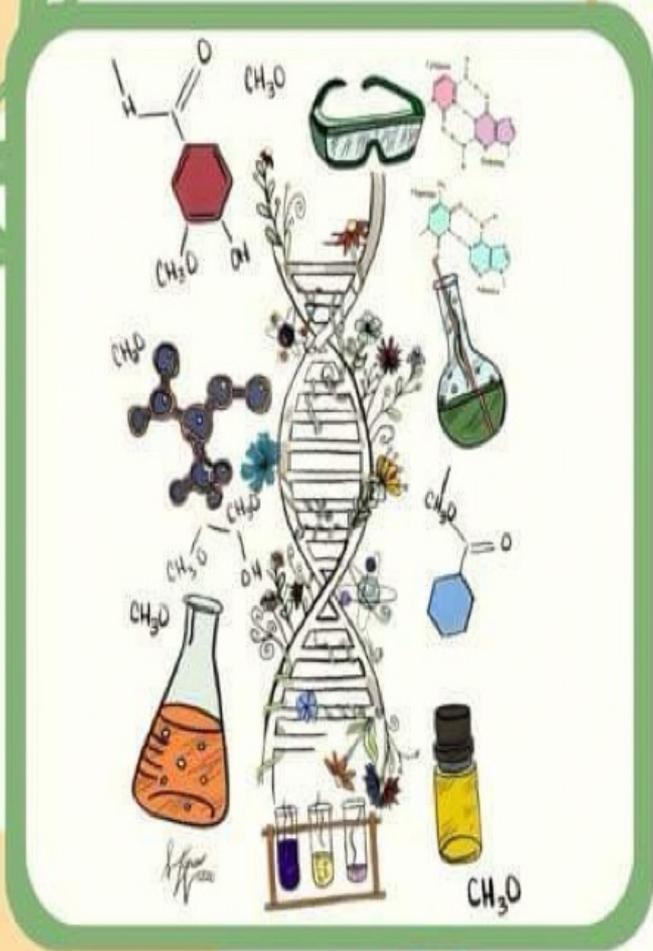


تفريغ عقاقير



اسم الموضوع:

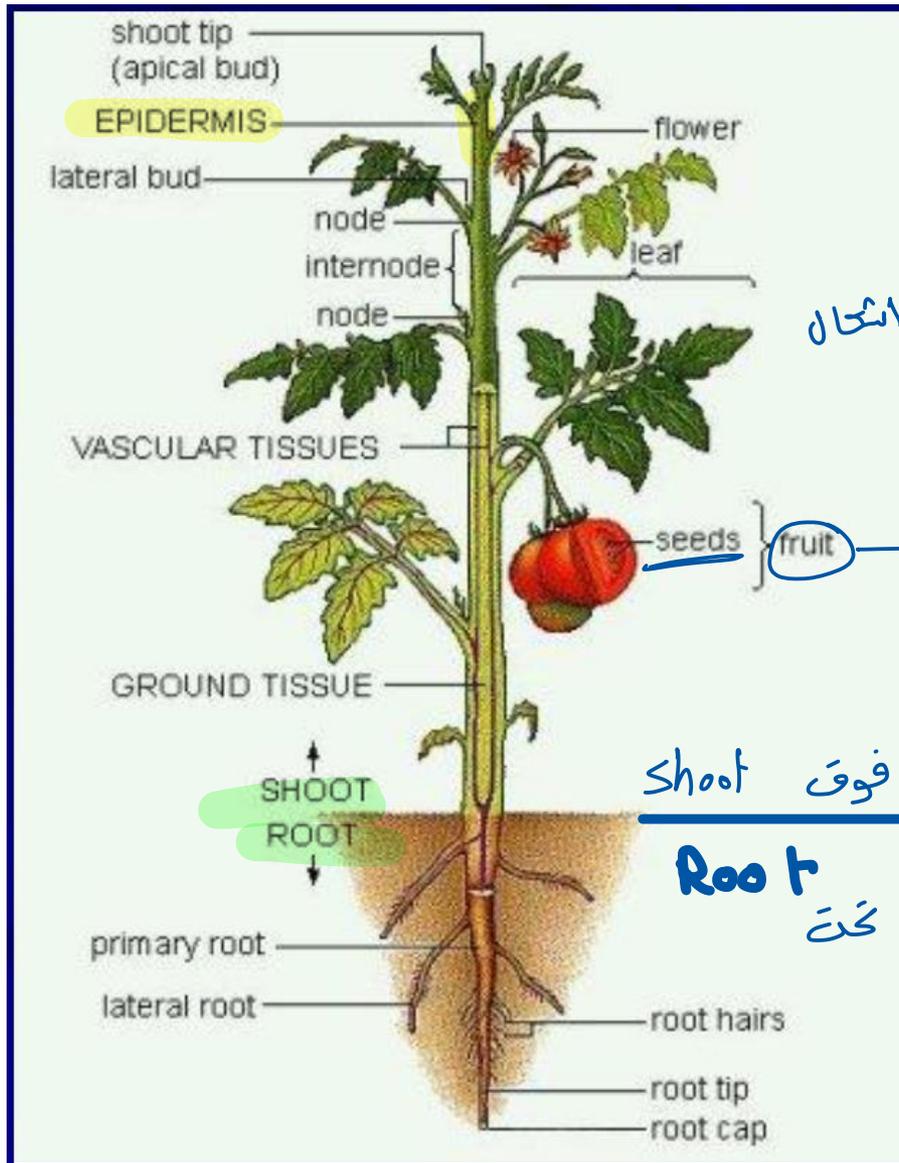
Chapter 4 part 1

إعداد الصيدلاني/ة: 

أمنة بعبارة



A flowering plant



طبقة الخلايا المحيطة بالنبذة
 Epidermis: The epidermis consists of a single layer of cells covering the whole plant. Epidermal cells show great variety in form, giving characteristic patterns when seen in surface view (straight, wavy, beaded, ... walls.)

