



INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY HEALTH SCIENCES

ISSN: 2394 9406

“A REVIEW OF KAMPILLAKA (MALLOTUS PHILIPPINENSIS MUELL. ARG)”

Dr. Tejashree Patil¹, Dr. Kamal Naik², Dr. Santoshi Mane³

¹P.G. Scholar, Dept. of DravyagunaVigyana

²Guide, Prof. of DravyagunaVigyana

Loknete Rajarambapu Patil Ayurvedic Medical Collage, Islampur

³Prof. Of Agadtantra and Vyavahara Ayurveda

Loknete Rajarambapu Patil Ayurvedic Medical Collage, Islampur

Corresponding Author' Email ID: tejashreepatil004@gmail.com

ABSTRACT:

Kampillaka belonging to family Euphorbiaceae is one of the promising drug with very high medicinal value. *Kampillaka* botanically identified as *Mallotus philippinensis* (Lam.) Muell. Arg. is known for its anthelmintic and purgative action in all classical texts of Ayurveda. This plant is also traditionally used by local healers for various diseased conditions.

Therapeutic useful part of the plant is glands and hairs of mature fruits (*Phalraj*). It should be administered internally after its proper *Shodhana* only. It is observed that the drug is used in 44 formulations in various dosages forms such as *Krimighatinivati*, *Dhanvantari Ghrita*, *JivantyadiYamaka*, *VidangadiChurna*, etc.

Kampillaka is used in the treatment of *krimi*, *Twakroga*, *Vruna*, *Vibandha*, *Gulma*, *Udara*, *Shleshmodara*, *Arsha*, *Shula*, *Jwara*, *Prameha*. It also shows various pharmacological activities like antimicrobial, anti-oxidant, antifilarial, antifertility, anthelmintic, anticancer, purgative, haemostatic etc.

Various available *Samhita*, *Nighantus*, books have the synonyms, properties, *Shodhana* procedure, identification tests for *Shudha Kampillaka*, uses, dose, toxic effects and various formulations of *Kampillaka*. Therefore in this present review article aims to compile this all information in a systematic manner.

Key words: *Kampillaka*, *Mallotus philippinensis*, Euphorbiaceae, *Phalraj*

INTRODUCTION:

Mallotus philippensis is one of the endangered medicinally important plants used in indigenous system of medicine for cultivation prospects. It is an important medicinal shrub of Ayurvedic system; whole parts of the plants are rich in secondary metabolites.¹

Kampillaka is drug of herbal origin has been categorized as one among eight *SadharanaRasa* (group of minerals). Because of its usefulness in Ayurvedic mercurial preparations (*Rasasiddhi*).²

The tree grows throughout the India up to a height of 1500m.³ A small, highly branched, evergreen medium sized tree about 6 to 10 meters tall. Young branches covered with rusty pubescence. Leaves are smooth from above, fine hair below with many red glands. 7 to 15 cm long with three red veins at the root. Flowers are small, unisexual, white or yellow; male flower is 15 to 25 cm long, axillary, growing at the end of branches. Fruits are round 8 to 12 cm diameter, covered with red and knotty particles. Seeds are black in colour, round in shape and smooth in touch.⁴

MATERIAL AND METHODS:

Available *Ayurvedic* literatures were studied for better understanding of drug. Information regarding to drug is collected from various books related medicinal plants, *Samhitas*, *Nighantus*, *Ayurvedic* text books, various journals, research articles and internet media was also used for availability and necessity for understanding the subject.

Botanical name-*Mallotus philippensis* (Lam.) Muell. Arg.⁵

Etymological derivation of *mallotus* Lour-Gr. Mallos, a lock of wool, mallotos, fleecy; referring to woolly nature of its fruits.⁶

Nirukti-⁷

According to *AdarshaNighantu*, *kampillaka* is found near kapila river or village. When people consume it, feels like shivering in body due to its bitter taste.

