

Lab 2

Pharmacognosy

PHG112



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

Vision

The Faculty of Pharmacy of October University for Modern Sciences and Arts is a pioneer in tutelage, scientific research, and community service at the local and regional levels, and holds an advanced position among its counterparts in international Pharmacy subject ranking

الرؤية

- كلية الصيدلة جامعة أكتوبر للعلوم الحديثة و الآداب كلية رائدة فى مجال التعليم و البحث العلمى و المشاركة المجتمعية على المستوى القومى و الإقليمى و لها ترتيب متقدم فى التصنيف العالمى لكليات الصيدلة.

Mission

•The Faculty of Pharmacy of October University for Modern Sciences and Arts is nationally accredited, has British partnership, and is committed to producing graduates who are able to compete in national and international job markets and entrepreneurship, and to be an effective member of the medical team providing best medical care, while heeding professional ethics, through an outstanding academic programme and proficient academic staff. The faculty is devoted also to provide effective community services, and exceptional applied scientific research.

الرسالة

• كلية الصيدلة جامعة أكتوبر للعلوم الحديثة والآداب معتمدة محليا، بشراكة بريطانية، تلتزم بتخريج صيدلى قادر على المنافسة فى أسواق العمل المحلية و الدولية و قيادة الأعمال، و أن يكون عضو فعال فى الفريق الطبى بتقديم أفضل رعاية صحية، مراعىاً أخلاقيات المهنة، من خلال برنامج تعليمى متميز و أعضاء هيئة تدريس أكفاء، وكذلك تلتزم الكليه بتقديم خدمات مجتمعية فعالة و أبحاث علمية تطبيقية متميزة.

Pharmacognosy

PHG112

Items	Marks
Quizzes	5 Marks
Assignment	15 Marks (10+5)
Practical Exam(s)	40 Marks (15+15+10)
Mid Term Exam	30 Marks
Final Exam	60 Marks
TOTAL	150 Marks



Pharmacognosy

PHG112

RULES

- Lab evaluation –10 marks
- Attendance
 - (only 15 min late is allowed)
 - (sign for yourself).
- Lab coat:
 - (not allowed to be in the lab without it).
 - (take it on and off before and after you get to the lab).
- Drawing:
 - (during the lab time).
 - (in a specific note using pencil).



Pharmacognosy

PHG112

RULES

- Lab evaluation --10 marks
- Work place and tools:

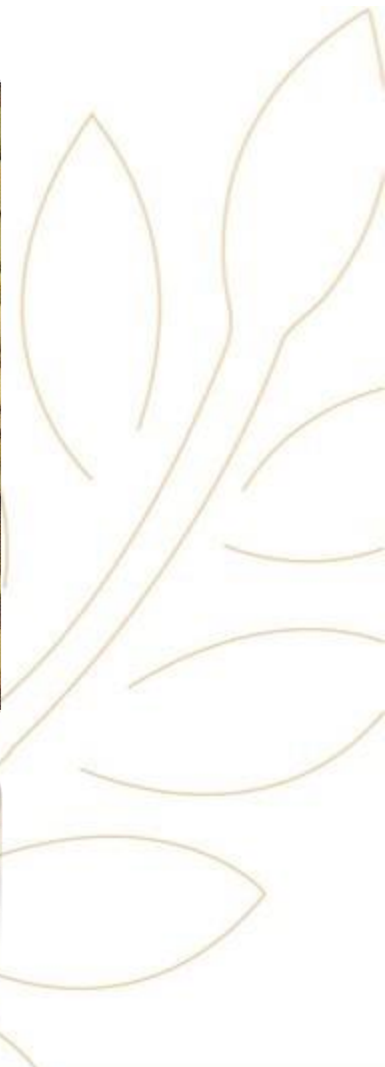
- (waste disposal → don't throw anything in the **Sink**).
- (microscope → **switch it OFF**).

- Behavior:

- (may get you to loose the whole 5 marks).



FOENUGREEK

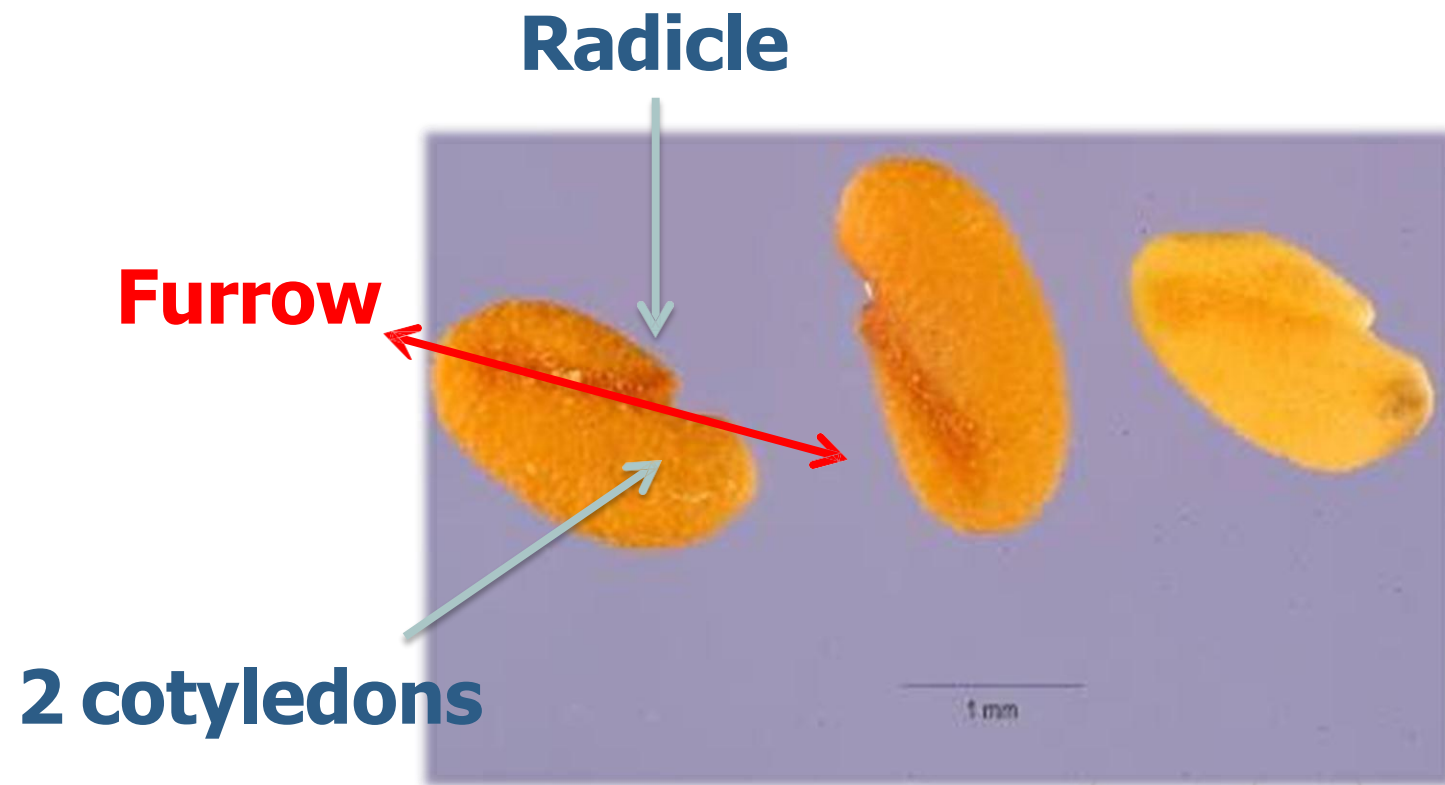


ORIGIN:

Dried ripe seeds of *Trigonella foenum-graecum*, Linn.
(Family Leguminosae).



