

EVALUATION OF CRUDE DRUGS



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EVALUATION OF ADULTERATION

- Evaluation of drug means
 - Confirmation of its **Identity**
 - Determination of its **Quality**
 - Determination of **Purity**
 - Detection of nature of **Adulteration**.
- The evaluation of a crude drug is necessary because of **three** main reasons.
 - **Biochemical variation** in the drug.
 - **Deterioration** due to treatment and storage (Humidity, Temperature, photosensitivity).
 - **Substitution or adulteration**, as a result of carelessness, ignorance or fraud.



MORPHOLOGICAL / ORGANOLEPTIC EVALUATION

- It refers to evaluation of drugs by **colour, odour, taste, size, shape and special features, like touch, texture.**
- It is a technique of qualitative evaluation based on **morphological and sensory profiles** of whole drugs.
- This evaluation procedure provides the simplest and quickest means to establish the identity and purity and thereby ensure quality of a particular sample



○ **Size and Shape** (for entire drugs).

Flowers:

Floral parts: stigmas, corollas, anther, ovary.

Leaves:

- Length, width, apex, margin, base, venation, the texture of the leaf and the hairs in upper and lower surface.
- The feel of the surface described as soft, hairy smooth.
- **Seeds:** Nux-vomica



S. nux-vomica seeds



Senna roemeriana



Bladder Senna *D. stramonium*



D. metel



○ **Bark:**

- i- The barks occur in three shapes:
 - Flat or curved pieces
 - Single quill
 - Double quills
- ii- Barks have two surfaces, an outer and inner.
- iii- The inner surface is usually lighter in colour than the outer surface.



Cinchona bark
(Curved)



Cinnamon bark
(Double Quilled)



Arjuna bark
(Flat)



○ **Odour:**

○ 1- distinct 2- indistinct

○ General terms used in describing odour are:

- Aromatic, Umbelliferous fruits, **coriander, ajwain**
- Balsamic, Resin, **Balsam of Peru**
- Spicy, **Cinnamon, *Myristica fragrance* (Nutmeg)**

○ **Taste:**

- Acid (sour): ***Tamarindus indica* (Imli)**
- Sweet: indicates sugar like substances - **Liquorice.**
- Alkaline, **alkaloids**
- Bitter: indicates presence of substances such as bitter principle, e.g. **Quinine, *Swertia chirata, Papaya***
- Tasteless



○ **Distinctive sensations to the tongue:**

- Mucilaginous and oily (soft feeling) *e.g.*, **Linseed**.
- Astringent (contraction of the tissues of the mouth) indicates presence of **tannin**.
- Pungent (warm biting sensation) *e.g.*, **Ginger, Capsicum**
- Acrid (irritant sensation) *e.g.*, **Aconite, Coca**.
- Nauseous (those tending to excite vomiting), **Ipeca**.

Colour

- White: *e.g.*, **Starch, Flours, Gums**
- Pale yellow (yellowish white) *e.g.*, **Ginger, Squill**
- Deep yellow: *e.g.*, **Peeled liquorice**
- Light pale brown *e.g.*, **Nux vomica, Fennel, Coriander**.
- Dark brown: *e.g.*, **Cloves**.
- Dark reddish brown: **Cinchona, Nutmeg**.
- Pale green *e.g.*, **Lobelia**.



THANK YOU

