

OCTOBER UNIVERISTY
FOR MODERN SCIENCES AND ARTS
جامعة أكتوبر للعلوم الحديثة والآداب

Pharmacognosy

PHG 112
PG 102

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Spring 2024

The background features a dark blue gradient with a large, stylized green shape on the left side. On the right side, there is a faint, golden-brown outline of a leafy branch.

Faculty of **Pharmacy**

Lecture 2



By the end of the lecture, students should be able to demonstrate knowledge of:

Foenugreek

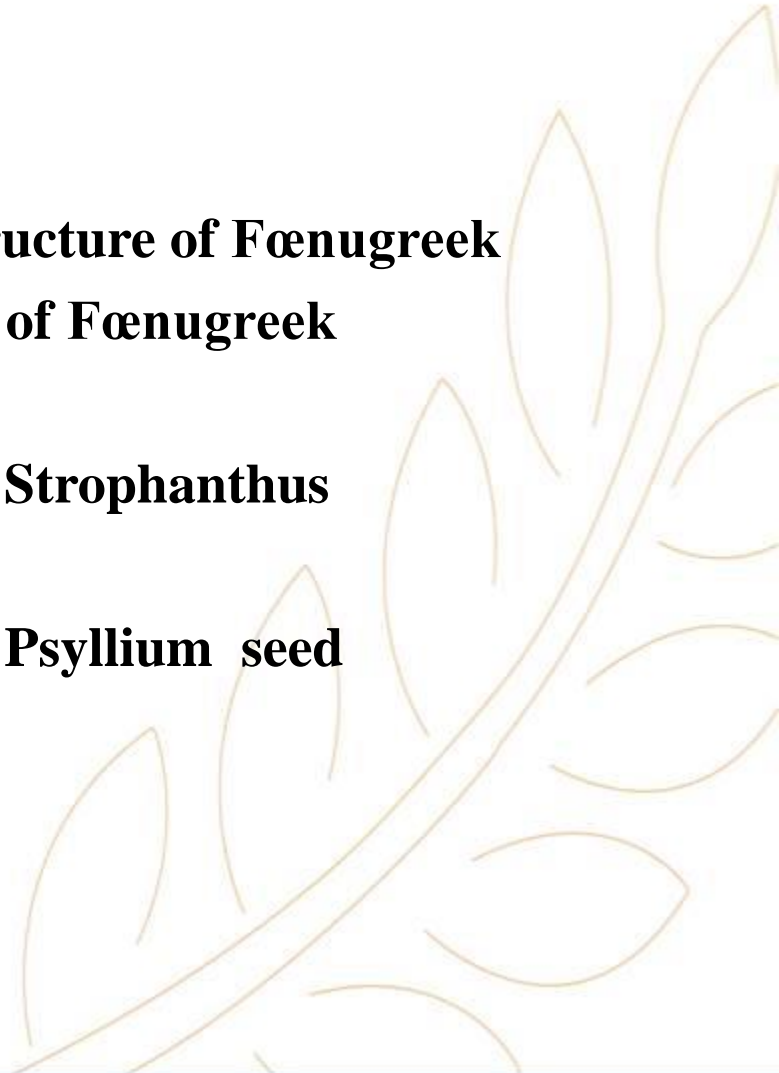
- **-The morphological & microscopical structure of Foenugreek**
- **-The chemical constituents, tests & uses of Foenugreek**

Strophanthus

The chemical constituents , test & uses of Strophanthus

Psyllium seed

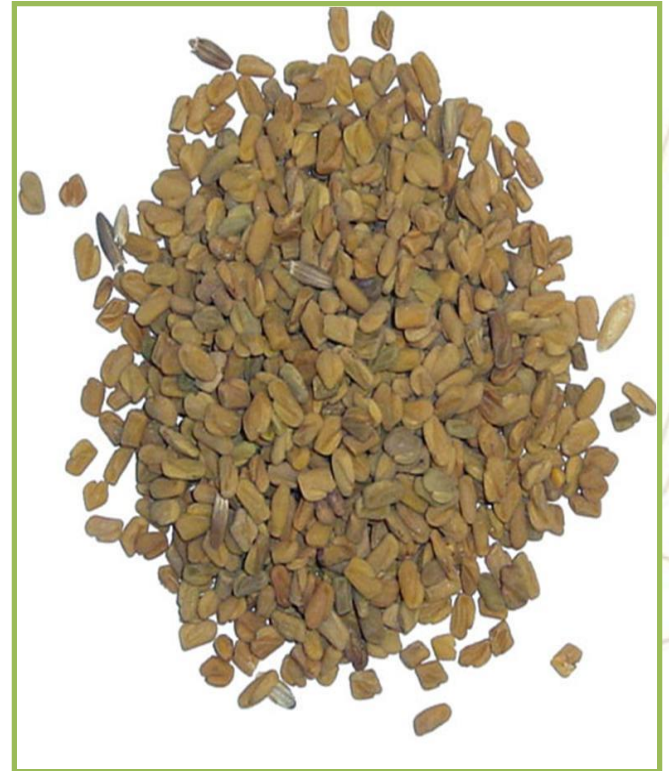
The chemical constituents , test & uses of Psyllium seed



