

# A comprehensive review of *Guduchi* (*Tinospora cordifolia* (Wild.) Miers), the ambrosia of Ayurveda : A classical memoir

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## Abstract

In Ayurveda, *Guduchi*, [*Tinospora cordifolia* (Wild.) Miers] is considered as a lead drug (*agrya dravya*) having multitude of therapeutic indications. This review provides a concise information regarding *Guduchi*, pertaining to its identifying characters, therapeutic properties and actions, being collected from 30 *Nighantu* (lexicons), 12 *Samhita* (treaties) and *Chikitsa grantha* (Compendia) and 15 *Rasa grantha* (Pharmacopoeia). The study reveals that, *Guduchi* is also known by about 79 other names (*pariyaya*), signifying its morphological features and pharmacological properties and actions.

*Guduchi* possesses *tikta*, *kashaya*, *katu rasa*, *laghu guna*, *ushna veerya*, *madhura vipaka* and *tridoshashghna* property. *Kandaguduchi*, a variety of *Guduchi*, has also been pronounced and attributed with 12 synonyms, possesses *katu rasa*, *ushna veerya* and *sannipatahara* properties and highlighted for its categorical actions like *Jvaraghni*, *Vishabhutghni* and *Valipalitnashini*. *Guduchi*, singularly has been attributed with fourteen *karma*(action) and indicated in twenty one clinical conditions. It is one among the few herbs advocated to be used in *ardra* (fresh) condition.. *Guduchi* is also used in pharmaceutical procedures like *Shodhana* (processing), *Marana* (calcination) and *Jarana* (incineration) of various metals and minerals.

This review is expected to enrich the documentary evidences about classical references on *Guduchi* as add on to future researches.

**Key word:** *Amrita*, *Chhinna*, *Guduchi*, *Giloe*, *Tinospora cordifolia*, *Tinospora malabarica*,

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## Introduction

Ayurvedic Pharmacopoeia delineate drugs of herbal, mineral, metal and animal origin. Information about these drugs can be traced through classical texts of Ayurveda, known as *Samhita* (treaties), *Nighantu* (lexicons), *samgraha grantha*, *chikitsa grantha*(compendia) and *Rasa grantha* (pharmacopoeia).etc. Some of these drugs are highly praised in the literature for their high therapeutic values, versatile range of actions, easy availability and preparatory methods. *Guduchi*, also known as *Amrita* and *Giloe*, botanically identified as *Tinospora cordifolia* (Wild.)Miers.) of family Menispermaceae is one such highly praised drug. It is a large glabrous climber with succulent, corky, grooved stems, branches sending down slender pendulous fleshy roots. Leaves membranous,

broadly ovate or orbicular, deeply heart shaped at the base. Tiny greenish yellow flowers occur in racemes. Male flower clusters in the axils of small subulate bracts, sepals yellow. Female flower usually solitary, similar to male, but sepals green. Carpels 1-2, stigma forked. Drupes, sessile; Seeds curved or half-moon shape, endospermic, cotyledons flattened, leaf like, radicle short<sup>(1,2)</sup>. The *Guduchi* vine grows wild and does not require much cultivation and can be easily propagated through stem cutting. It is often found in the dry forests of India growing on large trees, particularly *Neem* and mango trees.

*Tinospora cordifolia* is known by different name in different languages in India viz. *Gadancha*, *Giloe*, *Gulantha* in Bengal; *Ambarvel*, *Giroli* in Marathi; *Gado*, *Galo* in Gujarati; *Gurach*, *Giloe* in Hindi; *Amrytu* in Malayalam; *Shindil-kodi* in Tamil, *Guluchi lata* in Odia etc.<sup>(2)</sup>

Information pertaining to *Guduchi* can be traced through classical texts of Ayurveda. This review attempts to present a comprehensive account on various aspects of *Guduchi* available through classical literary sources of Ayurveda for its better understanding and application in research.

## Methodology

### Search criteria

Information regarding the drug *Guduchi* is hand searched

from books like *Nighantu*, *Samhita*, *Chikitsagrantha* and *Rasagrantha* and online source of e-*Nighantu*. Each book is searched comprehensively for search words '*Guduchi*', '*Amrita*', '*Chinnaruha*', '*Chinna*'. Information extracted from total 30 *nighantu* (18 printed and 12 e-*Nighantu*) (Table 1), 15 *Rasagrantha* (Table 2) and 12 *Samhita* and *Chikitsagrantha* is presented in Table 3 in alphabetical order.

