

SOME ADDITIONAL TOPICS

IMPORTANT MEDICINAL PLANTS

Introduction:

- Study of Medicinal plants is called **Pharmacognosy**.
- Study of drug action on living beings is called **Pharmacology**.
- The earliest reference of drugs in India are found in **Rigveda** which many drug plants reported in **charak samhita**.
- **Theophrastus (370–287 B.C.)** describe some medicinal plants in his book "**Historia de plantarum**"
- **Dioscoride (702 B.C.)** gave the description of medicinal plants in '**De Mataria - Medica**'
- **Hippocrates (460 - 370 B.C)** is known as **Father of medicines**.

(I) SARPAGANDHA OR RAUWOLFIA SERPENTINA:

Hindi name	–	Sarpagandha, Chandramar
English name	–	Serpent wood, snake root
Botanical name	–	<i>Rauwolfia serpentina</i>
Family	–	Apocynaceae
Useful plant part	–	Bark of Roots

Distribution:

- It is naturally found in South america, Africa, Srilanka, Indonesia, Malasia, China, Japan, Thailand, India, Pakistan, Burma.
- In india it is found in the Himalayan region, Sikkim, Assam, Darjeeling, Andaman & Nicobar and Westernghat.

Habit :

- It is a native of India.
- It is perennial shrub which can attain a height upto one metre. It bears tuberous roots. Its stem is surrounded by white bark.
- **Charls plumiger (1703)** suggested the name **Rauwolfia**.

Medicine:

- **Medicine** is obtained from the **bark of root**. Bark of roots remove three-four year old plants.
- **Muller and Schlittler (1652)** isolated **resperine**.
- Sarpagandha contains 80 types of alkaloids.

Most of important alkaloids are as follows

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|------------------|----------------|------------------|------------------|
| (1) Resperine | (2) Serpentine | (3) Raserpinine | (4) Daserpidine |
| (5) Serpentinine | (6) Ajmaline | (7) Rauwolfinine | (8) Rescinnamine |

Medicinal Uses:

- It is useful to **decrease the high blood pressure**.
- Rasperine is widely used as sedative in the treatment of Hypertension and depression.
- It is used in the treatment of **epilepsy** and insomnia.
- It is useful to reduce the fear, angryness and madness.
- It is used as antidotes to the bites of poisonous reptiles and other poisonous animals.
- Root decoction is also empolyed to increase uterine contraction.
- It can terminate the effect (**schizophrenia like symptoms**) of **LSD (Lysergic acid dicthylamide)** from central nervous system (CNS).

- Leaf juices are instilled into eyes as a remedy for the opacities of the cornea.
- Resperine is exploited to cure the patients with trembling and disordered voice caused by chronic alcoholism.

(II) Quinine :

Hindi name	–	Cunane
English name	–	Cinchona officinalis
Botanical name	–	Quinine or Fever bark tree
Family	–	Rubiaceae
Useful plant part	–	Bark of stem

Distribution :

- It is native of south america (Peru).
- It is naturally found in south america and jave island.
- It is cultivated in India, Burma, Indonesia, Tanjania. It is found in Nilgiris up to 2,200 metre. It is well distributed in those areas where annual rainfall is about 220 cm.

Habit :

- It was discovered by **La Condamine (1739) in Peru**.
- The efficiency of cinchona bark against malaria was discovered when countess of chinchon; wife of viceroy of peru, was cured of malaria (1638) by this bark through Linnaeus.
- It was firstly introduced in india by Anderson (1860). It may attain a height of 50 feet or more.
- Stem is surrounded by light brown or dark brown coloured bark.

Medicine :

- **Stem bark is richest source of cunine** where as root bark contain highest concentration of total alkaloids.
- The bark is removed from twelve year old tree.
- Bark of stem contain 25 types of alkaloids. The important alkalods are as follows

(1) Quinine (2) Quinidine (3) Cinchonine (4) Cinchonidine

These four alkaloids are collectively called Totaquine.

Some other alkaloids are :

(1) Hydroquinine (2) Cinchonine (3) Cusconine (4) Hydroquinidine
(5) Hydroquinidine (6) Javanine (7) Cuscamine (8) Cuscamidine

Medicinal Uses :

- (i) Drug quinine is useful for the treatment of malaria. It kills the asexual **schizont stage of malaria parasite plasmodium**.
- (ii) It is also used in the treatment of whooping cough, Hayfever, enlargement of spleen.
- (iii) It is used in the treatment of Amoebiosis, Pneumonia.
- (iv) Quinine, Quinidine, Cinchonidine and cinchonine is used as antipyretics.
- Quinine is also used as antiseptic for the preservation of precious clothes, feather, fur. Indiscriminate use of cunine for longtime weakens the heart, deafness, blindness, abortion etc.

(III) Opium or Poppy :

Hindi name	–	Afim
English name	–	Poppy, opium
Botanical name	–	<i>Papaver somniferum</i>
Family	–	Papavaraceae

Distribution :

- It is mainly grown in temperate region of Europe, Asia and africa. It is widely distributed in Himalayan region
- It is a native of Asia minor.
- It is cultivated in Madhya pradesh (especially in Mandasore, neemach, Ratalam districts), Rajasthan (especially in chittorgarh, Jhalawar, Banswara districts) and Uttar pradesh (especially in Faizabad and Barali).

Habit:

- It is annual herbaceous plant.
- Its height is about 2–3 feet, Fruit is capsule.

