

Literary review of Kampillaka with reference to adulteration**KAMPILLAKA (Mallotus philippinesis)****Dr. Vrushali b. Dani¹,**

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During the procedure of collection, preservation, manufacturing and marketing drug is handled by many workers and machines as well. This may cause morphological or microscopic changes in drug. This may lead to drug as a substandardized drug.

Some times drugs are rare in certain geographical conditions, or sometimes procedure of drug collection and preservation is very difficult. Some drugs are very expensive to cultivate, and sometimes to earn more profit drugs are admixed, sub standard and adulterated.

An adulterant is the drug which may resemble to original drug or may be totally different drug. Usually it is inferior, less effective contains inferior or no percentage of active principles.

KEYWORDS: Antioxidant activity , adulterant**INTRODUCTION**

Every dravya in nature can be used as a medicine, when it is used by yukti. Drug can be used as a medicine, should be in its pure and natural form, then only it cures the disease.

Drug Should have its natural properties in pure form. It should have its natural colour, Varna, Rasa, Gandha and other gunas. It should not be infected with Jantus and should not be in vikrut form. Then and then only it can be used for the medicinal purpose.

All drugs are obtained from either plant or animal sources. They are organized or unorganized organized drugs i.e. direct parts of plants having cellular tissues. Unorganized drugs undergoes various procedures like incision, drying, extraction with water and they do not contain cellular tissue.

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Some times drugs are rare in certain geographical conditions, or sometimes procedure of drug collection and preservation is very difficult. Some drugs are very expensive to cultivate, and sometimes to earn more profit drugs are admixed, sub standard and adulterated.

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ADULTERATION

Is a practice of substituting original drug partially or totally with other similar looking substance, but the later is either free from or inferior in chemical and therapeutic properties.

Addition of material other than original drug consist of

1. Admixture : Addition of one material to another by accident or carelessness.
2. Inferior material or inferior species is added to original one.
3. Sophistication - is addition of spurious material with intends to defraud.
4. Substitution – a) Substituting with totally different drug.
b) Substitution of species belonging to same family

c) Substitution by different parts of plant.

Types of Adulteration:

1. Substitution with inferior commercial varieties.
2. Substitution with artificially manufactured drug.
3. Substitution with exhausted drug.
4. Substitution with superficially similar but cheaper natural substance.
5. Substitution by addition of worthless or heavy material.
6. Substitution by synthetic principles.

REASON OF ADULTERATION:

1. Confusion in vernacular or local language names, For Exmple vernacular name.
2. Drugs having similarity in morphology.
3. Lack of authentic plant.
4. Careless collection.

1. Confusion in vernacular name

Drug are having various names in local languges.

for example kamillaka has vernacular name as kumkum, kamal which can be confused with same name to saffron and lotus in other local laguage This Confusion leads to the adulteration of drug.

2. Drugs having smilarity in morphology.

When drugs resembles same morphological characters seen with necked eyes causes the confusion in original and same looking drug. diffrent species of same Family also shows same morphological characters leading to confusion. for example fruits of kampillka and fruits of ficus belnghensis are having similarty in colour, shape and size of fruit.

3. Lack of authentic Plant

When there is inavailability of a authentic plant it is replaced by same other plant or its part and made them alike to original plant, causing the adulteration.

PHARMACOGNOSY

PHARMACOGNOSY is the study of medical drugs derived from plants or other Natural sources it is defined as the study of physical chemical and biochemical and biological properties of drugs. it is also defined as the study of crude drug. world pharmacognosy is derived from two Greek words pharmac on i.e. drug and gnosis i.e. knowledge. the term pharmacognosy was used for the first time Austrelian Physician Schamidt in 1811 & 1815 by crr. Anotheus seyaller.

in 20th century subject had developed mainly on the botanical side particularly in description and identificationof drugs both in their whole state and in powder form

Pharmacognosy is a Systemic and Complete Study of Crude.

In The Systemic Study Crude Drug is Discussed Under Origin of Drug, Common name of Drug, Biological Sources of drug, family of drug, Geographical sources collection of drug. All These Topics are studied.