Regional names-^{8,9}

Scientific name- *Mallotus philippensis* (from Latin, Mallotus = woolly)

Sansk- *Rajanaka, Kampillaka*

Assam- *Lochan*

Beng- *Kamlagudi, Kamala*

Eng- *kamala tree*

Guj- *Kapilo*

Hindi- *Kabila, Sindur, Rohini*

Kan- *Chandrahettu, Kapillaka, Kapilathettu, Kunkumadamara*

Kash- *Kameelak*

Mal- *Kampippala, Kampipalu, Manjana, Ponnagam, Kuramatakku*

Mar- *Shendri, Kapila, Sindur*

Ori- *Kamalagundi*

Punj- *Kumila, Kamalo, Kambal*

Tam- *Kamala, Kampila, Kapli, Kungumam, Vasanta,*

Urdu- *Kamila*

Tel- *Kunkuma*

Arab- *Kinbil*

Assam- *Gangai, Puddum, Lochan*

Oriya- *Bosonts-gundi, Kumala, Sundragundi, Kamalagundi*

Pers- *kanbela*

Santhal- *Rora*

Synonyms attributed to *kampillaka* in different *Nighantus* and *Sangrahagranthas* and their interpretations-¹⁰

Table no: 01

Sr. no		Synonyms	Interpretation
1)	Morphological Appearance	<i>Raktangi</i> <i>Raktaphala</i> <i>Raktachurn</i> <i>aka</i>	Fruits and fruit hair are red in colour

		<i>Lohitanga</i>	Ripen fruits becoming brick red in colour
		<i>Chandra</i>	
		<i>Chandrasa</i> <i>hya</i>	
		<i>GirimrudG</i> <i>airika</i>	Will appear beautiful when it blossoms and therefore creates pleasant sight
			Looks like <i>GairikaC</i> <i>hurna</i>
2)	Availability	<i>Kampillaka</i>	Was abundantly available at a place called <i>Kampilla</i>
		<i>Kampilya</i>	
		<i>Nadi vasa</i>	Its pungent taste creates shivering fear among the users.
			Near the river its

			tree grows
3)	Form	<i>Karkasha</i>	A rough powder
		<i>Dhatu</i>	Included in minerals
4)	Source	<i>Kapila</i>	Red powder found on fruits of <i>Kapila</i>
5)	Leaves & Fruits	<i>Bahupatra</i>	Having many leaves
		<i>Bahuphala</i>	Having many fruits
6)	Use	<i>Ranjana</i>	Used as colouring material
		<i>Ranjanaka</i>	
		<i>Varnaka</i>	
7)	G.I. Tract	<i>Rechi</i>	Improves <i>Jatharagni</i>
		<i>Rechani</i>	
		<i>Rochana</i>	Acts as purgative
8)	Surgical	<i>Vrunashodhaka</i>	Cleans the wounds
		<i>Raktasamana</i>	Pacifies <i>Rakta</i>
		<i>Raktashant</i> <i>ikrut</i>	

Scientific classification⁻¹¹

Kingdom- Plantae (comprising all living or external plants)

Subkingdom- Tracheobionata (have lignified tissues or xylem for conducting water and minerals)

Superdivision- spermatophyte (produce seed)
 Class- magnoliopsida (flowering plant producing an embryo with paired cotyledons)
 Subclass- Rosidae
 Order- Euphorbiales
 Family- Euphorbiaceae- Spurge family
 Genus- Mallotus
 Species- *philippensis*

Classification according to different Samhitas and Nighantus-¹²

Table no. 02

<i>Samhita/ Nighantu Name</i>	<i>Gana/ Varga</i>
1) <i>Charka samhita</i>	<i>Phalinidravaya & Virechaka</i>
2) <i>Sushrutsamhita</i>	<i>Shamadigana (Adhobhagahar)</i>
3) <i>Ashtangasangrah</i>	<i>Virechanopyogigana</i>
4) <i>Ashtanghridaya</i>	<i>Virechan, Shyamadigana.</i>
5) <i>KashyapSamhita</i>	<i>Mustadigana</i>
6) <i>Dhanvantarinighantu</i>	<i>Chandanadivarga , Mishrakvarga (sadharan rasa)</i>
7) <i>Sodhalanighantu</i>	<i>Chandanadivarga</i>
8) <i>Madanapalnighantu</i>	<i>Abhayadivarga</i>
9) <i>Kaiyadevanighantu</i>	<i>Aushadhivarga</i>
10) <i>Bhavaprakashnighantu</i>	<i>Haritakayadivarga</i>
11) <i>Raj nighantu</i>	<i>Suvarnadivarga</i>
12) <i>Shaligramnighantu</i>	<i>Ashtavarga & Arkavarga</i>
13) <i>Adarshanighantu</i>	<i>Amalakyadivarga</i>
14) <i>Priyanighantu</i>	<i>Haritakyadivarga</i>