MORPHOLOGY:

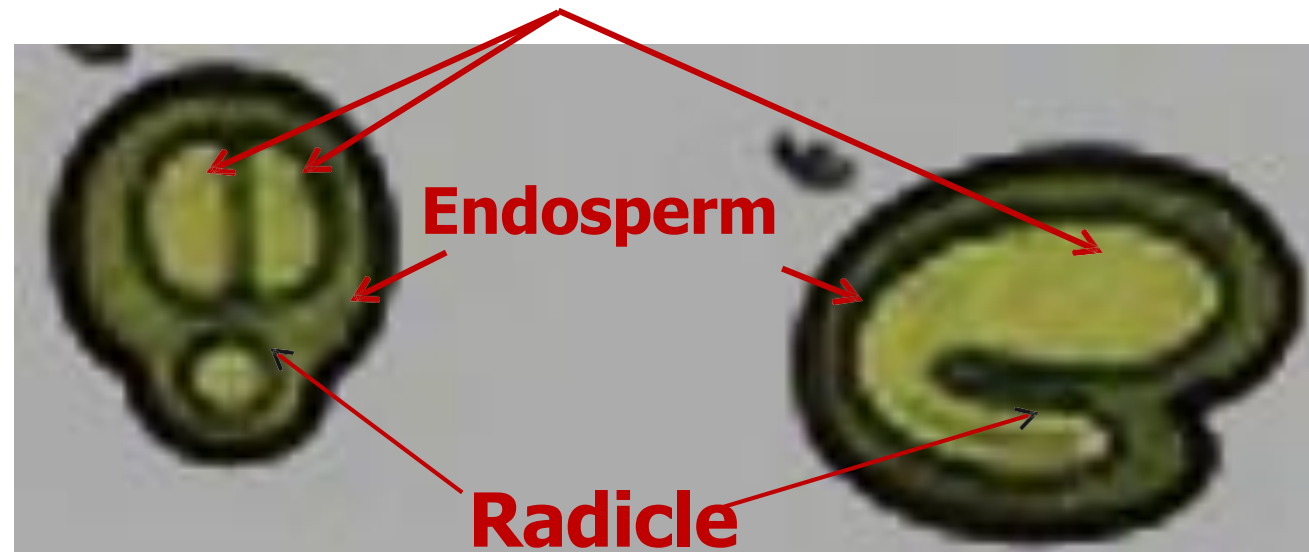


MORPHOLOGY:

Surface: leathery.

Testa scars: A furrow runs diagonally to divide the seed into 2 unequal parts (radicle and cotyledons).