**Table 1: List of *Nighantu* with references on *Guduchi***

Sr. No.	Nighantu
1.	Abhidhanamanjari <sup>(3)</sup>
2.	Abhidhanaratnamala <sup>(4)</sup>
3.	Amarakosha <sup>(5)</sup>
4.	Ashtanga Nighantu <sup>(6)</sup>
5.	Bhavaprakasha Nighantu <sup>(7)</sup>
6.	Dhanavantari Nighantu <sup>(8)</sup>
7.	Dravyaguna sangraha <sup>(9)</sup>
8.	Gunaratnamala <sup>(10)</sup>
9.	Haritakyadi Nighantu <sup>(11)</sup>
10.	Hridayadipaka Nighantu <sup>(12)</sup>
11.	Kaiyadeva Nighantu <sup>(13)</sup>
12.	Laghu Nighantu <sup>(14)</sup>
13.	Madanadi Nighantu <sup>(15)</sup>
14.	Madanapala Nighantu <sup>(16)</sup>
15.	Madhavadravyaguna <sup>(17)</sup>
16.	Mahaushadha Nighantu <sup>(18)</sup>

17.	Nighantushesha <sup>(19)</sup>
18.	Paryayamuktavali <sup>(20)</sup>
19.	Paryayaratnamala <sup>(21)</sup>
20.	Priya Nighantu <sup>(22)</sup>
21.	Raja Nighantu <sup>(23)</sup>
22.	Rajavallabha Nighantu <sup>(24)</sup>
23.	Sarasvati Nighantu <sup>(25)</sup>
24.	Saushruta Nighantu <sup>(26)</sup>
25.	Shabdachandrika <sup>(27)</sup>
26.	Shaligrama Nighantu <sup>(28)</sup>
27.	Shivakosha Nighantu <sup>(29)</sup>
28.	Siddhamantra Nighantu <sup>(30)</sup>
29.	Siddhasara Nighantu <sup>(31)</sup>
30.	Sodhala Nighantu <sup>(32)</sup>

**Table 2: list of *Rasagrantha* with references on *Guduchi***

Sr. No.	Rasagrantha
1.	Anandakanda <sup>(33)</sup>
2.	Arkaprakasha <sup>(34)</sup>
3.	Ayurveda prakasha <sup>(35)</sup>
4.	Rasajalanidhi <sup>(36)</sup>
5.	Rasamritam <sup>(37)</sup>
6.	Rasaprakasha sudhakara <sup>(38)</sup>
7.	Rasarnava Nama Rasatantra <sup>(39)</sup>
8.	Rasatarangini <sup>(40)</sup>

9.	Rasayanasara <sup>(41)</sup>
10.	Rasendra chintamani <sup>(42)</sup>
11.	Rasendra Sarasangraha <sup>(43)</sup>
12.	Rasendramangala <sup>(44)</sup>
13.	Rasendrasambhava <sup>(45)</sup>
14.	Siddha bhaishajya manimala <sup>(46)</sup>
15.	Yogatarangini <sup>(47)</sup>

Table 3: List of *Samhita* and *Chikitsa Grantha* with references on *Guduchi*

Sr. No.	<i>Samhita</i> and <i>Chikitsa Grantha</i>
1.	<i>Ashtanga Hridaya</i> <sup>(48)</sup>
2.	<i>Ashtanga Sangraha</i> <sup>(49)</sup>
3.	<i>Basavarajiya</i> <sup>(50)</sup>
4.	<i>Bhaishajya Ratnavali</i> <sup>(51)</sup>
5.	<i>Chakradatta</i> <sup>(52)</sup>
6.	<i>Charaka Samhita</i> <sup>(53)</sup>
7.	<i>Chikitsa Kalika</i> <sup>(54)</sup>
8.	<i>Gadanigraha</i> <sup>(55)</sup>
9.	<i>Sushruta Samhita</i> <sup>(56)</sup>
10.	<i>Vaidya chintamani</i> <sup>(57)</sup>
11.	<i>Vangasena Samhita</i> <sup>(58)</sup>
12.	<i>Vrindamadhava</i> <sup>(59)</sup>

### Inclusion criteria

The study covers Ayurvedic texts available in print and e format. If not available in print form, 'e' version were considered. For Vedic and mythological references, published articles and texts related to *Dravyaguna* were referred. The available data were scrutinized and after omitting the repeated information presented in precise tabular format, in a systematic manner, with regards to its synonyms, classification, properties, actions and indications on various disease conditions. The probable English equivalent of technical terminologies were noted referring NAMASTE portal<sup>(60)</sup> and if not available, standard dictionaries<sup>(61,62)</sup> and AFI were referred<sup>(63)</sup>.

