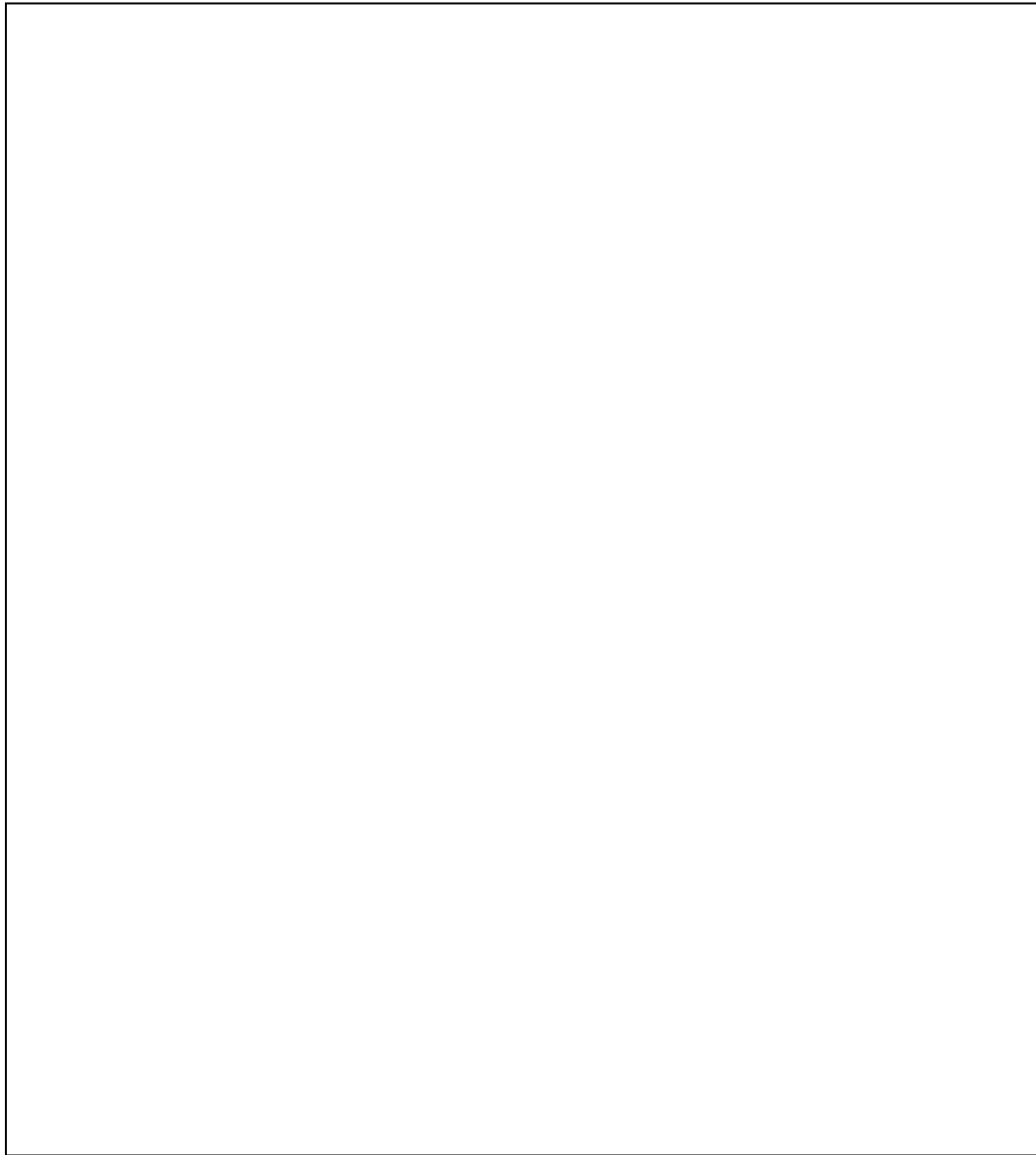
- **Microscopical Examination:**



- **Work sheet**

Key elements:

:



Grade:
Signature:

4)Cumin Fruit

- **Name:** Cumin -Fructus Cummin-ثمر الكمون
- **Origin:** It is the dried ripe fruit of *Cuminum cyminum*
Family: Umbellifereae

- **Morphology:**

Condition:

Shape:

Size:

Colour:

Odour:

Taste:

Kind: True, Simple, Dry, Schizocarpic fruit



- **Histology**

1)T.S.



2)Examination of powder

- **Physical Characters:**

Condition:

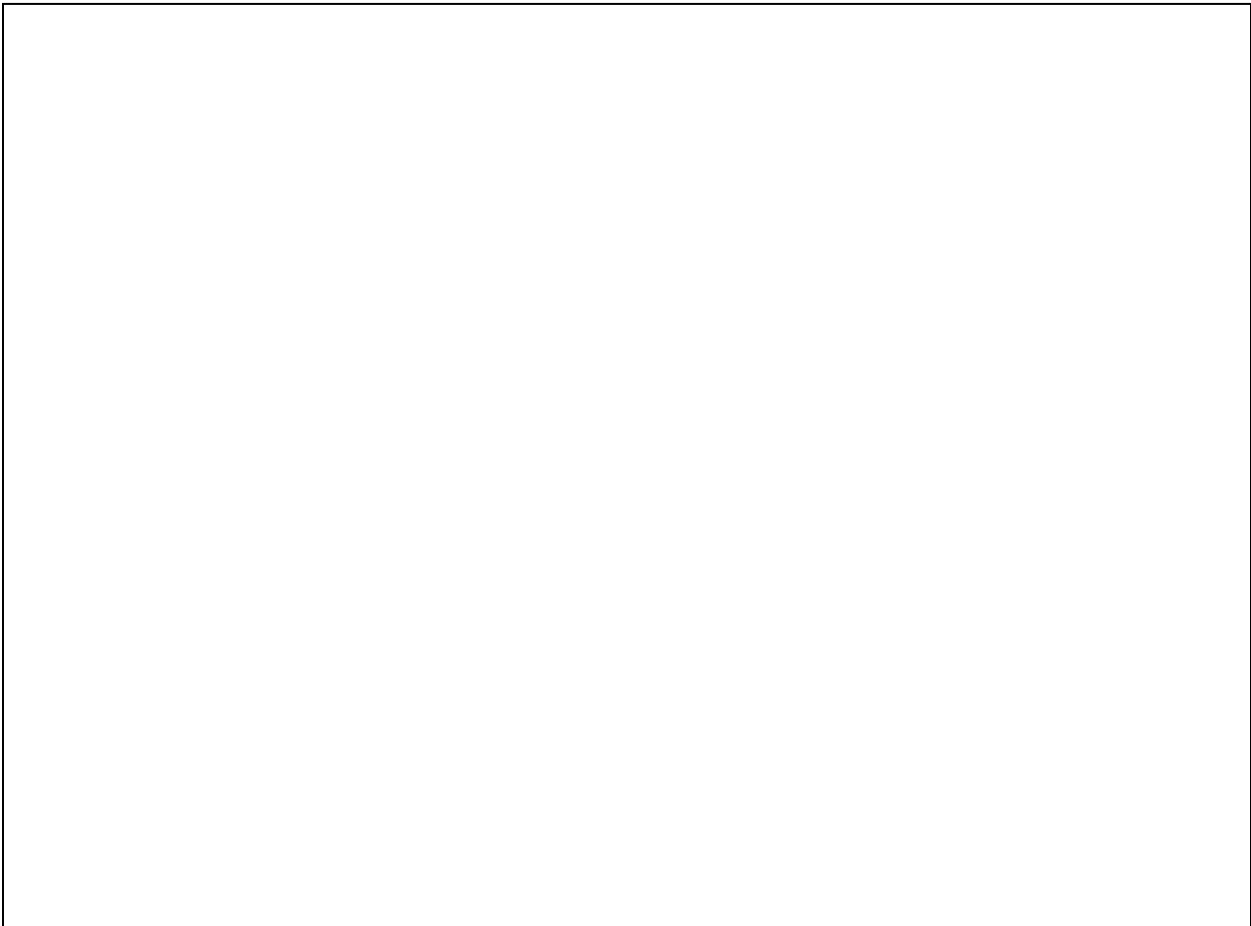
Homogeneity:

Colour:

Odour:

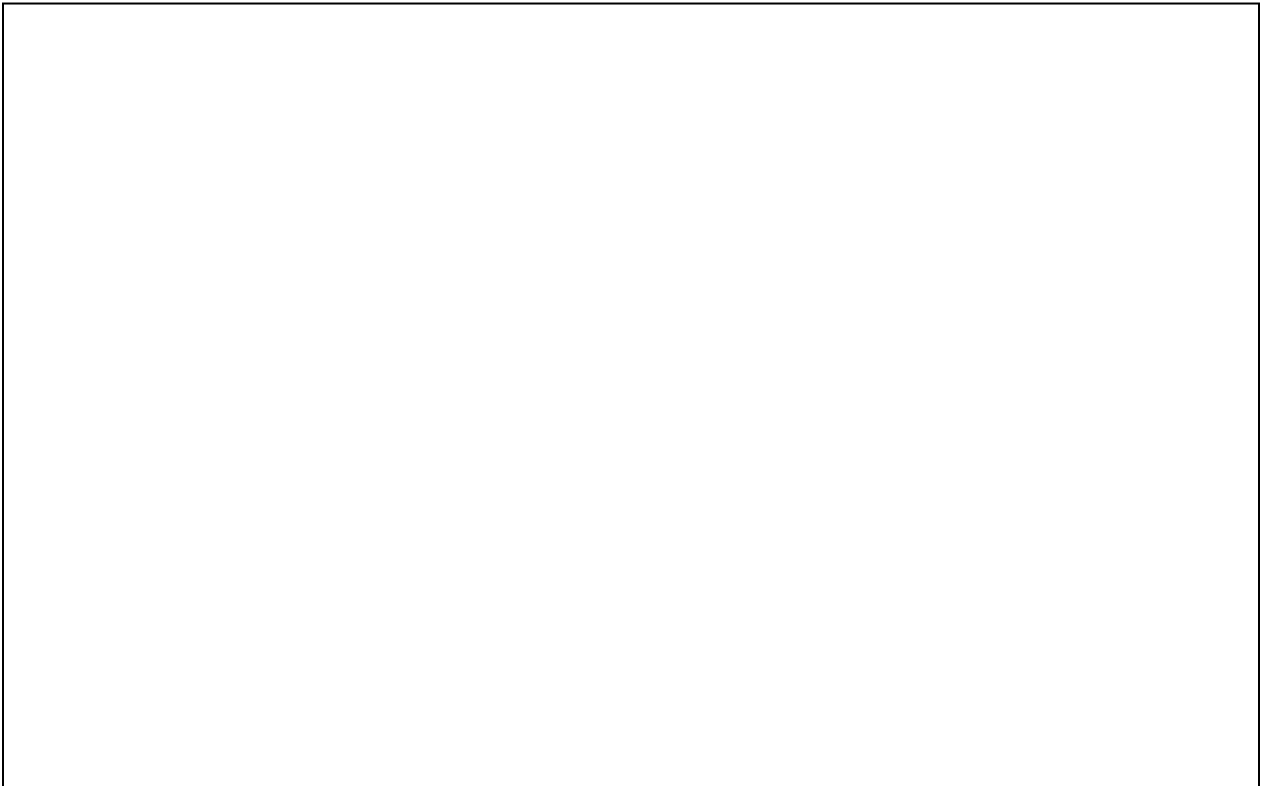
Taste:

- **Microscopical Examination:**



- **Work sheet**

Key elements:



Grade:
Signature:

Lab. 5

5) Ammi-visnaga Fruit

- **Name:** Ammi-visnaga fruit-Fructus Khelle **ثمر الخلة**
البلدي

- **Origin:** It is the dried ripe fruit of *Ammi-visnaga*
Family: Umbelliferae

- **Morphology:**

Condition:

Shape:

Size:

Colour:

Odour:

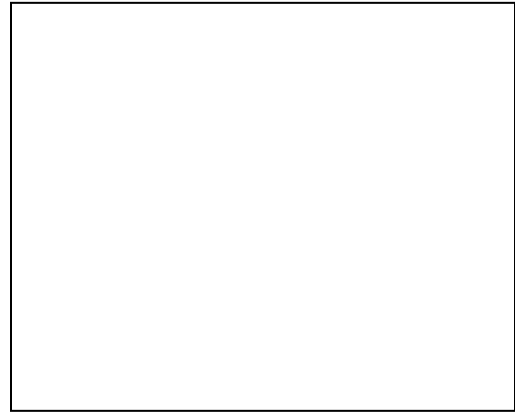
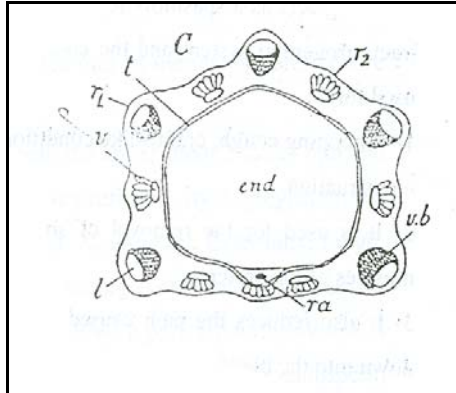
Taste:

Kind: True, Simple, Dry, Schizocarpic fruit



- **Histology**

1) T.S.



2) Examination of powder

- **Physical Characters:**

Condition:

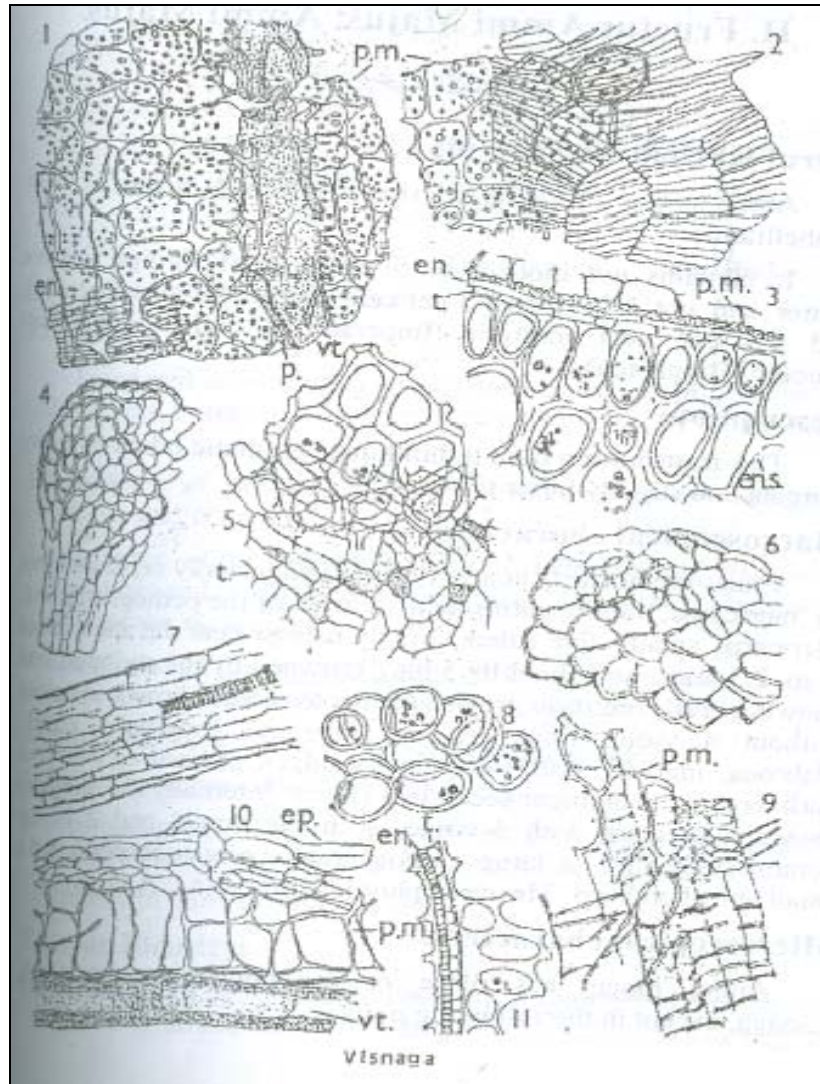
Homogeneity:

Colour:

Odour:

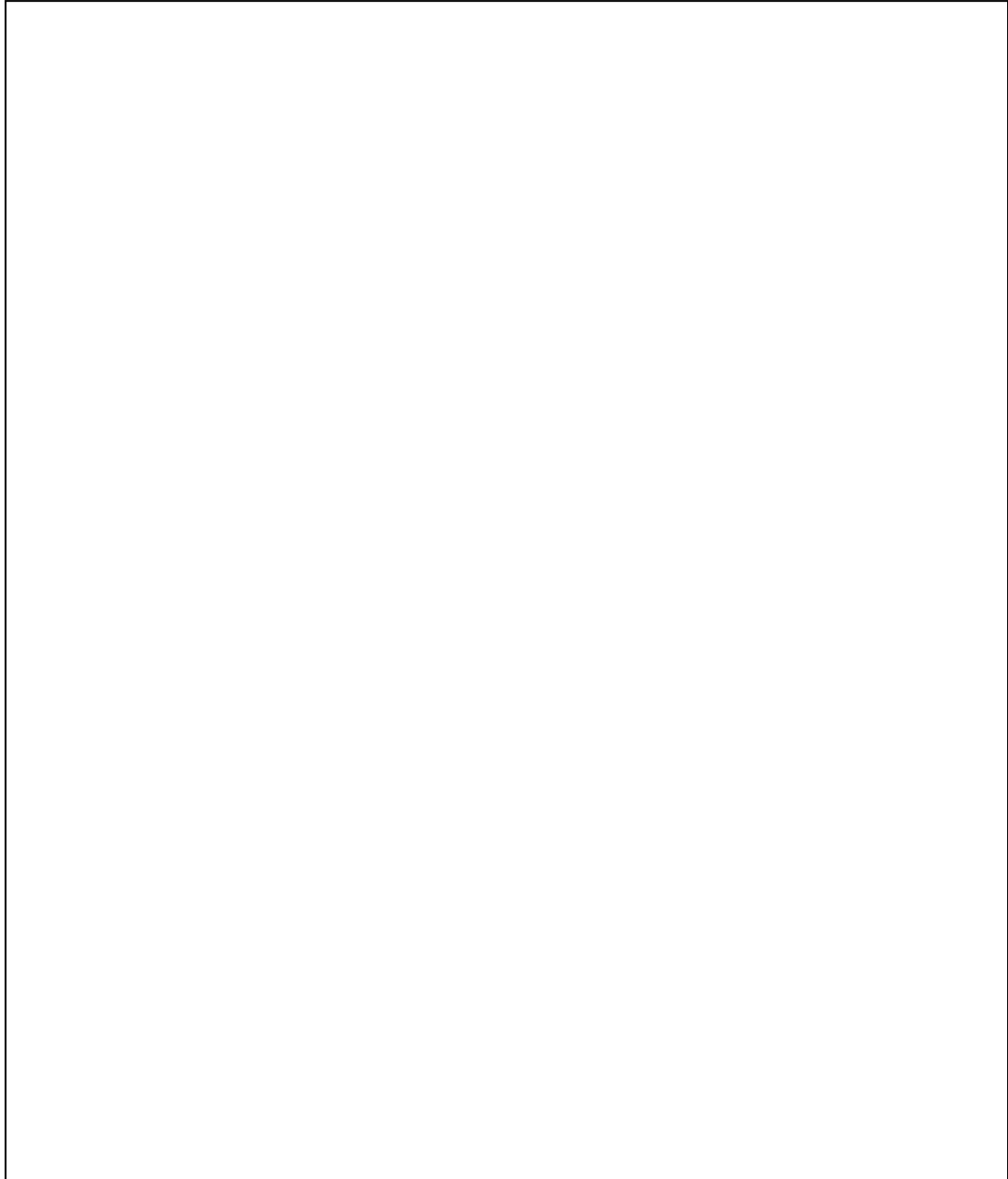
Taste:

- **Microscopical Examination:**



- **Work sheet**

Key elements:



Grade:
Signature:

6) Capsicum Fruit

• **Name:** Capsicum fruit -Fructus Capsici ثمر الشطة

• **Origin:** It is the dried ripe fruit of *Capsicum minimum*
Family: Solanaceae

• **Morphology:**

Condition:

Shape:

Size:

Colour:

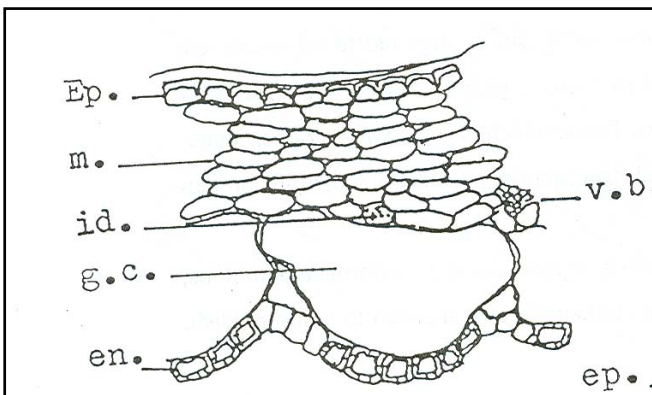
Odour:

Taste:

Kind: True, Simple, Succulent, Berry fruit

• **Histology**

1) T.S



2) Examination of powder

•Physical Characters:

Condition:

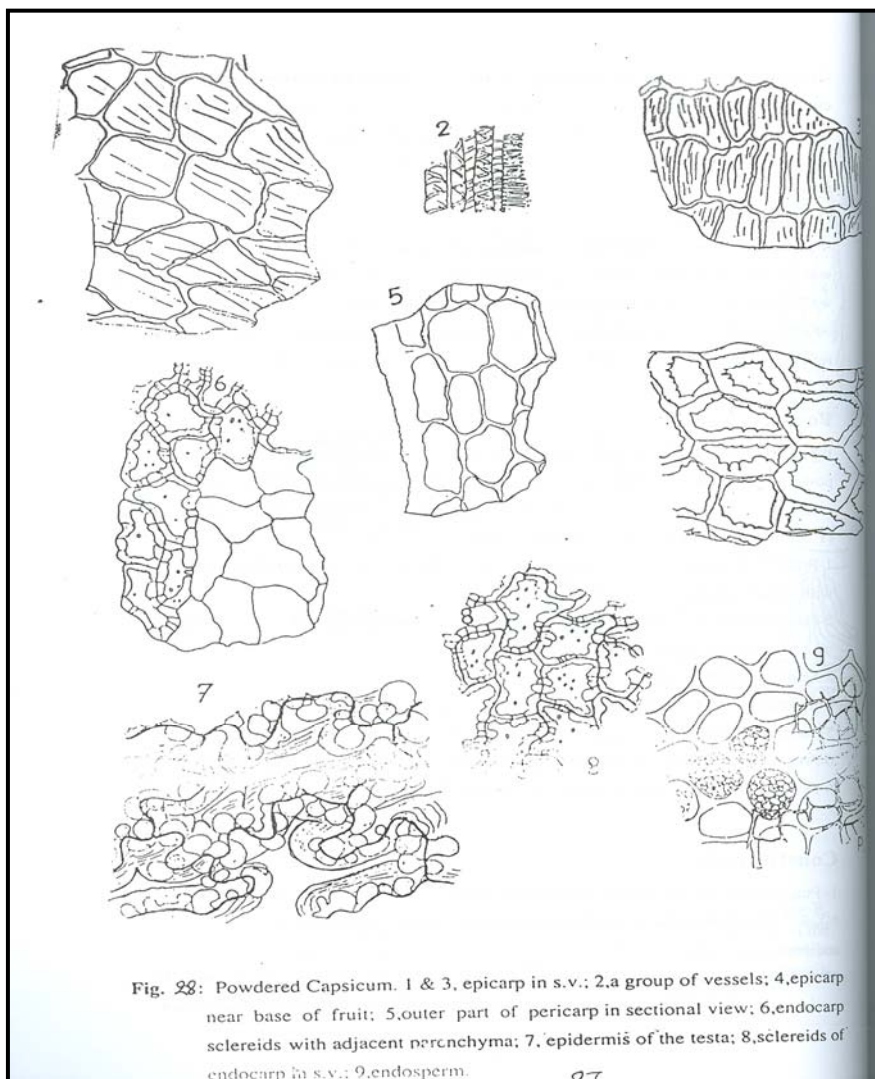
Homogeneity:

Colour:

Odour:

Taste:

•Microscopical Examination:



- **Work sheet**

Key elements:



Grade:
Signature:

Lab 6

Scheme for description of Herbs

1)Mentha Herb

- **Name:** Mentha-Peppermint-النعناع
- **Origin:** It is the aerial parts of *Mentha piperita*
Family: Labiatae

- **Morphology:**

Condition: Entire herb

Shape: Quadrangular in outline

Size:

Colour: Green

Odour: Characteristic aromatic

Taste: Aromatic taste followed by cold sensation



- **Histology**
1)T.S.



