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THERAPEUTIC EFFICACY OF KAMPILLAKA IN SKIN DISORDER

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Abstract: *Kampillak (Mallotus phillipinensis* Muell. Arg., *Fam. Euphorbiaceae) is a well known herbal drug being used in therapeutics for centuries together for the treatment of skin disorder in Ayurvedic system of Medicine. It is widely scattered perennial shrub or small tree in tropical and subtropical region up to an altitude of 1000 m. It is said to have broad range of Pharmacological activities. There are many chemical constituents documented from this plant drug. These are steroids, triterpinoids, flavonoids, coumarins, bergenin, mallotophilippinens, rottlerin, isorottlerin and particularly phenols. Reported biological activities range from antimicrobial, cytotoxicity, antifungal, antiviral, antioxidant to anti-inflammatory. Root bark, leaves, fruit dust are medicinally used plant parts in the treatment of skin problem, bronchitis, fungal infections, eye disease, cancer, diabeties, diarrhoea, jaundice, urino-genital infections, in dispersing swelling of the joints in acute rheumatism. This paper reviews therapeutic potential of this important herbal drug.*
Keywords*: Mallotus phillipinensis, Ayurveda, Skin disorders.*

Introduction: *Mallotus philippiensis* L. (Fam. Euphorbiaceae), commonly known as *Kampillak, Kameela*, Kamala tree is a large woody multipurpose medicinal tree. It is also known as red Kamala or Kumkum tree due to the fruits covering which produce a red dye[1]. It is up to 10-12 meters in height and widely distributed throughout tropical India along with the Himalayan Kashmir eastwards up to 5000 feets. The plant are a rich source of biologically active compounds and are used as a common dye yielding plant. Various parts of the *kameela* are used for the healing of skin problem, antifungal, tape worm, eye disease, bronchitis, diarrhea, uroginital infection, cancer, diabetes, jaundice and malaria etc [2]. Fruit of *M. pilippinensis* have been reported being used since long time in Ayurvedic (Indian), Arabic, Unani, Chinese and traditional medicine system as antihelminthics, antifungal, immunoregulatory properties [3].

Taxonomical Classification	**Synonyms-**	**Vernacular Name** [4]
Kingdom – Plantae	*Kampillaka, Karkasha, Raktanga, Rechi, Raktaphala* [5]	Hindi- *Samala, Sindur, Rohini, Kambhal*
Order – Malpigiales		English- *Kamal Tree*
Family – Euphorbiaceae		Bengali- *Samalagundi*
Subfamily – Acalyphoideae		Gujrati- *Sapilo*
Tribe- Acalpheae		Kannada- *Kampillaka,Kunkumadamara*
Genus- Mallotus		Marathi- *Shindur,Kapila*
Species- M. Philippensis Muell. Arg		Malayalam- *Sundry,Manawa,Ponnagam*
		Telgu - *Kunkuma*

Classical Properties and Action [6]
Ras : *Katu*
Guna : *Laghu, Ruksh*
Virya : *Ushana*
Vipaka : *Katu*
Karama : *Kapha-Vata shamak, Kusthaghan, Varanshodhan, Vrana ropana*
Important Formulation*:* *Krimighatini vatika* [7]
Useful Part: *Phalarajam* [8]

Therapeutic Uses: *Krimi, Rakta shodhak, Kandu, Pama, Kustha, Vrana ropana, Ashmari*.

Phytochemistry: Kamala oil has been found to contain about 60% of kamlolenic acid, linolinic, oleic and saturated acid and some conjugated diethenoid acid, myristic and palmitic acid, and active constituents are phenols, steroids, flavonoids, rottlerin and isorottlarin, glycosides, hydrocynic acid [9].

Pharmacological Action: Antifungal, Antibacteria, Antidiabetic, Anti oxidant, Anti leukemic activity, Anti cancer Immunomodulator, Hepatoprotective [10].

Classices Uses of Kampillaka

Classical text	Mode of use	Indication	Reference
Charaka Samhita	Churna with madhu	Gulma chiktsa	CS.Ci.5.130
	Kusthadha tail & Kanakakshiri tail	Kustha chiktsa	CS.Ci.7.104,114
	Kampillakadi tail	Granthi & Vrana chiktsa	CS. Ci.21.136
	Kampillaka kwatha & Lodhra churna	Virechan	CS.Ka.9.10
	Kampillaka kwatha	Pakvashya shodhak vasti	CS.Si.10.25
Sushrut Samhita	Kampillaka gutika	virachana	SS.Su.44.83.
	Kampillaka phala	Krimi, Kustha, Prameha, Siroroga nasaka	SS. Su.45.115
	Kampillaka tail	Kustha and Dustavrana shodhak chiktsa	SS Su.45.124
	Kmpillak kalka	Prameha chiktsa	SS. Ci.11.8.
Astang Hridya	Kampillaka churna	Kustha and Dustavrana shodhak chiktsa	AH.Ci.12.16
	Vajaraka tail	Prameha chiktsa	AH.Ci.19.81

Clinical Studies and Researches on Kampillaka

Wound Healing Activity: Gangwar M. et al. reported that ethanolic extract of Kameela at the dose of 200 mg/kg body wt. exhibits wound healing activity in rat models when administered orally for the duration of 10 days and histo-pathological evalution revealed more density of collegen formation with minimal inflammatory cells in deeper tissues when compared to controls group [11]. Antimicrobial activity-Sheikh et al. reported that methanolic extract of hairs and glands covering fruits of *M. philippinensis* (kamala powder) showed antimicrobial activity in different culture (gram positive and gram negative bacteria and fungi) [12].

Hepatoprotective Activity: Ramkrishana S. et al. reported that ethanolic extract of Kameela leaves exhibit hepatoprotective activity against ccl4 induced hepatotoxicity in rats when compare to silymarin which was standard control. Which may be attributed to its antioxidant property [13].

Anti-leukaemic activity: Khan M. et al. reported that hexane fraction of *M. philippensis* root extract possesses anti-leukemic activity in HL-60 cells and also confirmed that polyphenols were the main compounds of the extract that inhibited proliferation and induced apoptosis [14].

Subsitution and Adulterants: *M. philippensis* is commonly adulterated with Annato dye (*Bixa orellana* linn.) ferric oxide, brick dust and ferruginous sand. *Casearia tomentosa* (stem bark powder), *Carthmus tinctorious* (flower powder), *Ficus bengalensis* (fruit powder) and *Flemingia macrophylla* (hairs of fruits) are also reported to be used as adulterant or substitute of *Kampillaka* [5].

Conclusion: There are large number of modern medicine available for the treatment of skin diseases but have a some drawbacks as high cost effective, their side effects and chance of recurrence is high when drug has stopped because most of cosmetic drugs are steroid based. The medicament which is derived from natural sources have lesser side effect and easily available in our natives. *Kameela* contain variuos active chemical constituents like flavonoids, phenols, glycoside compound and tannins which have reported antimicrobial activity against various skin disorders.

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