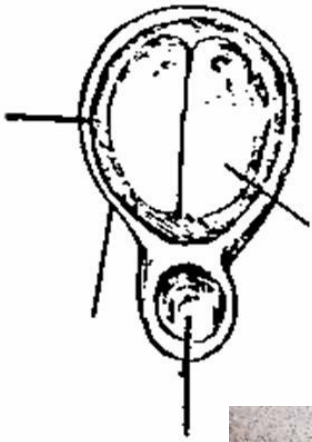
FOENUGREEK بذر الحلبة

- **Semen Foenugreek**

- **The dried ripe seeds of**
Trigonella foenum-graecum Linne
Family Leguminosae.

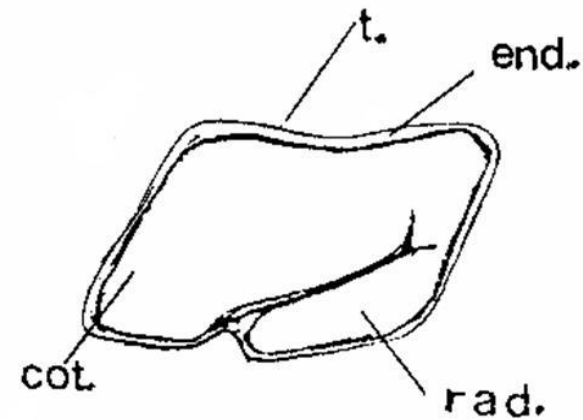
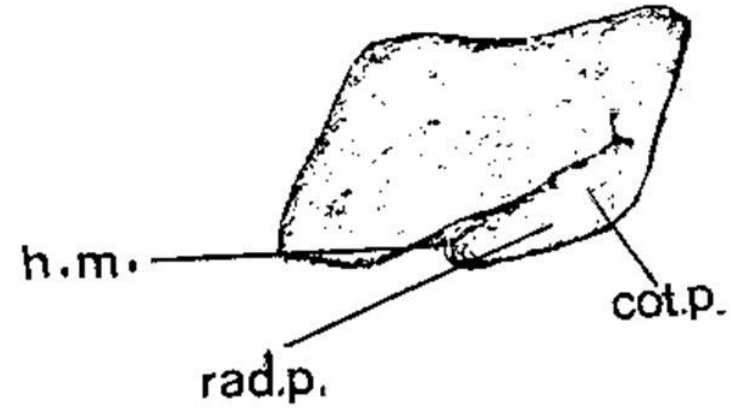