انحناء

منقطة

تختلف أشكال البنية
 لأسباب مختلفة
 في epidermis

الثمرة تحتوي
 بذورها على seeds

Plant tissues →

نوعين
A - Simple
B - Complex

- A tissue is an aggregation of cells of common source, structure and function in intimate union
- Classification of plant tissues:
- Tissues may be classified into

A. Simple plant tissue

- Those composed of one kind of cell only. E.g. parenchyma and collenchyma.

B. Complex plant tissue

- Those made up of two or more kinds of cells. E.g. xylem and phloem.

زالج
نسيج الخشب

الكاس

A) Leaves

مسهل laxative

Xanthorrhoeaceae

- Aloe : (الصبار) Aloe vera
- Family: Xanthorrhoeaceae



(صبر)



The juice of Aloes contained in the large pericyclic cells of the leaves. When the leaf base is cut, the juice flows out and collected

Aloe is recommended for the treatment of atonic constipation and suppressed menstruation.

مسهل
ب) لا يجوز الحطأه للمرأة
الكامل.

ب) لينعلى للمرأة التي
تناخر عنف الدررة الشهرية (بيزل الدررة)

A) Leaves

Tea (Black/Green) الشاي

• *Camellia sinensis* F. Theaceae.

• black tea-fully fermented leaves that are roasted (40mg caffeine/cup).

• green tea-steamed, dried, non fermented leaves (20mg/cup).

green tea contains higher concentrations of the active catechin constituents compared to black tea.



هو ما كسد بالبخار
مع كسد عال الكافيل
fully fermented
black tea
Leaves are roasted
الورق كحصص