2)Examination of Powder

- **Physical Characters:**

Condition: Fine powder

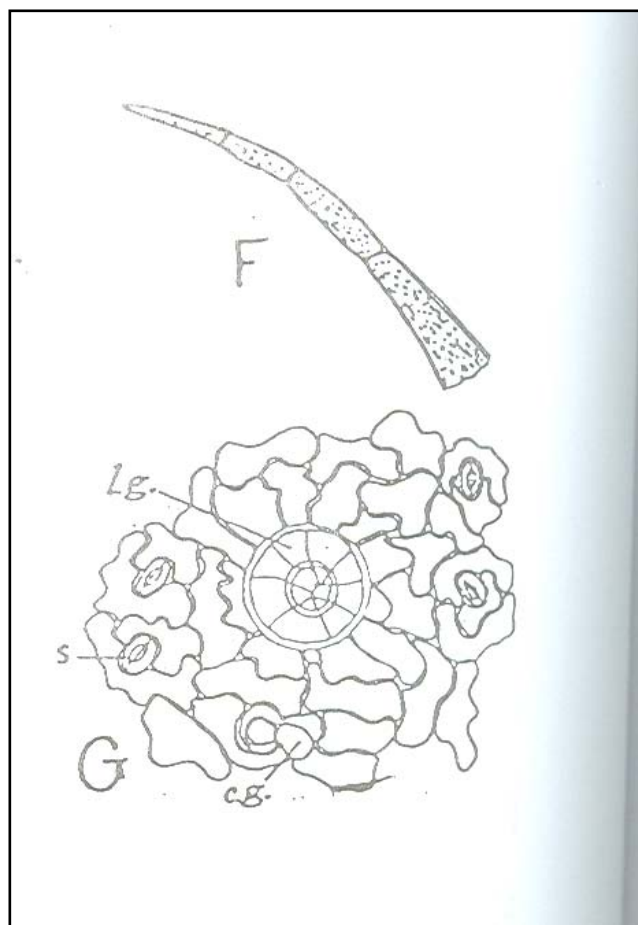
Homogeneity: Homogenous

Colour: Green to light olive green

Odour: Characteristic aromatic

Taste: Aromatic taste followed by cold sensation

- **Microscopical Examination:**



- **Work sheet**

Key elements:



Grade:
Signature:

2)Hyoscyamus Herb

- **Name:** Egyptian Henbane-Hyoscyamus muticus
عشب السكران المصرى

- **Origin:** It is the aerial parts of *Hyoscyamus muticus*

Family: Solanaceae.

- **Morphology:**

Condition:

Shape:

Size:

Colour:

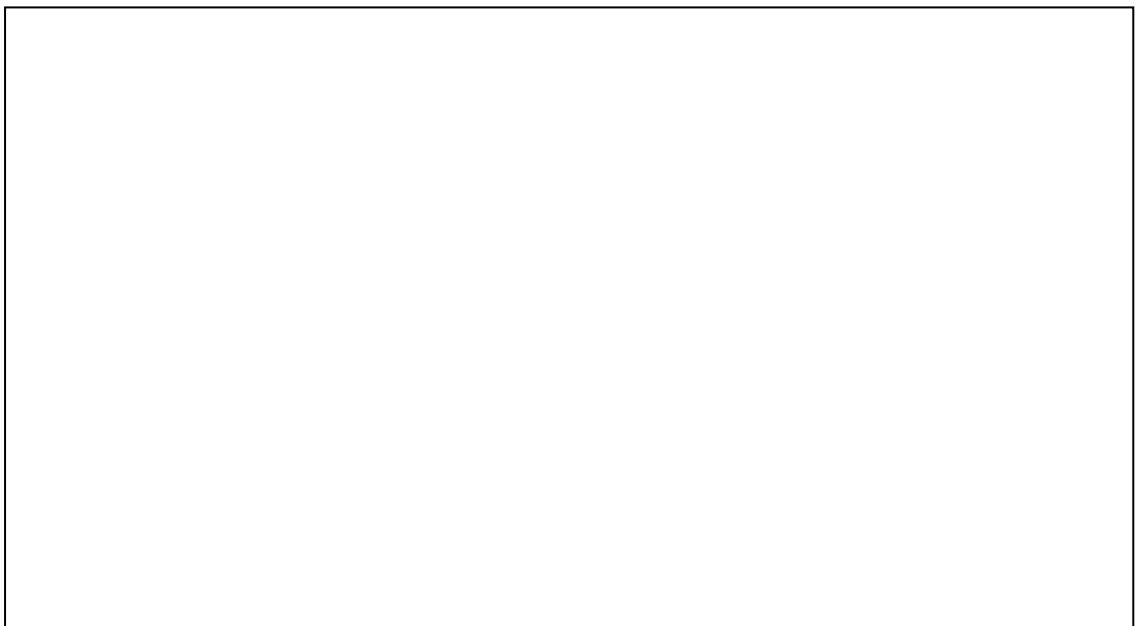
Odour:

Taste:



- **Histology**

1) T.S.



2)Examination of powder

- **Physical Characters:**

Condition:

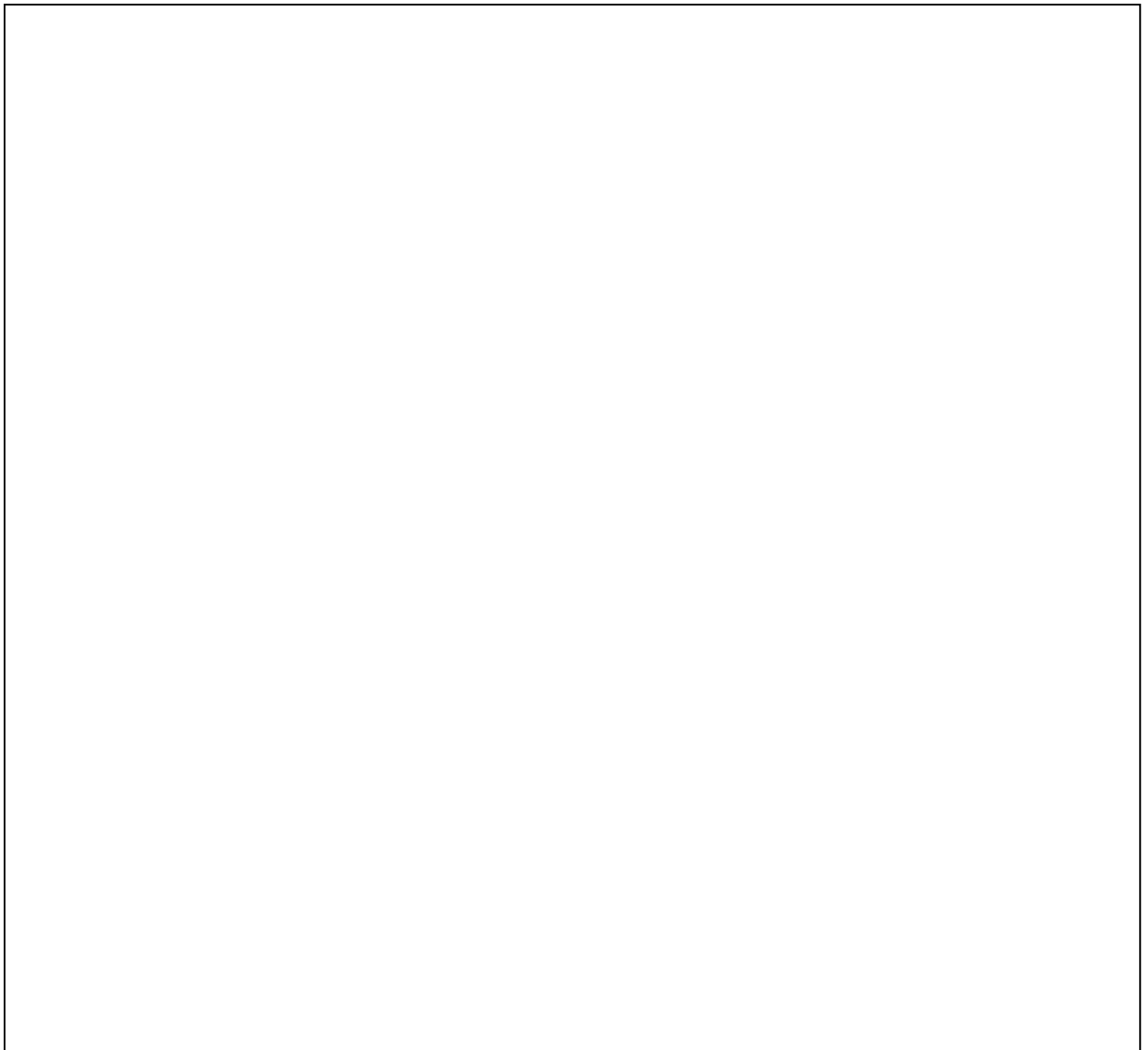
Homogeneity:

Colour:

Odour:

Taste:

- **Microscopical Examination:**



- **Work sheet**

Key elements:

A large, empty rectangular box with a thin black border, occupying the central portion of the page. It is intended for the user to provide key elements related to the worksheet.

