MEDICINAL PLANTS

The branch of science in which study of medicinal plants is done known as **Pharmacognosy.** They study the process of medicine is called **Pharmacology. Hippocrates** is known as father of medicine. **" Discorides"** is knows as father of pharmacognosy.

1. Cinchona officinalis

(i) **Hindi Name :-** "Quinine" or "Jaisuitbark" or "Peruvian bark" or " Countess bark".
Cinchona officinalis is Dicotyledon and belong to **Rubiaceae** family.
Distribution :- This plant is mainly found in Peru country. Its many species are grown in India, **Indonesia** and **Jawa lsland.** The maximum amount of quinine (medicine) obtains from **C.lidgerina.**

(ii) **Habit :-** This medium size plant and **perennial.** The credit goes on **" La-condamine"** for discovery of this plant. The name of Cinchona was coined by **" Linnaeus"** on the name of Mrs. of Vice Roy of Peru Island – **"Cinchon".** This plant first time introduced in India from Jawa-Island by **"Anderson".**

(iii) **Source of Medicine :-** This quinine is obtained from the **bark** of plants of genus of cinchona. First of all bark removed from the stem, branches and root (mainly stem) during the rainy season. The bark almost contain approximately 25 type of alkalloids like **Quinine, Quinidine, Cinchonine** and **Cinchonidine.**
The chemical formula of quinine is $C_{20}H_{24}O_2N_2$. The quinine is obtained in the form of quinine sulphate. All the alkalloids of Cinchona collectively known as **"Totoquine".**

(iv) **Medicinal uses :-**
(i) The maximum uses of quinine is for treatment of **Malaria.** It is effective on asexual stage – (schizont of malarial parasite).
(ii) Quinine used in bacterial infection and **pneumonia** for their treatment because it is **antibacterial.**
(iii) Its application is also effective in the infection of **protozoans.** It is used in **amoebic dysentery.**
(iv) Quinine is **"insects repellent".** It used for protection of costly clothes. fur and feathers.
(v) Excluding quinine, Quinidine used as **"inhibit auricular stimulation** "[cardiac depressant].
(vi) Quinine is also used for making **hair lotion.**

(v) **Precautions :-**
(i) High-dose of quinine can causes **"blindness", "deafness" and "giddiness".**
(ii) It should not be give to pregnant ladies and heart patient.

2. Curcuma longa

"Haldi" or **"Turmeric"** This is of family **Zingiberaceae** and **monocotyledon** plant.

(i) **Distribution :-** The cultivation of turmeric is mainly in **India** & **China.** But now a days it is also grown in **Pakistan, Sri Lanka, Indonesia** and **Peru.**

(ii) **Habit :-** This is a perennial herbs which grows as under ground rhizomes.

(iii) **Source of Drug :-**
(i) The medicine obtains from the under ground **rhizomes.**
(ii) First of all rhizomes boil in water for 10-12 hours, then after dries in sun light. But this process, the yellow colour oozes from the secreting cells and spread over the all parts of rhizome.

(iv) **Composition of Drug :-** This is a **cellular** and in the form of powder. Turmeric is a type of **tissues.** It contains volatile oils. The main coloured alkalloids are **curcumine** and **zingiberine.** The volatile oil usually is **umbelliferine.**

(v) Medicinal Uses :-

(i) Turmeric used as a **carminative** (digestive). It remove **indigestion.** It increase the secretion of **bile juice.**
(ii) It is a **tonic** and **stimulant.**
(iii) It used as in the form of **antihelmintic.**
(iv) Its decoction is useful in **cold and cough.**
(v) It is also used as **blood purifier**
(vi) It used witnh milk as pain killer for any type of injury. It also help in wound healing.
(vii) It uses in **cosmetic** materials. By the use of this the skin becomes soft and smooth.
(viii) **"Kumkum"** which is the symbol's of Indian married woman's formed from turmeric. When turmeric powder treated with concentrated Sulphuric acid then it change into red colour power.
(ix) There is no side effect of turmeric. It is used as spices.

3. Fefula asafoetida

"Hing" of **'asafoetida'** or **'Devil's dung'**

The family of asafoetida is **Umbelliferae** or **Apiaceae.** It is Dicotyledon plant. This plant is **perennial** herbs.

(i) Distribution :- It is extensively found in **India, East Iran** and West **Afganistan.** In India, only grown in **valley of Kashmir.**

(ii) Source of Drug :- The drug obtains from the root. If the roots cut from the base of the stethen it give more medicine. The **resin** like material come out from the cut. It becomes dark brown in colour after dryness. This is very bitter in taste and it has **pungent smell.** The cut is nade on the root in the month of April before flowering.

(iii) Composition of drug :- Asafoetida is **acellular oleogum resin.** It contains **carbon disulphide,**
Penine, umbelliferine and **Ferulic acid.** Its pungent smell and bitter taste is only due to presence of carbon disulphide compound. It lack alkaloids.