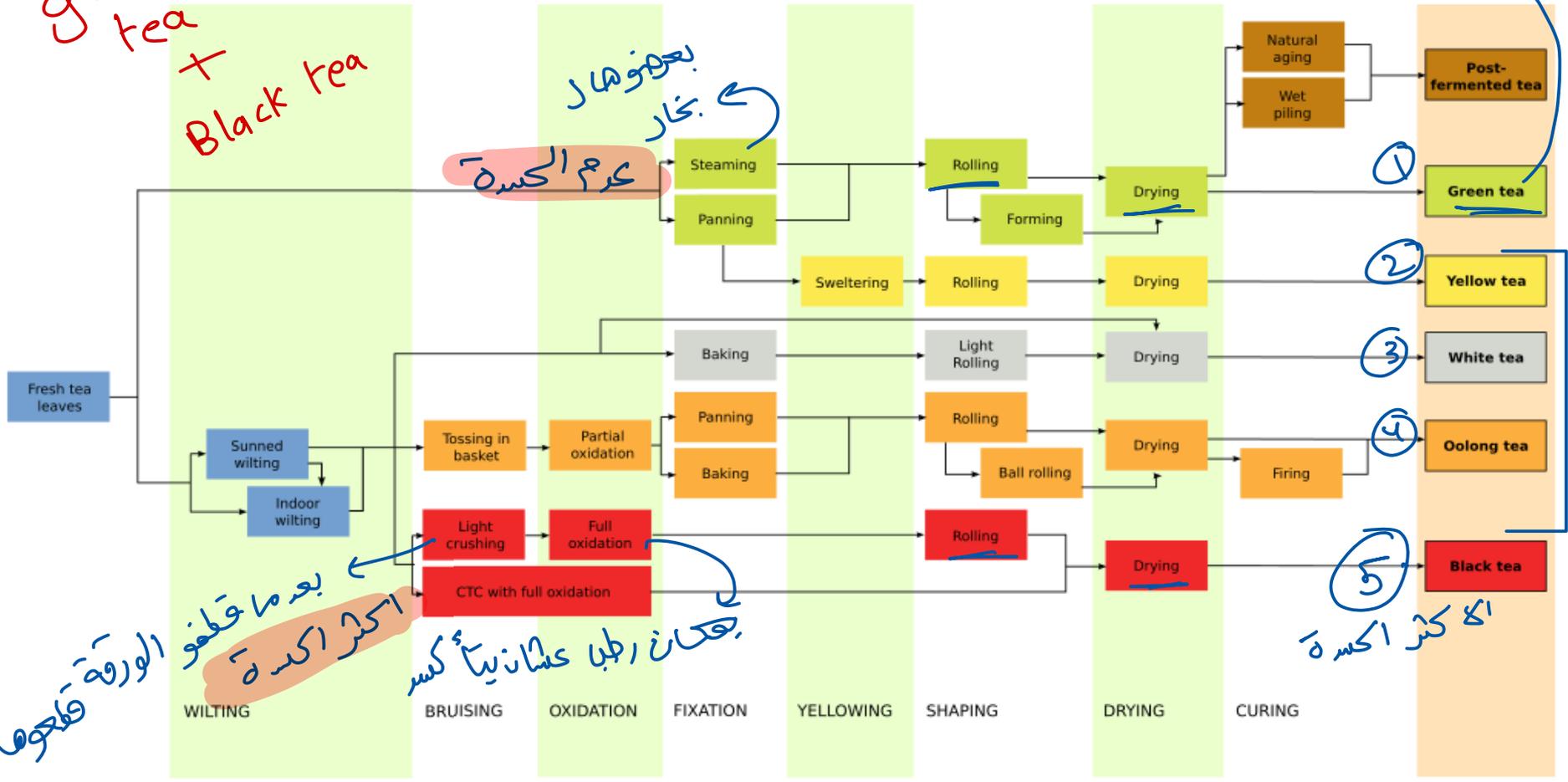
فيه كافين
كالي
40mg / cup

* green tea : steamed بالبخار
dried
non fermented
20mg / cup



Tea preparation

Green tea + Black tea

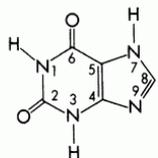


A) Leaves

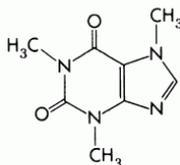
Tea (Black/Green) الشاي

Camellia sinensis F. Theaceae.

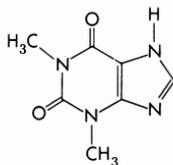
Theaceae
Camellia sinensis



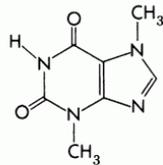
XANTHINE



CAFFEINE



THEOPHYLLINE



THEOBROMINE

Black tea

Green tea

PHARMACOLOGICAL ACTIONS

• **BLACK TEA:** Claimed to Protect against ischemic heart disease.

• **GREEN TEA:** Antioxidant capacity; decreases serum concentrations of total cholesterol, triglyceride

• Standardized Preparations: Activate thermogenesis and fat oxidation.

• Black and green tea: Increase plasma antioxidant capacity;

↑ حرارة
↑ إنتاج

Active constituents:

المادة الفعالة في الشاي

1. Polyphenols (Tannins: Catechins)

epicatechin, epigallocatechin

2. Alkaloids purine group

(Xanthine derivatives):

1) Caffeine 2-4% – CNS stimulant.

2) Theophylline – bronchodilator.

3) Theobromine – diuretic.

3. Inorganic ions: fluoride (130-160 mg/kg), potassium, aluminum

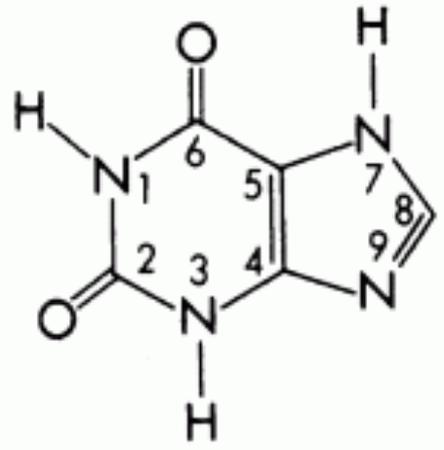
4. Other Ingredients:

flavonoids, caffeic acid derivatives

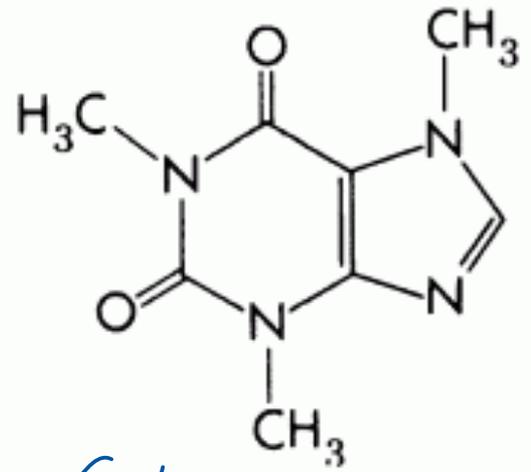
مصدر البور

Alkaloids
purine

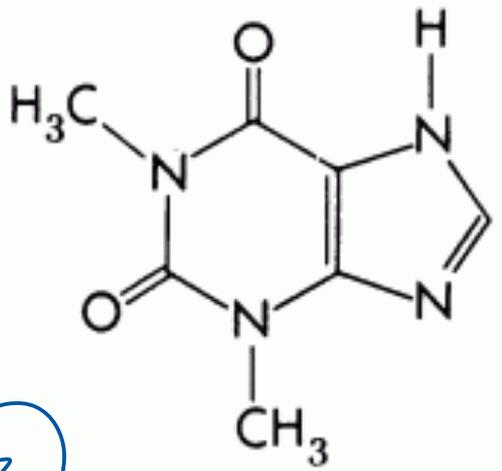
قواعد نيتروجينية



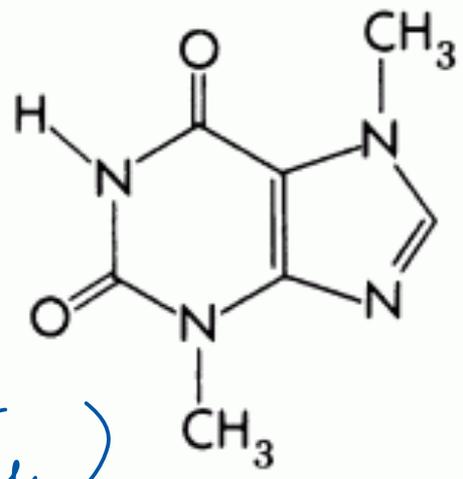
① XANTHINE



② CAFFEINE



③ THEOPHYLLINE



④ THEOBROMINE

هو الذي يعيق امتصاص الحديد (مما اثر به على الاكل)

Tannins

بتعليق
مزارة للشاي

حرارة

- Are astringent and bitter-tasting plant polyphenols that bind and precipitate proteins
- The term tannin refers to the source of tannins used in tanning animal hides into leather.