Grade:
Signature:

Lab 7

Scheme for description of Subterranean organs

1) Liquorice

- **Name:** Liquorice - *Glycyrrhiza glabra* – جذر العرقسوس
- **Origin:** It is the unpeeled roots of *Glycyrrhiza glabra*. Family: Leguminosae.

- **Morphology:**

Condition: Entire subterranean organ

Shape: In pieces, with rough brownish surfaces

Size:

Colour: Brown

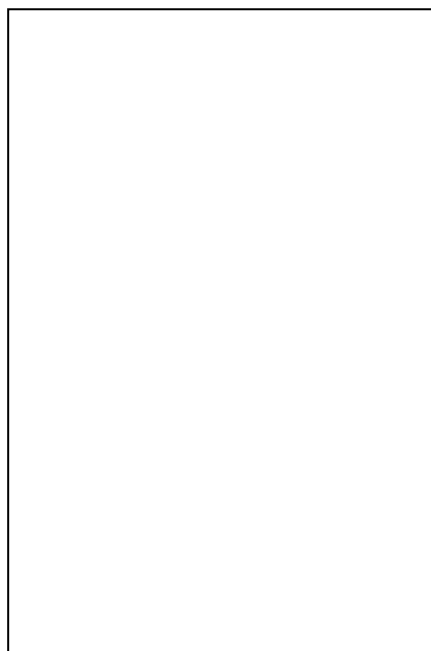
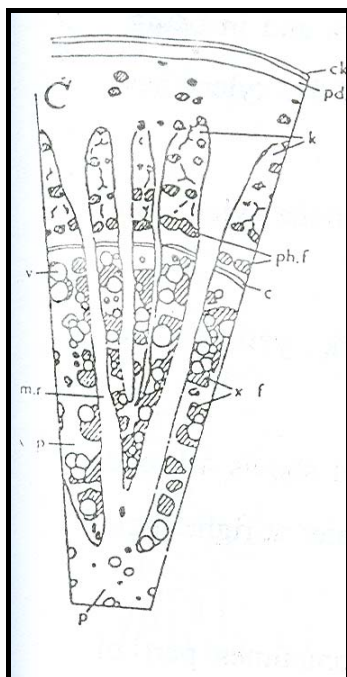
Odour: Faint characteristic

Taste: very sweet



Histology

1) T.S:



2) Examination of powder

• Physical Characters:

Condition: Powder

Homogeneity: Homogenous

Colour: Brownish yellow

Odour: Faint characteristic

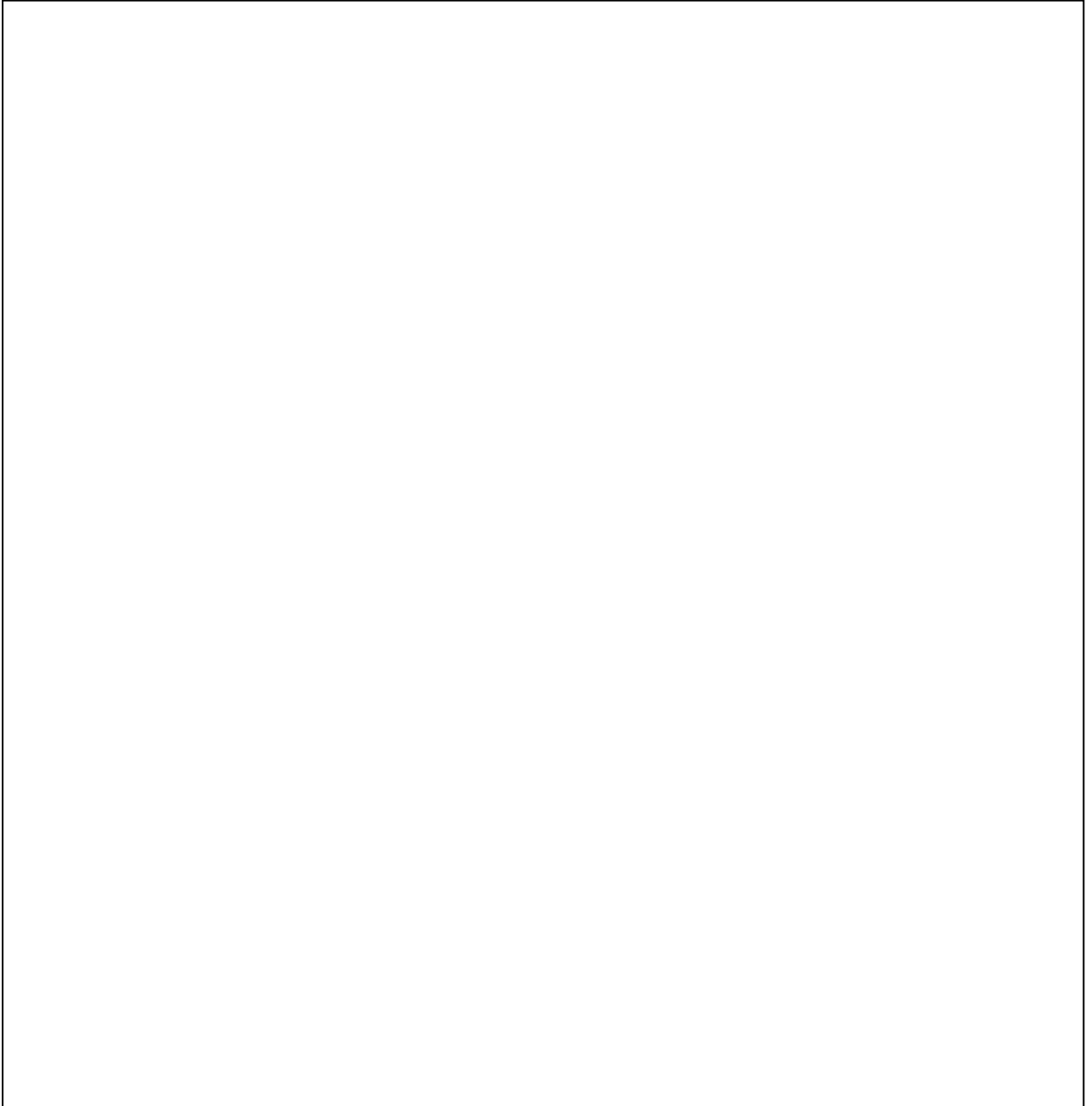
Taste: Very sweet

- **Microscopical Examination:**



- **Work sheet**

Key elements:

A large, empty rectangular box with a thin black border, intended for listing key elements of the worksheet.

Grade:
Signature:

2) Rhubarb

- **Name:** Rhubarb-Rhizoma Rhie-الراوند
- **Origin:** It is the dried rhizomes and big roots of *Rheum palmatum* except *Rheum rhaponticum*
Family: Polygonaceae, deprived of most of its outer tissues.
- **Morphology:**

Condition:

Shape:

Size:

Colour:

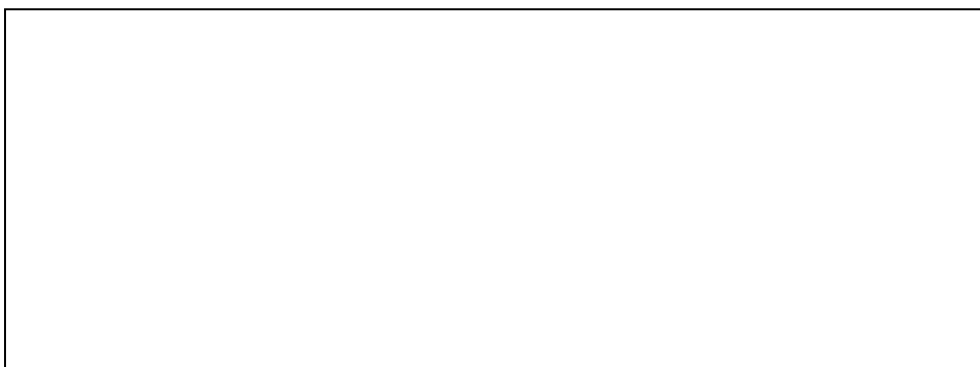
Odour:

Taste:



- **Histology :**

1) T.S



2) Examination of powder

- Physical Characters:

Condition:

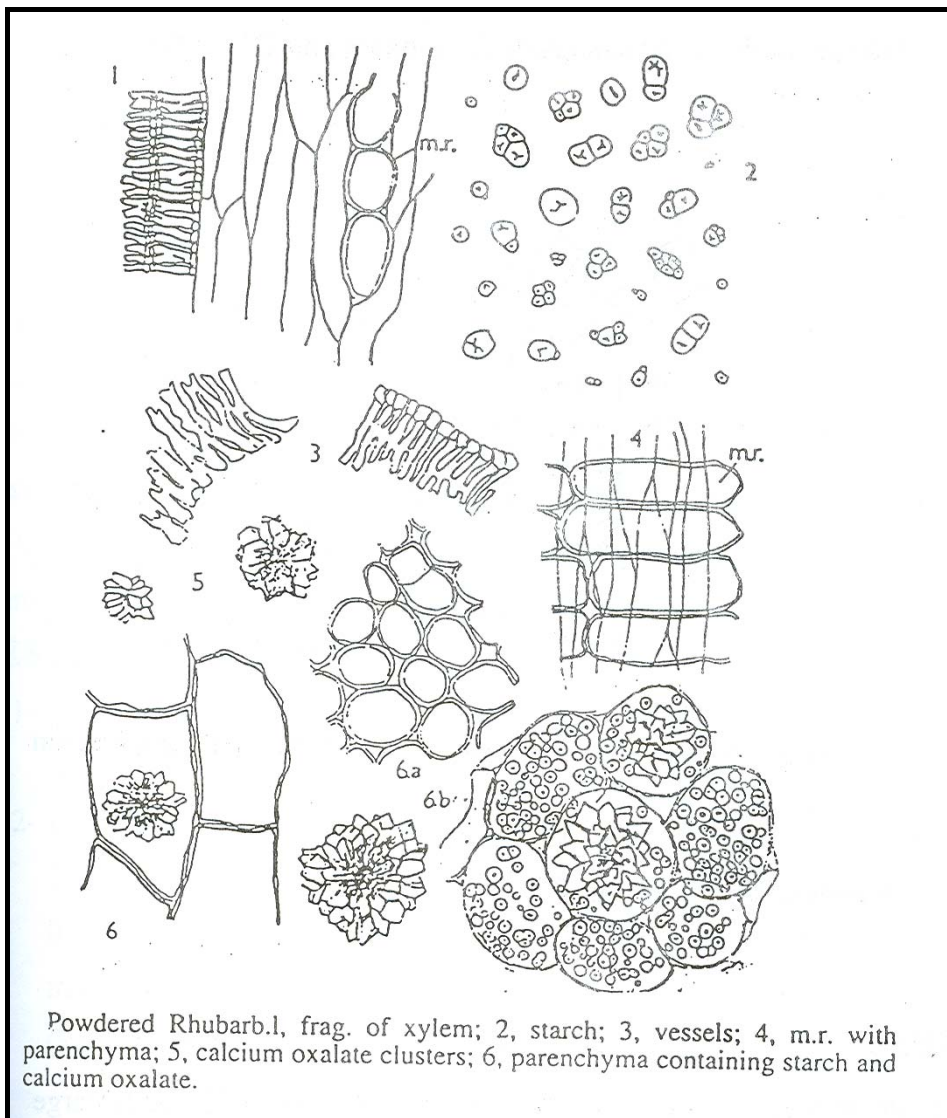
Homogeneity:

Colour:

Odour:

Taste:

- Microscopical Examination:



- **Work sheet**

Key elements:



Grade:
Signature:

Lab 8

3)Curcuma

- **Name:** Curcuma –Turmeric rhizome- الكركم
- **Origin:**It is the dried rhizomes of Curcuma domestica
Family: Zingiberaceae.
- **Morphology:**

Condition:

Shape:

Size:

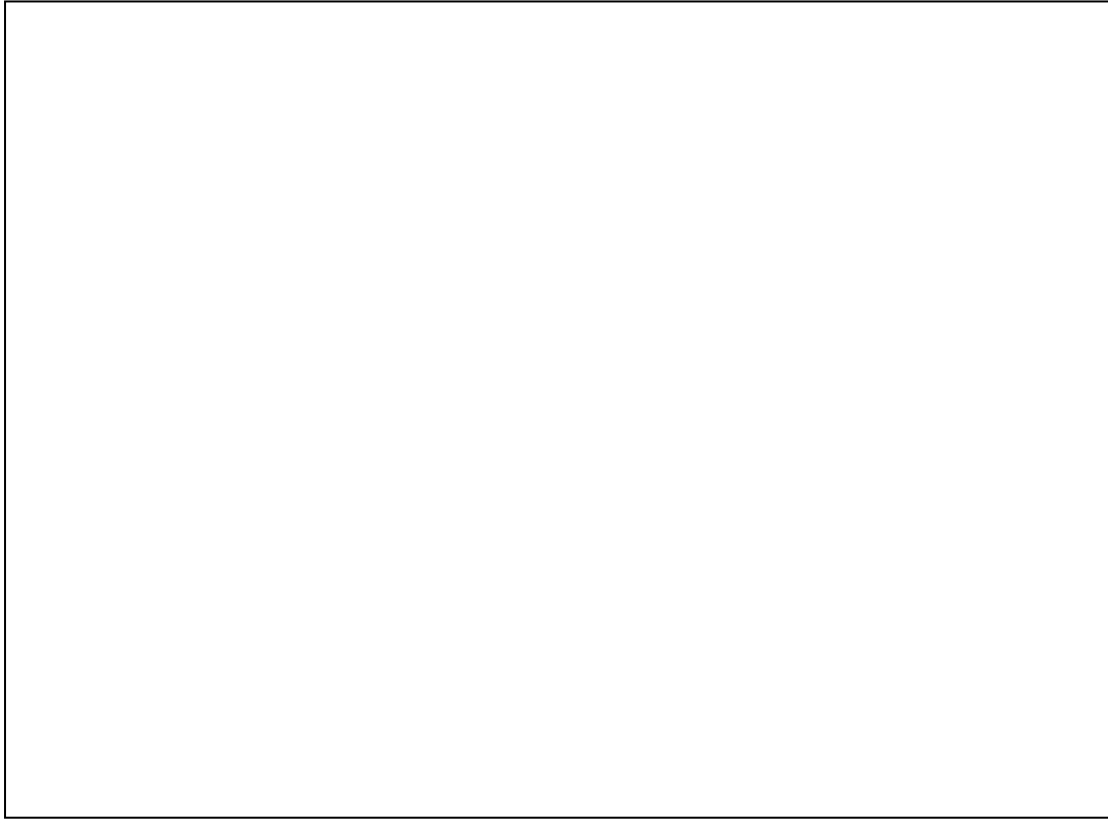
Colour:

Odour:

Taste:



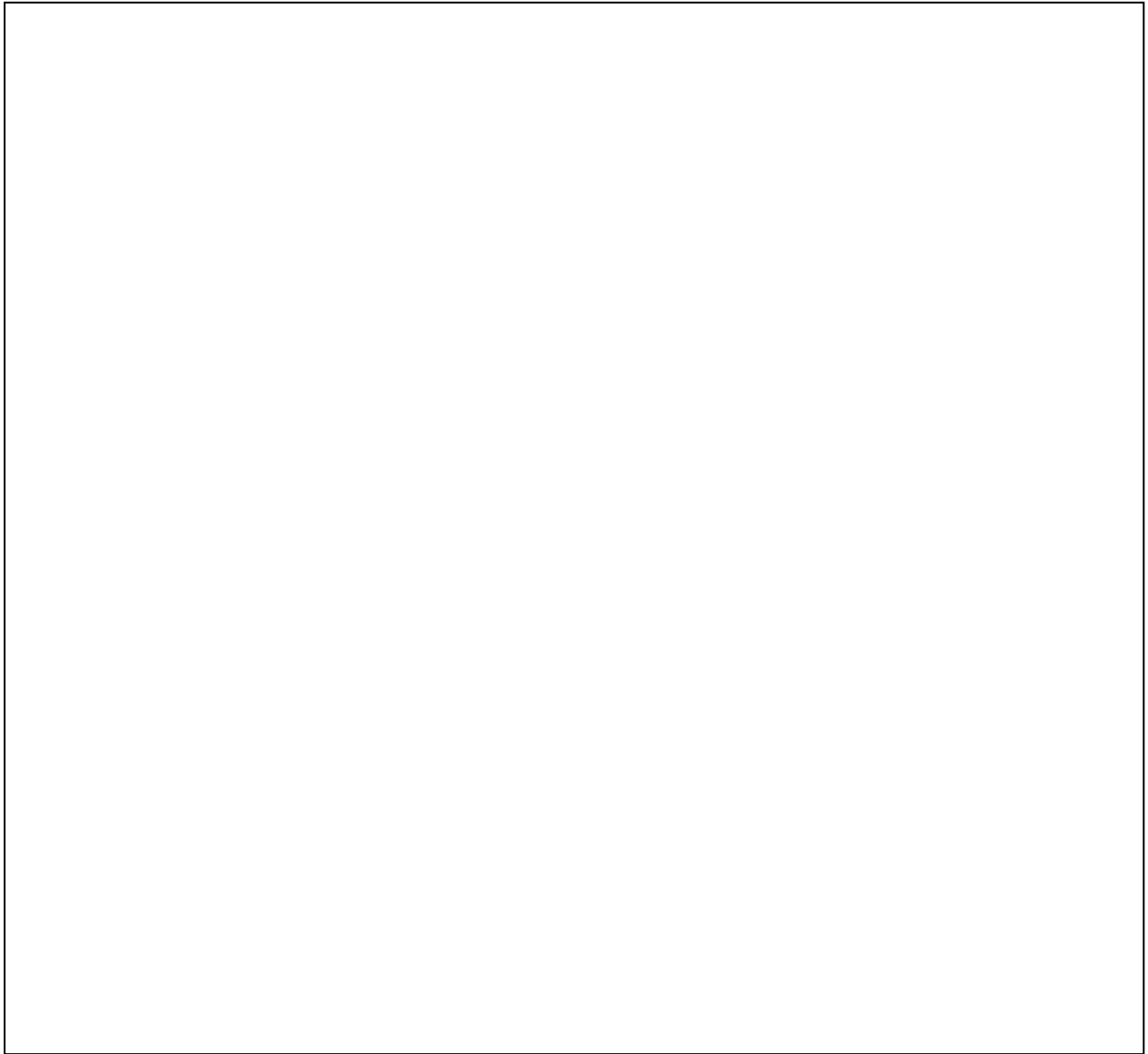
- **Histology:**
 - 1) **T.S.**



2) Examination of powder

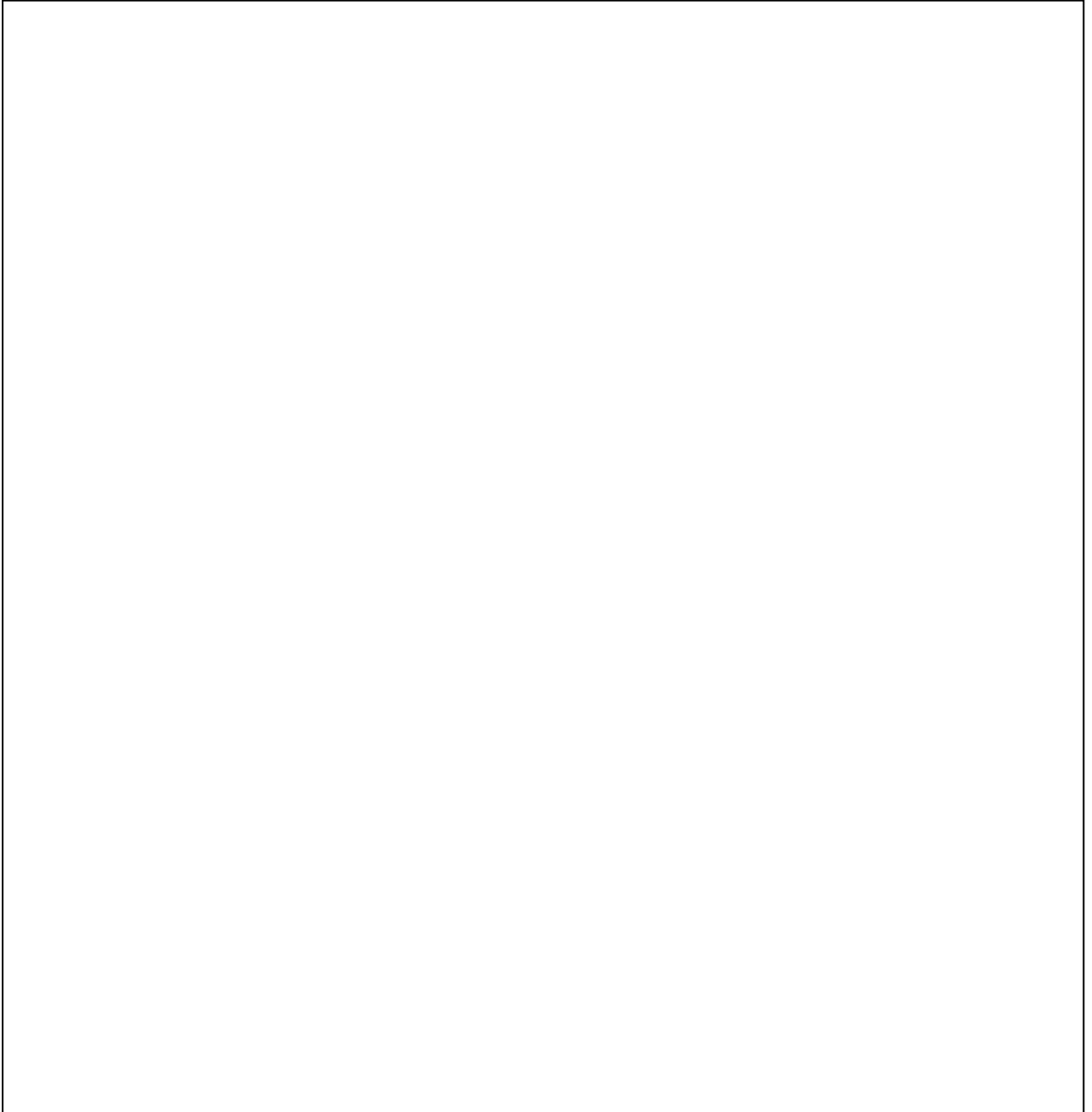
- **Physical Characters:**
 - Condition:**
 - Homogeneity:**
 - Colour:**
 - Odour:**
 - Taste:**

- **Microscopical Examination:**



- **Work sheet**

Key elements:

A large, empty rectangular box with a thin black border, intended for listing key elements of a worksheet.

Grade:
Signature:

4)Ginger

- **Name:** Ginger- Zingiber officinale-الزنجبيل
- **Origin:** It is the dried rhizomes of *Zingiber officinale*. Family: Zingiberaceae, deprived of its cork and known as unbleached Jamaica Ginger.

- **Morphology:**

Condition:

Shape:

Size:

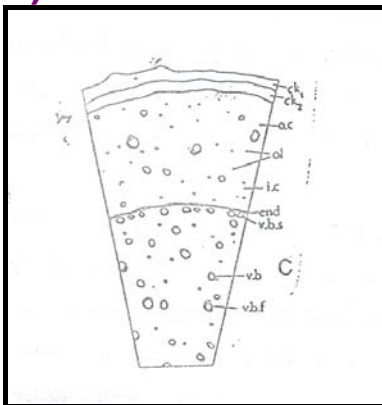
Colour:

Odour:

Taste:

- **Histology**

1)T.S



2) Examination of powder

- **Physical Characters:**

- Condition:**

- Homogeneity:**

- Colour:**


- Odour:**

- Taste:**

- **Microscopical Examination:**

- **Work Sheet**

Key elements:



Grade:
Signature:

Lab (9)

Unorganized Drugs

Define Unorganised Drugs

Unorganized drugs are crude drugs of plant or animal origin having no cellular or definite structure, they are mixtures of chemical substances or they are decomposition products, they are produced normally or pathologically.

Classification of Unorganised Drugs

Unorganized drugs are classified according to their origin and nature into different groups:

Group I: Resins and Resin combinations.

Group II: Gums

Group III: Latices

Group IV: Juices

Group V: Extracts

Group VI: Lipids

Group VII: Proteins

Group VIII: Volatile oils

Group IX: Waxes

Group X: Saccharine substances

The following are some examples of these unorganized drugs:

1) Colophony

- **Origin:** It is the residue left after distilling the volatile oil from the oleoresin obtained from *Pinus palustris* Family: Pinaceae.



- **Test for identification:**

To 10 ml of a 1% solution of colophony in acetic anhydride, add a drop of sulphuric acid, a bright pink color is produced, which rapidly changes to violet.

2) Myrrh

- **Origin:** It is the oleogumresin obtained from the stems and branches of *Commiphora molmol* Family: Burseraceae.

- **Test for identification:**

Mix the powder with H₂O → Yellowish brown emulsion.



3) Benzoin

Origin: Benzoin is the balsamic resin obtained from the incised stems of *Styrax benzoin* Dryander, known in commerce as Sumatra Benzoin or *Styrax tokineniis* (Pierre) Craib, known in commerce as Siam Benzoin (Fam. Styraceae)

Test for identification:

Powder $\xrightarrow{\text{dry heat}}$ powder melts

Irritating whitish fumes Evolve, which is condensed , in case of Sumatra benzoin, on the upper part of the tube, to form whitish crystalline sublimate consisting of plates & small rod-like crystal of cinnamic & benzoic acids that strongly polarized light

4) Gum Acacia

- **Origin:** it is the dried gummy exudates from the trunk and branches of *Acacia senegal*
Family: Leguminosae



- **Test for identification:**

Add to 2 ml of solution of gum acacia (1 in 2) add one drop of benzidine tincture and one drop of H₂O₂ a blue colour is formed due to the presence of oxidase enzyme.