Pharmacognostic Study also Included the Morphological Study of Drug. Morphological Study is perform one under Macroscopic Study And microscopic Study.

A systematic and complete study of crude drug is done in pharmacognosy

COMMON ADULTERANTS OF KAMPILLAKA

Kampillaka is commonly adulterated with following plants and materials

1. Annatto dye (Brica Orellana)
2. Ferric oxide
3. Bric dust
4. Ferruginous sand

5. Cassia tomentosa (stem bark powder)
6. Caranthmus tinctorius (flower powder)
7. Ficus benghlensis (Fruit Powder)
8. Flemingia Macrophylla (Hair of fruits)

Annatto dye is orange red condiment and food colouring derived from seeds of achiote tree (*Bixaorellana*) are similarly in colour and texture in powder form with Kampilla powder it is linked with cases of food allergies due to which it is admixture with Kapila Churna is hazardous

Ferric oxide and ferruginous sand have similarity in colour with Kapil as soon as ferric oxide is heavy metal substitution mixing of its in Kapila Churna is harmful and dangerous.

Cassia tomentosa which is also known as senna multi glandulosa is a Hairy or woody Shrub it is widely available as a weed powder of stem bark of this plant is used for admixture of Kapila churn both are having different properties hence it will give Infra result to the patient.

Caranthmus tinctorius also known as the safflower it is cultivated for vegetable oil it is cultivated in large scale in India on commercial bases for safflower oil flour powder of this plant is used to adulterate Kapil or powder it will show different reserve as it is having different properties then Kampillaka.

Ficus benghalensis commonly known as Banyan Tree it is widely available all over India fruits of Banyan Tree are similar in shape size and colour of Kapilla fruits the fruit powder of this plant is used to adulterate Kampilla Churn.

Flemingia microphylla it is Woody leguminous Shrub it is multipurpose plant widely used in agriculture crop improvement fooder and dyes is fruit or small and turn brownish in colour after ripning this Fruit powder is used to adulterate Kampilla powder.

SYNONYMS OF KAMPILLAKA =

- 1) Kampilla- BP,MP, SN, DN, RN,
- 2) Karkasha- BP,SN.
- 3) Chandra- BP,SN .
- 4) Raktang- BD, KY,SN,NA, DN,RN.
- 5) Rochana- KY,SN.
- 6) Raktrenu-PN.
- 7) Rechani- SN
- 8) Ranjak- SN,RN.
- 9) Lohitang- DN,RN.
- 10) Raktchurnak- MP,KY, DN,RN.
- 11) Rechi-MP,SN,NA, DN.
- 12) Rechanak-DN
- 13) Raktphal- SN,NA.
- 14) Pikaksha- SN.
- 15) Laghupatruk- SN.
- 16) Nadivas-SN
- 17) Bahupushpa- SN
- 18) Bahuphal- SN
- 19) Ranjan- KY, DN.
- 20) Ranjanak- MP
- 21) Rechan- MP,SN,RN.
- 22) Lohit- MP.
- 23) Rechak- RN.

Abbreviation (Annexure)

BP=BHAVPRAKSH NIGHANTU.

KY=KAIYDEV NIGHANTU.

NA=NIGHANTU ADARSHA.

PN= PRIY NIGHANTU.

SN= SHARANGDHAR NIGHANTU.

MP= MADNAPAL NIGHANTU.

DN= DHANWATARI NIGHANTU.

VERNACULAR NAMES OF KAMPILLAKA

Sanskrit – Kampillak, Kampilla, Kampilya, Raktang, Rechak, Karkash, Chandra, lohitang, Ranjak.

Hindi- Kabila, Kamila, Kambila.

Marathi- Kapila, Shendri.

Gujrathi- Kapila, Kapilo.

Bengali- Kamalgundi.

Kannad- Kampillakam., Kopithetu, chandrahitta.

Tealgu- Kumkum.

Tamil- Kapila ,Rang, Kapila podi.