متعددة الفينول

دباغة
جلود
الحيوانات

However, the term is widely applied to any large polyphenolic compound containing sufficient hydroxyls and other suitable groups (such as carboxyls) to form strong complexes with proteins and other macromolecules. Tannins have molecular weights ranging from 500 to over 3000.

tannins

A) Leaves

Sage.

اطيراميه



- Salvia officinalis L. Family: (Labiatae/Lamiaceae)

Constituents

فينولات

- Acids: Phenolic – caffeic, chlorogenic, and rosmarinic.

- Flavonoids.

- Tannins

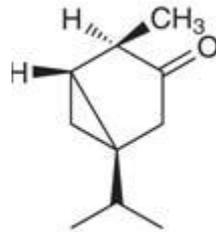
كلم من shekmic acids

بجھوني زيغ الطيراميه

- Volatile oil: 1–2.8%. Major components are α - and β -thujones. Others include 1,8-cineole, borneol, camphor.

جاي من 10 كرونات
ال
Structure
صت حفظ

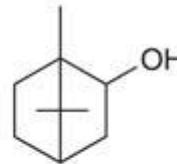
Monoterpenes



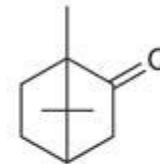
α -thujone
(-)-thujone



1,8-cineole



borneol



camphor

حفظ الاساسي

سليج
سليج

• Pharmacological Actions

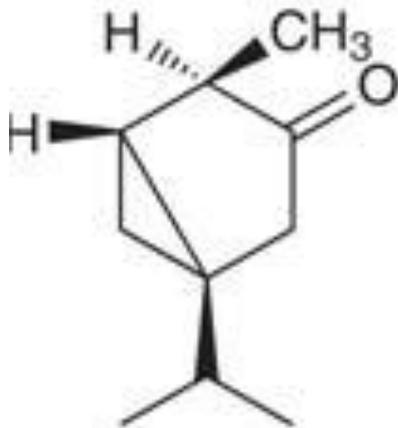
1) Antispasmodic activity.

2) Anticholinesterase activity. → تحسن الذاكرة Early herbals claim that sage enhances the memory. The anticholinesterase activity of several Salvia species have been investigated in the search for new drugs for the treatment of **Alzheimer's disease**

3) Antimicrobial and antiviral activity. Antimicrobial activity of the volatile oil has been attributed to the thujone content.

Volatile oils

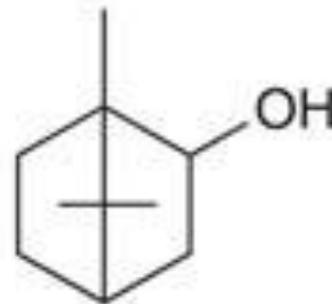
Monoterpenes



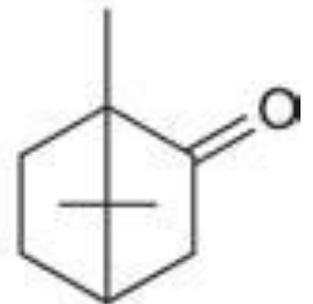
α -thujone
(-)-thujone)



1,8-cineole



borneol



camphor



Sage

صيدانية



Thyme

زحمر



Bay

ورق
الغار



Melissa



Rosmary



Marjoram



Basil
الريحان



البيلاب (ليس كالبيلاب)
Ivy leaves



Peppermint leaf



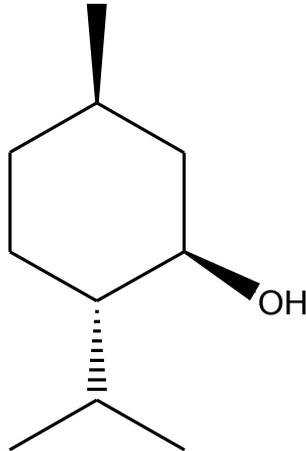
- Origin: is the dried leaves of *Mentha x piperita*:
Labiatae بحرق بلاول بعدين برودة
- It has an initially burning taste and cool aftertaste, especially when air is drawn in through the mouth.

نصوبها بس تدخل هوا
جوا تعلق

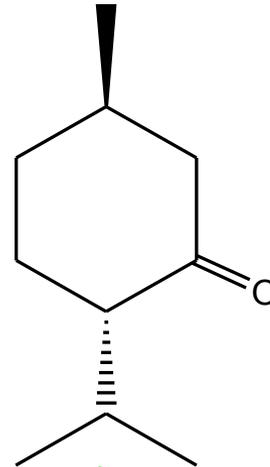
الحار

Contents

- The essential oils of the Labiatae family are synthesized in the cells of the glandular trichomes.
- Contains not less than 1.2 % V.O.
- **كحول** • 44% **menthol** (/form in nature and crystalline)
- **كيتونات** • 15-32 % **menthone**
- **استر** • 4.5-10 % menthyl acetate esters
- 6-12 % tannins, flavonoids, triterpenes and other bitter principles



② (-) Menthol



① Menthone

اهم مركبات النعنع

Preparation of peppermint oil:

- Steam distillation of the fresh or dried herb to obtain a colorless to pale green liquid with a pungent odor of peppermint.