### Exclusion criteria

Unpublished Ayurvedic texts, available in manuscript form and references from *Purana* were excluded from the present study.

### Result and Discussion

#### Mythological view

It is narrated that, *Ravana* the king of Lanka overcome with lust, abducted *Sita* the wife of *Rama*, then the mighty *Rama* assisted by the army of monkeys fought *Ravana* and killed him in the battle field. Indra, the king of Gods, was greatly pleased at the death of *Ravana*, praised *Rama* and brought back to life all the monkeys, who had been killed, by sprinkling nectar on them. In all places where drops of nectar fell on the ground running from the bodies of monkeys, there grew the plant of *Guduchi*<sup>(7)</sup>

In *Veda Sounakiya Atharvaveda* and *Panini Upadhi Bhojavritta Sayana* it is delineated that *Guduchi* is kept in every house to avoid snakes and scorpions. In *Kaushika sutra*, *Guduchi* is mentioned by the name '*Kudruchi*'<sup>(64)</sup>.

#### Variety

*Kandaguduchi*<sup>(8,23,33)</sup> is considered as a variety of *Guduchi*.

#### Botanical sources of *Guduchi*

The family *Menispermaceae*, over 450 species distributed in about 70 genera. *Tinospora cordifolia* (Wild.) Miers, *Tinospora malabarica* (Lam.) Hook. f. & Thomson, *Tinospora crispa* (L.) Hook. f. & Thomson are used as the botanical sources of *Guduchi*. Though all these three *Tinospora* species are reported, *Tinospora cordifolia* (Wild.) Miers and *Tinospora malabarica* (Lam.) Hook. f. & Thomson. are commonly used in different parts of India as botanical sources of *Guduchi*. *Tinospora cordifolia* (Wild.) Miers distributed through the tropical Indian subcontinent and China. *Tinospora malabarica* (Lam.) Hook. f. & Thomson is abundantly seen in South-East India especially at Konkan, Karnataka, Tamilnadu, Kerala, Odisha and Bengal. *Tinospora cordifolia* (Wild.) Miers is an extensive climber with corky, grooved bark with adventitious aerial roots. *Tinospora malabarica* (Lam.) Hook. f. & Thomson. is a giant deciduous climber. It is mixed as adulterant or substituted with *Tinospora cordifolia* (Wild.) Miers<sup>(65)</sup>.

#### Ayurvedic way of nomenclature

In Ayurvedic pharmacopoeia, particularly in *Nighantu*, a group of names, known as *paryaya* (synonyms), are

attributed to plants based upon their morphological and pharmacological features. This is an Ayurvedic method to distinguish a plant species clearly through its morphological features and adhering importance to its range of actions. *Guduchi* in this regard, was able to fetch

over 79 synonyms showing its paramount importance in Ayurvedic pharmacopeia. *Kandaguduchi* has also attracted 12 synonyms. Detailed interpretations of these synonyms attributed to *Guduchi* and *Kandaguduchi* are enumerated in Table 4.