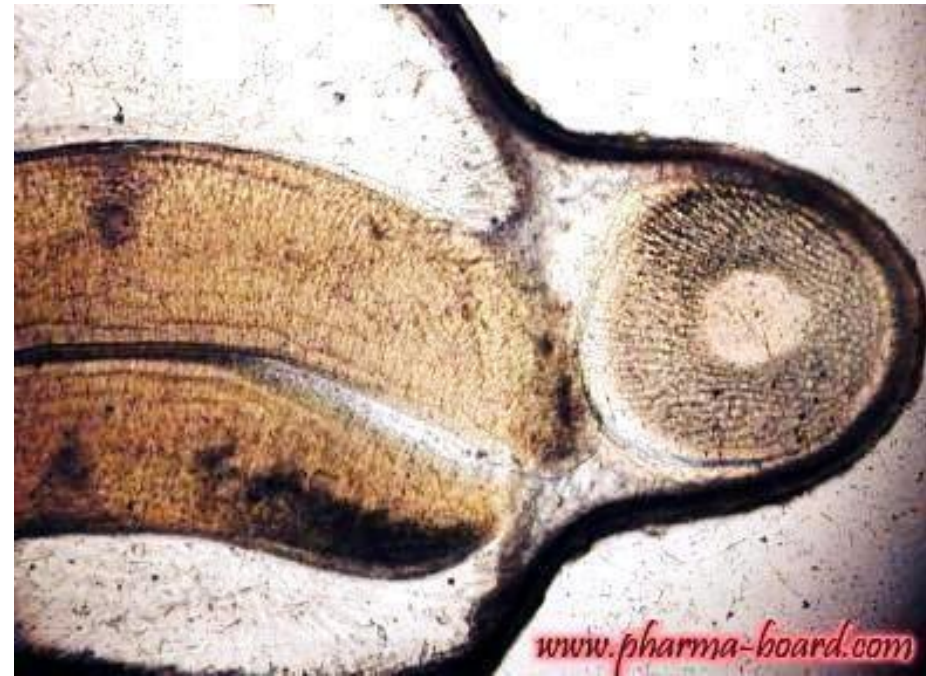
T-CUT 2 cotyledons **L-CUT**



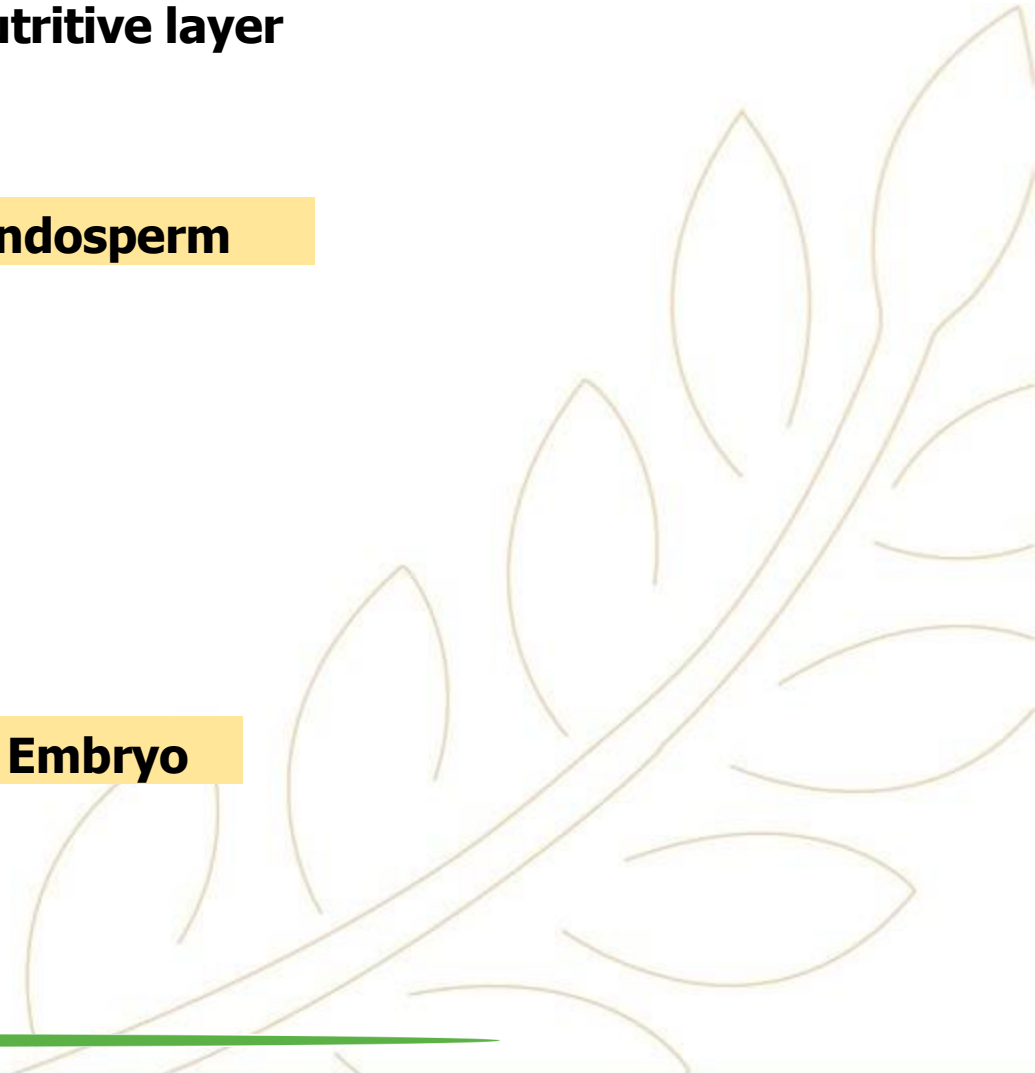
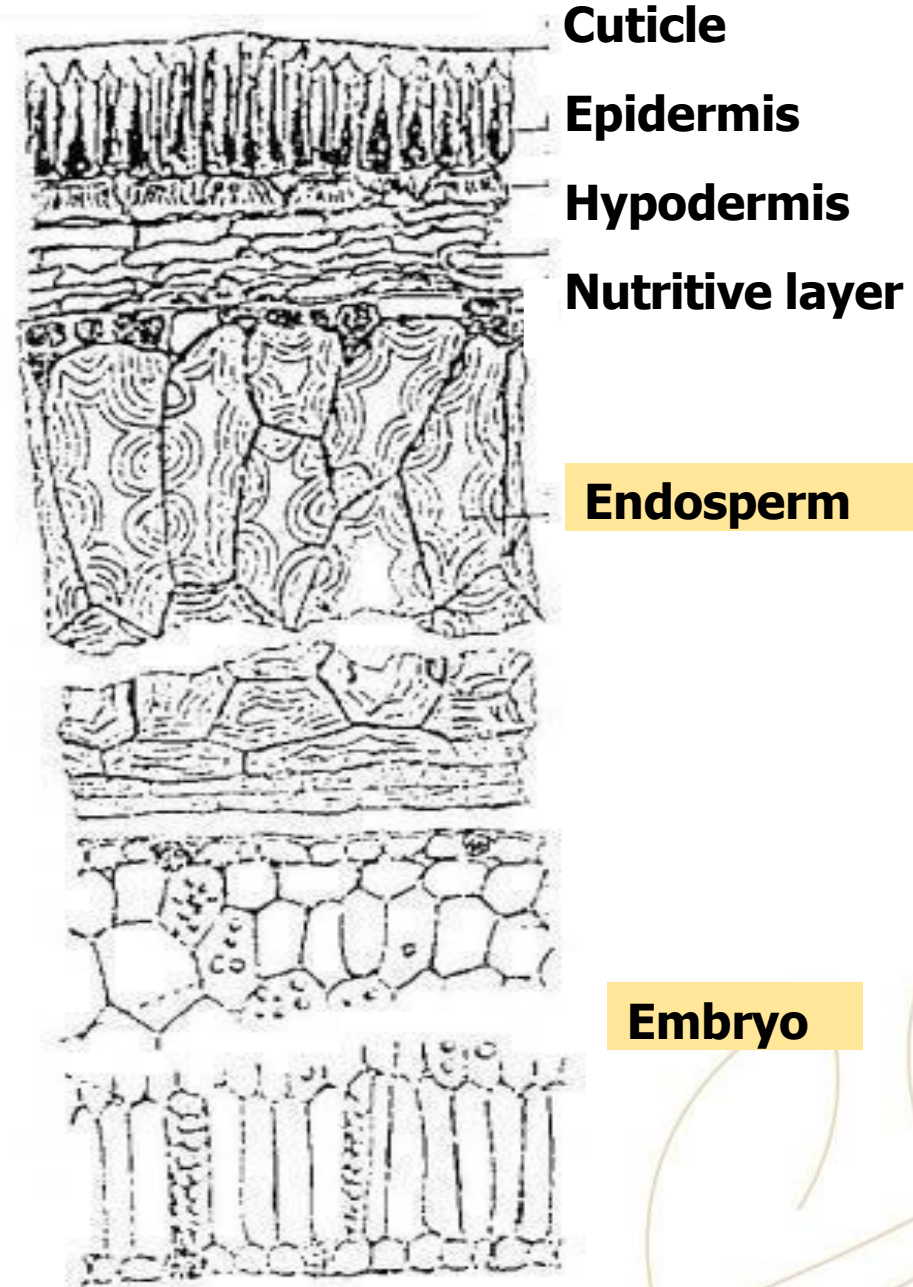
MORPHOLOGY:

Kernel: Albuminous.

Embryo: Accumbent.



T.S.



Physical characters:

Shape: Oblong, flattened & rhomboidal.

Color: yellowish-green.

Odour: Characteristic odour of foenugreek.

Taste: Mucillagenous & slightly bitter.



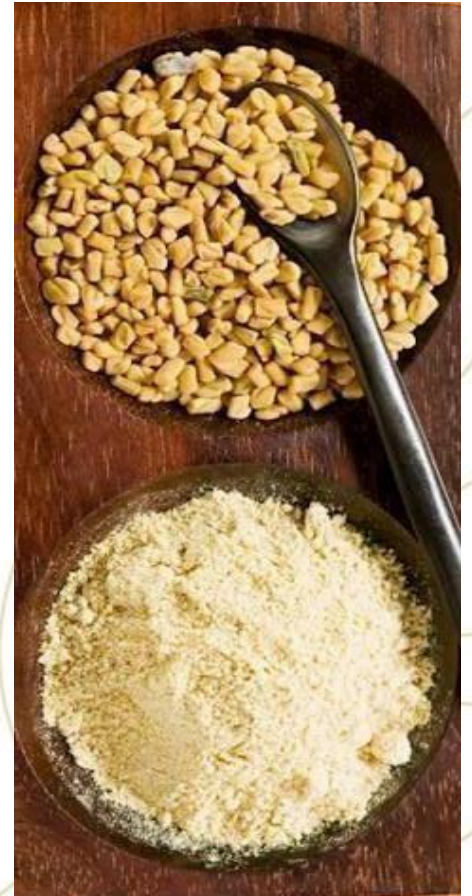
Powder:

Condition: Homogenous Fine powder

Color: Yellowish buff colour

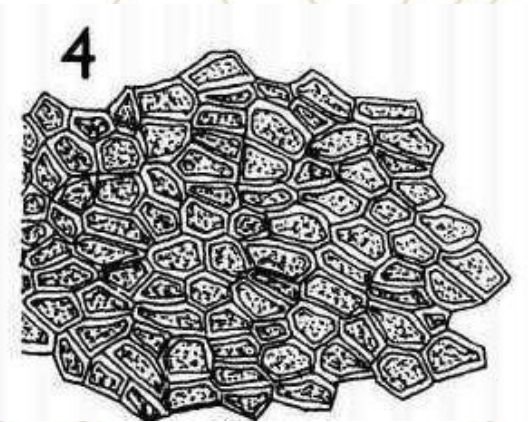
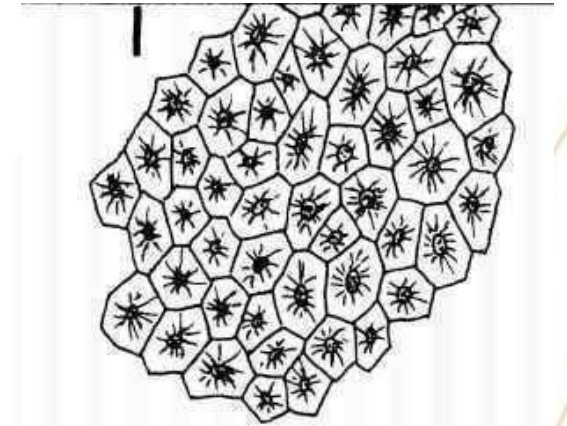
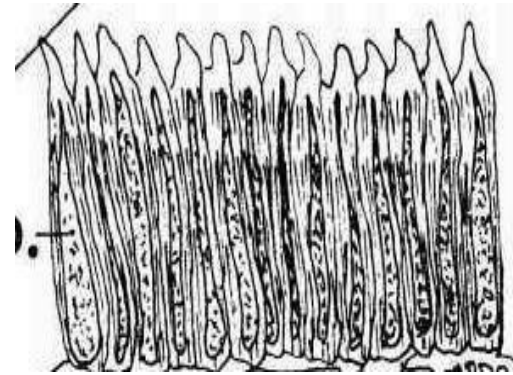
Odor: Oily characteristic odor

Taste: Mucilaginous, slightly bitter



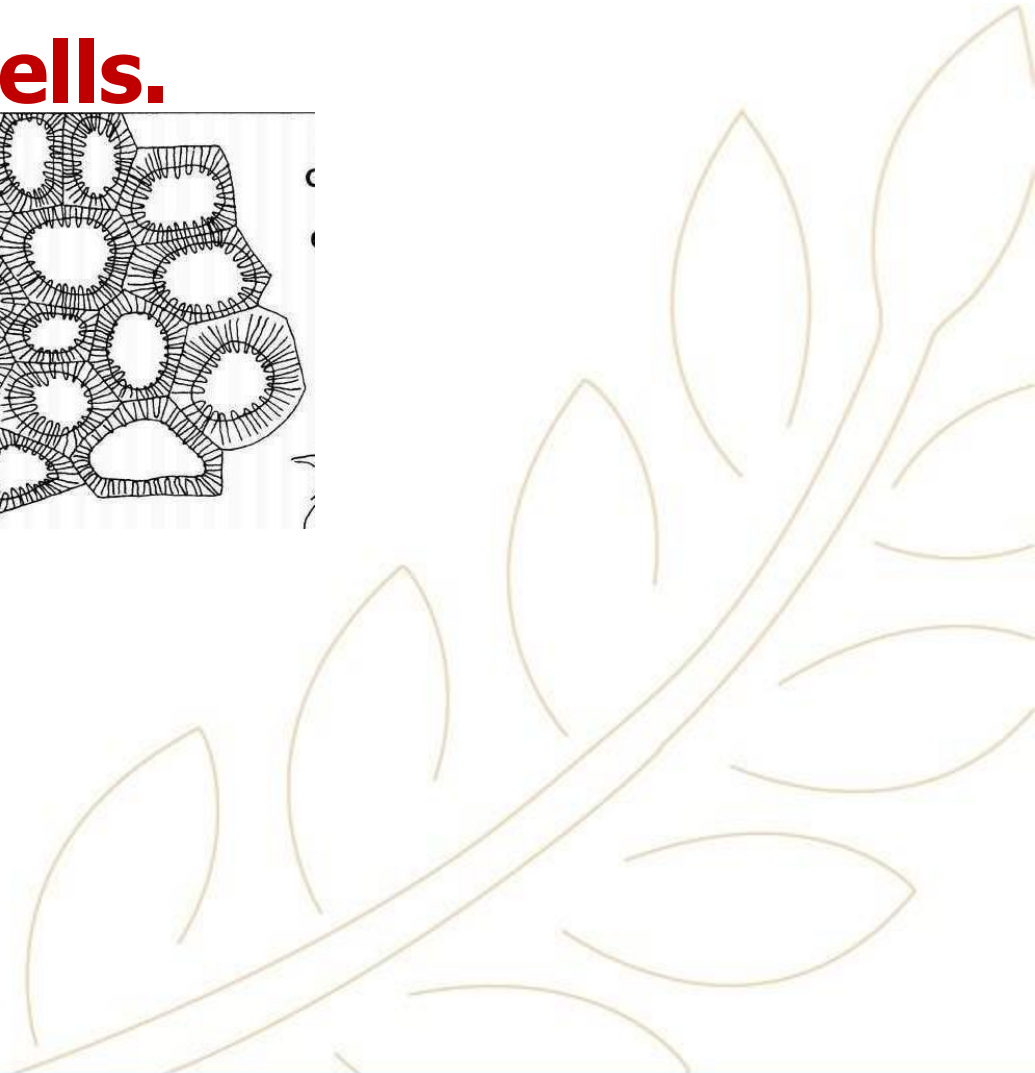
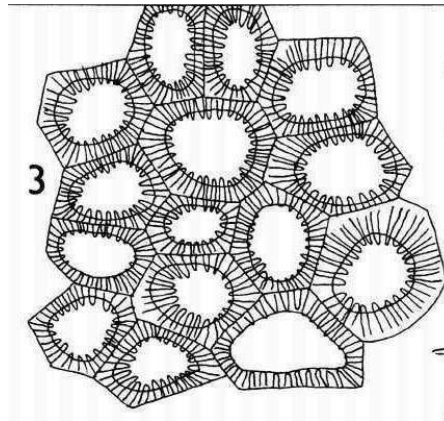
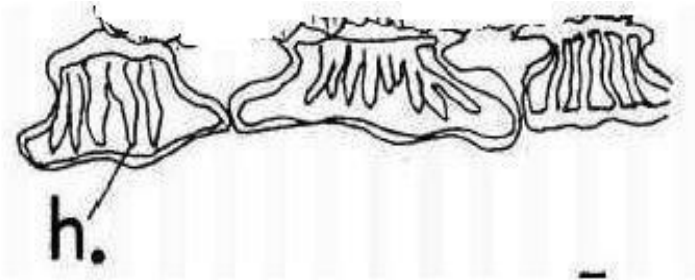
Microscopical Characters

1- Palisade-like epidermal cells.



