Review Article

MACROSCOPIC IDENTIFICATION OF CRUDE DRUGS FOR AYURVEDIC FORMULATIONS

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ABSTRACT

There are certain diseases in which western medicines are still lacking cure. It is important to note that western medicine is undoubtedly effective for symptomatic control of these disorders but still lacking cure for potential. Apart from this these drugs are having numerous side effects. Keeping this fact in mind the attention diverts towards our ancient system of medicine i.e., Ayurveda for radical cure of these diseases. The demand for plant derived products is increasing day by day. For preparation of any Ayurvedic formulation proper identification of crude drug is extremely necessary. Identification of crude drug involves the morphological or macroscopic details and microscopic parameters. These parameters are necessary for the preparation of accurate and potent formulations. Identification of crude drug is the most important step in development of standards for herbal drugs a lot of adulteration is being done. The major problems affecting the quality of crude drug are adulteration or substitution, degradation due to faulty collections, drying or storage. A well known example is of drug Ashoka which is the stem bark of Saraca indica, the material available in the market is frequently found to be Polyalthia longifolia.

KEYWORDS: Crude drugs, Naamroojjnanam, Adulteration, Substitution.

INTRODUCTION

Crude drug is any naturally occurring, unrefined substance derived from organic or inorganic sources such as plant, animal, bacteria, organs or whole organisms intended for use in prevention, diagnosis or treatment of disease¹. The drugs of plant origin are frequently used as a whole plant; otherwise their parts such as root, stem, leaf, flower, seed, fruit, modifications of stem and root, bark of stem or root, wood, and their exudates or gums etc. The morphological or macroscopic details of respective part are given by observing it with a naked eye or with the aid of a magnifying lens². Plants can be identified on the basis of Naamroojjnanam. Naam and Rupa are linked with each other in order to distinguish objects. In recent times “namarupajjna” has been designated as a distinct branch of Dravyaguna vigyana.

Identification of crude drug is required;

- To get authentic drug
- To prevent adulteration
- To get the best effect of the drug

Identification of crude drug is based on the macroscopic, microscopic and organoleptic features. The macroscopic features of the crude drug include size, shape, colour, odour, taste, fractures and internal colours.

1. Size: The size of crude drug is the measurement of length, breadth and diameter. It is measured in mm or cm. This parameter could be very helpful in the identification of seeds, fruits, leaves, roots and other parts of the plant as well.

2. Shape: Different parts of the plant have different shapes. Some crude drugs have got very unique shape, which play a very important role in its identification. The crude drug may have different shapes like;

- Guduchi stem - Cylindrical
- Kupilu seed - Button shape
- Manjistha stem - Quadrangular
- Sathi root - Nodular
- Tagar root - Irregular
- Vatsanabha root - Conical

3. Colour: The crude drug may acquire a variety of colours. The colour of crude drugs may vary from white to yellowish grey, yellowish brown, reddish orange or brownish black.

- The bark of Ashok (Saraca asoca) is red colour. Therefore it has got synonyms like Raagi, Raagi taru³.
- The wood of Daruharidra (Berberis species) appear to be yellow colour. Therefore it has got synonym like Pitadaru⁴.

4. Odour: The crude drugs may be odourless or possess an odour.

- The rhizome of Vacha (Acorus calamus) has got intense smell. Therefore it has got synonym like Ugragandha⁵.
- Gandhaprasarni (Paederia foetida) spreads foetid smell around. The name of the plant itself suggests its identifying character⁶.

5. Taste: The crude drugs may possess a characteristic taste or may be tasteless. The different terms used to define taste of a crude drug mentioned in the Ayurvedic texts are Madhur, Amla, Lavana, Katu Tikta & Kasaya.

- The rhizome of Katuka (Picrorhiza kurroa) is bitter in taste therefore it has got synonym Tikta, Tiktarohini⁷.
• The bark of Twak (Cinnamomum zeylanica) is sweet in taste and therefore it has got synonym like Gudtwak, Swaadi9.

6. Fracture and internal colours- Fracture and internal colour of crude drugs refer to the external markings that are characteristics of a particular drug and colour after breaking the drug.