**Table 4: Various synonyms of *Guduchi* and their interpretation**

Synonym of <i>Guduchi</i>	Nirukti and interpretation
<b>Based on propagation</b>	
<i>Bahuchhinna</i> <sup>(8,23,25)</sup> , <i>Chhinna</i> <sup>(3,8,7,11-14,16,18,23,25,27,32)</sup> , <i>Chhinnanga</i> <sup>(8,14,32)</sup> , <i>Chhinnarohaka</i> <sup>(3)</sup> , <i>Chhinnaruha</i> <sup>(3-8,11,13,16,18-21,23,25,27)</sup> , <i>Chhinnodbhava</i> <sup>(3,7,8,11-14,16,18,19,23,25,32,33)</sup>	Grows time and again even if it is cut-off several times.
<i>Amara</i> <sup>(20,21,27)</sup> , <i>Amrita</i> <sup>(3-8,11-14,16,18-21,23,25,27,31,32)</sup> , <i>Amritahvaya</i> <sup>(3)</sup> , <i>Amritalata</i> <sup>(3,4,8,13,14,23,32)</sup> , <i>Amritavalli</i> <sup>(3,7,8,11,12,16,18,19,21,23,28,33)</sup>	A climber that never die (even a piece of stem is sufficient for propagation)
<i>Kaandajata</i> <sup>(4)</sup> , <i>Kaandodbhava</i> <sup>(6)</sup>	
<b>Based on Pharmacognostical character</b>	
<i>Kundali</i> <sup>(3,4,6-8,11-14,16,18-21,23,25,28,32)</sup> , <i>Mandali</i> <sup>(6,8,7,11,14,32)</sup>	Ascending on the host in a circular way ( Fig.1)
<i>Nagakumari</i> <sup>(8,23)</sup> , <i>Nagakanyaka</i> <sup>(14,32)</sup>	The stem has a twining nature comparable to that of young snakes.
<i>Tantri</i> <sup>(3,28)</sup>	Rope like nature of the stem.
<i>Shyama</i> <sup>(14,23,32)</sup>	The stem of <i>Guduchi</i> black green in colour when the superficial skin is peeled off.
<i>Dhaara</i> <sup>(3,8,11,13,14,25,32)</sup>	Young stems have slight longitudinal grooves.
<i>Chakralakshanika</i> <sup>(7)</sup> , <i>Chakralakshana</i> <sup>(4,8,16,19,21)</sup> , <i>Chakralakshani</i> <sup>(3,11,13,20,25,28)</sup> , <i>Chakrangi</i> <sup>(14,32)</sup>	In transverse section of the stem, a circular structure is seen. ( Fig 1)
<i>Madhuparni</i> <sup>(3,4,6-8,11-13,19-21,23,25,27,28,32)</sup>	Leaves have viscid juice like honey.
<i>Chandrasahsa</i> <sup>(7,8,11,13,16,23)</sup>	The seeds are semilunar in shape.
<i>Dhira</i> <sup>(7)</sup>	Possesses properties of bitterness and pungency.
<i>Akanda</i> <sup>(33)</sup> , <i>Bahuchchhidra</i> <sup>(3)</sup> , <i>Brahmalata</i> <sup>(25)</sup> , <i>Suddhavallika</i> <sup>(27)</sup> , <i>Sukshmapatra</i> <sup>(25)</sup> , <i>Suvalli</i> <sup>(27)</sup>	
<b>Based on Pharmacological action</b>	
<i>Jvaranashini</i> <sup>(8,14,16,32)</sup> , <i>Jvarari</i> <sup>(23)</sup>	It is a potent drug efficacious in fever.
<i>Jivanti</i> <sup>(3,7,8,11,16,19,23,25,27,32)</sup> , <i>Rasayani</i> <sup>(7,8,11,23)</sup> , <i>Vayahstha</i> <sup>(3,4,6-8,12-14,16,23,32)</sup> , <i>Vayasya</i> <sup>(11)</sup>	It is well known <i>Rasayana</i> .
<i>Guduchika</i> <sup>(32)</sup> , <i>Guluchi</i> <sup>(3)</sup>	It provides protection against many diseases.
<i>Soma</i> <sup>(7,11,13)</sup>	It promotes strength and vitality