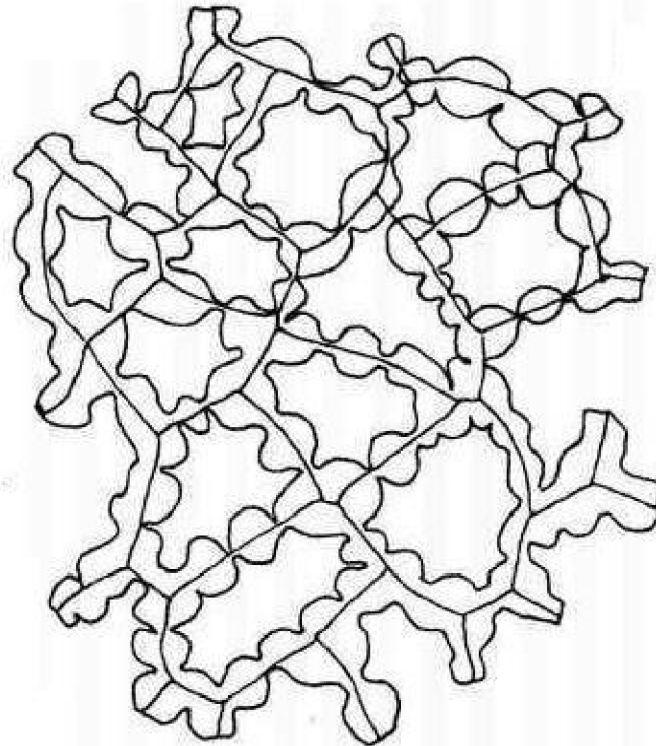
Microscopical Characters

2- Basket-like hypodermal cells.



Microscopical Characters

3- Stratified mucilaginous endosperm.

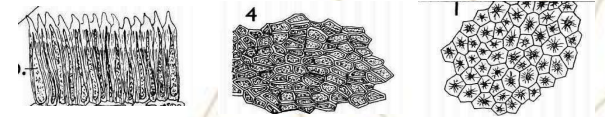
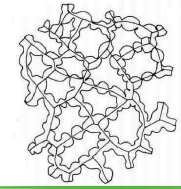
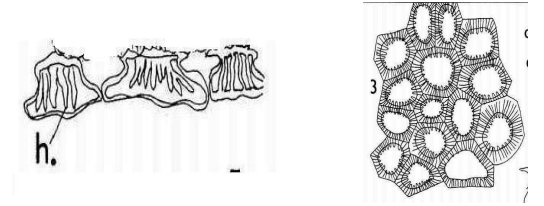


Microscopical Characters:

Mount in KOH: All key elements except endosperm

Mount in phloroglucinol: Negative result

Mount in water: Negative result



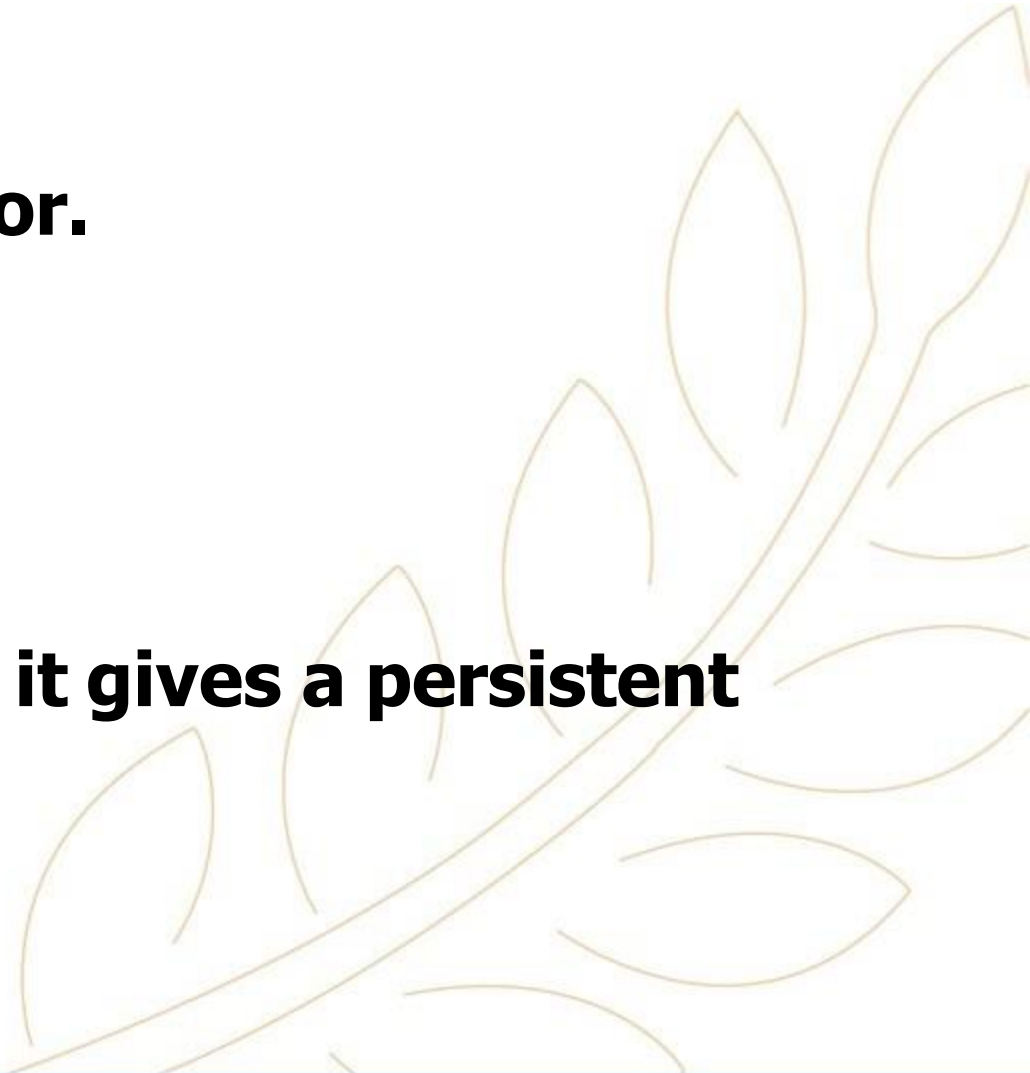
CHEMICAL TESTS:

- 1) Powder + Sudan III: Red Color.
- 2) Powder + Methylene Blue: Blue Color.

Why?

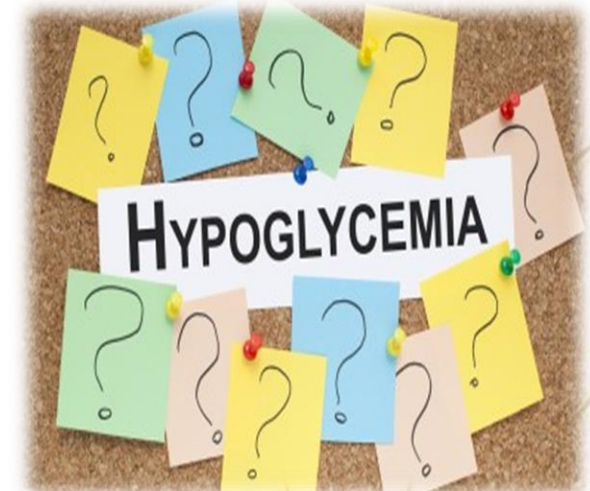
3) Froth test:

Upon vigorous shaking of Powder+H₂O, it gives a persistent froth!