Macroscopic description-¹³

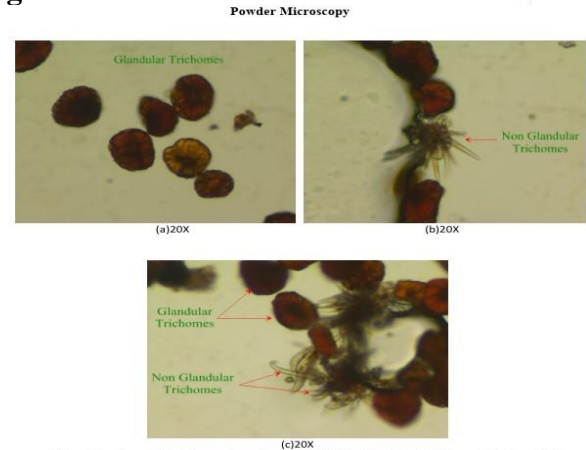
Fine granular powder, dull red or madder-red coloured floating on water.

Microscopic description-¹⁴

Under microscope glands appear depressed and globular , containing deep

red coloured resin, secreted by many club shaped cell radiating from a common centre; a number of stellate trichomes present, trichomes thick-walled, branching lignified with smooth margins, yellow coloured, arranged in small radiating groups.

Fig. No. 01



Characters observed in the powder microscopy: Stellate Glandular Trichomes (a), Branched thick walled trichomes(NGT) (b), Branched thick walled trichomes(NGT) & Stellate Glandular Trichomes (c).

Identity, Purity and Strength-¹⁵

- 1) Foreign matter- not more than 2%
- 2) Total Ash- not more than 6%
- 3) Acid- insoluble ash- not more than 4%
- 4) Alcohol soluble extractive- not less than 50%
- 5) Water soluble extractive- not less than 1%

Substitutes and Adulterations-¹⁶

Mallotus philippensis is commonly adulterated with Annato dye (*Bixaorellana* Linn.), ferric oxide, brick dust and ferruginous sand. *Caseariatomentosa* (stem bark powder), *carthamustinctorius* (flower powder), *Ficus benghalensis* (fruit powder) and *Flemingiamacrophylla* (hairs of fruits) are also reported to be used as adulterant or substitute of *Kampillaka*.

***Kampillaka* Shodhan-¹⁷**

- 1) *Kampillaka* (phal raja) 1 part

2) *Matulunga rasa* quantity sufficient for *Bhavana*

3) *Adraka rasa* quantity sufficient for *Bhavana*

Method:

-*Kampillaka* available in the market is heavily adulterated. The material therefore is to be briskly shaken with water so that brick powder settles down and *Kampillakaraja* float on the top of water. It is to be removed out allowing the settled matter undisturbed. This may be repeated 3 times and the top layer (very light) is allowed to dry and subjected to the *Shodhana*.

-*Bhavana* is given three times with above ingredients separately.

Test of purity (shudhipariksha)-¹⁸

- 1) Soft to touch
- 2) When rubbed on paper leaves behind a yellow line
- 3) Floats on water
- 4) Dose not dissolve in water
- 5) Dissolves in alkali
- 6) Sprinkled over fire, it gives a crackling appearance

Part use- glands and hairs of mature fruit.
¹⁹

Properties-²⁰

Rasa (Taste) - *Katu* (Pungent)

Vipak - *Katu* (Undergoes Pungent taste after diagestion)

Veerya (Potency) - *Ushna* (Hot)

Guna (Qualities) - *Laghu* (light for diagestion),

Ruksha (Dry in nature),

Teekshna (Strong)

Karma (Action) - *Kaphavata shamak* (Reduce vitiated *Kapha* and *Vatadosha*)

Prabhava - *Krimighna*.....

Adarshanighantu

Dosage-²¹

0.5 to 1.0 gm of the drug in powder form.

Toxicology-^{22, 23}

1. Larger dose can cause nausea, purging and severe spasmodic pain.

2. The approximate lethal dose of rottlerin in rat was 750mg/kg. The plant extract was found to trematodes; alcoholic extract being most effective in vitro and in vivo. Death of worms commenced 60 and 90 min after addition of alcoholic extract (1:100 concentration) and aqueous extract (1:25 concentration) respectively

Siddha properties-²⁴

Siddha name- *Kapli*, *Kungumam*, *Kurangumanjanathi*, *Kamala*, *Kambillam*, *Kamela*

Suvai (taste)- *Kaippu* (bitter)

Veeriyam (potency)- *Veppam* (hot)

Vipakam (transformation) - *Kaarppu* (pungent)

Ceikai (pharmacological action)- *Puzhukkolli* (Antihelmintic),

Inbamperukks (Aphrodisiac), *Karkaraichi* (Lithotriptic)

Gunam (Uses) - Antipyretic and respiratory infections.