ريحة
حادة للنفث

عديم اللون - اخضر فاتح

anti
α cytel choli *
انطيرسية

Rosemary

Labiata

(*Rosmarinus officinalis*)



- Small perennial evergreen shrub

← شجيرة دائمة الخضرة
دائمة الخضرة

- Narrow leaves have a spicy, pine-like flavor

- Not winter hardy in Illinois

- Grow in pots

- Propagate from stem tip cuttings

← يقطع جزء وبتزرعة
Stems



← اوراقها ورقية ناعمة لها رائحة الصنوبر

فمن كثير يتحلل بالتنا (يسه يتحوس)

Rosemary (اكليل الجبل ، حصالبان)

شجيرة د العه الحنطرة

- A silvery evergreen shrub that originated in the Mediterranean region and is now grown

كل انحاء العالم

worldwide. البحر الابيض المتوسط

- Rosemary (*Rosmarinus officinalis*) is known both as a culinary and healing herb.

علم الطبخ

كلاج

Rosemary → eurosp عسرة

- Uses:

- Memory aid: The herb's enduring reputation as a memory aid may in part be due to:

تذاكرة

- Its high concentrations of health-promoting antioxidants. These compounds help to protect the brain and other parts of the body against unstable oxygen molecules, called free radicals, which can damage cells in the body.

يحصن التذاكرة.

- Rosemary may also sharpen memory by helping to prevent the breakdown of neurotransmitter acetylcholine.

Rosemary →

كطفه مع
زيت الجوجوبا

JaJopa + Rosemary

- **Topical uses:**

- Rosemary oil, which is steam-distilled from the plant's pale blue flowers, may help soothe muscle sprains, strains, and arthritic joints. → (الام المفاصل روماتيزم) شرعيني يتختم في

- The oil contains camphor, a skin irritant that can increase blood circulation to the skin when applied topically.

- The aromatic oil is frequently added to hair preparations: one recent trial found that rosemary oil, when combined with thyme, and lavender oils in a neutral carrier oil (jojoba) may help to lessen a type of hair loss called alopecia areata. →

مخلوط مع الزعتر لافندرا

(لافندر وزعتر مع الجوجوبا)

تباعه في علاج شرعيني حالة الصلع

Rosemary

Rosemary
oregano and thyme

- **Internal uses:**

→ بلجفروا على شكل كبسولات

- - Herbalists often suggest capsules containing rosemary oil along with the essential oils of oregano and thyme for the treatment of yeast (Candida) overgrowth in the intestines.

اوريجانو
وزعوم

- rosemary has apparent use as **antibacterial** and **antifungal** properties.

بساعه على علاج فطريات الجهاز الهضمي

A) Leaves: Examples

تشبه جفان الكورتيزون.
(تنبه الكورتيزون)

Common name	Arabic name	Binomial name	Family	Main herbal use	Major constituents
ivy prospane	اللبلاب فيها triterpene حجابي بالاعجاز	<u>Hederae folium</u>	<u>Araliaceae</u>	Expectorant antitussive Treatment of chronic inflammatory bronchial diseases	1. triterpene 2. glycosides of hederagenin: hederacoside C , hederacoside D hederacoside B phenolics flavonoids, coumarins

BCD

Hederae folium is used for the treatment of respiratory tract diseases with intense mucous formation, respiratory tract infections and in irritating cough which stems from common cold.

بخفض البلغم

The major compounds responsible for the biological activity are triterpene saponins. Ivy leaf extracts exhibit spasmolytic/antispasmodic, anti-inflammatory, antimicrobial, analgesic, anthelmintic, antitrypanosomal, antileishmanial, antitumor, antimutagenic, molluscocidal, antioxidant and antithrombin activities.



اللبلاب مهم جدا في علاج كل ما يتعلق بالجهاز التنفسي وامراض الصدر وامراض الجهاز الهضمي ، وهناك نوع من اللبلاب سام جدا عند ملامسته وهو اللبلاب ذات الاوراق الحمراء اما ذات الاوراق الخضراء فهو آمن .

B) Flowers:

النباتات التي تستخدم
زهورها

Saffron زعفران



اللافحوان Calendula



Lavender



البابونج Chamomile



سعال

- Explain the term, 'Hay Fever'.
- Inhalant plant allergens come in contact of the nasal and buccal mucosa during respiration. The symptom is restricted to the nasal mucosa and manifested by sneezing, lacrimation, itching and swelling of nose and eyes. This condition is known as hay fever or sinusitis.



Roman

روماني

البابونج Chamomile

Chamomile

الماني



German

• According to **pharmacopoeia** we have **2** types of chamomile:

1. **Roman chamomile**: is used mainly in **Europe**, **Chamaemelum nobile**

(شربان النبلاء)

انواع البابونج
الروماني والالماني

Family: (Asteraceae/Compositae)

عضوا مقسمة

• It has **thin** petals and **intense** at the center.

رقيقة

كثيفة

جوا المركز

2. **German chamomile**: Matricaria chamomilla. Family: Asteraceae/Compositae

it has **wide** petals and **outspread** from the center.

المادة الفعالة في البابونج

• Chamomile contain a compound called **matricin** that **converts** during **distillation** it to another compound called **Chamazulene** (**chama**: from **chamomile**, **azue**: from **blue** color).

