



## Review Article

### MACROSCOPIC IDENTIFICATION OF CRUDE DRUGS FOR AYURVEDIC FORMULATIONS

Rupesh Kumar Sanger<sup>1\*</sup>, D.C. Singh<sup>2</sup>, Suresh Chaubey<sup>3</sup>, Naveen Kumar<sup>1</sup>

<sup>1</sup>P.G. Scholar, <sup>2</sup>Professor and Head, <sup>3</sup>Associate Professor, Department of Dravyaguna, Rishikul Campus Haridwar, Uttarakhand Ayurved University, Dehradun, India.

#### 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, *Naamroopjnanam*, 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 disease<sup>1</sup>. 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 lens<sup>2</sup>. Plants can be identified on the basis of *Naamroopjnanam*. *Naam* and *Rupa* are linked with each other in order to distinguish objects. In recent times "*namarupajnana*" 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.

<i>Guduchi</i> stem	-	Cylindrical
<i>Kupilu</i> seed	-	Button shape
<i>Manjistha</i> stem	-	Quadrangular
<i>Sathi</i> root	-	Nodular
<i>Tagar</i> root	-	Irregular
<i>Vatsanabha</i> 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 taru*<sup>3</sup>.
- The wood of *Daruharidra* (*Berberis* species) appear to be yellow colour. Therefore it has got synonym like *Pitadaru*<sup>4</sup>.

**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 *Ugragandha*<sup>5</sup>.
- *Gandhaprasarni* (*Paederia foetida*) spreads foetid smell around. The name of the plant itself suggests its identifying character<sup>6</sup>.

**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*, *Tiktarohini*<sup>7</sup>.

- The bark of *Twak (Cinnamomum zeylanica)* is sweet in taste and therefore it has got synonym like *Gudtwak, Swadi*<sup>8</sup>.

**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 kurooa)* appear blackish on breaking. Therefore has been given the synonym *Krishna bheda*<sup>9</sup>.
- On breaking the root of *Kutha (Saussurea lappa)* a clearly differentiated ring like structure is visible encircling the inner tissue<sup>10</sup>.
- The rhizome of *Ativisha (Aconitum hetrophyllum)* is very fragile so easily breakable and around four black spots may be visible<sup>11</sup>.
- The seed of *Vidang (Embelia ribes)* when broken many spots are seen on the inner structure. Therefore it has got synonym like *Chitratanul*<sup>12</sup>.

#### Unique Identifying feature of some of the Crude Drug

- *Agaru (Aquilaria agallocha)* - The pieces of wood has irregular dark patches highly charged with oleo resin. It has a slightly bitter and aromatic taste<sup>13</sup>.
- *Akarkara (Anacyclus pyrethrum)* - It has gradually tapering tap roots with a few hair like rootlets, densely crowned by the remnants of stem and leaf bases<sup>14</sup>.
- *Aswagandha (Withania somnifera)* - The outer surface of the root is fawn or yellowish brown in colour and finely wrinkled longitudinally<sup>15</sup>.
- *Bakuchi (Psoralea corylifolia)*- Seeds are black slightly flat & oval having a very small pointy tip. It gives intense smell after chewing<sup>16</sup>.
- *Chitrak (Plumbago zeylanica)*- The stem of the plant has got striations<sup>17</sup>.
- *Guggulu (Commiphora mukul)*- The plant exudes a gum resin coming out of cavities in form of particles reddish black in colour so called *Mahisaksha & Kalaniryasa*<sup>18</sup>.
- *Jatamansi (Nardostachys jatamansi)*- The dried rhizome of the plant is covered with a bundle of reddish brown fibres. Therefore it has got synonym like *Bhootjata, Jatila*<sup>19</sup>.
- *Kalajaji (Nigella sativa)*- Seeds are black triangular appear white after breaking<sup>20</sup>.
- *Kalihaari (Gloriosa superba)*- The tuber of the plant is plough shaped and therefore it has got synonym like *Laangli, Halini*<sup>21</sup>.
- *Kampillaka (Mallotus philippinensis)*- The fruit of the plant is covered with hairs in form of rough red powder so called *Raktanga* and *Raktachurnaka*<sup>22</sup>.
- *Kutki (Picrorrhiza kurroa)*- 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 *Matsyapitta*<sup>23</sup>.
- *Latakastoori (Hibiscus abelmoschus)*- The seeds of the plant are black, flat and somewhat kidney shaped. The seeds when crushed smells like *Kastoori*<sup>24</sup>.