Uses

1. Hypoglycemic in diabetic patients.



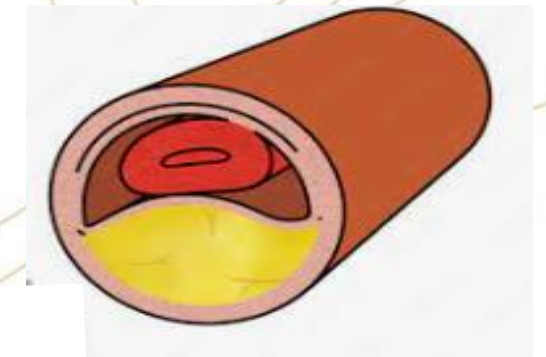
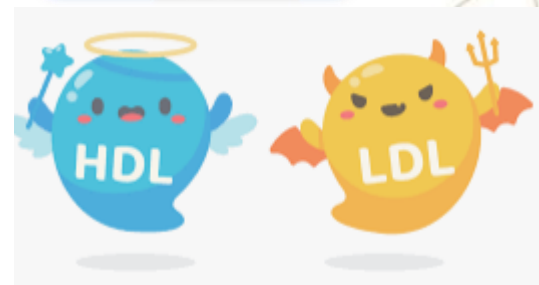
2. Lactagogue.



3. Treatment of dyspepsia & gastritis.



4. Hypocholesterolemic actions.



Quinoa seeds



Dry yellow quinoa



Dry red quinoa



Dry black quinoa



Dry mixed quinoa



Cooked mixed quinoa



Cooked yellow quinoa



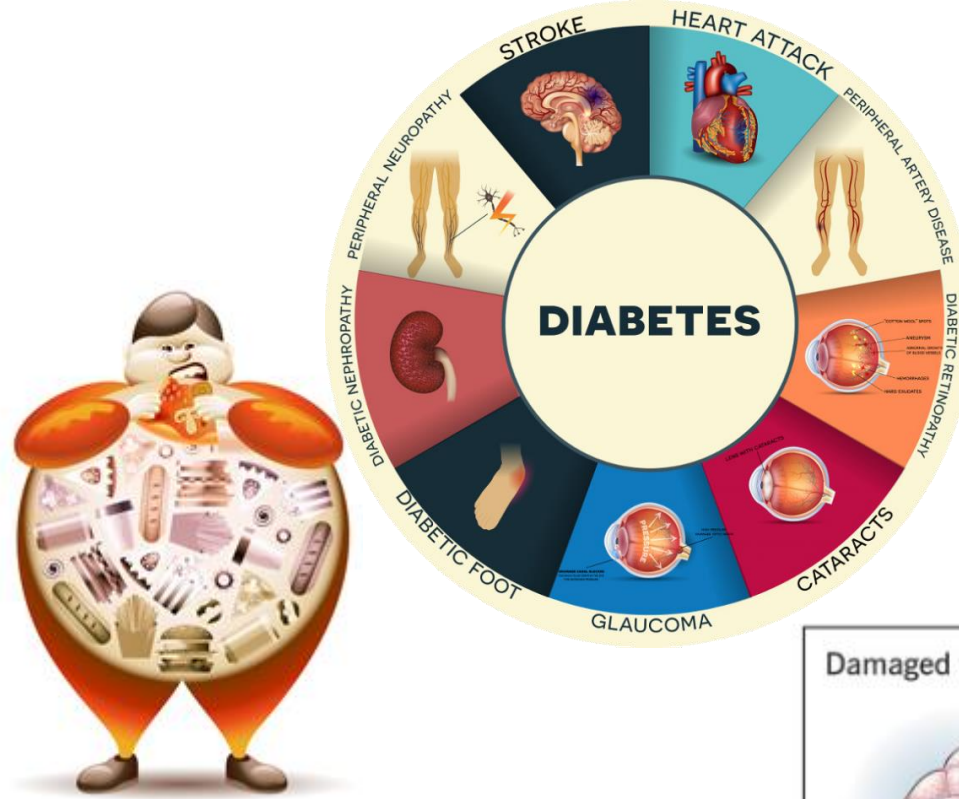
Origin:

Dried ripe seeds of *Chenopodium quinoa*, a flowering plant in the **Family**
“**Chenopodiaceae**”

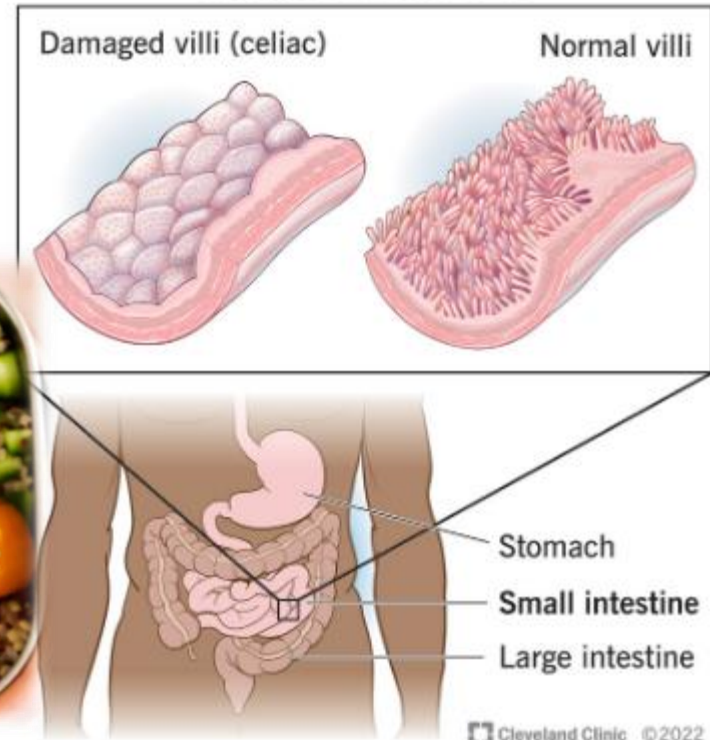


Uses

- Antioxidants
- Treatment of Celiac disease
- Treatment of obesity
- Treatment of Diabetes



Celiac Disease
Lining of small intestine



Chia seeds



Origin:

Dried ripe seeds of *Salvia hispanica*, a flowering plant in the Family “Lamiaceae”