(iv) Medicinal uses :-

(i) It used as **spasm releiver.** It cure **flatulent colic pain.**
(ii) It used in **Cholera, whooping cough** and **Jaumdice.**
(iii) It is used in the disease who is suffering by **"fits" or Epilepsy.**
(iv) It is used in respiratory disease – **bronchitis.**
(v) It help to remove **worms** from alimentary canal.
(vi) It is used as spices in India.
(vii) It is used to check abdominal swelling in the form of paste
(viii) It is very useful medicine to remove **constipation.** [As powerful **anticonstipation agent]**
(ix) It has no side effect.

4. Papaver somniferum

Comon name – "Post", Poppy", "Apheem"

This plant is Dicotyledon of Papaveraceae family.

(i) Distribution :- It is extensively cultivated in India, Japan, China, Pakistan, Jurkey and Iran. In India it is grown in district of **Rajasthan** such as **Banswara, Jhalawar, Chittore ; and Faizabad** of Uttar Pradesh; **Ratlam, Neemach and Mandsor** in M.P. It is also known as **"Black Gold".** The cultivation of poppy is under the control of Government. The 70% of opium of world is cultivated in India.

(ii) **Habit :-** The plant is **Annual herb.** The fruit is a capsule and persistant with stigma. The flowers are big. white, pink or red in colour.

(iii) **Source of Drug :-** The drug is obtains from the **unriped capsule.** The parallel cuts are marked on the capsule. From these cuts yellow coloured milk comes out. It is knows as latex. When dries, it becomes dark brown or black in colours. This opium is batter in taste and with smell. The cultivation of best quality of opium is in Mandsore district of Madhya Pradesh.

(iv) **Composition of Drug :-** The drug is acellular latex. The of opium contains 25 types of alkalloids.

Out of them the main alkalloids as follows :-

Morphine	-	09-14%	Codeine	-	0.5 – 02 %
Nascapine	-	03-10%	papaverine	-	0.8-1%
Thebaine	-	0.2-1%	Narcine	-	0.2-4%

Other alkalloids :- The pseudomorphine, protopine cryptopine etc. narcotic substances obtain. Some of more dangerous substances obtain from the opium which have many times more effective than opium such as – **Heroin** or **Diacetylemophine.**

(v) **Medicinal uses :-**

(i) Morphine is a effective and **strong analgesic.** It is extensively used in all type of pain like buring, fracture of bones, kidney pain etc. (Visceral pain)

(ii) The opium has **sedative action** and induce **sleep.** It means it release all **anxiety** and bring a **sound sleep.**

(iii) Codeine used in **cough** and **cold.** It is an effective drug for cough.

(iv) This drug is used for treatment of **insomnia.** All the alkalloids of opium have effect on central nervous system.

(v) It is used in **dysentery.**

(vi) The paste of opium is used for **piles**

(vii) It stops tne possibility of **abortion** and it is also very useful to relieve the pain after the birth of child.

(viii) It is also very useful in **ulcers** and **gastritis.**

(vi) **Side effects :-** The continuous use of opium a person becomes **assictive** and then after it has no effect. It reduce hunger and responsible for constipation. Chinese started a **opium-war** because there habitants were addicted.

(vii) **Precaution :-**

(i) Opium should not be given to the **child** and **old persons.**

(ii) The person should not taken those who are suffering by **respiratory disease.**

5. Rauwolfia Serpentina

(i) **Common Name – "Sarp Gandha"** or **'Small moon'** or **'chand mukha'** or **' serpent root'** or **"snake root".** It is a dicotyledon plant of **apocyanaceae** family.

(ii) **Distribution :-** It is naturally found in **Burma, Pakistan, Jawa, Nepal and Thailand.** It is distributed in **Assam. Sikkim, Bihar and U.P. in India.** The name of this plant (Rauwolfia) coined by **Charles Pluminger** on a German Scientist – **Leonard rauwolf.**

(iii) **Habit :-** It is perennial, erect bushes.

(iv) **Source of Drug :-** It is usually obtains from the **root with bark** of the plant. First of all root taken with its bark after 2-3 years old plant. The roots are pungent and bitter in taste.

(v) Composition of Drug:- The drug obtains in form of cellular and powder. The root of Rauwolfia contains almost 70 types of alkalloids in which **reserpine** and **serpentine** is the main alkalloids. The other alkalloids are **Ajmaline, Rauwolfine, Riscinnamine and Yohimbine** etc. The chemical formula of Reserpine is $C_{33}H_{40}$ N_2O_9. . The first time reserpine extracted by **Mulller** and **Schitler** from the plant. Reserpine is a most important drug.

(vi) Medicinal uses:-

(i) Reserpine is used from ancient period for **snake's biting, epilepsy, insanity** and **insomnia.**

(ii) Reserpine reduce **high blood pressure .** It decrease high blood pressure during **hypertension.**

(iii) It is used to cure voice which is disturb due to drinking of alcohol.

(iv) It is used to cease the effect of high maidness (mental imbalance or Schizophrenia) it is also very useful to release the **fear** and **anger** as well as reduced the **excitement.**

(v) It is called as **"medicine of insanity"** in india.

