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RESEARCH ARTICLE

A CRITICAL REVIEW OF TINOSPORA CORDIFOLIA (GUDUCHI)

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ABSTRACT

Tinospora cordifolia is one of the most important among the commonly used herbs in *ayurveda*. It is a versatile herb having multidimensional use. *Ayurvedic Nighantus* are clearly mentioned *tinospora cordifolia (Guduchi)* in details with specific synonyms and therapeutic indications. In *vrihattrayee* the description of *guduchi* is present. In this study we try to assemble all the information about *guduchi mentioned* in ayurvedic *nighantus* and other text.

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INTRODUCTION

Tinospora cordifolia commonly known as Guduchi (Sharma and Dravyaguna Vijnan, 1999) or Amrita is a very much important herb in Ayurvedic system of medicine belonging to Family Menispermacaea. The different medicinal preparations of guduchi are used in various somatic, psychosomatic and lifestyle disorder of human being since times immemorial. Systemic and proper use of Guduchi can cure various life threatening disorder like diabetes, arthritis, fever, malignancy etc. Guduchi has a definite role as a hepatoprotective and as an immune booster. Few Selective herbs are mentioned in ayurveda having pharmacological action on tridosha – Guduchi is one of them. It has *Tikta, Kasaya Rasa; laghu-snigdha guna; USNA virya and Madhura vipaka. Ayurvedic Nighantus* broadly described about *Guduchi* like honeycomb with origin to therapeutic indications.

Sanskrit Synonym of Guduchi (Tinospora cordifolia*)* in different Nighantus

- Bhav prakash Nighantu (Pandey, 1969):
- Guruchi, Kundali, soma,chinna, Chinnodvoba, Amrita, Madhuparni, Chinnaruha, Vayast-ha, Chakralakshana, Chandrahasa, Vatsadani, Amritaballi, Madhuparnika, Rasayani, Vatsadini, Somballi, Tantrika,Mandali, Daibanirmita, Vayastha, Dhira.
- **Dhanwantar Nighantu (Sharma, 1982):** Kundali, chinna, Chinnodvoba, Amrita, Madhuparni, Chinnaruha, Vayastha, Amritalata, Dhara, Vatsadini, Amritaballi, Somballi, Nagkumari, chhinnagni, Jwarnashini, Jibanti, tantrika, Mandali, Daibanirmita, Vayastha, Soumya, Vishalya, Amrita Sambhava, Pindamrita, Vahuchhina, Kandarohini, Mrittika, Visigita, Dhira.
- **Kaidev Nighantu (Sharma, 1979):** Guruchi, Kundali, soma, chinna, Chinnodvoba, Amrita, Madhuparni, Chinnaruha, Vayast-ha, Chakralakshana, Chandrahasa, Vatsadani, Amritaballi, Madhuparnika, Rasayani, Vatsadini, Bora.
- **Madanpala Nighantu (Nripa *et al.*, 1954) :** Guruchi, Kundali, chinna, Chinnodvoba, Amrita, Chinnaruha, Vayast-ha, Chakralakshana, Chandrahasa, Vatsadani, Amritaballi, Jwarnashini, Jibanti.
- **Shaligram Nighantu (Vaishya, 1981):** Guruchi, Kundali, chinna, Chinnodvoba, Amrita, Madhuparni, Chinnaruha, Vayastha, Amritalata, Vatsadini, Amritaballi, Somballi, Nagkumari, chhinnagni, Jwarani, Jibanti, tantrika, Daibanirmita, Vayastha, Soumya, Vishalya, Amritasambhava, Dhira, Kundalini, Pittahni, Pindamrita, Vahuchhina, Kandarohini, Mrittika, Visigita, Dhira, Chandrika, Visagpriya.
- **Raj Nighantu (Narahari and Raj Nighantu):** Guruchi, Chinna, chinnadvoba, Amrita, Chinnaruha, chakralakhsana, Chandrahasa, Amritalata, Bora, Amritaballi, Jwarani, Shyama, Surakrita,

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Madhuparnika, rasayani, Amritastamra, Vatsyadini, Vishalya, Visagpriya, Jibantika, Kundalini, Nagkumarika, Chandrika, Gilay.

- **Priya Nighantu (Sharma, 1983):** Guruchi, Chinnodvaba.
- **Sankar Nighantu (**Pandit Dutta, 1935**):** Gilay
- **Nighantu Adarsha (Vaidya Bapala, 1968):** Guruch, Chinnodvaba, Amrita, Madhuparni, chinnaruha, Vatsyadani, Vatsyadini, Tantrika, Kundalini.

Table 1. National and International name of Tinospora Cordifolia

National Name	International Name
Hindi : *Gulancha*	Arab : *Gilo*
Bengali : *Gilo*	Burma : *Singomone*
Gujrati : *Gulvel*	Nepal : *Garjo*
Kannar : *Amrutaballi*	Persian : *Gulbel*
Malyalam : *Amritu*	Sikkim : *Gurjo*
Marathi : *Gulvel*	French : *Gulancha*
Punjabi : *Gilo*	Deccan : *Gulbel*
Tamil : *Amrutavalli*	China : *K'uan Chu Hsing*
Telegu : *Amruta*	Cantonese: *Fun Khu hang.*
Assamese : *Amarlata*	
Kashmiri : *Gilo*	
Oriya : *Gulancha*	
Urdu: *Gilo*.	