Chemical composition-²⁵

1. The most important active constituent is a brownish red or reddish yellow colour called Rottlerin.

2. Capsular hair and glands gave phloroglucinol derivatives; rottlerin, isorottlerin, isoallorottlerin (the red compound).

3. Two more compounds designated as kamalins 1 and 2 have been isolated.

4. The stem bark contains kamaladiol- 3-acetate and friedelin.

Traditional indications of kampillaka-²⁶

1. *Vrana* - Ulcers, Wounds

2. *Gulma* - Tumors of the abdomen

3. *Udara* - Ascites, enlargement of the abdomen

4. *Vibandha* - constipation

5. *Adhmana* - Bloating, gaseous distension of abdomen

6. *Shleshmakrumi* – Parasites of kapha origin
7. *Kaphajakasa* – Cough of kapha origin
8. *Pittavrana* – Ulcers, wounds
9. *Ama* – A produce of indigestion and altered metabolism
10. *Shopha* – Inflammation
11. *Jwara* – Fever
12. *Shola* – Abdominal colic pain
13. *Kushtaghna*- Alleviated skin disorders
14. *Krimighna* – Useful in worm infestation
15. *Kandughna* – Relives itching

Medicinal uses^{27,28}

1. The hairs of *Kampillaka* is mixed with sesame oil and applied over the skin affected with eczema and wound as part of treatment
2. Is used for the treatment of intestinal worms by mixing it with hot water and consuming
3. Decoction of the fruit hair is giving in a dose of 30 to 40 ml to retain the fetus in pregnancy condition
4. Cold infusion of the bark is given in a dose of 40- 50 ml to treat renal calculi and in retention of urine
5. Decoction of the bark is given to treat skin diseases like eczema and acts like a blood purifier
6. Baldness – *Kamala* is mix with oil and massage on scalp
7. Cold – the oil prepared from the leaf is used
8. Insect bites – young fruit ground and mixed with honey is applied
9. Rheumatism – a decoction of bark is given
10. Weeping eczema, herpes, scabies, ring worm and ulcers – in unani *Kamala* is prescribed for topical use

11. All parts of the tree can be applied externally to treat parasitic infections of the skin

Other uses-

1. The capsule yields a dye which gives a permanent rich, flame colour. It is used for dyeing silk and wool bright orange.
2. A red dye has been extracted from the roots.
3. The wood of the tree is used for making tool handles, match boxes, etc
4. Leaves are used as fodder for cattle
5. It is used as a host plant for lac insects

Pharmacological Activities⁻²⁹

Antifilarial, antifertility, anthelmintic, antibacterial, hypoglycaemic, anticancer, antispasmodic, purgative, hemostatic, antilithotropic, anti-inflammatory, wound healing, cardiac depressant, antifungal, stimulant, antimicrobial.

Propagation and Cultivation⁻³⁰

Natural reproduction takes place by seeds which fall to the ground in the beginning of the hot season and germinate in the rainy season. Artificial propagation is done by sowing fresh seeds in April. The more vigorous seedling are ready for transplanting during the 1st year, smaller ones may be kept for another year in nursery. The tree also reproduces from root suckers but the growth is very slow.

Contraversy⁻³¹

No controversy as such. Some people may take ‘*Euphorbia tirucallai*’ plant (Indian tree spurge; milk bush- English) known in Gujarati as *Kharsandi* or *Dandalio* Thor as *Kampillaka*. The whole plant is full of latex and is poisonous. This plant is known as ‘*Kampipala*’ in Malayalam. So thinking it to be *Apbhrashta* of *Kampillaka*, they have made this mesh.