Medicine :

- Incision are made on unripe capsule which yield **yellow latex**. The latter is converted in Brown-black substance on dryness.
- It contains 30 types of alkaloids. Out of them the important alkaloids are as follows

(i) Morphine	(ii) Codeine	(iii) Thebaine	(iv) Narcotine
(v) Papaverine	(vi) narceine	(vii) Noscapine	

Medicinal uses :

- (i) Morphine is used as sedative which is used as sleeping to reduce fatigue, excitation & stress
- (ii) Codeine is used in the treatment of coughing
- (iii) It is used to prevent diarrhoea & vomiting.
- (iv) It is used in the treatment of Piles.
- (v) Papaverin is beneficial in Asthma. It is anti spasmodic & used as vasodilator to remove pain in coronary & cerebral thrombosis.
- (vi) It can be used to reduce pain after parturition.
- (vii) It is used as pain killer in the treatment of liver, inflammation, injury, sprain, bodypain.

(IV) Heeng (*Ferula assfoetida*) :

General name	Heeng
Botanical name	<i>Ferula assfoetida</i>
English name	Heeng, Devil's dung
Family	Umbelliferae or Apiaceae
Useful plant part	Oleogumresin obtained from root.

Distribution : It is mainly grown in eastern iran, west afganistan, kashmir, & Punjab.

- It is native of Afganistan.

Habit : It is perennial herbaceous plant.

Medicine :

- Resin like substance comes out after making a cut, at the junction root & stem. The former becomes turned in to darkbrown coloured solid structure in the presence of air, called oleogumresin.
- Oleogumresin contains ferulic acid, carbon disulphide &, volatile oil, Alkaloids are absent in it.
- Medicine is obtained as semi solid or powder,
- In india, Hingadivati, keranjadiyog and Rajpravartini etc. are aurvedic medicines manufactured by Heeng.
- Some modern medicines are – Tincture asafoetide, pilula asfoctida & Plaster of asafoetida.

Medicinal uses :

- (1) Useful in colicpain, Indigestion & expell intestinal worm.
- (2) To flavour food material.
- (3) In the treament of cholera, jaundice, cough, whooping cough.
- (4) It affects Nervous system and respiratory system. It is useful in the treatment of epilepsy, bronchitis, Pneumonia in infants.

(V) Turmeric :

Common name	Huldi
Botanical name	<i>Curcuma longa</i>
English name	Turmeric
Family	Gingiberaceae
Useful plant part	Underground rhizome

Distribution :

- It is native of India (Cochin)
- It is mainly grown in India, China, Indonesia, sri Lanka, Pakistan, West Indies.
- It is main producer country of Turmeric. In india, it is cultivated in Maharashtra. Andra pradesh, Orissa, Bihar, Tamilnadu, Karnataka.

Habit :

- It is perennial herb.

Medicine :

- Curcumine and zingeberine medicines are obtained from underground rhizome.

Medicinal uses :

- (1) As a blood purifier.
 - (2) It is used in injury, wound, Skin diseases due to its antiseptic property.
 - (3) It is used alongwith milk for the treatment of external & internal injuries.
 - (4) As a condiment & dyes.
 - (5) In the treament of cold, coughing etc.
 - (6) Useful in liver and urinary diseases.
 - (7) It is used in making cosmetics of women due to its antiseptic properties and capacity of healing of wound.
- Red coloured kum kum is prepared by reaction between Turmeric powder and H_2SO_4 .

(VI) Brahmi :

Common name	Brahmi
Botanical name	<i>Centella asiatica</i>
English name	Asiatic pennywort
Family	Apiaceae
Useful plant part	Leaves

Uses : Antidote against cholera, as a brain tonic also cures madness.

(VII) Guggal:

Common name	Guggal
Botanical name	<i>Commifera wightii</i>
English name	Indian bdellium tree
Family	Barseraceae
Useful plant part	bark of stem secreting milky oleoresin

Uses : It is effectively used to reduce blood cholesterol level, obesity, used in treatment of Rheumatism. healing of fractures.

(VIII) Ephedra:

Common name	Khanda, Phok
Botanical name	<i>Ephedra gerardiana</i>
English name	Jointed fir
Family	Ephedraceae
Useful plant part	Dried stem yields ephedrine

Uses : An **alkaloid ephedrine** is obtained that is used to cure fever, hay fever, cough, cold, bronchitis, Asthma, used as cardiac stimulant.

(IX) Karela :

Common name	Karela
Botanical name	<i>Momordica charantia</i>
English name	Bitter gourd
Family	Cucurbitaceae
Useful plant part	Fruits rich in tetracyclic triterpens

Uses : It is useful in diabetes.

(X) Saphad musli:

Common name	Saphad musli
Botanical name	<i>Chlorophytum borivillianum</i>
English name	
Family	Liliaceae
Useful plant part	Roots

Uses : It is effective in the treatment of deficiency of maleness.

Resonate the Concept

Resonate the concept

1. It is called Devil's dung due to bitter taste and specific odour.
2. Heroine is got from poppy. The former is Diacetyl morphine that is strong analgesic. Brown sugar is prepared by it.
3. Pier-Jean Robiquet –1832 firstly isolated codeine from poppy.
4. German Scientist F.W.A Sertuner (1806) firstly isolated Morphine from poppy.
5. Four alkaloids – Quinine, Quinidine, Chinchonine, Cinchonidine found in the Cinchona plant are collectively called Tonaquine.
6. Sarpagandha is called Medicine of mad man.