Panjabi- kamal.

Malyalam- Ponaggam

Farsi- Kambilay, Kamilah, kambala.

Afgani- kambil, Kimbil, Vars.

English- Kamala.

Latin name- Mallotus philippinesis

A) Dravya vargiakran of kampillak.

- 1) Karyadravya- kampillak is karya dravya as it works with its guna.
- 2) Chetnadravya- antachetnadravya.
- 3) Utpattibheda- Prithvi, aapya dravya.
- 4) Prayogbheda- Aushadhi dravya.
- 5) Yoni bheda- audbhid dravya.
- 6) Udbhavbheda- sthalaj dravya.
- 7) Aakruti bheda- vrukha/ kshup.
- 8) Rasa bheda- Katu rasa dravya.
- 9) Vipak bheda- Katu vipak dravya.

10) Veerya bheda- Ushna verya dravya.

11) Doshkarma bheda- Kapha-pitta shamak.

12) Vayo bheda- Bahuvarshayu.

B) Gana & varg of Kampillaka according to samhitas & nighantu.

1) Charak samhita- virechak gana.

2) Sushrut samhita- shyamadi varg.

3) Ashtanghriday samhita- Virechak gana., Shyamadi gana.

4) Dahnwantari nighantu- Chandanadi varg.

5) Shaligram Nighantu- ashta varga.

6) Bhavprakash nighantu – Haritkyadi varga.

7) Kaiyadev nighantu – Aushadhii varg.

8) Madanpal nighantu- Haritkyadi varg.

9) Raj nighantu- suvarnadi varg.

10) Nighantu aadarsh- Aamlakyadi varg.

11) Priy nighantu- Haritkyad varg.

12) Bruhat nighantu- shyamadi gana.

MODERN LITERATURE RELATED TO KAMPILLARA

a) BOTANICAL CLASSIFICATION

Kingdom	-	plantae
Subkingdom	-	Trocheobionta
Superdivision	-	Supermatophyta
Division	-	magnoliophyta
Class	-	magholiopsida.
Subclass	-	Rosidae
Order	-	Euphorbiales
Family	-	Euphorbiaceae
Genus	-	Mallotus.
Species	-	Mattotus Phillippinensis.

b) Description of Mallotus Phillipinensis

Latin name – Mallotus Phillipinensis.

Family – Euphrbiaceae.

Mallotus phillippinensis is a plant which is traditionally well known to the people, working with traditional medicines. For the long period of time mallotus phillippinensis is used in a traditional system of medicines. It is used as a purgative, anti inflammatory, antibacterial medicine it is well known or its antebelminthic property. It is also used for the treatment of Filaria as a antifilarial medicines. It is also used at a detergent and also for the preparation of dye.

Mallotus is a genus of trees and shrubs. It is chiefly distributed in tropical and subtropical region of world. Around 20 species of mallotus one found in India.

Malotus phillippinensis is commonly known as kamala tree, kabila tree, Red wood dye tree also it has various vernacular names in various languages in India kapila, Kapilo, Kamalgundi, Kumkum are th few of them.

In local language.e. in Marathi mallotus phillippinensis is known as a kapijal, or shendri. It is a perennial shrub or a small tree it has glandular red-coloured fruits with red coloured hairy coating on them. These glandular hair covering is collected as a reddish brown powder. Procedure to collect his powder is that, collect mallantus fruits in a clooth and by shaking and rubbing them by hands. Powder is collected. This powder is used in various medicines and also used industries to make detergent and dyes from that.

i) General habitat and Ecology of Mallotus Phillipinensis

It is a evergreen tree. It is found in moist, deciduous, evergreen and dry deciduous forests and also in the plains. Found on hills, types at obove 800m hight, of western Himalayas and peninsular India. It is also found in eastern and western ghost.

All over the world it is found in India Srilanka, southern china, Throughout Malesia and Austrelia. It is commonly found in evergreen brests.

