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

pharmacogno

PHG 112 PG 102

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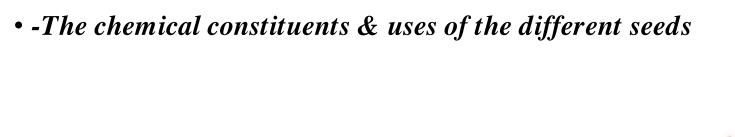
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By the end of the lecture, students should be able to demonstrate knowledge of:

Other important seeds



Seeds Having Nutraceutical Applications

Chia seeds

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. Essential 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
1-Nigella seed	The dried ripe seeds of Nigella sativa F. Ranunculac eae	Volatile oil (1.4%) Thymoquinone, Carvone, Fixed oil *Unsaturated fatty acids [Oleic acid, Linoleic acid Δ3, Linolenic acid Δ6, Stearic acid] *Saturated fatty acids [Myristic acid, Palmitic acid]. Protein, Vitamins (B 1,2,6), Minerals (Ca, Fe, Zn, Cu)	1-Treatment of respiratory tract conditions (Allergy, cough, colds, bronchitis, Flu, asthma) 2- Support circulatory and immune system 3- Decrease the probability of arteriosclerosis and prevents thrombosis, due to the presence of unsaturated fatty acids
2-Pumpkin seed	The dried ripe seeds of Cucurbita pepo, F. Cucurbitac eae	- <u>Sterols</u> (e.g. β-sitosterol, β- tocopherols) - <u>Triterpenes</u> (squalene), tetraterpene (β-carotene) - <u>Unsaturated fatty acids</u> (omega 6 & omega 3)	Antiinflammatory, antiviral, analgesic in urinary disorders anti-ulcer, antidiabetic and antioxidant

Seeds Having Cosmeceutical Applications

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
- 4. Use it as a Hair Mask Ingredient





Castor seeds

Origin

The dried ripe seeds of Ricinus communis, F. Euphorbiaceae.

Active constituents

- 1- Alkaloids: Ricinine
- 2- Ricin (a lectin that inhibits protein synthesis in animal cells and leads to cell death).
- 3- Fixed oil and protein.

Uses

- 1- The oil is a powerful purgative (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-Castor oil provides hydration and conditions the hair since it's rich in ricinoleic acid and fatty acids, which serve as natural emollients for the hair.





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

Other Common Seeds

Some Common Seeds

Name	Origin	Active constituents	Uses
1-Colchicum	Dried ripe seeds of Colchicum	1- 0.2 0.8% of alkaloid colchicine 2- 1% of fixed oil	1-It relieves the pain and inflammation of acute gout
Colchicum	autumnale family Liliaceae	3-5% glucose	2- Plant hormone, it induces polyploidy 3- Cytotoxic effect
2-Calabar beans	The dried ripe seeds of Physostigma venenosum F. Leguminosae	Alkaloids (physostigmine also known as eserine)	- Contract the pupil, manage ocular pressure in glaucoma, - Reverse the toxicity of certain other drugs - Semi synthesis of rivastigmine used to treat dementia in Alzheimer disease

Calabar beans



Pharmaceutical preparations containing physostigmine (eserine)



Bi-miotic

Anticholium





Name	Origin	Active constituents	uses
3-Evening primrose	Dried ripe seeds of Oenothera biennis F. Onagraceae	Protein(essential - amino acids, containing sulphur) Fixed oil (- gamma-linolenic acid (GLA) Cellulose -	-EPO is used for skin disorders such as eczema, psoriasis, and acne - It is also used for rheumatoid arthritis, weak bones - High cholesterol & heart disease

Evening primrose oil is a source of phytoestrogens, or compounds that mimic the effects of estrogen in the body. It is often used to help balance hormones, particularly in women. It can be beneficial for symptoms related to hormonal imbalances (low estrogen), such as Premenstrual Syndrome (PMS) and menopausal symptoms. The GLA in primrose oil helps regulate hormone levels in the body.

Side effect: Causes blood thinning which may lead to bleeding



Activities



V

Faculty of Pharmacy



Thank You!

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