

# **MAGNOLIACEAE**

## **(Magnolia Family)**

The members of the perianth in this family are acyclically arranged and contain volatile oil.

Most of them grow in the tropics and in the temperate regions of Northern Hemisphere; are in the form of trees or shrubs.

Flowers big, actinomorphic, a bract, similar to spathe is found at the base of the bud.

Petals and stamens are numerous.

# ***Illicium verum***

**(Star Anise, Yıldız anasonu)**

Grows in China, Japan and the  
Philippines.

The fruit, **Fructus Anisi stellati (Anisi stellati fructus)** (Star Anise fruit) yields a volatile oil called **Oleum Anisi stellati (Anisi stellati oleum)** with steam distillation (3-5%).

This drug is rich in **anethole** (80-90%) and is called “Yıldız Anasonu” in Turkish since it has the odor of anise. It is also stomachic and carminative just like anise.

# MONIMIACEAE

**The plants of this family grow in the Southern hemisphere.**

# *Peumus boldus* (**Boldo**)

**Grows in Chili.**

**Cultivated in Italy and North Africa.**

Opposite, leathery, revolute  
leaves yield the drug  
**Folia Boldo** T.K. (**Boldi  
folium**) (Boldo Yaprağı).

Contains **boldine (alkaloid)**, **boldoglucin (heteroside)**, **volatile oil** and **tannin**;  
cholagogue\* in the diseases of gall bladder,  
**stimulant of digestion in liver deficiency.**  
**Boldine** is also hypnotic and increases the  
elimination of urea from the body.

(\*cholagogue: a drug or substance that promotes  
the flow of bile from the gall bladder into the  
duodenum)

**Fam: Nymphaeaceae**

**(Water Lily family, Nilüfergiller)**

Perennial, herbaceous plants living in fresh water in the tropics and temperate regions. The lamina of the leaves floating on the water are entire, the ones under the water are filiform.

## ***Nymphaea alba***

(European White Waterlily,  
Beyaz nilüfer) grows in ponds  
and has a rhizome.

## ***Nuphar luteum***

(Yellow waterlily, Sari  
nilüfer)  
Seen along with *Nymphaea alba*.

# ***Victoria regia (V. amazonica)***

The genus is named after Queen Victoria of the UK.

Grows in fresh waters of Central and South America; have round shaped leaves with a diameter of 2 m and length of 4-6 cm, floating on the water.

**This is the plant with the biggest leaves among Spermatophyta.**

# Fam: Berberidaceae

(Barberry family, Kadın tuzluğugiller)

Perennial herbaceous plants or shrubs growing in the temperate regions of Northern Hemisphere.

**The flower structure of the plants of this family is similar to monocotyledones; i.e. calyx and corolla are not distinctly differentiated and mostly trimeric.**

# ***Podophyllum peltatum***

**(Mayapple, Adam's  
apple, American  
mandrake)**

**Origin: America**

**The plant is poisonous, has only 2 palmately lobed leaves, the flower is solitary.**

**Rhizomes of the plant are known as **Rhizoma Podophylli (Podophylli rhizoma)** and a resin is obtained from this drug called **Resina Podophylli** T. F. (**Podophylli resina**) or **Podophyllum** T.K. (podofilin), contains **podophyllotoxine** and therefore is **strongly purgative** and **cholagogue**.**

**These drugs are poisonous and are used today for the treatment of **skin tumors and warts\***.**

(\*wart: A hard rough lump growing on the skin, caused by infection with certain viruses and occurring typically on the hands or feet)



# ***Berberis sp.***

**(Barberry, ambarbaris, kadıntuzluğu, amberparis)**

This genus gives the name to the family.

## ***Berberis crataegina***

**(Berberry, karamuk, diken  
üzümü)**

Flowers yellow, numerous, in the form of a panicle.

Calyx, corolla and androceum have 6 members each.

The fruit is a small, ovoid berry.

Wood of the plant has yellow color due to the alkaloid called **berberine** that it contains. Roots are used in wool dyeing.

# ***Berberis vulgaris*** **(European barberry, Jaundice berry)**

Has yellow flowers and red fruits. Fruits and roots contain **berberine**, and are used as **vasoconstrictor\***, **cholagogue** and **spasmolytic\*\***.

(\*vasoconstrictor: a drug, agent, or nerve that causes narrowing (vasoconstriction) of the walls of blood vessels; \*\*spasmolytic: Relieving or preventing spasms, especially of smooth muscle = antispasmodic)

# ***Leontice leontopetalum***

**(Lion's foot, Arslan  
pençesi, Kirkbaş,  
patlangaç)**

Tubers contains **alkaloid (petaline)** and **saponoside (leontosaponin)**, used as **antiepileptic** and **antispasmodic**.