بدا المركز
Chama
Chamomile

Chamazulene

azue = blue color

matricin (15c)

تتحول الى
converts

chamazulene (13c)

صفحة كاملة

البابونج (German): Chamomile

- *Matricaria chamomilla*. Family: Asteraceae/Compositae
- **Part(s) Used** : Flower head

Active constituents:

- **Coumarins**: Umbelliferone and its methyl ether, heniarin.
- **Flavonoids**: Apigenin, luteolin, quercetin, and rutin.
- **Volatile oils**: Pharmacopoeial standard not less than 4 mg/kg blue oil. Main components are α -bisabolol (up to 50%) and chamazulene (blue) (1–15%).
- **Other constituents**: sesquiterpenes (e.g. matricarin and matricin).
- **Chamazulene** is formed from matricin during steam distillation of the oil. It varies in yield depending on the origin and age of the flowers.

البابونج
مهم جداً
كالمسحوق

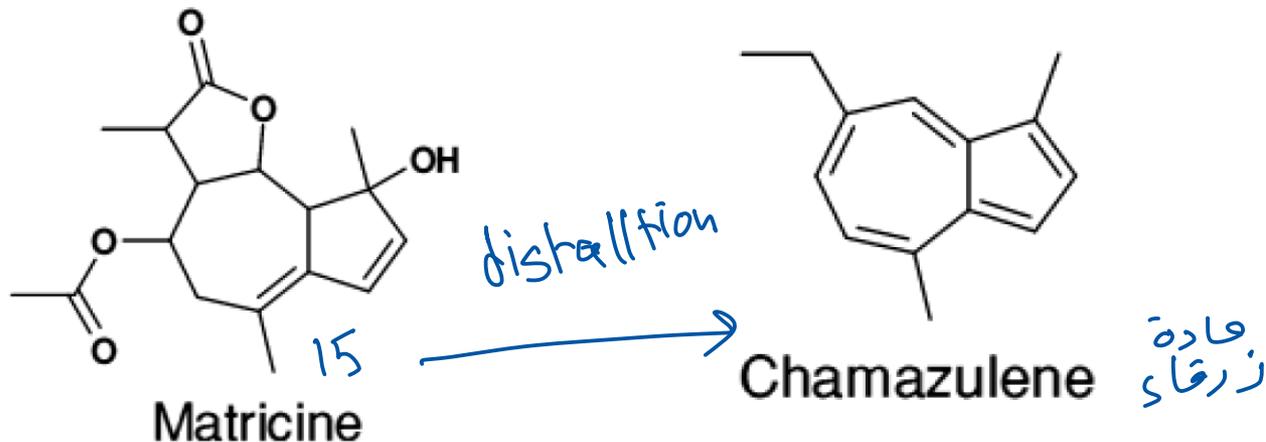
● Thajone → عني
الطيريه

البابونج (German): Chamomile

جاي بالامتحان

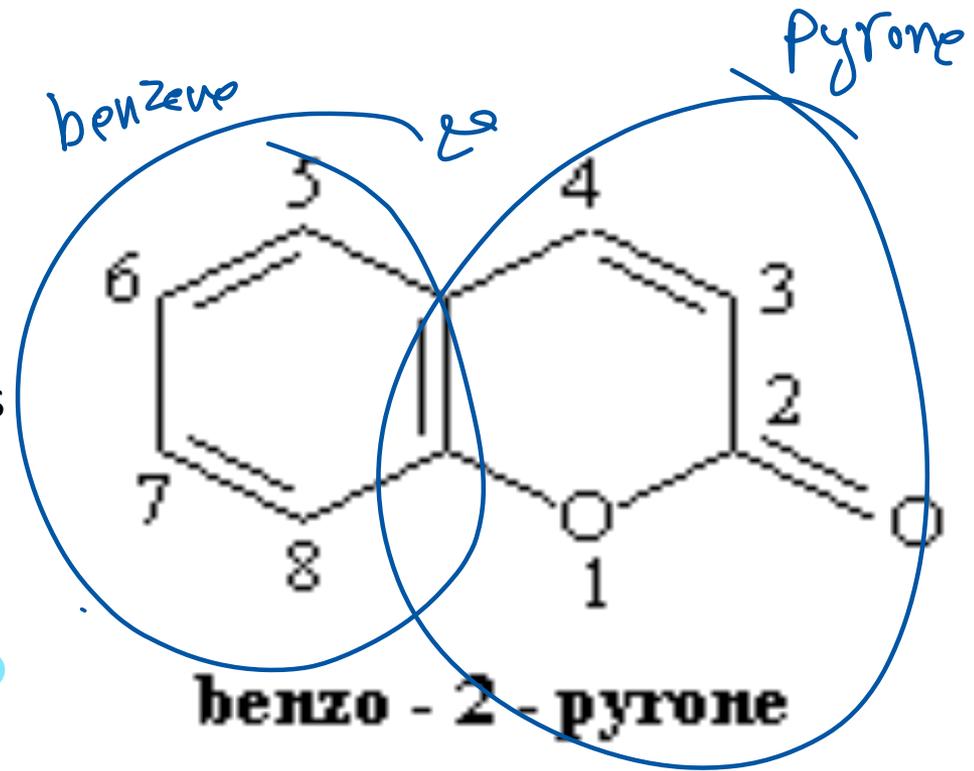
15 ←

- **Matricine** is a **tricyclic sesquiterpenoidal** compound that contain **furan** ring, during **distillation** process the **furan lactone** will be **open** due to **high temperature** and convert it to **carboxylate** called **chamazulene carboxylic acid**, also we **remove** a **carbon atom** in carboxylate gp in **matricin**, by this we have **bicyclic** structure contain **14** carbon, so **chamazulene** is **not naturally** compound and **not a sesquiterpens**.