Distribution (Chatterjee Asima and Prakashi Satyesh Chandra): Found throughout tropical India, ascending to an altitude of 300 meter.

Botanical Description (Vaidya Gogte Vishnu Mahadev): It is a long lasting creeper climbing over the trees like mango, neem etc

Stem: It is covered by transparent layer and can be peeled off. It has many tentacles hanging down.

Leaves: Heart shaped, individualized, pointed at the tip and slimy.

Flowers: Small yellow flowers appearing in clusters.

Fruits: Bean shaped, appearing red on ripening and flourish in cold and moderate climate.

Pharmacognosy (Sabins Mukund, 2006):

Stem: Stem trite, sparcely lenticellate young stem green with smooth surfaces and swelling at nodes, older ones show a light brown surface marked with protuberances due to circular lenticels. T. S. of stem shows 2–3 cells of cork followed by 2–3 layers of collenchymatous cortex and 4–6 layers of parenchymatous cortex, consisting of circular to be diametric type of cells. Just below the lenticels, groups of sclereids present in secondary cortex. Phloem consists of sieve tube, companion cells and phloem parenchyma, some which contain calcium oxalate crystals.

Xylem consists of vessels, tracheids, parenchyma and fibres. Secondary xylem elements are thick walled lignified. Vessels cylindrical with bordered pits on walls. Large vessels process several tyloses with transverse septa. Medullary rays 15 – 20 or more cells wide containing rounded, hemispherical, oblong, ovoid starch grains with faintly marked concentric striations and central hilum. Pith composed of large, thin walled cells with starch grains.

Dose (Sabins Mukund, 2016): Sharangadhar samhita recommended the use of 2.5 to 5 Gms of powder per day

Stem: 250mgs - 500mgs.
Decoction: 50-100ml.
Infusion: 30-60ml.
TR (1/8):2-8ml

Properties

Rasa: Tikta, Kasaya
Guna: Laghu, snigdha
Virya: Usna
Vipaka: Madhura
Prabhav: Vishaghna
Karma: Tridosha shamak, Pitta shamak.

Pharmacological Activities

Hypoglycaemic, antihyperglycaemic, CNS depressant, antibacterial, anti-microbial, antipyretic, anti-inflammatory, antiarthritic, antiallergic, hepatoprotective, analgesic, immunosuppressive, immunostimulant, anti-neoplastic, antistress, antidiabetic, antitumor, adaptogenic, antileishmanial, antioxidant, antiendotoxi, hypotensive, diuretic.

Chemical constituents

- **Alkaloid :** Berberine,Tembetarine-Stem,
- **Diterpentoids:** Tinosporide,Columbin,Borapetol-stem
- **Steroids:** 20 Beta-hydroxyecdysone. Beta sitosterol.
- Starch components (Guruchi satya):
- It is the starchy extract with water and is prepared by powdering the wet plant mixing it with water and drying the sediments. Polysaccharides are found in satva
- 15) Identity, Purity and Strength
- **Foreign Matter :** Not more than 2%
- **Total ash :** Not more than 16%
- **Acid soluble ash:** Not more than 3%
- **Alcohol-soluble extractive:** Not less than 3%
- **Water-soluble extractive:** Not less than 11%

Substitute and Adulterant

The commonest species of Tinospora with which T. Cordifolia is likely to be substituted or adulterated are T. Sinensis (Lour) Merr. And T. Cripsa (Linn.) Miers ex Hook. f. and Th. The extract of Guruchi (Guruchi Sattva) is adulterated with powder/flour of potato/sweet potato/arrowroot/banana.

Trade and Commerce: Retail market price – Stem – Rs.12/- per kg. (2001)

Cultivation: The plant is sometimes cultivated as ornamental and is easily propagated by stem cuttings. It is specially trained to grow on Neem tree, thereby it is supposed to possess more medicinal virtue. It can also be grown by sowing seeds in monsoon, but the growth of seedlings is very slow as compared to plants grown by cuttings.