<i>Vishaghni</i> <sup>(3,19)</sup> , <i>Vishapa</i> <sup>(27)</sup>	It Counteracts poisons
<i>Somavalli</i> <sup>(4,7,8,11,14,19,25,27,28,32)</sup> , <i>Somalata</i> <sup>(3)</sup> , <i>Somalatika</i> <sup>(23)</sup>	That which pacifies thirst, burning sensation etc.
<i>Anilaghni</i> <sup>(3)</sup> , <i>Pitaghni</i> <sup>(27)</sup> , <i>Vataraktari</i> <sup>(27)</sup> , <i>Vranaha</i> <sup>(27)</sup> , <i>Vishalya</i> <sup>(8, 19, 7, 11,14,23,25,27,28,32)</sup>	
<b>Based on mythology</b>	
<i>Devanirmita</i> <sup>(3,4,7,8,11,14,19,25,32)</sup>	Lord Indra and Showered nectar for giving life to the army of monkey's for Lord Rama- By this, from the drops of nectar, which fell on the earth the <i>Guduchi</i> was produced.
<i>Devi</i> <sup>(19)</sup> , <i>Amritasambhava</i> <sup>(8,23)</sup> , <i>Surakrita</i> <sup>(23)</sup>	
<b>Other</b>	
<i>Tantrika</i> <sup>(3-8,11,18,19,27, 32)</sup>	It protects health of all the family members.
<i>Vatsadani</i> <sup>(3-5,7,8,11-14,16,19-21,23,25,27,31,32)</sup>	The claws will eat this plant mainly.
<i>Chhadmika</i> <sup>(23)</sup>	Thick foliage which forms a canopy as it wear
<i>Bhishakapriya</i> <sup>(23)</sup> , <i>Bhishakajita</i> <sup>(8)</sup>	The favourite of the physicians or that which has won the favour of physicians.
<i>Vara</i> <sup>(13,23)</sup>	The best among medicines
<i>Ananta</i> <sup>(19)</sup> , <i>Chanda</i> <sup>(3)</sup> , <i>Dhara</i> <sup>(19)</sup> , <i>Guda</i> <sup>(27)</sup> , <i>Krita</i> <sup>(18)</sup> , <i>Lamba</i> <sup>(19)</sup> , <i>Mahakanda</i> <sup>(3)</sup> , <i>Mritika</i> <sup>(8)</sup> , <i>Nirjara</i> <sup>(28)</sup> , <i>Pathya</i> <sup>(25)</sup> , <i>Pamaroddhara</i> <sup>(27)</sup> , <i>Pindamrita</i> <sup>(8,13)</sup> , <i>Satirupa</i> <sup>(13)</sup> , <i>Saumya</i> <sup>(8)</sup> , <i>Sauvokta</i> <sup>(3,8)</sup> , <i>Vichchhinna</i> <sup>(13)</sup> , <i>Vishayani</i> <sup>(3)</sup>	
<b>Synonym of Kandaguduchi</b>	<i>Bahuruha</i> <sup>(23,33)</sup> , <i>Bhurivallari</i> <sup>(33)</sup> , <i>Kanchukadhya</i> <sup>(33)</sup> , <i>Kandaguduchi</i> <sup>(8)</sup> , <i>Kandajata</i> <sup>(4)</sup> , <i>Kandamrita</i> <sup>(8,23,33)</sup> , <i>Kandarohoni</i> <sup>(8,13,23,33)</sup> , <i>Kandodbhava</i> <sup>(6,8,23)</sup> , <i>Kanya</i> <sup>(8,33)</sup> , <i>Pindaguduchika</i> <sup>(23,33)</sup> , <i>Pindalu</i> <sup>(23,33)</sup> , <i>Snigdhaparni</i> <sup>(33)</sup>

## Classification

In classical texts of Ayurveda the drugs are categorized under various groups as per their group characteristics.

*Guduchi*, has a mention in 68 groups/sections based upon the features like origin, morphology, property, pharmacodynamics, therapeutic use of the drug, habit, properties, action on *dosha* and disease conditions etc. Out of the referred 30 *Nighantus*, 24 described the drug

under a common class (*varga*). The signature and simile is perceived while going through these classifications certifying the scientific approach of *Nighantus* behind this classifications.

The details of classifications of *Guduchi* have been enumerated in Table 5.