In India mallotus philippinensis is found in Kashmir, coastwards ascending to 1500m, all over Bengal. Trees of mallotus philippinensis are also found in Haripura, zilla surat State Gujarat.

ii) Biophysical Limits of Mallotus philippinensis

Mallotus philippinensis trees grows on the attitude of 0-1600m. it needs the annual temperature in between 16° - 20°c. it requires mean annual rainfall from 800-2000mm. these plants mostly grows on every soil types which includes fertile soils, limestones, acidic & rocky lands also. Kamala tree withstands considerable shade. It is forest – hardy and drought resistant also.

iii) Morphological characters of Mallotus Phillippinensis

Latine – name – mallotus philippinensis, in latine mollotus means “wooly.” Kamala tree has a typical wooly appearance at its barks, leaves and fruits. It is monoecious in nature, upto 2.5m tall. It is a small sized evergreen tree or a shrub, with following morphological characters.

- 1) **Bark** – Brownish black coloured, rough textured bark branches are reddish-brown glandular.
- 2) **Leaves** – Leaves are alternate, ovate, rhomboied or accminate. Simple leaves with more less leathery appearance having two glands at the base. Mostly acute at appere, conspicuously 3 nerved, hairy, reddish glandular beneath, lateral nerves 7 pair,s.
- 3) **Petiole** – 2-10 cm long. Puberulour, reddish brown in colour.
- 4) **Flowers** – Dioecious, Small flowers, with black red colour and spikes. Male flower in terminal and axillary position 2-10 cm long solitary or fascicled. Female flower with a stellate, hairy, 3 celled ovary with 3 papillose stigmas.
- 5) **Fruits** – fruit is depressed, capsule, 3 lobed. Capsules 5mm x7mm x10 mm stellate. Puberulous with abundant orange or reddish brown glandular granules. Fruit contains 3 seeds.
- 6) **Seeds** – seeds are black in colour. They are smooth in texture. They are globules 4 mm across.

Mallotus philippinensis flowers from January – march and June – September fruiting throughout the year.

iv) Pharmacological activities of Mallotus philippinensis

Mallotus philippinensis is having various pharmacological activities some of its activities are newly discovered and mentioned in various scientific journals and articles compilation of that studies is described here with reference to modern texts and websites.

a) Antifibrotic activity.

Aqueous and alcoholic extracts of leaves of Mallotus philippinensis was studied in vitro and antifibrotic activity was observed

b) Antifertility activity

According to Scientific study & observation from laboratory finding seeds of Mallotus philippinensis shows adverse effect on different reproductive parameters of female rats.

c) Antibacterial and antifungal activity.

Study on different types of agar, Mallotus philippinensis is observed to have antimicrobial & antifungal activities

d) Antiinflammatory activity.

Fruits of Mallotus philippinensis contains chalcones derivatives and Mallotrophilipensin C,D,E which inhibits nitric acid production resulting in antiinflammatory activity.

e) Antioxidant activity.

Among different extract, back fraction of Mallotus philippinensis shows antioxidant & antiradical activity

f) Antihelminthic & Purgative action.

Mallotus philippinensis shows potent purgative action and antihelminthic property esp. with *h. nana*

g) Wound healing activity

h) Antitumour activity

- i) Anti HIV activity
- j) Antileukemic Activity
- k) Anti allergic Activity

Mallotus philippinensis derivatives inhibit histamine release showing antiallergic activity. The new study suggests that rottlerin is useful in most cell mediated allergic disorders including urticaria and allergic asthma.

VII) Uses of *mallotus philippinensis*

Mallotus philippinensis is used in different Ayurvedic, Homoeopathy, Siddha and Nani Medicines. It is also used in traditional medicines and in folk medicines as well. In traditional medicines *Mallotus philippinensis* is used against filarial. It is also used for its purgative actions. *Mallotus philippinensis* is used as antihelminthic in Unani medicines. It is used as purgative, antihelminthic, wound healing. It is also used for various types of skin infections. In some of folk medicines it is used as antifertility. In some traditional medicines Kamila is mixed with curd and it shows purgative and antihelminthic actions as well.

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