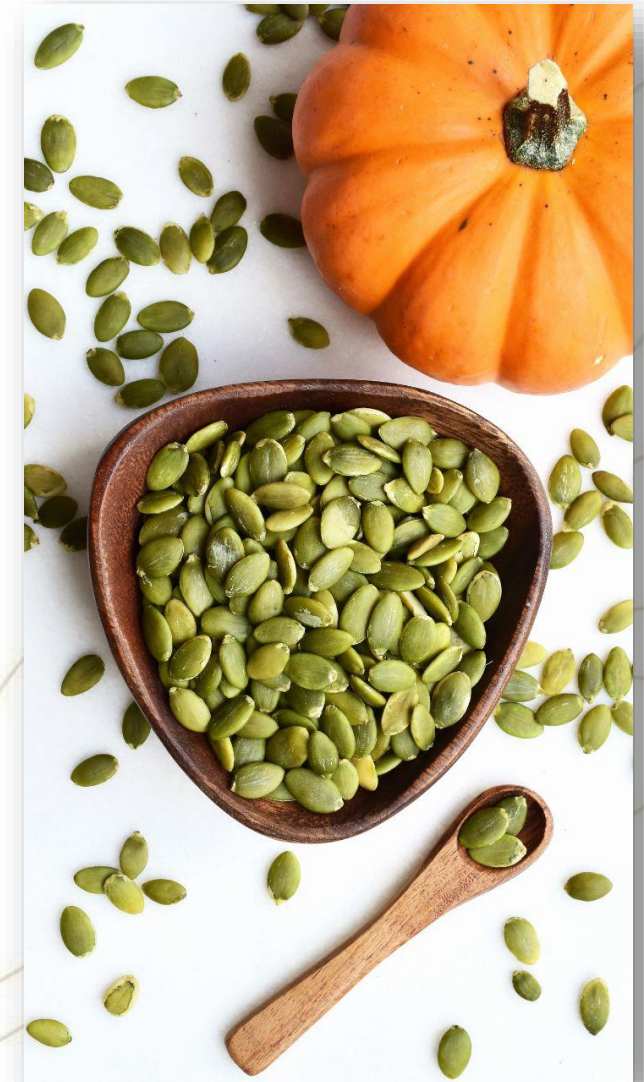


Uses

1. Treatment of obesity
2. Diabetes
3. Hypertension
4. Reducing cholesterol



Pumpkin seeds



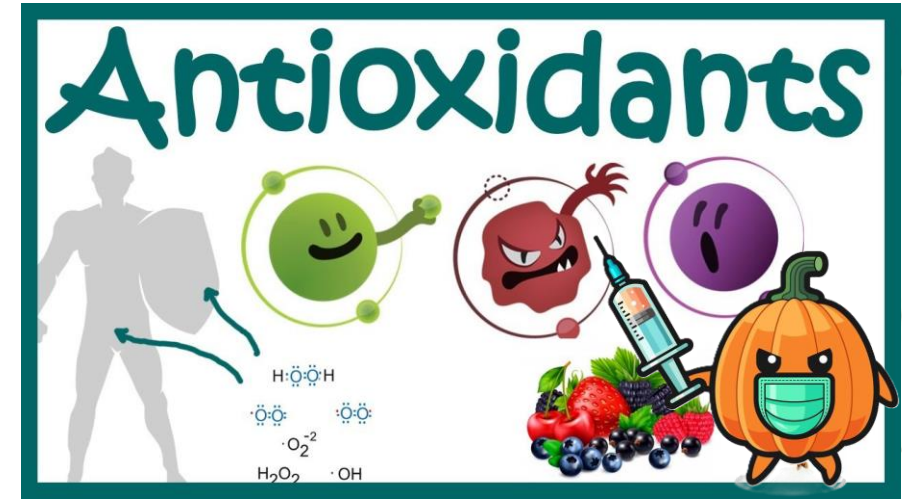
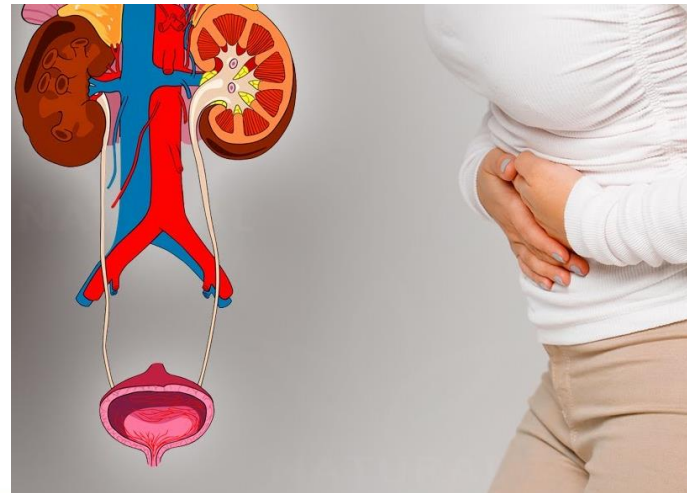
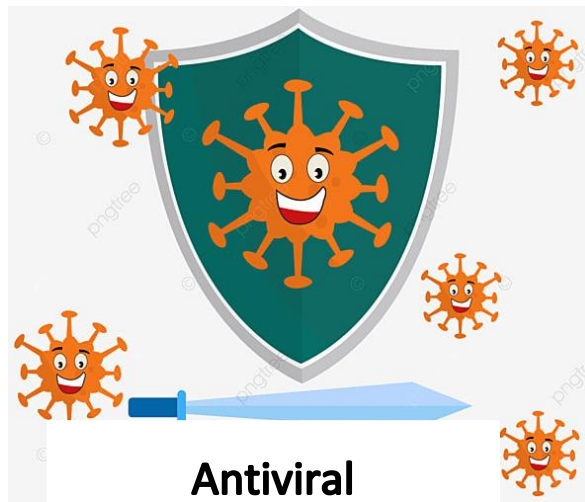
Origin:

Dried ripe seeds of *Cucurbita pepo*, also known as a *pepita* (from the Mexican Spanish: *pepita de calabaza*, 'little seed of squash'),
Family "**Cucurbitaceae**"



Uses

- Anti-inflammatory
- Antiviral
- Analgesic in urinary disorders
- Anti-ulcer
- Antidiabetic
- Antioxidant



Nigella sativa



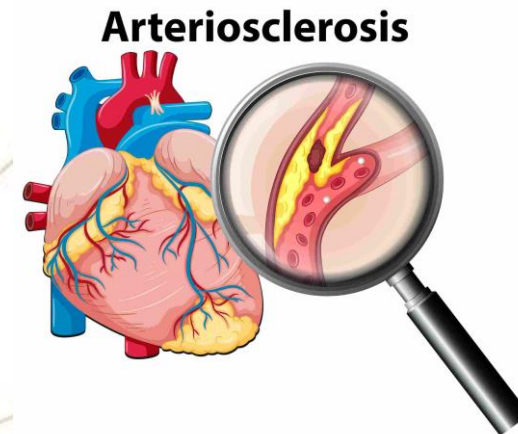
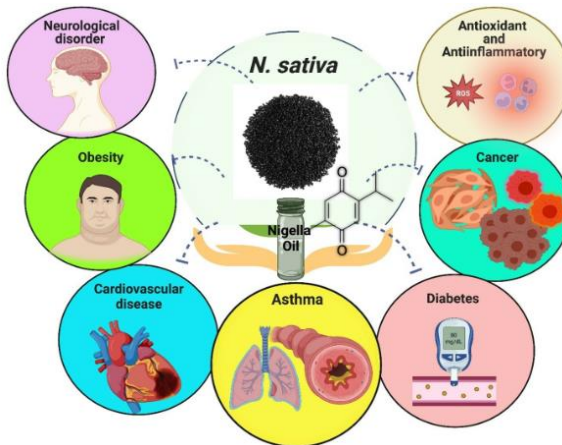
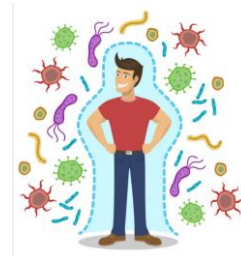
Origin:

Dried ripe seeds of *Nigella arvensis*; Family Ranunculaceae



Uses

- Treatment of respiratory tract conditions (allergy, cold, cough, bronchitis, flu and asthma).
- Support circulatory and immune system.
- Decrease the probability of arteriosclerosis and prevent thrombosis (due to the presence of unsaturated fatty acids (omega 3 & 6).