**Table 5: Classification of *Guduchi* in various *Samhita*, *Rasagrantha* and *Nighantu*.**

Classification	<i>Mahakashaya, Gana, Varga and Skandha</i>
Based on Habit	<i>Valli Gana</i> <sup>(34)</sup> , <i>Valli panchamula</i> <sup>(49,56,58)</sup> , <i>Vrikshadi varga</i> <sup>(27)</sup> , <i>Lataavarga</i> <sup>(25)</sup> , <i>Latakanda</i> <sup>(19)</sup>
Based on action	<i>Dahaprashamana</i> , <i>Hikka Nigrahana Mahakashaya</i> , <i>Vamana Dravyakalpa sangraha</i> <sup>(53)</sup> , <i>Dahaghna</i> , <i>Jvaraghna</i> , <i>Mutra Virechaniya</i> , <i>Sandhaniya</i> , <i>Stanya Shodhana</i> , <i>Snehopaga</i> , <i>Triptighna</i> , <i>Trishnaghna</i> , <i>Vayahsthapana Gana</i> <sup>(45)</sup> , <i>Jvarahara</i> , <i>Prajasthapana</i> , <i>Sandhaniya</i> , <i>Snehopaga</i> , <i>Stanyashodhana</i> , <i>Triptighna</i> , <i>Trishna Nigrahana</i> , <i>Vayahsthapana Mahakashaya</i> <sup>(49,53)</sup>
Based on properties	<i>Katu skandha dravya</i> , <i>Madhura skandha dravya</i> <sup>(53)</sup> , <i>Tikta Rasa Gana</i> <sup>(45)</sup> , <i>Tikta Varga</i> <sup>(56)</sup> , <i>Tikta skandha</i> <sup>(4,49)</sup>
Based on first drug of group	<i>Aragvadhadi Gana</i> <sup>(45,49,55,56)</sup> , <i>Gokshuradi Gana</i> <sup>(43,45)</sup> , <i>Guduchyadi Gana</i> <sup>(7,8,11,23,28,32,45,48,49,56)</sup> , <i>Kakolyadi Gana</i> <sup>(45,54,56)</sup> , <i>Kiratadi Gana</i> <sup>(36,43,45,47)</sup> , <i>Murvadi Gana</i> <sup>(58)</sup> , <i>Mustakadi gana</i> <sup>(52)</sup> , <i>Padmakadi Gana</i> <sup>(6,45,49)</sup> , <i>Patoladi Gana</i> <sup>(26,45,47-49,55,56,58,59)</sup> , <i>Rasnadi Gana</i> <sup>(54)</sup> , <i>Shatavaryadi Gana</i> <sup>(36,43,46)</sup> , <i>Shatayadi Varga</i> <sup>(53,58,59)</sup> , <i>Shyamadi Gana</i> <sup>(45,48,49,56,58)</sup> , <i>Triphaladi Gana</i> <sup>(43,45)</sup> , <i>Vidarikandadi Gana</i> <sup>(43)</sup> , <i>Brihat Shatayadi varga</i> <sup>(59)</sup> , <i>Bilvadi varga</i> <sup>(18)</sup> , <i>Pippalyadi varga</i> <sup>(22)</sup> , <i>Abhayadi varga</i> <sup>(16)</sup> , <i>Madanadigana varga</i> <sup>(3)</sup>
Based on Number	<i>Panchadasha Gana</i> <sup>(15)</sup> , <i>Chatushpada Varga</i> <sup>(12)</sup>
Based on <i>Dosha Karma</i>	<i>Kapha samshamana Varga</i> , <i>Vata samshamana Varga</i> <sup>(56)</sup> , <i>Tridoshaghna Dravya</i> <sup>(46)</sup> , <i>Kaphavataghna varga</i> <sup>(30)</sup>
Based on use	<i>Aushadhi varga</i> <sup>(13)</sup>
Other	<i>Chaturbhadra varga</i> <sup>(8,13,57,59)</sup> , <i>Maraka Varga</i> <sup>(36,43)</sup> , <i>Panchatiktam Varga</i> <sup>(40,45)</sup> , <i>Shaman Dravya</i> <sup>(58)</sup> , <i>Aushadha ashraya parichchheda</i> <sup>(24)</sup> , <i>Panchamrita yoga</i> <sup>(23)</sup> , <i>Trayantikadi Gana</i> <sup>(54)</sup> , <i>Trikarshika</i> , <i>Dvitiyakanda-Vanaushadhi varga</i> <sup>(5)</sup> , <i>Shakavarga</i> <sup>(7,9,10,11,17)</sup>

### ***Rasadipanchaka* (Ayurvedic pharmacodynamics properties) and *Doshaghna***

It is accentuated in most of *Nighantu* that *Guduchi* possesses *Tikta*, *Kashaya*, *Katu*<sup>(7,10,11,13,18,16,46)</sup> *Rasa*, *Laghu guna*<sup>(7,10,11,13,18,16,46)</sup>, *Ushna Veerya*<sup>(6-8,10,11,16,18,22,23,33,46)</sup>, *Madhura Vipaka*<sup>(7,10,11,13,18,16,46)</sup> and *Tridoshaghna*<sup>(6-8,10,11,13,14,18,24,32,46)</sup> property. Some *Nighantu* mentioned *Guduchi* having *Tikta*, *Kashaya*<sup>(8,23,33)</sup>, *Tikta Rasa*<sup>(6, 22)</sup> *Guru Guna*<sup>(8, 23)</sup> and *Pittamedovishoshan*<sup>(8)</sup> property. *Kandaguduchi* possesses *Katu Rasa*, *Ushna veerya*, *Sannipatahara*<sup>(8,23,33)</sup> property. Ayurveda proposes the drug action based upon *Rasa* (taste), *Vipaka* ( post digestive effects, *Veerya* (potency), or *Prabhava* (specific actions)<sup>53</sup>.