(vi) Reserpine increase the **peristalsis movement** and secretion of **gastric juice.**

(vii) The flow of blood increase in brain through the **ajmaline.** The juice of leaves of ajmaline removes the opacity of white region of eye.

(viii) The effect of L.S.D. [Lysergic acid di ethylamide] on central nervous system, decreased by reserpine.

(ix) It is used to stop the **aggressive nature** of wild animals.

(x) It contracts the uterus, so that it is used to stop the **excess bleeding** during birth.

(vii) Precautions :- This drug should not be given to patient of **Peptic ulcer, asthma** and **heart patients.**

6. Ephedra

Botanical name :- Ephedra sp.
Common Name :- Ma Huang, Yellow hemp
Family :- Ephedraceae
Source of drug :- Stem and branchlets
Composition of drug :- Some following alkaloids are present

1. Ephedrine
2. Pseudoephedrine
3. Ephadine

Most important alkaloid is ephedrine ($C_{10}H_{15}$ ON)
Main uses :-

1. Ephedrine is used as a nasal drops in sinus congestion.
2. Ephedrine is used for treatment of bronchitis and cough.
3. It is used in asthma

2. Withania somnifera

Hindi name :- Ashwagandha
Family – Solanaceae
Source of drug :- Roots (dried)
Composition of drug :- Main alkalodis of this plant are withanine, withananine, somnine and somniferinine.
Medicinal uses :-

1. Arthritis, asthama and in whooping cough

2. It prevent impotency, also useful in infertility, low sperm count
3. It acts against scabies and ulcers

8. Commiphora weightii

Hindi name :- Guggal
Family – Burseraceae (dicot)
Source of drug :- Gummy resin. This resin is called guggulipid.
This gummy resin is harvested from the plants' bark
Composition of drug :- Guggalsterone is found in guggal
Medicinal uses :-
1. It reduces cholesterol in blood
2. It is used to fight obesity
3. It is used in arthritis
4. It is used in pyorrhoea
5. It is also used in cold and cough
6. It is used in ulcers.

9. Centella asiatica

Hindi name :- Brahmi
Family – Umbelliferae or **Apiaceae** (dicot)
Source of drug :- Whole plant
Composition of drug :- Two main active constituents in brahmi are bacoside A and B. Bacoside A assists in release of nitric oxide that allows then relaxation of the veins to allow the blood to flow more freely throughout the body. Bacoside B is a protein attributed to nourishing the brain cells

Main uses :-
1. It is a brain tonic
2. It is used in treatment of leprosy
3. It stimulates hair growth
4. It improves the general health
5. It is blood purifier

10. Momordica charantia

Hindi name :- Bitter melon or bitter gourd
Family – Cucurbitaceae (dicot)
Source of drug :- Fruit
Composition of drug :- It is a rich source of phosphorous.

Uses:-
1. The bitter gourd is specially used as a folk medicine for diabetes
2. It purifies the blood
3. Juice of the fresh leaves of bitter gourd is valuable in piles
4. It is also used in respiratory disease
5. Juice of fresh leaves is used in cholera and diarrhea
6. Leaf juice is used in treatment of alcoholism.

11. Chlorophytum borivillianum

Hindi name :- Safed musli
Family – It is monocot plant belongs to Liliaceae family
Source of drug :- Tuberous root
Composition of drug :- It contains about 27 alkaloids, 2 to 17% steroid like saponine (mainly) stigmasterol and hecogenin. It also contain carbohydrates (40 to 50 %), protein (7 to 10%), minerals and vitamins (A, B, C, D, E and K)
Uses:-

1. It is aphrodisiac in nature
2. It is helpful in curing impotency
3. It has spermatogenetic property
4. It is used as a health tonic
5. It is used in diabetes and arthritis
6. It is considered as alternative to Viagra.
7. It improves mental and physical power in children
8. It is helpful in curing natal and post natal problems

Some other important Medicinal Plants

S.No.	Common name	Botanical Name	Family	Useful Plant part	Uses
1.	Neem	Azadirachta Indica	Meliaceae	Bark, leaf Flower,seed	Skin disease Insecticide Antihelmentic etc.
2.	Belladona	Atropa Belladona	Solanaceae	Root	Pupil dialation, Caugh and sedative
3.	Datura	Datura Stramonium	Solanaceae	All plant Parts (root, Stem leves)	Stimulant Sedative, antispasmodic, Asthama, arthritis
4.	Tulsi	Ocimum Sanctum	Labiatae	All plant parts (root, stem, leaf)	Malaria, Cough, Nausea, Fever, Stomachache, Mosquito repellant
5.	Emblica (Aonla)	Embilca Officinalis	Euphorbiaceae	Fruit	Indigestion, source of Vitamin C
6.	Ginger	Zingiber Officinale	Zingiberaceae	Rhizome	For increasing Disgestive power, Cough and acidity
7.	Muliathi	Glycyrrhiza Glabra	Leguminosae (Papilionatae)	Stem, root	It is a good medicine for Cough
8.	Digitalis	Digitalis purpura	Scrophulariaceae	Leaves	Cardiac stimulant And relieving dropsy