Fam:

**Menispermaceae**

**Grows in the tropics; most of them are climbing and poisonous plants.**

# ***Jatrorrhiza palmata*** **(Colombo)**

Origin: South of Africa, Madagascar.

Roots resemble carrot and are called **Radix Colombo (Colombo radix)** T.K. (Güvercin kökü), the roots are collected, sliced and then dried.

Contains **alkaloid** and **bitter substance** and was used as **tonic, against dysentery\* and diarrhea.**

(\*dysentery. An inflammatory disorder of the lower intestinal tract, usually caused by a bacterial, parasitic, or protozoan infection and resulting in pain, fever, and severe diarrhea, often accompanied by the passage of blood and mucus)

# ***Chondodendron tomentosum***

## **(Curare vine)**

This species and some other *Chondodendron* species are used in the preparation of curare (arrow poison) by native South Americans.

Leaves and branches of the plant are extracted with water, these extracts are filled into bamboo and **tube curare** is obtained. An alkaloid named **d-tubocurarine** found in this extract is **muscle relaxant**\*.

(\*muscle relaxant: a drug that reduces muscle contractility by blocking the transmission of nerve impulses or by decreasing the excitability of the motor end plate or by other actions)

This compound connects to acetylcholine receptors and blocks them. Acetylcholine is responsible for neuromuscular transmission.

Thus, muscle activity is blocked, respiration muscles are paralyzed.

**Fam: Annonaceae**

# ***Cananga odorata* (Ylang ylang)**

**Grows in Africa and Indian Islands.**

The volatile oil obtained from the flowers is called **Oleum Ilang Ilang (Ilang Ilang Oil)** (Ylang ylang oil, Cananga oil) and is used in cosmetic industry.

# Fam: Myristicaceae

Trees or shrubs growing in the tropics. The fruit is a drupe and the seed is surrounded by a colored arillus.



# ***Myristica fragrans* (Nutmeg)**

**Origin: Moluk Islands  
(Indonesia).**

Fruit is a yellow colored drupe resembling peach fruit, cracks open when mature and bright red colored fleshy **arillus** is seen.

**Both seeds **Semen Myristicae (Myristicae semen)** (Küçük hindistancevizi) and this arillus **Macis** are used as drugs.**

Seeds contain **fixed oil** and **volatile oil**, and also a phenyl propane derivative called **myristicin** is present; used externally for rheumatism.

Used as **carminative and somnific\*** for children, however it is narcotic and therefore harmful due to this substance and toxic if taken in high amounts.  
Leads to atropin-like syndrome requiring medical attention.  
(\*somnific: inducing sleep)

**Macis** is also used for the same purpose.

**Nutmeg is also used as spice.**

# **Fam: Lauraceae**

## **(Laurel Family, Defnegiller)**

One of the most important families of the Ranales order.

Mostly grows in the tropics; consists of woody, herbaceous plants, trees or shrubs containing volatile oil.

# ***Laurus nobilis***

**(Bay laurel, Bay tree,  
Defne ağacı)**

**Element of Mediterranean  
region, tree up to 15 m.**

**Leaves leathery, elliptic-lanceolate,  
margins undulate, strong aromatic  
when crushed.**

**Bay leaves, **Folium Lauri (Lauri folium)** are the richest organ of the plant in respect to volatile oil, used in the production of Laurel oil and for culinary purposes.**

# **Fructus Lauri (Lauri Fructus)**

(defne meyvası) is rich in fixed oil which is obtained by mechanical means: **Oleum Lauri (Lauri Oleum)** (Laurel Seed Oil, Defne yağı, Tehnel yağı), used in rheumatism pain in the form of a pommade.

Has been the symbol for victory and success since ancient times, therefore it is used in the crowns of heroes.

The plant found in the logo of pharmacy is also laurel.

# ***Persea gratissima (P. americana)*** **(Avocado, Tereyağ ağacı, avokado)**

**Origin: Central  
America.**

**Avocado fruits are pear shaped and  
green colored, 10-15 cm, rich in protein  
and vitamins.**

**Avocado oil has recently been used in cosmetic preparations.**

**Avocado leaves are used to pass kidney stones traditionally.**

# ***Cinnamomum cassia*** **(Chinese Cinnamon, Çin tarçın ağacı)**

An evergreen species growing and being cultivated in Southeast China.

The barks of young trunks and branches are peeled off, dried and **Cortex Cinnamomi cassiae** T.K. (Çin tarçını kabuğu) is obtained.