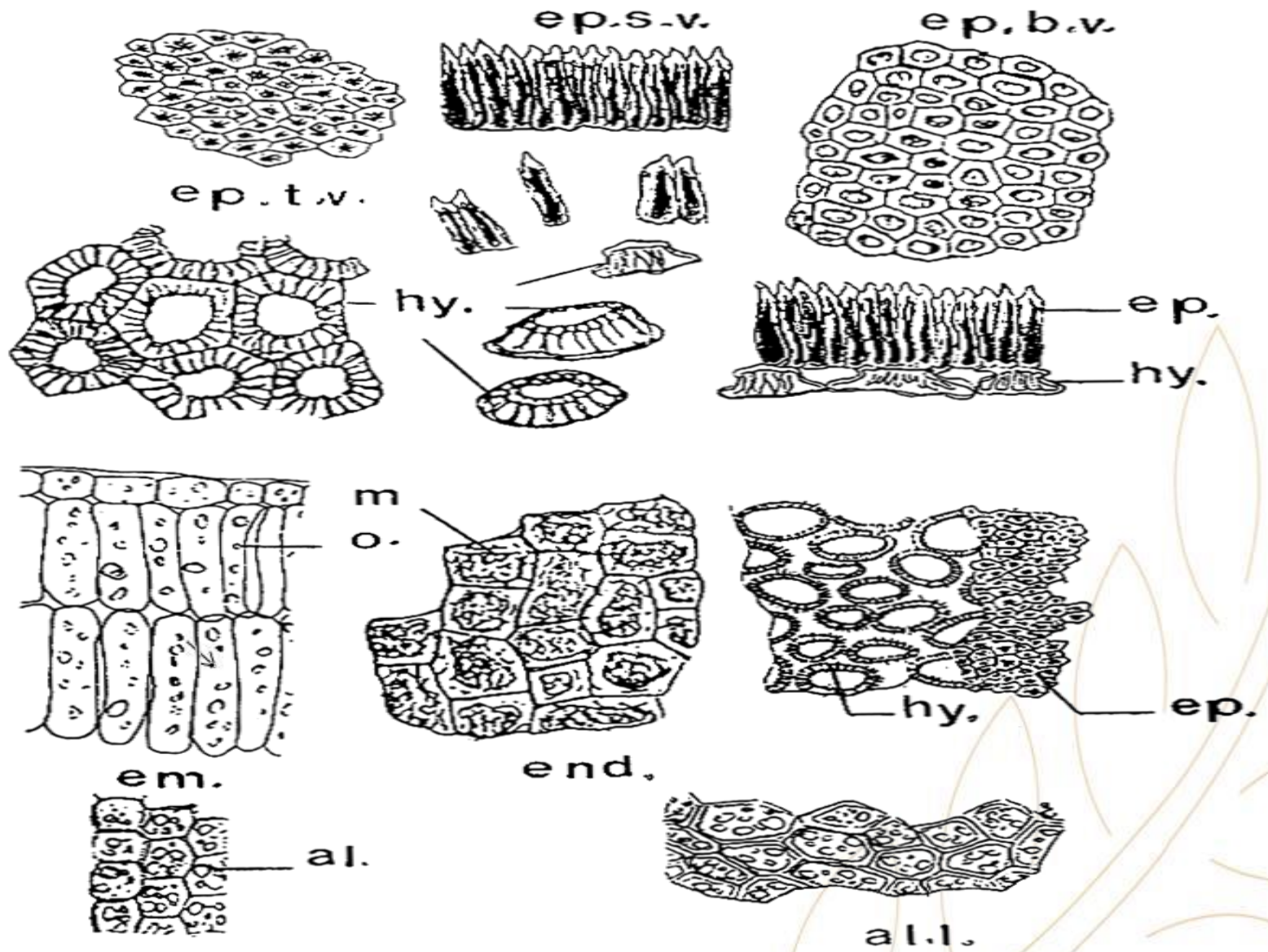
- **Contains not more than 2 % of foreign organic matter.**



Accumbent embryo

Albuminous seed





Active Constituents

**28 % of
mucilage**

**mannose
&
galactose**

**Alkaloids:
Gentianine
trigonelline
&
choline**

**23-25%
proteins
&
amino
acids.**

**Flavonoids
Apigenin,
luteolin,
vitexin &
quercetin.**

**0.6-1.7 %
saponins
glycosides**

**steroidal
sapogenin,
gitogenin,**

Active Constituents (cont.)

coumarin,
(5-8 %)

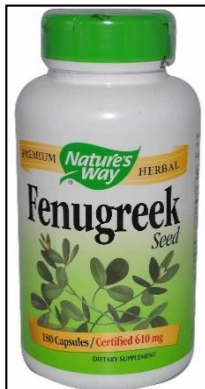
vitamins
(nicotinic acid)
& minerals (a
rich source of
selenium).

volatile
constituents
responsible for
the flavor of
Fœnugreek.

Fenugreek Preparation

Nutraceutical

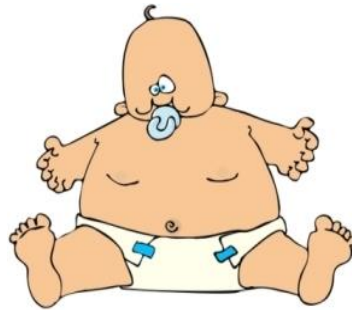
Cosmeceutical



- Medicinal Uses and actions

1-Hypoglycemic in diabetic patients.

2- Lactagogue.