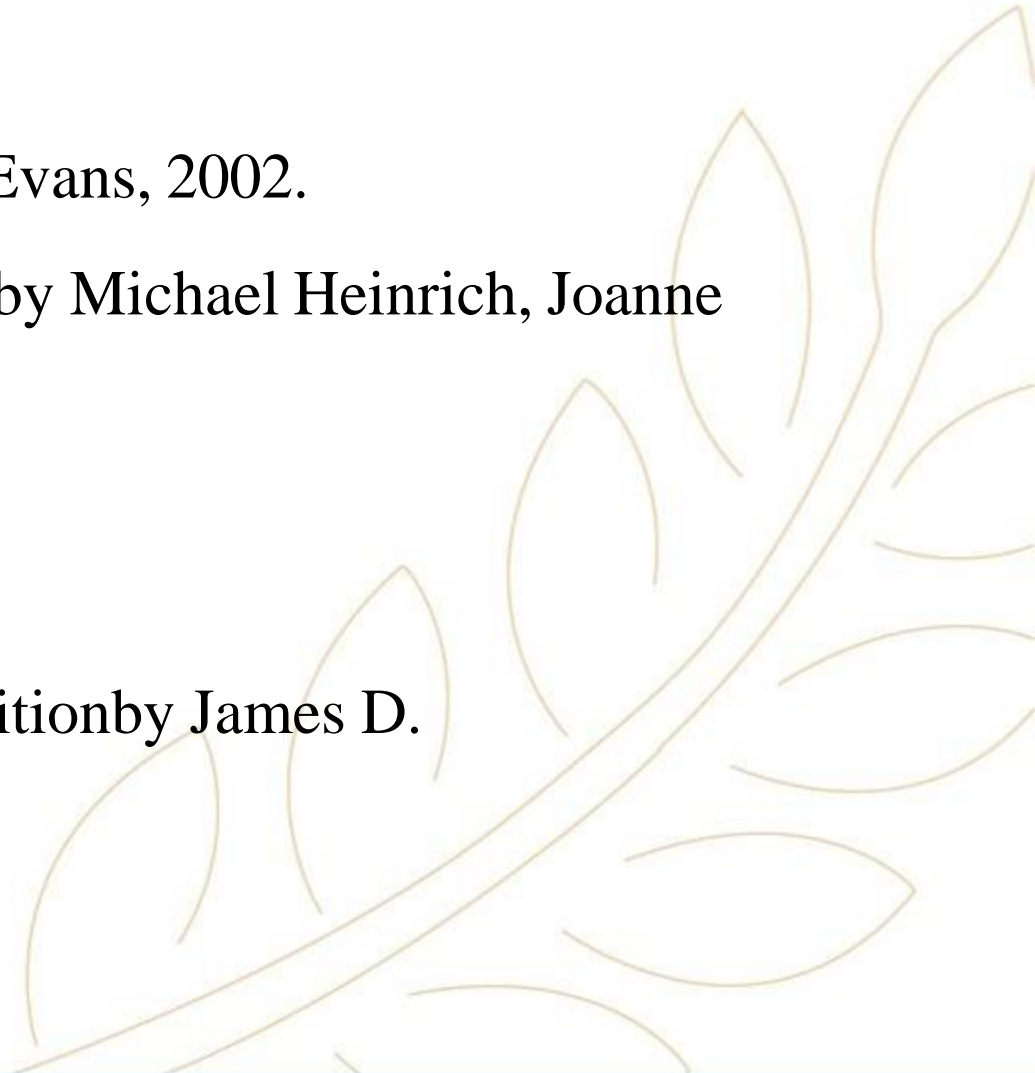


References:

1. Trease & Evans' Pharmacognosy by William Charles Evans, 2002.

3. Fundamentals of Pharmacognosy and Phytotherapy by Michael Heinrich, Joanne Barnes,
Simon Gibbons, and Elizabeth M. Williamson, 2004.

2. Botany : An introduction to Plant Biology, Third edition by James D. Mauseth, 2008.



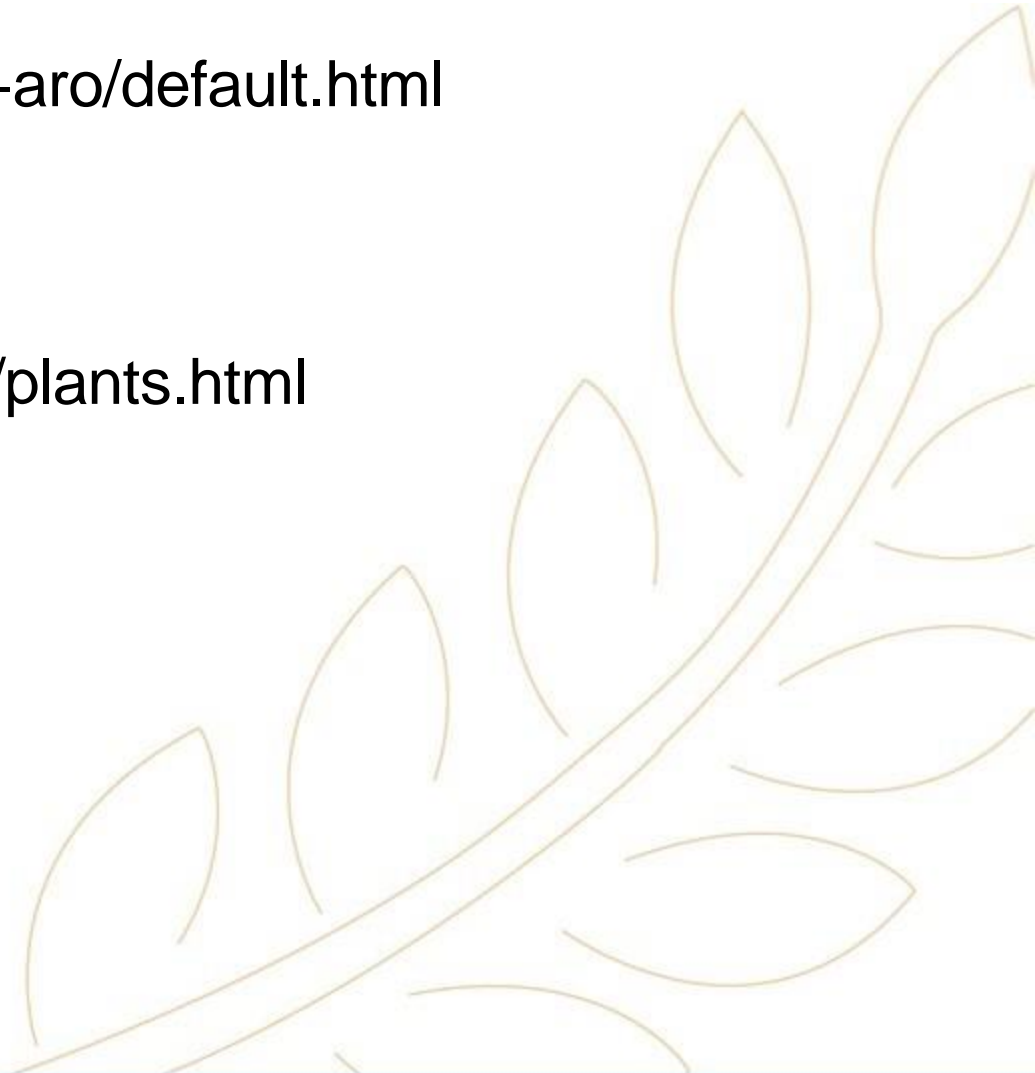
Useful links:

<http://www.hort.purdue.edu/newcrop/med-aro/default.html>

<http://www.herbmed.org/>

<http://www.danish-schnapps-recipes.com/plants.html>

<http://www.botanical.com/>





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