5) Gum Tragacanth

- **Origin:** It is the dried gummy exudates obtained by incision from *Astragalus gummifer*
Family: Leguminosae



- **Test for identification:**

Mix a small quantity of gum tragacanth powder with few drops of water followed by few drops of N/50 I₂ to get yellow coloured particles and minute scattered blue points are observed.

Lab 10

Unorganized Drugs

(6) Aloe

- **Origin:** It is the solid residue obtained by evaporating the liquid juice which drains from the leaves of *Aloe ferox* Family: Liliaceae.
- **Test for identification:**
Boil the powder with H₂O → ^{cool} → filter
To 1 ml of the filtrate add 1 ml bromine water → Pale yellow ppt.

(7) Agar

- **Origin:** It is the polysaccharide obtained by extracting the algae belonging to class Rhodophyceae, especially *Gelidium* species.
Family: Gelidiaceae
- **Test for identification:**
Boil 1 g Agar with H₂O for 10 min
→ Stiff gel.



(8) Gelatin

- **Origin:** It is a mixture of reversible gel-forming proteins obtained by treating certain animal tissues, particularly skin and bones, with hot water. This process converts insoluble collagens into soluble gelatin, a solution of which is purified and concentrated to a solid form.

- **Test for identification:**

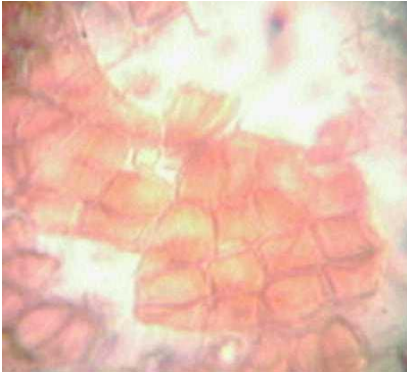
Heat the powder with soda lime (NaOH) → Ammonia odour.



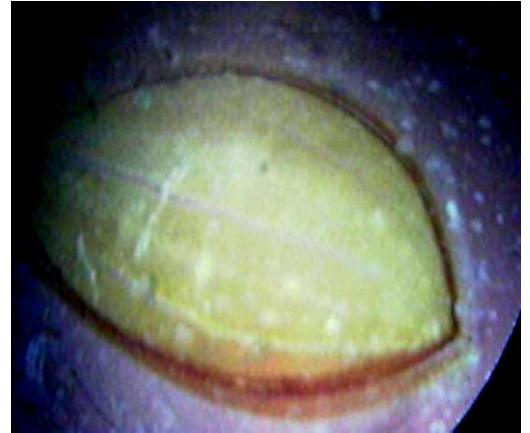
APPENDIX

(I)Seeds

1)Linseed



Pigment Layer



Straight embryo

2)Black Mustard



**Orthoplocous
Embryo**

3)White Mustard



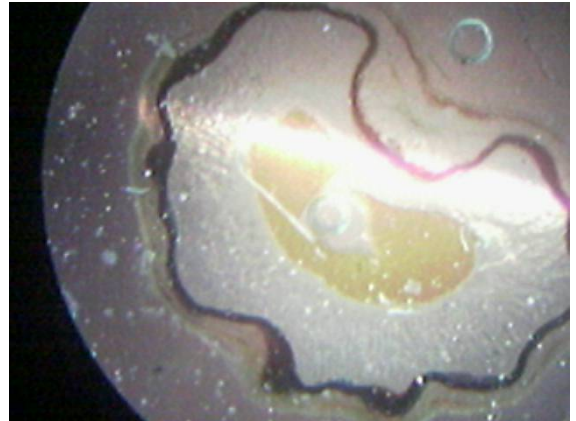
Entire seed

4)Nux vomica Seed



Entire seed

5)Cardamom Seed



T.S

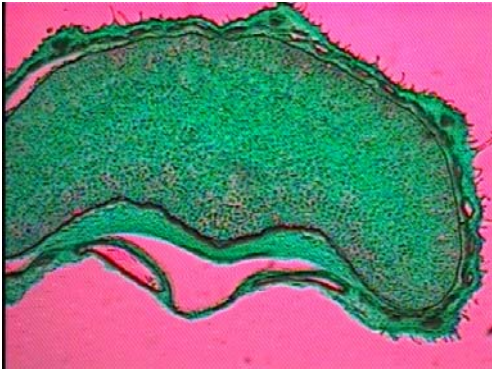
6)Nutmeg



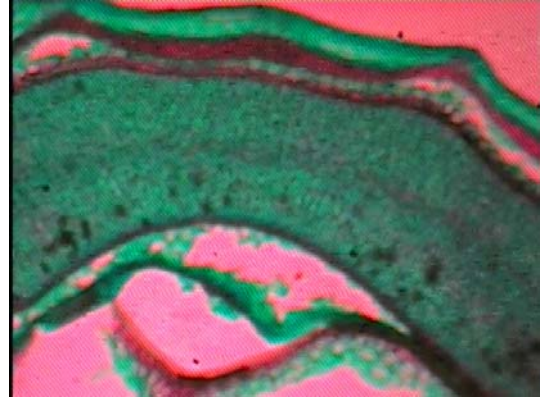
Entire Seed

(II)Fruits

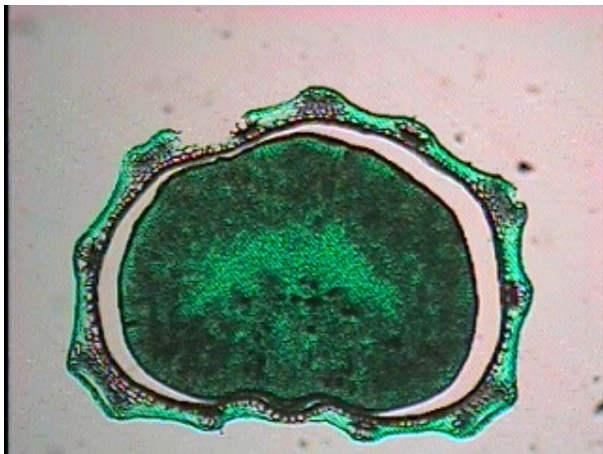
1)T.S in Anise Fruit



2)T.S in Coriander Fruit



3)T.S in Ammi-visnaga Fruit



4)Ammi-majus Fruit



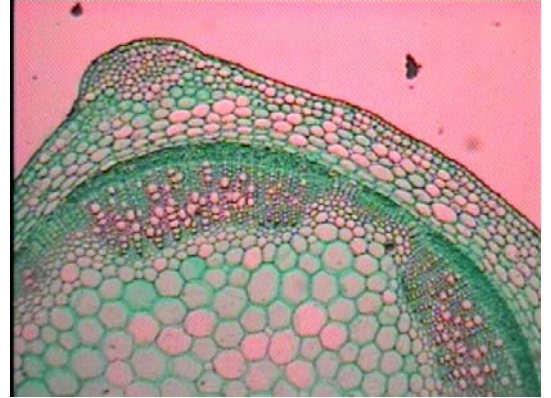
Entire Fruit

(III) Herbs

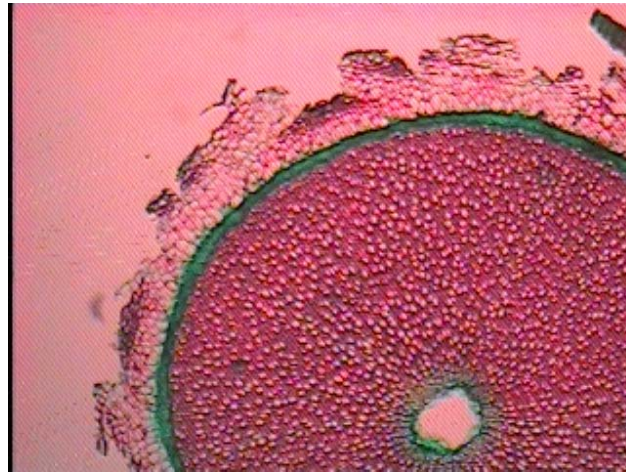
1) Branched hair of hyoscyamus powder



2) T.S in Mentha Stem



3) T.S in Thyme Stem



(IV) Subterranean Organs

1) Gentian



2) Ipecaquanha



4) Podophyllum



