

GOEL INSTITUTE OF PHARMACY AND SCIENCES, LUCKNOW

D PHARMA 1st YEAR

PHARMACOGNOSY NOTES

UNIT-2

CLASSIFICATION OF CRUDE DRUGS

Crude drug generally applied to the products from plants & animals origin found in a raw form.

CLASSIFICATION:- Study of the drugs are classified in the following different ways.

(1) **ALPHABETICAL CLASSIFICATION:-** Crude drugs are arranged according to their Latin or English names alphabetically:

(a) *Indian Pharmacopoeia*

(b) *British Pharmacopoeia*

(c) *United States Pharmacopoeia & National Formulary*

(d) *British Herbal Pharmacopoeia*

(e) *British Pharmaceutical codex*

(f) *European Pharmacopoeia*

(g) *Encyclopaedia of common natural ingredients used in drugs & cosmetics*

For Examples:- Acacia, Benzoin, Cinchona, Datura, Ergot, Fennel Gentian, Hyoscyamus, Isapgol, Jalap, Kurchi, Liquorice, Myrrh, Nux-vomica, Opium, Podophyllum, Quassia, Rauwolfia, Senna, Turmeric, Uncaria gambier, Vasaka, Woolfat, Yellow beeswax, Zedoary.

(2) **MORPHOLOGICAL CLASSIFICATION:-** The crude drugs are grouped according to the parts of the plants or animals represented into **Organized** & **Unorganised** drugs.

Seeds:- *Nux-vomica, Isapgol, castor*

Leaves:- *Senna, Digitalis*

Barks:- *Cinchona, Cinnamon, kurchi*

Woods:- *Quassia, Sandalwood*

Roots:- *Rauwofia, Ipecacuanha*

Rhizomes:- *Turmeric, Ginger*

Flowers:- *Clove, saffron*

Fruits:- Coriander, Fennel, bael

Entire Fruits:- Ergot, Belladonna

Dried Latex:- Opium, Papain

Resins & Resin Combination:- Balsam of tolu, Asafetida, Benzoin

Dried Juices:- Aloevera

Gums:- Acacia, Tragacanth, Guar gum

Dried Extracts:- Gelatin, Catechu, Agar

This system of classification is more convenient for practical study; especially when the chemical nature of the crude drug is not clearly understood.

(3) **TAXONOMICAL CLASSIFICATION:-** The drugs are classified according to plants or animals from which they are obtained in Phyla, Order, Families, Genera, Species, Sub-species etc. This system of classification is criticized for its failure to recognize the **Organized** & **Unorganised** nature of crude drugs & chemical nature of active constituents & therapeutic significance of crude drugs.

For Examples:-

Phylum : Spermatophyta

Division : Angiospermae

Class : Dicotyledons

Order : Rosales

Family : Leguminosae

Sub-family : Papilionaceae

Genus : Glycyrrhiza

Species : Glycyrrhiza Glabra

For Examples:-

Phylum : Spermatophyta

Division : Angiospermae

Class : Dicotyledons

Sub-class : Sympetalae

Order : Tubiflorae

Family : Solanaceae

Genus : Atropa, Datura

Species : Atropa Belladonna, Datura Metel

(4) **CHEMICAL CLASSIFICATION:-** Crude drugs are divided into different groups according to the chemical nature of their most important constituents.

For Examples:-

Glycosides:- Digitalis, Senna, Liquorice

Alkaloids:- Nux-Vomica, Cinchona, Datura

Tannins:- Pale Catechu, Ashoka

Volatile Oils:- Clove, Garlic

Lipids:- Castor Oil, Beeswax

Carbohdrates:- Acacia, Agar, Isapghula

Resin & Resin Combination:- Jalap. Balsam of Tolu

Vitamins:- Shark liver Oil, Hormones, Insulin

Proteins:- Gelatin, Papain

Preffered method of classification, since therapeutic & pharmacological significance is based on the chemical composition of crude drugs

(5) **PHARMACOLOGICAL CLASSIFICATION:-** This involves the grouping of crude drugs according to the pharmacological action of their active constituents or their morphological, taxonomical status or chemical relationship. The drugs differing in mode of action but having same pharmacological effects are also grouped together. For Examples:- Bulk Purgative, Irritant Purgative.

For Examples:-

DRUGS ACTING ON GIT

Bitters:- Gentian, Cinchona

Carminative:- Mentha, Cardamom

Emetics:- Ipecacuanha

Bulk Laxative:- Agar, Isapghula, Banana

Purgative:- Senna, Castor Oil

Peptic Ulcer:- Derivatives of Glycyrrhitinic acid treatment (Liquorice & Raw Banana).

DRUGS ACTING ON RESPIRATORY SYSTEM

Expectorant:- Liquorice, Vasaka

Anti-tussives:- Opium

Bronchodilators:- Tea, Ephedra

DRUGS ACTING ON CARDIO VASCULAR SYSTEM

Cardiotonics:- Digitalis, Squill

Cardiac-depressants:- Cinchona

Vaso-constrictors:- Ergot, Ephedra

Anti-hypertensive:- Rauwolfia

DRUGS ACTING ON AUTONOMIC NERVOUS SYSTEM

Adrenergic:- Ephedra

Cholinergic:- Pilocarpus

Anti-cholinergics:- Belladonna, Datura

DRUGS ACTING ON CENTRAL NERVOUS SYSTEM

Central analgesics:- Opium

CNS Stimulants:- Coffee

Analeptics:- Nux-vomica, Camphor

CNS Depressant:- Belladonna, Opium, Hallucinogen, Cannabis

DRUGS ACTING ON ANTI-SPASMODIC

Smooth muscle relaxant:- Opium, Datura

Skeletal muscle relaxant:- Curare

Anti-cancer:- Vinca

Anti-rheumatics:- Guggul, Colchicum

Astringent:- Black Catechu

(6) **CHEMO-TAXONOMICAL CLASSIFICATION:-** The character most often studied in chemotaxonomy are *metabolites* of pharmaceutical significance such as *Alkaloids, Glycosides, Flavonoids* etc. *DNA Hybridization, Amino acid sequencing in proteins.*

(7) **SERO-TAXONOMICAL CLASSIFICATION:-** They are also gaining significance in this method of classification. **For Example:-** Presence of *Berberine alkaloid in berberies, Argemone presence of rutin, Flavonoids in higher plants* etc.