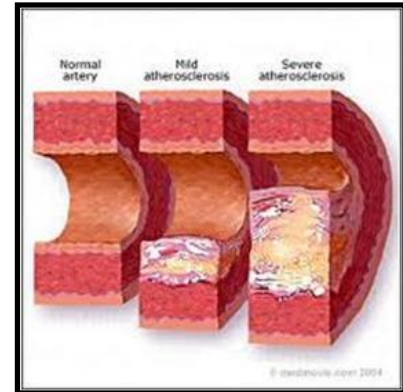


3-Treatment of dyspepsia & gastritis



Gastritis

4-Hypocholesterolemic actions in normal and diabetic humans.



atherosclerosis

5- It has demulcent, laxative and nutritive properties.



**6-Topically for wounds ,
leg ulcers & to reduce
inflammation**



**Side effects
and/or
toxicity**

1-Repeated external applications can result in undesirable skin reactions.

2-Minor gastrointestinal symptoms, such as diarrhea and flatulence.

Contraindications

1-The hypoglycemic activity of fœnugreek may interfere with an existing hypoglycemic therapy.

2-oxytoxic and uterine stimulant activity ,the use of fœnugreek during pregnancy and lactation in doses greatly exceeding those normally encountered in foods is not advisable.

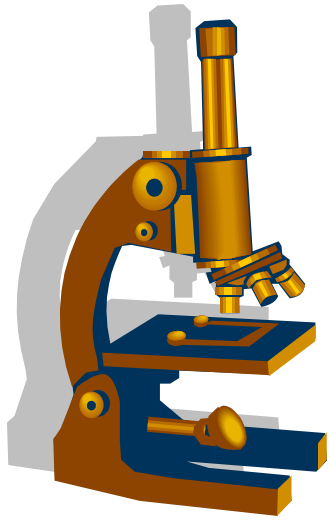


Cosmeceutical uses

- It helps strengthen hair follicles, promote healthy hair growth, and reduce issues like hair breakage and thinning.
- Skin Rejuvenation: Incorporate fenugreek oil into your skincare routine to revitalize and rejuvenate your skin.
- Anti-collagenase activity and increased collagen production anti-aging remedy
- It helps moisturize, soothe inflammation.



Chemical tests



It gives positive histochemical tests with sudan III and methylene blue

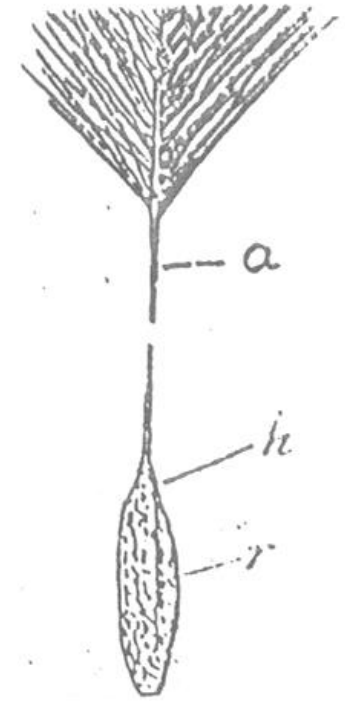
- **Positive test for saponin (Froth test)**

References

- <http://www.webmd.com>
- <http://www.findhomeremedy.com>

STROPHANTHUS

بذور الاستروفانس



- **Strophanthus** is the dried ripe seeds of *Strophanthus kombe*',
S. hispidus & *S. gratus*