Table 2. Therapeutic uses of Guruchi in different Nighantus

Disease	BPN	DN	KN	MPN	SGN	RN	PN	SN	NA
Jwara	+	+	+	+	+	+	+	+	+
Daha			+		+	+		+	+
Trishna	+		+		+	+			+
Vaman	+				+	+			
Raktavikr		+			+			+	
Vata vyadhi					+			+	
Prameha	+		+	+	+	+	+	+	+
Pandu	+		+		+	+		+	+
Bhrama			+		+	+		+	
Kamala	+		+				+	+	+
Vatarakta	+		+	+		+	+	+	+
Medhya			+	+					
Slipada				+					
Amlapitta	+			+					
Chardi				+					+
Hridgatavata	+			+					
Kustha	+	+	+					+	+
Kas	+	+	+					+	+
Krimi		+	+					+	+
Ama			+					+	+
Raktarsha		+	+					+	
Visharpa								+	

BPN: *Bhav prakash Nighantu;* **DN:** *Dhanwantar Nighantu;* ***KN:****Kaidev Nighantu;* ***MPN:****Madanpala Nighantu;* ***SGN****:Shaligram Nighantu;* ***RN****:Raj Nighantu;* ***PN****:Priya Nighantu;* ***SN:****Sankar Nighantu;* ***NA:****Nighantu Adarsha.*

Table 3. Properties of Guduchi in different Nighantus

Properties	BPN	DN	KN	MPN	SGN	RN	PN	SN	NA
Rasa	*Katu Tikta Kasaya*	*Tikta Kasaya*	*Kasaya Katu Tikta*	*Katu Kasaya Tikta*	*Katu kasaya*	*Tikta Kasaya*	*Tikta*	*Katu Kasaya*	*Tikta Kasaya*
Guna	*Laghu*	*Guru*	*Laghu*	*Laghu*	*guru*	*Guru*		*Usna*	*Guru*
Virya	*Usna*	*Usna*	*Usna*	*Usna*	*Usna*	*Usna*	*Usna*	*Usna*	*Usna*
Vipaka	*Madhura*		*Madhura*	*Madhura*				*Madhura*	

Contraindication

No contraindication is reported up to date with tinospora cordifolia.

Drug interactions: No drug interaction is found with Tinospora cordifolia and any of the modern or ayurvedic medicine.

Position of Guduchi in different Ayurvedic text

Nighantu	Varga
Bhavprakash Nighantu	*Guruchyadi*
Dhanwantar Nighantu	*Guruchyadi*
Kaidev Nighantu	*Ousadhi varga*
Madanpal Nighantu	*Abhayadi varga*
Shaligram Nighantu	*Guruchyadi*
Raj Nighantu	*Guruchyadi*
Priya Nighantu	*Pippaladi varga*
Sankar Nighantu	*Pratham vag*
Nighantu Adarsha	*Guruchyadi*
Charak Samhita	*Agrya dravyas*
Susruta Samhita	*Guruchyadi, Patoladi, Aragvadhadi, Kakoladi valli panchya.*
Astanga Samgraha	*Guruchyadi, Patoladi, Aragvadhadi, Padmakadi gana*

Ethical preparations (Bhishagratna, 1907)

Amritadi Tailam; Madhuparnadi Tailam; Amritadi churna; Guduchi Kasaya; Guduchyadi Ghreetam; Guduchi modak; Guduchi Tailam; Guduchi Pancāmuli Kwath; Guduchi Swaras;Guduchyadi Lauham.

DISCUSSION

Tinospora cordifolia having near about fifty synonym mentioned in ayurvedic nighantus among those few are most popular like amrita, giloy, chhinnaruha, madhuparni etc. Each name of guduchi signify specific action. It has various national and international name for identification. It is a long lasting creeper climbing plant found throughout tropical India. Leaves are heart shaped, individualized pointed at the tip and slimy; flowers are small yellow appearing clusters. Fruits are bean shaped red on repening. Stem, leaf and areal roots are use as a medicinal purpose and doses depends on roga bala and rogi bala. The pharmacological properties having usna virya it pacify vata and kapha dosha and due to madhura vipaka it act on pitta and vata dosha. It is vishagna by prabhava. So guduch has definite role on tridosha. According to Bhavprakash Nighantu indication of Guruchi is jwara, trishna, vaman, prameha, pandu, kamala, vatarakta, amlapitta, hridgata vata, kustha and kas. Dhanwantar nighantu concise the indication of guruchi and only mentioned jwar, raktavikar, kustha, kas, krimi and raktarsha. The indication of guduchi in raktarsha mentioned only Dhanwantar, kaidev and Priya Nighantu. Kaidev Nighantu added some indication of guduchi like daha, bhrama, medhya with comparison to Bhavprakash and Dhanwantar Nighantu. Madanpal Nighantu first mentioned guduchi as a antifilarial drug. Shaligram Nighantu classically mentioned the therapeutic indication of guduchi in jwara, daha, trishna, vaman, raktavikar, Vatavyadhi, prameha, pandu and bhrama. Most specific indication are given by PN eg Jwara, prameha, kamala, vatrakta. Visharpa added by Shankar Nighantu which indicate that guruchi can use in emergency

purpose. All Nighantus mentioned guruchi in a specific varga but in Charak samhita it described as argya dravya and Susruta samhita and Astanga samgraha guduchi mentioned in different varga.

Conclusion

The wide range of therapeutic indications of Tinospora cordifolia (Guduchi) make it extreme popularity in ayurveda. It has numerous synonyms having definite role to specify tridosha. Apart from general indication like jwar, prameha etc tinospora cordifolia can use in emergency condition.

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