• The rhizome of Kutki (Picrorrhiza kurrooa) appear blackish on breaking. Therefore has been given the synonym Krishna bhedha9.

• On breaking the root of Kutha (Saussurea lappa) a clearly differentiated ring like structure is visible encircling the inner tissue10.

• The rhizome of Ativisha (Aconitum hetrophyllum) is very fragile so easily breakable and around four black spots may be visible11.

• The seed of Vidang (Emblica ribes) when broken many spots are seen on the inner structure. Therefore it has got synonym like Chitratandul12.

Unique Identifying feature of some of the Crude Drug

• Agar (Aquilaria agallocha)- The pieces of wood has irregular dark patches highly charged with olein resin. It has a slightly bitter and aromatic taste13.

• Akarkara (Anacyclus pyrethrum) - It has gradually tapering tap roots with a few hair like rootlets, densely crowned by the remnants of stem and leaf bases14.

• Aswagandha (Withania somnifera) - The outer surface of the root is fawn or yellowish brown in colour and finely wrinkled longitudinally15.

• Bakuchi (Psoralea corylifolia)- Seeds are black slightly flat & oval having a very small pointy tip. It gives intense smell after chewing16.

• Chitrak (Plumbago zeylanica)- The stem of the plant has got striations17.

• Guggulu (Commiphora mukul)- The plant exudes a gum resin coming out of cavities in form of particles reddish black in colour so called Mahisaksha & Kalanirayasa18.

• Jatamanshi (Nardostachys jatamansi)- The dried rhizome of the plant is covered with a bundle of reddish brown fibres. Therefore it has got synonym like Bhootjata, Jati19.

• Kalajaji (Nigella sativa)- Seeds are black triangular appear white after breaking20.

• Kalithaari (Gliricidia superba)- The tuber of the plant is plough shaped and therefore it has got synonym like Laangli, Halini21.

• Kampillaka (Mallotus philippinensis)- The fruit of the plant is covered with hairs in form of rough red powder so called Raktanga and Raktaachurnaka22.

• Kutki (Picorrrhiza kurrooa)- The rhizome of the plant has got scales like that of fish on its surface. Therefore it has been given synonym like Matsyasakala. Due to its bitter taste it has got synonym like Matsyasapitta23.

• Latakastoori (Hibiscus abelmoschus)- The seeds of the plant are black, flat and somewhat kidney shaped. The seeds when crushed smells like Kastoori24.

• Manjistha (Rubiia cordifolia)- The root of the plant is red in fresh state so called Raktangi, coppery when half dry so called Tamramula and black when dried completely so called Kalamesika25.

• Raaj Dhatura (Datura stramonium)- The seeds are black, flat and kidney shaped26.

• Sariva (Hemidesmus indicus)- The outer portion of the root is somewhat dark brown in colour while the inner one is yellow27. The root is longitudinally fissured and transversely cracked. Surface of transversely cut root show a hollow strand in the centre28.

• Taalmooli (Curculigo orchioidis) – The transversely cut root shows a mealy surface of dirty white colour, divided into outer corky layer and a broad central strand29.

• Varahikand (Dioscorea bulbifera)- The tubers of this plant is covered with hairs like that of swine30.

• Varun (Crataeva nurvala)- The bark of the plant is studded with small, white lenticels dots31.

• Vatsnabha (Aconitum ferox) – The surface of the root is transversely shrivelled, dark brown in colour and densely covered with remnants of roots or root scars arranged in an annual fashion32.

• Vidhara (Argeria speciosa) – Transversely cut surface shows a thin loose bark followed by two or more concentric rings of vascular tissue enclosing a prominently radiating woody portion33.

CONCLUSION

World is full of numerous ideas and it is up to the analyst how much meaning he derives there from. Though Naamrupajnanam is literally mean to indicate the morphological as well as therapeautic features or properties of a plant, but by the synonyms provided by different Nighantu and Samhitas, more or less it is the physical features which can be understood broadly which help in the identification of the plant. Identification of crude drugs is essential to distinguish the different drugs as well as the different parts of a plant used for yoga preparation. To get the best result of a drug we should be very clear about the identity of the drug.

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