

Pharmacognosy | Chapter – 5 | Unit -5

1. **Antiseptics and Disinfectants:** - Benzoin, Myrrh, Neem, Turmeric.
2. **Antimalarial :-** Cinchona, Artemisia
3. **Oxytotic :-** Ergot
4. **Vitamins:-** Cod Liver Oil, Shark Liver oil
5. **Enzymes :-** Papaya, Diastase, Pancreatin, Yeast

Antiseptics and Disinfectants: -

Antiseptics:

- They are chemical agents used to reduce the risk of infection from germs and help stop the spread of disease.
- Antiseptic are applied to living tissues often to the skin in the form of hand rubs or washes.
- Sometimes antiseptics are called skin disinfectants.

One line Definition:-

Antiseptic are chemical agent which are used to kill pathogenic microbes and stop there growth.

Disinfectants :

- Disinfectants are also chemical substance but they are used to kill bacteria and their Spores.
- They are primarily applied to non-living surface such as for cleaning your countertops or tubes and sterilization of instruments are apparatus.

Benzoin:

Synonyms: Sumatra Benzoin, Gum Benzoin, Laban

Family: Styraceae

Biological Source: Benzoin is a balsamic resin obtained from *Styrax benzoin*.

Organoleptic Characters:

Colour	Greyish to Brown or grey
Odour	Aromatic and Characteristic
Taste	Sweetish and slightly acid

Chemical Constituents :

- Sumatra benzoin contains of free balsamic acid and their esters.
- It also contains triterpenic acids like siaresinolic acid and sumaresinolic acid.

Uses:

- It is used as expectorant carminative and diuretic.
- It is also used externally as an antiseptic and protective.
- It is used in the preparation of compound tincture of benzoin.
- It used in cosmetics industry for making soaps, perfumes.
- It is used in flavour agent in pharmaceutical preparations.

Myrrh

Synonyms: Gum myrrh, Bol myrrha

Family : Burseraceae

Biological Source: Myrrh is an obtained from *Commiphora molmol*.

Organoleptic Character:

Colour	Raddish to Brown
Odour	Aromatic
Taste	Agreeable

Chemical Constituents:

- It contains yellowish thick volatile oil, gum of resin.
- Resin contains ether- soluble resin acid, α , β and γ commiphoric acids.
- **They volatile oil contain terpenes cuminic aldehyde eugenol etc.**

Uses:

- It is used as stimulant and an antiseptic. It is also protective.
- Myrrh is astringent to the mucous membrane
- It used in mouth washes and gargles.

Neem

Synonyms: Margosa, Nim

Family: Meliaceae

Biological Source: It consists of leaves and other aerial parts of *Azadirachta indica*.

Chemical Constituents: The active ingredients azadirachtin, Salannin and meliantriol.

Neem tree contain different constituents in different part

Seed	Azadirachtin, Salanin, Meliantrol and meliacin
Leaves	Nimbosterol and Quercetin
Bark	Nimbin, Nimbinin, Nimbidin nimbosterol
Neem Oil	Chiefly glycerides of oleic (50%) and stearic 20% acids.

Uses:

- The neem is used in antiseptic and insecticides.
- Neem oil used in fungi.

- They are used in Anti-insect Product.

Turmeric

Synonyms: Haldi, Haridra, Indan Saffron

Family: Zingiberaceae

Biological source : Turmeric consist of dride as well as fresh rhizomes of plant known as *Curcuma longa* Linn

Chemical Constituents:

Turmeric contains volatile oil, resin, abundant zingiberaceous starch grains and yellow colouring substance known as curcuminoids.

Turnerone, zingiberene, borneal, cuprylic acid are the other constituents of turmeric oil.

Uses:-

- It is used as antiseptic expentorant.
- It used in colouring agent.

Anti malarials

Anti malarials drug is used to prevent or treatment of malaria.

Malaria is occurs due to infection by the four species of a

1. Plasmodium Malariae
2. Plasmodium vivax
3. Plasmodium ouale

4. Plasmodium falciparum

The Disease are infected into human body due to bite of female **Anopheles** mosquitos.

Cinchona :-

Synonyms : Jesuit's bark, Peruvian bark.

Family: Rubiaceae

Biological source:- It is dried bark of cultivated trees of cinchona *Calisaya wedd.*

Organoleptic characters:

Colour	Brownish grey to white
Odour	Slight and characteristic
Taste	Bitter and astringent

Chemical Constituents:-

Cinchona contains alkaloids. It consists of approximately 30 types of alkaloids like:- Quinidine, Quinine, cinchonine, cinchotannic acids etc.

Uses:-

- It is used in stomachic and tonic.
- It used in treatment of antimalaria
- It is used as antiseptic
- It is used to treatment dyspepsia and gastric catarrh.

Artemisia

It is also known as mugworts.

Synonyms:- Mugworts, wormwood and sagebrush.

Family:- Asteraceae.

Biological Source:

Artemisia annua is an annual herbaceous plant of the Asteraceae. *Artemisia annua* (L.)

Chemical constituents:

The main constituent of the plant is artemisinin, It is a promising anti-malarial drug effective against Plasmodium vivax and P. Falciparum. The distillation of aerial parts of the plant also yield essential oil (0.2 - 0.4%) which comprised of many chemical constituents with the major compounds including myrcene (3.8%), 1,8-cineole (5.5%), artemisia ketone (66.7%), linalool (3.4%), camphor (0.6%), alpha-pinene (0.032%), camphene (0.047%), β -pinene (0.882%), borneol (0.2%) and β caryophyllene (1.2%).

