

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

# ***Pharmacogn***

PHG 112  
PG 102

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**Fall 2024**

# Lecture 3






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


**Other important seeds**

- **-The chemical constituents & uses of the different seeds**



# Some Common Seeds

Name	Origin	Active constituents	Uses
<p><b>1-Colchicum</b></p> 	<p>Dried ripe seeds of Colchicum autumnale family Liliaceae</p> 	<p>1- 0.2 0.8% <u>of alkaloid colchicine</u></p> <p>2- 1% of fixed oil</p> <p>3- 5% glucose</p>	<p><b><u>1-It relieves the pain and inflammation of acute gout</u></b></p> <p>2- Plant hormone, it induces polyploidy</p> <p>3- Cytotoxic effect</p>
<p><b>2-Nigella seed</b></p> 	<p>The dried ripe seeds of Nigella sativa F. Ranunculaceae</p>	<p><u>Volatile oil</u> ( 1.4 % )</p> <p><u>Thymoquinone</u>, Carvone ,</p> <p><u>Fixed oil</u> *Unsaturated fatty acids [ Oleic acid , Linoleic acid <math>\Delta^3</math> , Linolenic acid <math>\Delta^6</math> , Stearic acid ]*Saturated fatty acids [ Myristic acid , Palmitic acid].</p> <p><u>Protein , Vitamins</u> ( B 1,2,6 )</p> <p><u>Minerals</u> ( Ca , Fe , Zn , Cu )</p>	<p><b><u>1-Treatment of respiratory tract conditions( Allergy , cough, colds , bronchitis , Flu , asthma)</u></b></p> <p><b><u>2- Support circulatory and immune system</u></b></p> <p>3- Decrease the probability of arteriosclerosis and prevents thrombosis, this is due to the presence of unsaturated fatty acids (Omega 3 &amp; Omega 6)</p> <p>4- Antioxidants, Cytotoxic, antiviral</p>

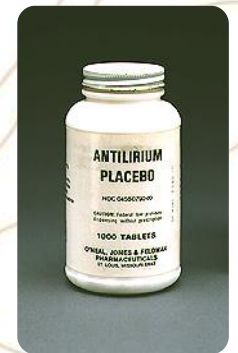
Name	Origin	Active constituents	Uses
<b>3-Calabar beans</b>	The dried ripe seeds of <i>Physostigma venenosum</i> F. Leguminosae 	<u>Alkaloids</u> <u>(physostigmine also known as eserine)</u>	<u>Contract the pupil, manage ocular pressure in glaucoma,</u> - Reverse the toxicity of certain other drugs - <u>Semi synthesis of rivastigmine used to treat dementia in Alzheimer disease</u>

Pharmaceutical preparations containing physostigmine (eserine)

Anticholium



Antilirium




Name	Origin	Active constituents	Uses
4-Pumpkin seed	The dried ripe seeds of <i>Cucurbita pepo</i> , F. Cucurbitaceae	<p>-<u>sterols</u> (e.g. <math>\beta</math>-sitosterol, <math>\beta</math>-tocopherols)</p> <p>- triterpene (squalene), tetraterpene (<math>\beta</math>-carotene)</p> <p>- <u>unsaturated fatty acids</u> ( omega 6 &amp; omega 3)</p>	<p><u>antiinflammatory</u>, antiviral, <u>analgesic in urinary disorders</u>, anti-ulcer, antidiabetic and antioxidant</p>



**Pumpkin seed**



Name	Origin	Active constituents	uses
<p><b>5-Evening primrose</b></p> 	<p><b>dried ripe seeds of <i>Oenothera biennis</i> F. Onagraceae</b></p>	<p><b>Protein(essential amino acids, containing sulphur) oil ( gamma- linolenic acid (GLA) Cellulose</b></p>	<ul style="list-style-type: none"> <li><b>-EPO is used for skin disorders such as eczema, psoriasis, and acne</b></li> <li><b>- It is also used for rheumatoid arthritis, weak bones</b></li> <li><b>- High cholesterol &amp; heart disease</b></li> </ul>



# Chia seed

**Chia seeds** are the edible seeds of *Salvia hispanica* a flowering plant in the mint family (Lamiaceae)



## Chemical constituents:

### - Dietary fibres

- Protein ↘

- High amount of omega-3 fatty acids

- Vitamins ( A , B1& B3)