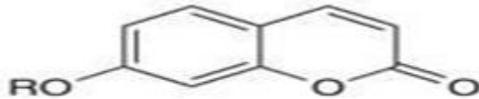
الاسم يدري بالاسم

- **Coumarin** and the other members of the coumarin family are benzo- α -pyrones, while the other main members of the benzopyrone group, the **flavonoids** contain the γ -pyrone group.
- Coumarins may also be found in nature as glycosides.



قادرة
لبيضة
بسطر موهما
بالادوية

Coumarins

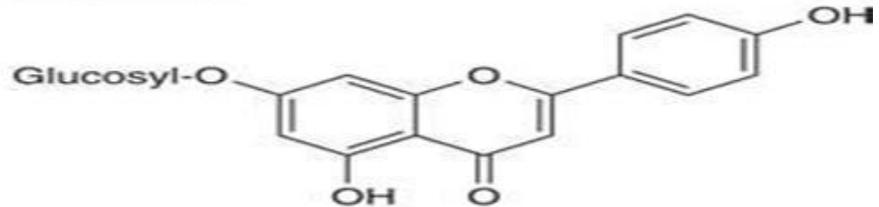


umbelliferone

umbelliferone methyl ether

R
H
CH₃

Flavonoids



apigenin-7-glucoside

4mg/Kg

Pharmacological activity of Chamomile

- **All** these compounds are responsible for the **pharmacological activity**, so we use chamomile as **antispasmodic** and **carminative** (orally use) due to the activity of **flavonoids**, while **topical** use as **anti-inflammatory**,
- also it's used in **teething pain** in pediatric, **antiseptic**, it has **hypnotic effect** so help u to **sleep**, also we use it as **antacid**.

لجارد للريح

الاطفال
يلقى

بسنو

مطهر

يساعد على
النوم

مضاد حرقه (القرحة)

يساعد على
الاسترخاء

كمضاد حرقه

هو البابونج
دعوق السوسا



Clove (القرنفل)

Syzygium aromaticum

Family: Myrtaceae



بازد (البزاعم) buds
بنشفها بهير
لونها بنى

- **Part(s) Used:** dried flower bud.
- **Active Constituents:**
- Clove bud: oil containing Eugenol (90%), Eugenyl acetate, β -caryophyllene.
- • Other components like methylsalicylate, methyleugenol and benzaldehyde.

• **Herbal Use**

- Clove has been traditionally used as a carminative, anti-emetic, toothache remedy and counter-irritant.

الزيت
الذي ركتو لبتحي
عبارة دكتو الاسنان
انسو Eugenol

طارد
التريخ

علاج ألم الأسنان

لعنق الاستفراغ
زيت اللزقات لوجع الفم



Clove (القرنفل)

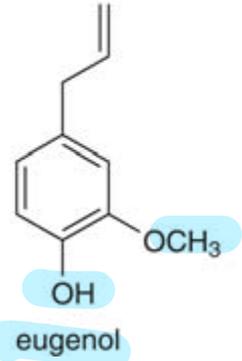
Syzygium aromaticum

Family: Myrtaceae

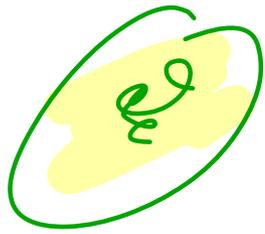


- The distinctive odour of the clove is due to the presence of Eugenol
- It's phenylpropene structure and there are hydroxyl and methoxy groups ortho- to-each other.
- The problem of this plant: it mustn't be used with any anti-coagulant drug, so the dentist must be sure to use clove-free compounds if the patient use anti-coagulant drug to prevent the bleeding.

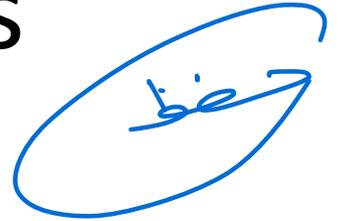
Phenylpropanes



حاصير فتاحه مع ادوية ال anti coagulant ← لانها بتعمل bleeding



Categories of Volatile oils



- **Monoterpene-rich volatile oils** Some examples:

- Peppermint oil • Lavender oil • Lemon oil • Camphor • Thyme oil • Turpentine oil

- **Phenylpropane-rich Volatile Oils** Some

- examples: • Cinnamon oil • Anise oil • Fennel oil • Clove oil • Nutmeg oil • Peru balsam • Tolu balsam

Shackmic ←
زي
(البلسم)

طارد اللديان

الشيح الخرساني Artemisia cina

يستخدم زهورته

• Artemisia cina BERG. Family: Asteraceae/Compositae.

• **Part Used:** dried, unexpanded flower heads

نفس عائلة
بابونج

• **Active Constituents---**The chief constituent of Wormseed is a crystalline bitter principle, **Santonin:** anthelmintic property of the drug.

المادة الفعالة

• **Artemisia cina** should be collected in **July** and **August** since Santonin attains its maximum at this time of the year

• **Artemisia cina** also named as wormseed contains another bitter principle, **Artemisin**, and a yellow volatile oil **cineol**.