- *Manjistha (Rubia cordifolia)*- The root of the plant is red in fresh state so called *Raktangi*, coppery when half dried so called *Tamramula* and black when dried completely so called *Kalamesika*<sup>25</sup>.
- *Raaj Dhatura (Datura stramonium)*- The seeds are black, flat and kidney shaped<sup>26</sup>.
- *Sariva (Hemidesmus indicus)*- The outer portion of the root is somewhat dark brown in colour while the inner one is yellow<sup>27</sup>. The root is longitudinally fissured and transversely cracked. Surface of transversely cut root show a hollow strand in the centre<sup>28</sup>.
- *Taalmooli (Curculigo orchoidis)* - The transversely cut root shows a mealy surface of dirty white colour, divided into outer corky layer and a broad central strand<sup>29</sup>.
- *Varahikand (Dioscorea bulbifera)*- The tubers of this plant is covered with hairs like that of swine<sup>30</sup>.
- *Varun (Crataeva nurvala)*- The bark of the plant is studded with small, white lenticels dots<sup>31</sup>.
- *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 fashion<sup>32</sup>.
- *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 portion<sup>33</sup>.

#### 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 therapeutic 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.

#### REFERENCE

1. [https://en.m.wikipedia.org/.../crude\\_drug](https://en.m.wikipedia.org/.../crude_drug)
2. The Quality control & Standardization of Ayurvedic medicines, Dr. Devendra Joshi & Dr. Geeta Joshi, Chaukhambha Orientalia Varanasi, Edition: 2011; pp. 121
3. Ausadhnamarupavijnanam Vol -1, Dr. Sanjeev Kumar Lale, Edition: 2003; pp. 20
4. Namarupajnanam, Priya Vrat Sharma, Chaukhambha Visvabharati Varanasi, Reprint: 2011; pp. 102
5. Ibid; pp. 167
6. Ayurvedokta Oushadha Niruktamala, Dr. J.L.N. Sastry, Chaukhambha Orientalia, Edition: 2001; pp. 41
7. Ausadhnamarupavijnanam Vol -1, Dr. Sanjeev Kumar Lale, Edition: 2003; pp. 60
8. Ibid; pp. 148
9. Ibid; pp. 60

10. Bhavaprakasa Nighantu, Commentary by Prof. K. C. Chunekar, Chaukhamba Bharti Academy, Reprint: 2013; pp. 88
11. Ibid; pp. 123
12. Ibid; pp. 51
13. Principal Crude Herbal Drugs of India, Y.K. Sarin, Printed by Gajendra Singh Gahlot at Shiva Offset Press, Edition: 2008; pp. 4
14. Ibid; pp. 8-9
15. Ibid; pp. 26-27
16. Bhavaprakasa Nighantu, Commentary by Prof. K. C. Chunekar, Chaukhamba Bharti Academy, Reprint: 2013; pp. 120
17. Ibid; pp. 22
18. Namarupajnanam, Priya Vrat Sharma, Chaukhambha Visvabharati Varanasi, Reprint: 2011; pp. 72-73
19. Bhavaprakasa Nighantu, Commentary by Prof. K. C. Chunekar, Chaukhamba Bharti Academy, Reprint: 2013; pp. 229
20. Ibid; pp. 32
21. Namarupajnanam, Priya Vrat Sharma, Chaukhambha Visvabharati Varanasi, Reprint: 2011; pp. 53
22. Ibid; pp. 45-46
23. Ibid; pp. 37
24. Ibid; pp. 175
25. Ibid; pp. 146-147
26. Bhavaprakasa Nighantu, Commentary by Prof. K. C. Chunekar, Chaukhamba Bharti Academy, Reprint: 2013; pp. 304
27. Ibid; pp. 413
28. Principal Crude Herbal Drugs of India, Y.K. Sarin, Printed by Gajendra Singh Gahlot at Shiva Offset Press, Edition: 2008; pp. 16-17
29. Ibid; pp. 168-169
30. Ausadhnamarupavijnanam Vol -1, Dr. Sanjeev Kumar Lale, Edition: 2003; pp. 236
31. Trees of Delhi a field guide, Pradeep Krishen, Edition: 2006; pp. 203
32. Principal Crude Herbal Drugs of India, Y.K. Sarin, Printed by Gajendra Singh Gahlot at Shiva Offset Press, Edition: 2008; pp. 34-35
33. Ibid; pp. 68-69

**Cite this article as:**

Rupesh Kumar Sanger, D.C. Singh, Suresh Chaubey, Naveen Kumar. Macroscopic Identification of Crude Drugs for Ayurvedic Formulations. International Journal of Ayurveda and Pharma Research. 2016;4(4):83-85.

**Source of support: Nil, Conflict of interest: None Declared**

**\*Address for correspondence**

**Dr. Rupesh Kumar Sanger**

P.G. Scholar,

Department of Dravyaguna,

Rishikul Campus Haridwar,

Uttarakhand Ayurved University,  
Dehradun.

Mob No- 08423344130

Email- [sangerbams1@gmail.com](mailto:sangerbams1@gmail.com)