Ayurvedic medicines containing Kampillaka⁻³²

Table no. 03

Sr. No	Kalpa (Form)	Yoga (Formulation)
1)	Churna (powder)	<i>Kampillakachurna</i> <i>Kampillakachurna + guda</i> <i>Kampillakadichurna</i> <i>Shyamadichurna</i> <i>Patoladhichurna</i> <i>Kushtadichurna</i> <i>Patolamuladyachurna</i> <i>Tratyadhichurna</i>
2)	Yogas	<i>Veerechaka yoga</i> <i>Kampillaka yoga</i> <i>Shaladi yoga</i> <i>Vidangothyadi yoga</i>
3)	Vati (tablet)	<i>Krimighatinigutika</i> <i>Gaganagarbhavati</i> <i>Krimikuthar rasa</i> <i>Pittajgulmahara yoga</i> <i>Mahakalka rasa</i>
4)	Gutika	<i>Kampillakadigutika</i>
5)	Varti	<i>Krumignadivarti</i>
6)	Ghrita (ghee)	<i>Triphaladyaghrita</i> <i>Bindughrita</i> <i>Brhamighrita</i> <i>Nilinighrita</i> <i>Vipadikaharaghrita</i> <i>Dhanvantarighrita</i>

		<i>Tilvakaghrita</i> <i>Kampillakadighrita</i>
7)	Taila (oil)	<i>Kampillakataila</i> <i>Kushtadyataila</i> <i>Kanaka ksheeritaila</i> <i>Vipadikaharataila</i> <i>Kampillakaditaila</i> <i>Mahavajrakataila</i> <i>Jeevantyadhitala</i> <i>Phalataila</i>
8)	Malahara (ointment)	<i>Kampillakamalahara</i>
9)	Basti (enema)	<i>Shodhanabasthi</i>
10)	Avachurna	<i>Musthakadhiavachurna</i> <i>Guggulyadiavachurna</i>
11)	Kalka	<i>Kampillakakalka</i>

CONCLUSION:

The present review highlights the multiple uses of *Mallotus philippensis*. This plant is used against human pathogens including anti-inflammatory activity, antioxidant, antiradical, protein inhibition, hepatoprotective, anti HIV activity and many more. This review also underline *Kushthaghna*, *Vranashodhana*, *Vranaropana*, *Rechana*, *Deepana*, *Krimighna*, *Raktashodhaka*, *Ashmaribhedana*, *Garbhanirodhaka*, *Twakdoshahara*.

Though it has such medicinal and economic property it is now rarely available and has been categorized as an endangered plant could be unawareness about its uses in general public as well as its difficulty in natural reproduction. So different methods of its conservation and

propagation should be adapted so as to prevent its extinct.

The combination of traditional and modern knowledge together may produce better results for human beings.

REFERENCES:

1. Jaya Sharma, Dr.RajendraVarma, A Review On EndangeregPlant Of MallotusPhilippensis (Lam.) M. Arg. Pharmacology Online 3: 1256- 1265 (2011) .
2. Vijay Kumar SangameshKotrannavar, SavitaShivappaAngadi, A Review Of Kampillaka(MallotuaPhilippensisMuell) From Ayurvedic Perspective, Annals Of Ayurvedic Medicine Vol-2, Issue- 3, July-Sep. 2013, Page No. 89.
3. Prof. G. S. Lavekar, Database On Medicinal Plants Used In Ayu. & Siddha, Vol. 5, Central Council For Research In Ayu. & Siddha Dept. Of Ayush2008. New Delhi, Page- 101.
4. Dr.A. P. Deshpandae–DravyagunaVijnyana, Part 1 & 2, AnamolPrakashanPune – 2, Reprint Dec 2007, Page 870-871.
5. Prof. G. S. Lavekar, Database On Medicinal Plants Used In Ayu. & Siddha, Vol. 5, Central Council For Research In Ayu. & Siddha Dept. Of Ayush2008. New Delhi, Page- 101.
6. Dr.Hema Sane, Dr.Yogini Kulkarni,BotanyOf Commonly Used Medicinal Plants With Diagnostic Keys, Vision Publications, Edi. First 201,4 Page – 309.
7. Bapalal G. Vaidya,AdrshaNighantuPart-2, ChoukhambhaPrakashan, 2nd Edi. 1999,Amalakadi Varga, Page – 448- 453.
8. Kamala Information From [Www.Bimbima.Com](http://www.Bimbima.Com)
9. The Ayurvedic Pharmacopeia Of India, Part – 5, Volume – 1st Edi. 1990 Reprint – 2001, Publish- The Cotroller Of Publications Civil Lines Delhi 110054, Page 55.
10. Vijay Kumar SangameshKotrannavar, SavitaShivappaAngadi, A Review Of Kampillaka(MallotuaPhilippensisMuell) From Ayurvedic Perspective, Annals Of Ayurvedic Medicine Vol-2, Issue- 3, July-Sep. 2013, Page No. 90.
11. Kamala Information From Www. Bimbima.Com
12. RituSingh, DessertationOn PharmacognosticalAnd Analytical Study Of Kampillaka(MallotusPhilippensisMuell. Arg W.S.R. To Different Market Samples, Litreture Review, Page- 28, 29.
13. The AyurvedicPharmacopeia Of India, Part – 5, Volume – 1st Edi. 1990 Reprint – 2001, Publish- The Cotroller Of Publications Civil Lines Delhi 110054, Page 55,142,143
14. The Ayurvedic Pharmacopeia Of India, Part – 5, Volume – 1st Edi. 1990 Reprint – 2001, Publish- The Cotroller Of Publications Civil Lines Delhi 110054, Page 55,142,143
15. The Ayurvedic Pharmacopeia Of India, Part – 5, Volume – 1st Edi. 1990 Reprint – 2001, Publish- The Cotroller Of Publications Civil Lines Delhi 110054, Page 55,142,143
16. Prof. G. S. Lavekar, Database On Medicinal Plants Used In Ayu. & Siddha, Vol. 5, Central Council For Research In Ayu. & Siddha Dept. Of Ayush2008. New Delhi, Page- 104.
17. Ayurveda Prakasa, Adhyaya2, KampillakaShodhana, Page- 346
18. Dr.A. P. Deshpandae–DravyagunaVijnyana, Part 1 & 2, AnamolPrakashanPune – 2, Reprint Dec 2007, Page 870-871.