***Cinnamomum zeylanicum***  
**(Ceylon Cinnamon, Seylan tarçını ağacı)**

**Origin: Ceylon and Java Island**

The bark of the young trunks and branches are collected, cork tissue is removed, the remaining part is called **Cortex Cinnamomi zeylanici (Cinnamomi cortex)** T.K. (Seylan tarçını kabuğu).

Both drugs contain **1-2% volatile oil**; this volatile oil is rich in **cinnamic aldehyde** (70-80%), **eugenol** is also present.

The mostly used one is Ceylon Cinnamon.

Leaves yield another volatile oil by steam distillation that is rich in **eugenol**. **Eugenol** is a valuable compound since it is used in the synthesis of **vanillin**.

# *Cinnamomum camphora* (Camphor tree)

Origin: Far East, South China and Japan;  
trees up to 40-50 m.

Woods of 20-25 year old trees are cut and yield 2-3% volatile oil with steam distillation.

If this volatile is oil left in cold, camphor precipitates as crystals.

These crystals, **Camphora** T.K. (Kafur), are used as cardiac and respiratory analeptic\*.

(\*analeptic: restorative or stimulating, as a drug or medication)

Camphora is externally rubefacient, and used to relieve rheumatoid pain externally as ethanolic solution.

If applied as mist or pommade containing camphora, shows antiseptic effect in the lungs and respiratory track.



# **Order: Papaverales (Rhoeadales)**

**Contains annual or perennial herbaceous plants  
growing in the Northern Hemisphere.**

**Fam: Papaveraceae**  
**(Poppy Family, Gelincikgiller)**  
**Usually contains white or colored latex.**

General flower formula a.  $K_2 C_{2+2} A_\infty G_{(2-\infty)}$

The fruit is generally a poricide capsula.

# ***PAPAVER sp.***

**Grows in the entire Mediterranean region.**

**Annual or perennial plants up to 50-150 cm.**

**Stamens are numerous.**

**Stylus is absent, stigma is according to the number of carpels, in the form of a radially arranged, flat tray or disc.**

**Pores (or valves) open just below this disk when the fruit mature.**

***Papaver* species are very important in pharmacy since it contains **alkaloids** in its **latex**.**

***Papaver  
somniferum***  
**(Opium Poppy,  
Haşhaş)**

**Annual, cultivated plant.**

**1) *P. somniferum* subs.**

***anatolicum* (körhaşhaş),  
the fruit does not open when  
mature**

**2) *P. somniferum* subsp.**

***spontaneum* (açık haşhaş).**

# **Fructus Papaveris**

## **(Papaveris fructus)**

Immature opium poppy capsules are scared and a white milky fluid flows out.

This milk gets dark in color and harder in a short period.

Collected with special blades, kneaded and is **Opium** T. F. (Afyon) obtained.

**Opium** contains 10-25%  
mixture of alkaloids  
(opium alkaloids).

The most important ones are as follows:

**morphine:** painkiller, antidiarrheic;

**papaverine:** spasmolytic;

**codeine and noscapine** (formerly  
narcotine): antitussive

**Since opium leads to addiction, its usage is prohibited.**

**Mature capsules contain 0.18-  
0.28% morphine.**

**Seeds do not contain alkaloid, however has fixed oil of 50-60%.**

Leaves of *Papaver somniferum* also yield a drug, **Folium Papaveris (Papaveris folium)** T.K. (Haşhaş yaprağı), used as painkiller externally traditionally, however this knowledge lacks scientific evidence.

**Fructus Papaveris immaturi (Papaveris immaturi fructus)**, are immature fruits with the seeds removed, contains 0.2-0.3% opium alkaloids.  
Used in folk medicine as a gargle in toothache and somnific for the children.

**Oleum Papaveris** is the oil obtained from opium seeds by pressing.

Used in pharmaceutical technology, consumed as culinary oil. **DOES NOT CONTAIN ALKALOIDS!!!**.



# ***Papaver rhoeas***

(Corn Poppy, Field Poppy, Gelincik)

**Red petals have a black spot  
at the base.**

Petals, **Flos Rhoeados (Rhoeados flos)**  
T.K. (Gelincik çiçeği) have red color due  
to **anthocyanosides** that it contains,  
used as colorant in syrups.

It is also antitusive due to the alkaloid  
called **rhoeadine** that it contains.

# ***Glaucium corniculatum***

**(Blackspot hornpoppy, Kırmızı boynuz gelincik)**

**Aerial parts contain alkaloid: sedative and also used in diabetes.**

# ***Chelidonium majus***

**(Greater Celandine,  
Kırlangiçotu)**

**Orange colored latex of  
the plant is used in the  
treatment of warts.**