طارد اللديان

منقوصة
طالفتح
الزهره

حرة

الشيش الخرساني *Artemisia cina*



الشيح الخرساني Artemisia cina

- **Herbal action and Uses**
- Santonin acts as a direct poison to parasites, and is used as a remedy for round-worms, which it rapidly expels; it has also an effect on thread-worms to a lesser degree, but has no action on tapeworms.
- **Dosage**: Santonin lozenges, B.P.
- As a rule, when a single dose is to be given, it should be administered upon an empty stomach, and the patient should refrain from eating for a short time afterward. A purgative should precede and follow its use.

تقتل الديدان بشكل مباشر عن طريق شلها.

تستخدم في علاج الديدان الكلفية

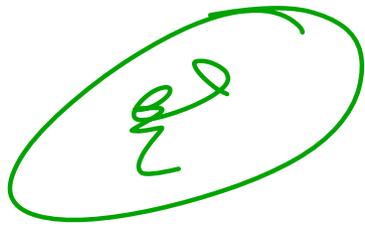
تؤثر على الديدان الشريطية

على معدة خائفة

صلى الاربع لفرده ياكل (5) بعدة

(2) بدنا بعدة

فاده سطره



Toxicity

* بين تقيبه هاي السمية
بنوف كل التي ازرق بعينه اهفر

- **Several cases are on record of fatal poisoning by Santonin.**
- Santonin produces vision disturbances, objects first appears **blue** then **yellow**, the absorbed santonin renders urine intense **yellow** if **acidic**, while **purplish yellow** if **alkaline**.

بلسوفوا
عناك

لون البول يتغير

acidic → yellow
ازا بول حفي

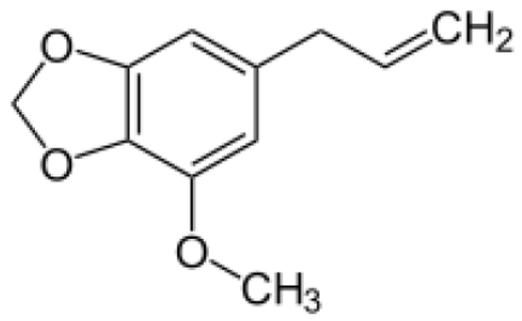
alkaline → purplish yellow
ازا بول قلبي

جوزة الطيب C) Seeds:Nutmegs بتحل هلوسه

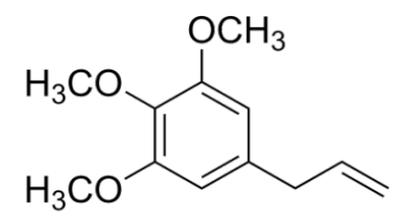
Myristica fragrans Myristicaceae

- Mace: القشرة الرفيعة الداخلية التي تغطي الجدار الداخلي لثمرة جوزة الطيب
- Nutmeg: usually used as complete fruit but the V.O. is obtained from the seeds or kernel.
- The oil of the nutmeg is very expensive because the fruits need long time to be ضيفة
- mature and they are very light, so when the farmer cultures large number of the plant trees he will have small weight of the fruits (nutmeg)..

زرعتها بتأخذ وقت طويل (المحصول قليل)



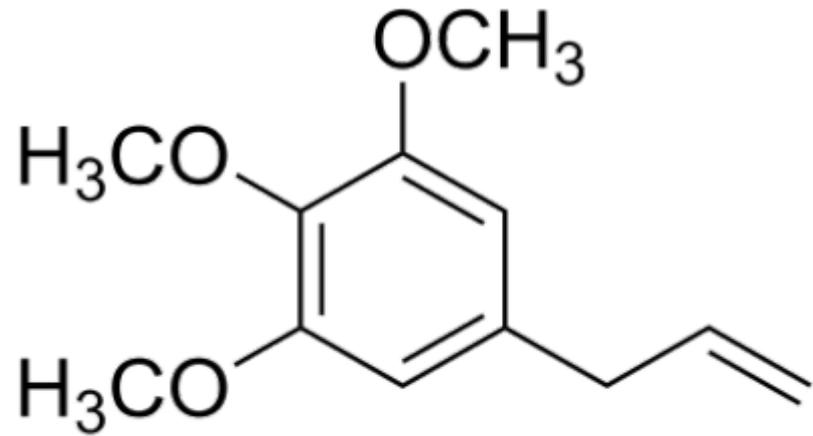
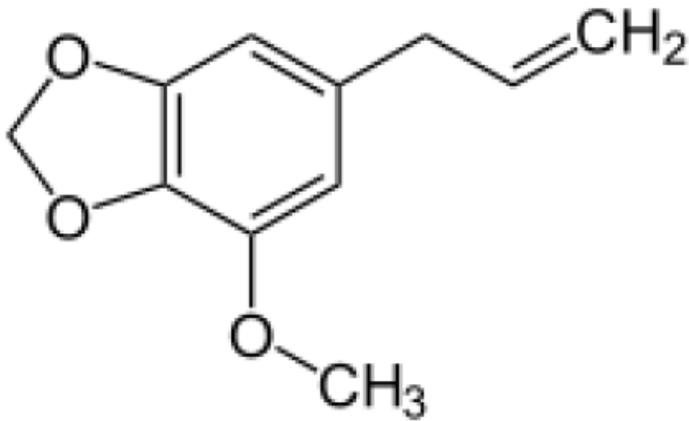
myristicine



elemicin

الذبيوت الكارة جاي من sheckmick acid





myristicine

elemicin

بجملو
myristicine

هبة اسود لين كما جوزة العلبا

as trace
في عائلة الالفلاف