**Family Apocynaceae deprived
of their awns.**



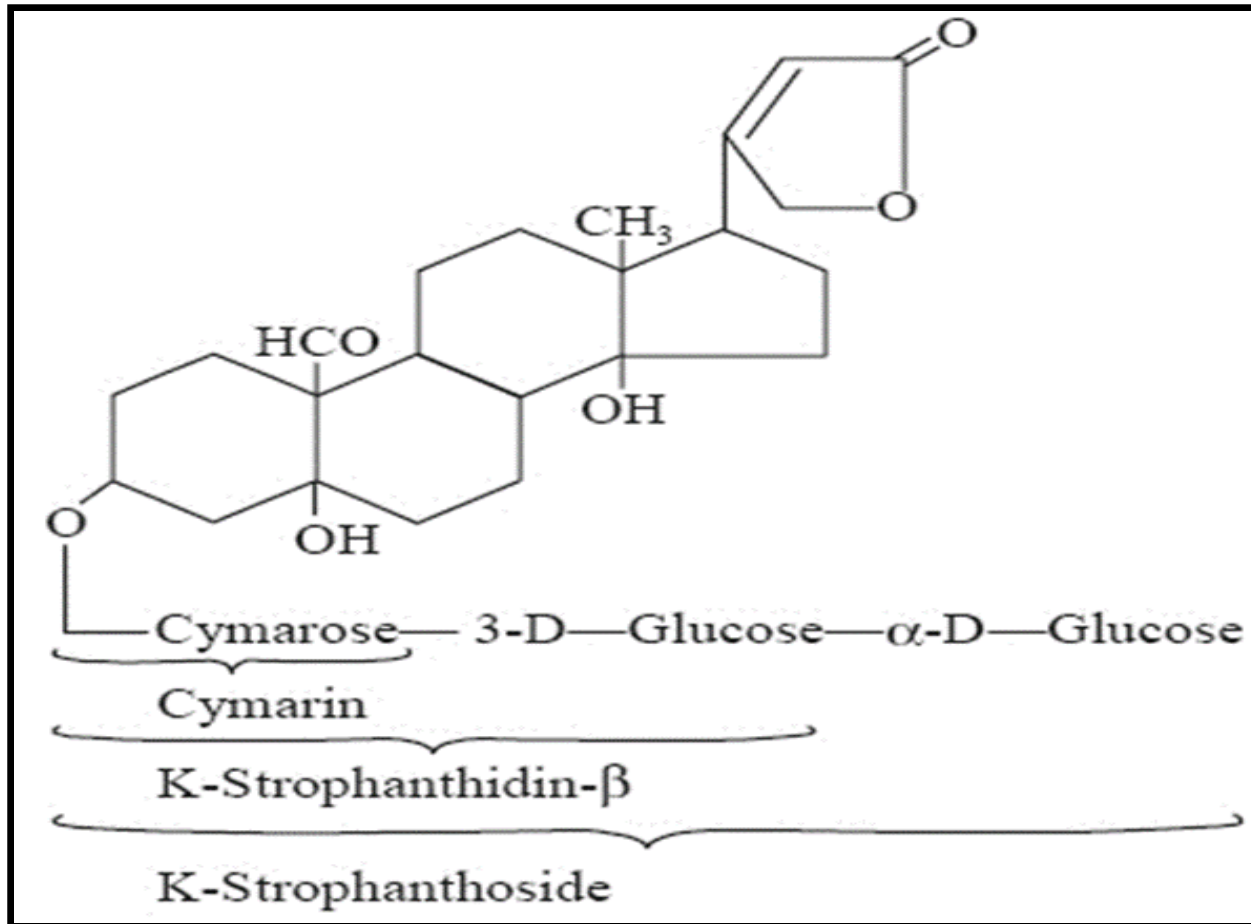
8 – 10% of a mixture of cardiac glycosides K – strophanthin & K - strophanthoside

Kombic acid

**ACTIVE
CONSTITUENTS**

4 - 8 % of ouabain (G - strophanthin), the rhamnoside of ouabigenin.

**Choline,
trigonelline**



Strophanthus Glycosides

Uses and actions

1- Cardiac stimulant and cardiogenic



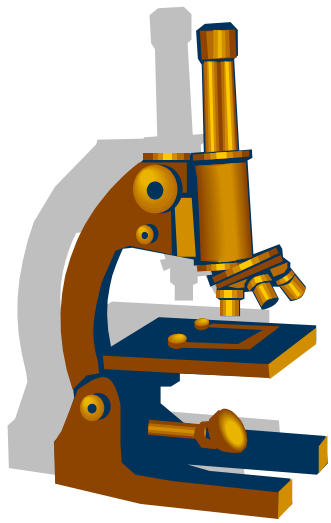
2-It controls the blood pressure



3- Efficient diuretic.

**In certain cases is used as substituent for digitalis :
It is not cumulative and less liable than
digitalis to produce gastric & intestinal irritation.**





Chemical test

Mount a section of Strophanthus in sulphuric acid (66 % v/v).

The endosperm acquires a **green** colour and the embryo a **green** or **reddish** colour in *S. kombe* and *S. hispidus* respectively
(Strophanthin glycoside)

The embryo acquires a **red** colour in *S. gratus*
(ouabain)

PSYLLIUM SEED

The dried ripe seeds of *Plantago psyllium* and *Plantago albicans* , F . Plantaginaceae.