- Minerals; calcium, iron, magnesium, phosphorous





## Uses:

- Treatment of obesity
- Diabetes
- Hypertension
- Reducing cholesterol

## Side effects:

-When it is consumed in lots of quantities the body may find it difficult to digest it properly. One should stick to an ideal quantity of chia seeds in a day and not consume more. Consuming more of these tiny seeds can cause diarrhea, bloating and stomach cramps

-It is known that high levels of omega-3 fatty acids may increase the risk of bleeding. Therefore, it is advised to avoid taking chia seeds with foods or supplements rich in omega-3 fatty acids

# Quinoa

The seeds of *Chenopodium quinoa*

Family Chenopodiaceae

It is a flowering plant grown as a crop primarily for its edible seeds



## Chemical constituents:

1-One of the best vegetable sources of protein. Eessential amino acids such as lysine and methionine.

2- Large quantities of vitamins (thiamin,vitamin C) and minerals

3- High content of fibre, carotenoids

4-Terpenoids, flavonoids, phenolic acids, and steroids.



## Uses

- Treatment of Obesity.
- Diabetes.
- Celiac disease.  
↓
- Antioxidants.



Name	Origin	Active constituents	Uses
<p><b>-Castor seeds</b></p>	<p>The dried ripe seeds of Ricinus communis, F. Euphorbiaceae.</p>	<p>1- <u><b>Alkaloids: Ricinine</b></u>  2- <u><b>Ricin (a lectin that inhibits protein synthesis in animal cells and leads to cell death).</b></u>  3- <u><b>Fixed oil</b></u> and protein.</p>	<p>1- <u><b>The oil is a powerful purgative</b></u> (the seeds are toxic).  2- Externally, the oil has been recommended for tinea, forms a light coloured odourless soap or in the form of pastes.  3- <u><b>Castor oil provides hydration and conditions the hair since it's rich in ricinoleic acid and fatty acids,</b></u> which serve as natural emollients for the hair.</p>



## Side effects and toxicity:

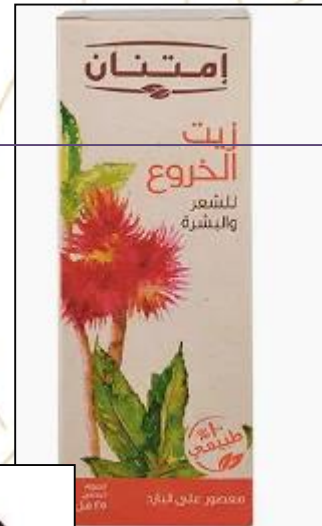
The plant including the seeds contains an irritant substance named **Ricin that poisons the blood.**

N.B: One of the most potent natural toxins known. One seed can kill a child

**The oil is safe** because the poison remains in the seed where seeds themselves and the cake left after the expression of the oil are violently purgative.

N. B. Applying castor oil just once a month can **boost hair growth** up to five times the usual rate. It can **moisturize a dry, irritated scalp.**

Castor oil's **antibacterial and antifungal properties can reduce dandruff.** It can **help grow** hair in other parts of the body, like the **eyebrows and eyelashes**



# Jojoba



Jojoba oil is extracted from the seeds of the Jojoba plant also known as the *Simmondsia chinensis* plant

Jojoba oil is rich in vitamins B, E, and C and minerals like copper and zinc

## **Benefits Of Using Jojoba Oil For Hair**

### **1. Moisturises Hair**

2. **Promotes Hair Growth** & Thickness

3. **Repairs Damage** From Heat & Styling Tools

4. Maintains Scalp's Natural Balance

5. **Controls Dandruff**

# How To Use Jojoba Oil For Hair?

1. Direct Application
2. Mixing it With Other Products
3. Use it as a Hair Conditioner
4. Use it as a Hair Mask Ingredient



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 to dark. On the right side, there is a stylized, light-colored outline of a leafy branch, possibly representing a plant or a medical symbol.

# Faculty of **Pharmacy**





Established by Dr.Nawal El Degwi

October Univeristy for Modern Sciences and Arts

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