Uses:

- Thick, raised scars (hypertrophic scars). Developing research suggests that applying a lotion containing mugwort and menthol directly to the skin relieves itching in severe burn victims.
- Stomach problems (colic, diarrhea, cramps, constipation, slow digestion, vomiting).
- Epilepsy.
- Irregular menstrual periods.
- Low energy.
- Anxiety.
- Diarrhea.
- Constipation.

Oxytocics

- The drug which are used to stimulant effects on the motility of the Uterus.
- Oxytocic agents are medications that stimulate uterine activity and are used to induce labor, increase contractions, reduce the risk of postpartum hemorrhage immediately after birth, and expel fetal contents in incomplete abortion.

Ergot

Synonyms:- Ergot of rye Ergota

Family : Hypocreaceae

Biological Source: Ergot is the dried sclerotium of a fungus *Claviceps purpurea*.

Organoleptic characters:

Colour	Dark violet to black
Odour	Disagreeable and faint
Taste	Unpleasant

Chemical constituents:

- It contain Potent indole alkaloids.
- Ergometrine and ergometrinine are both water soluble chemical constituents of ergot.
- Ergotamine,ergotaminine, ergosinine and ergosine are water insoluble chemical constituents of ergot.
- They also contain histamine,tyramine and other amines as chemical constituents.
- They are composed of sterols like ergosterol and fungisterol.
- They contain clavinet, mannitol ,lactic acid and succinic acid as chemical composition.
- They have clavicepsin, ergoflavin, ergotic acid and betain alkaloid.

- They have elymoclavine. Sclerythrin and ergonovine. Putriscine, cadaverine, agmatine and amino acid work as colouring matter.

Uses:

- Ergot is used in labour to assist delivery.
- It used in the treatment of migraine.
- Ergometrine is also known as Ergonovine.

Vitamins

Vitamin is an organic molecule that is an essential micronutrient which an organism needs in small quantities for the proper functioning of its metabolism.

The vitamins received through the normal well balanced diet are not treated as drugs for a healthy person.

Shark Liver Oil:-

Synonyms: Oleum Selachoids

Biological Source:- Shark liver Oil is the fixed oil obtained from the fresh and carefully preserved livers of various species of the shark mainly *Hypoprion brevirostris*.

Chemical constituents:

- It contain vitamin A
- It also contains glycerides of saturated and unsaturated fatty acids.
- The chemical constituent of shark liver oil is alkylglycerol,commonly found in mother's milk and in bone marrow.

Uses:-

- It is used in the deficiency of Vitamin-A.
- It used in Burn and Sunburn ointment.

- It also used in this disease
- Leukemia and other cancers.
- Side effects of cancer treatment including radiation illness and lowered white cell count.
- Common cold.
- Flu.
- Skin problems.

Cod liver oil:-

Synonym :- Oleum morrhi

Family :- Gadidae

Biological Source :-

Cod liver oil is processed from fresh liver oil of cod fish *godus morrhua* and other species of *godus*

Chemical Constitution :-

- Glycerides esters of sat.acid of linoleic acid, oleic acid, myristic acid, Palmitic acid, Vit.A, VitD
- Unsaponified matter (1%)
- Cholesterol and squalene
- Fatty alcohol
- Elcosapentaenoic acid (7%)+ Docosahehexanoic acid (7%) = Omega-3-fatty acid

Uses :-

- Source of vitamin
- As nutritive
- Treatment of Rickets and T.B.

Enzymes :-

Enzymes are the protein substance which server a role of catalysing the biochemical reactions.

They are colloidal in nature, heat-labile and Highly specific in action.

Papaya:-

Synonyms:

Family: Caricaceae

Biological source:- it is a cultivated fruiting tree known as *Carica papaya* Linne.

Chemical Constituents:-

It different proteolytic enzymes present in papaya latex are the mixture of papain and chymopapain the proteolytic enzymes acting on polypeptides and amides.

Uses:-

- It is used for treating Gastro Intestinal tract (GIT) disorders, intestinal parasite infections and as a sedative and Diuretic.
- It also used for nerve pains.
- Papaya leaves are used to make medicine.
- It is used in clarification of beverages and as a meat tenderiser.

Diastase :-

Synonyms: Amylase, salivary diastase, malt diastase.

Biological source:

It is one of the amylolytic enzymes present in saliva.

Salivary diastase or ptyalin and pancreatic diastase or amylase found in the digestive tract of the animals.

Chemical Constituents:

It Contains dextrin, maltose, traces of glucose and amolytic enzyme diastase.

Uses:-

Diastase from various sources is used as digestant.

It is used in the production of predigested starchy foods and also for the conversion of starch to fermentable sugars in fermentation and brewing industries.

Yeast :-

Synonyms:-

Fungus, catalyst, foam, froth, leavening, fermenter.

Family:- Saccharomycetaceae

Biological Source:- Yeasts are very common in the environment, and are often isolated from sugar-rich materials.

Chemical Constituents:

They contains about 65 to 85% of moisture, members of Vitamin B group nitrogenous compounds glycogen, fat and Vitamins.

Uses:

The yeast is used in manufacture of alcohol, beer etc.

It also yeast in bread industry.

Pancreatin

Biological Source:-

Pancreatin is a digestive enzyme extracted from the pancreas of certain animals like hog, *Sus scrofa* (Suidae).

Chemical contains:

It is composed of **amylase, lipase and protease**.

Uses:

This medication contains digestive enzymes, which are natural substances needed by the body to help break down and digest food. It is used when the pancreas cannot make or does not release enough digestive enzymes into the gut to digest the food.

Depending on the amount of enzymes in your product, it may be used for indigestion, as a supplement, or as replacement therapy (such as in chronic pancreatitis, cystic fibrosis, cancer of the pancreas, after surgery on the pancreas or gut).