Active constituents :

1-Acidic mucilage (10 – 12 %)

2- Small amount of glycoside.

3- Fixed oil - protein.



•Uses:

1-Bulk laxative

(alone or associated with other purgatives as: Senna & Cascara).



2- Promising in lowering cholesterol and controlling diabetes.



- **Psyllium husk:**

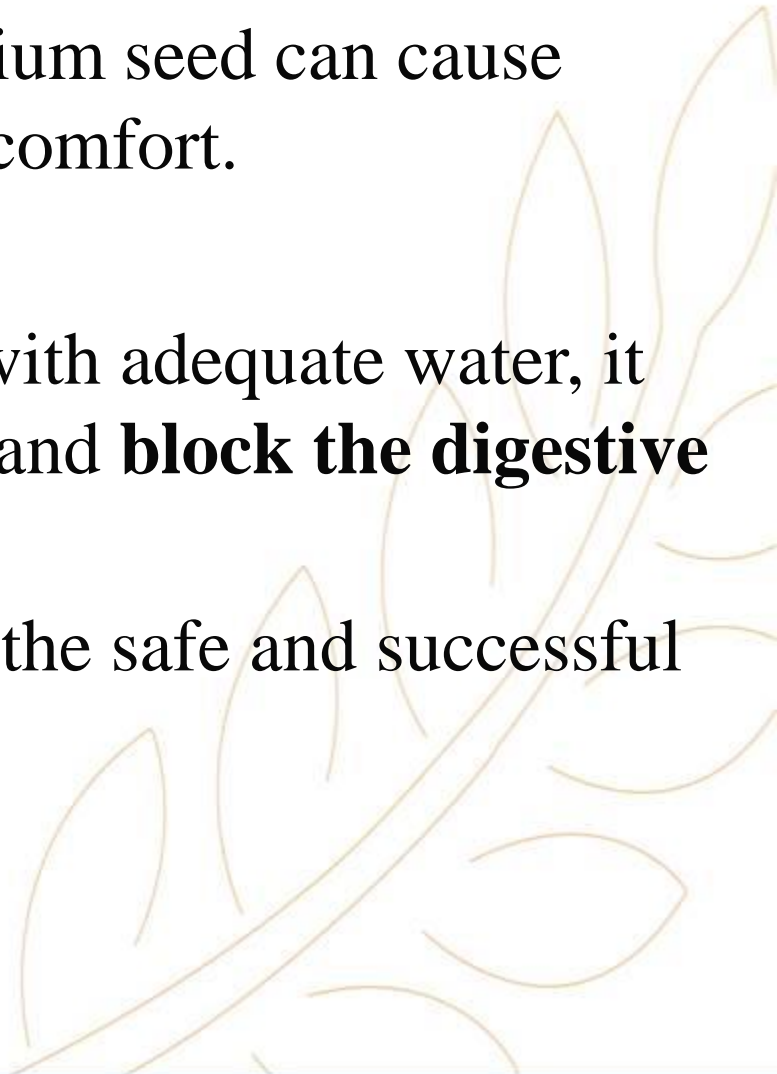


- **Psyllium seed husk are indigestible and are a source of soluble dietary fiber.**
- **The seeds are placed in water , the seed coat swells (the epidermal cells) forming layers of mucilage around the seed which are peeled & left to dry.**
- **It is then purified and used as laxative (in chronic constipation).**

- **Contraindication**

- The indigestible fiber in psyllium seed can cause **flatulence** and abdominal discomfort.
- If psyllium seed is not taken with adequate water, it can clump together in a mass and **block the digestive tract.** ↘

Sufficient fluid is essential to the safe and successful use of psyllium seed.





HOME WORK

-Complete the following statements:

- a- Foenugreek is an example of.....seed
- b- Foenugreek is used for,,
- c- Foenugreek is tested by.....
- d- Active constituents in Foenugreek are,,.....
- e- Strophanthus is used,
- f- Strophanthus is tested by.....
- g- psyllium husk is defined as.....



The background is a dark blue gradient. On the left side, there are several overlapping, curved bands of varying shades of green, ranging from light lime green to a darker forest green. On the right side, there is a faint, golden-brown outline of a laurel wreath, consisting of a central stem with several pointed leaves extending outwards.

Faculty of **Pharmacy**



Established by Dr.Nawal El Degwi

October Univeristy for Modern Sciences and Arts

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Thank You!

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