19. Prof. G. S. Lavekar, Database On Medicinal Plants Used In Ayu. & Siddha, Vol. 5, Central Council For Research In Ayu. & Siddha Dept. Of Ayush2008. New Delhi, Page- 104.
20. From [Www.Easyayurveda.Com](http://www.Easyayurveda.Com) Search On Kampillaka : MallotusPhilippensisUses, Research, Remedies On 18 April 2017.
21. The AyurvedicPharmacopeia Of India, Part – 5, Volume – 1st Edi. 1990 Reprint – 2001, Publish- The Controller Of Publications Civil Lines Delhi 110054, Page -142,143.
22. From [Www.Bimbima.Com](http://www.Bimbima.Com) Search On Kamala Information, Medicinal Uses, Side- Effects And More.
23. Prof. G. S. Lavekar, Database On Medicinal Plants Used In Ayu. & Siddha, Vol. 5, Central Council For Research In Ayu. & Siddha Dept. Of Ayush2008. New Delhi, Page- 103.
24. Prof. G. S. Lavekar, Database On Medicinal Plants Used In Ayu. & Siddha, Vol. 5, Central Council For Research In Ayu. & Siddha Dept. Of Ayush2008. New Delhi, Page- 102.
25. From www.easyayurveda.com Search On Kampillaka : MallotusPhilippensisUses, Research, Remedies On 18 April 2017.
26. From www.easyayurveda.com Search On Kampillaka : MallotusPhilippensis Uses, Research, Remedies On 18 April 2017
27. From www.easyayurveda.com Search On Kampillaka : MallotusPhilippensis Uses, Research, Remedies On 18 April 2017
28. From www.bimbima.com Search On Kamala Information, Medicinal Uses, Side- Effects And More.
29. From [Www.Bimbima.Com](http://www.Bimbima.Com) Search On Kamala Information, Medicinal Uses, Side- Effects And More
30. Prof. G. S. Lavekar, Database On Medicinal Plants Used In Ayu. & Siddha, Vol. 5, Central Council For Research In Ayu. & Siddha Dept. Of Ayush2008. New Delhi, Page- 104.
31. Dr.BapalalVaidyaForwordBy P. V. Sharma, Some Controversial Drugs In Indian Medicine, ChaukhambhaOrientaliaVaranasi, 2nd Edition 2005, Page- 184 To 187.
32. Vijay Kumar SangameshKotrannavar, SavitaShivappaAngadi, A Review Of Kampillaka(MallotuaPhilippensisMuell) From Ayurvedic Perspective, Annals Of Ayurvedic Medicine Vol-2, Issue- 3, July-Sep. 2013, Page No.94, 95