### ***Karma* and *Rogaghanata* (Actions and therapeutic indications)**

*Guduchi* has been attributed 14 *Karma* (action) and indicated in 21 disease conditions related to 9 *Srotasa* (Figure 2 & 3). The chronological reporting of actions and indications of *Guduchi* is being presented in a descending order, considering the number of texts have reported the same. The most important *Karma* attributed to *Guduchi* are *Rasayana* (rejuvenation)<sup>(6,7,10,11,13,14,18,22,24,32)</sup>, *Samgrahi*<sup>(6-8,10,11,13,14,16,18,24,32)</sup>, *Balya*(promoting strength)<sup>(7,8,10,11,13,16,18,22-24,46)</sup>, *Deepana/Vahnikrita* (digestive)<sup>(6,7,11,13,14,16,18,24,32)</sup>, *Amahara*<sup>(7,11,13,18,46)</sup>, *Vayahsthapana*<sup>(13,53)</sup>, *Medhya* (promoting intellect)<sup>(8,53)</sup>,

*Ayushyaprada*<sup>(8)</sup>, *Chakshushya*, *Hridya* (wholesome to the heart)<sup>(13)</sup>, *Triptighna*, *Stanyashodhaka*, *Sandhaniya*, *Dahaprashamana*<sup>(53)</sup>.

Maximum indications are for *Jvara* (fever)<sup>(6-8,10,11,13,14,16,18,22-24,32,33,46,53,56)</sup> followed by *Trishna* (polidypsia)<sup>(6-8,10,11,13,14,18,23,24,32,33,46,53)</sup>, *Vatarakta* (rheumatism due to *Rakta*)<sup>(6-8,10,11,13,14,18,22,23,32,53,56)</sup>, *Kamala* (jaundice)<sup>(6,7,10,11,13,14,16,18,22,24,32,53)</sup>, *Daha* (burning sensation)<sup>(6,7,10,11,13,14,18,23,32,33,46,53)</sup>, *Prameha* (diabetes mellitus)<sup>(7,8,10,11,13,18,22,23,33,48)</sup>, *Pandu* (anaemia)<sup>(7,8,10,11,13,18,23,33,46)</sup>, *Chardi* (emesis)<sup>(7,8,11,13,18,23,24,33,46)</sup>, *Kushtha* (integumentary disease)<sup>(7,8,10,11,13,16,18,53)</sup>, *Krimi* (worm infestation)<sup>(7,11,13,16,18)</sup>, *Kasa* (cough)<sup>(7,11,13,18,46)</sup>, *Arati*<sup>(23,33)</sup>, *Bhrama* (vertigo)<sup>(23,33)</sup>, *Vataroga* (disease due to *Vata Dosha*)<sup>(7,33)</sup>, *Kandu* (pruritis)<sup>(8,53)</sup>, *Shwasa* (dyspnoea)<sup>(7,53)</sup>, *Raktarsha* (piles)<sup>(8,48)</sup>, *Arsha* (piles)<sup>(7)</sup>, *Atisara* (diarrhoea)<sup>(46)</sup>, *Kriccha Hridroga* (heart disease)<sup>(7)</sup>, *Raktaroga* (disease due to *Rakta Dosha*)<sup>(33)</sup> and *Visarpa* (acute spreading eruptions)<sup>(8)</sup>.

*Guduchi*, when administered with specific *anupana* (vehicle) manages specific diseases and aggravated *dosha* conditions. With *Erandataila* (castor oil) it cures *Vatarakta* (gout), with *Sunthi* (dry ginger) it cures *Amavata* (rheumatism due to *aam*), with *Guda* (jaggery) it cures *Vibandha* (constipation). *Guduchi* pacifies *vata*, *pitta* and *kapha dosha* when administered with *ghrita* (ghee), *sita* (sugar) and *madhu* (honey) respectively<sup>8,16</sup>.

*Kandaguduchi* possesses *Jvaraghni*, *Vishabhutghni* and

*Valitpalitnashini*<sup>(8,23,33)</sup> property.

*Kaiyadeva Nighantu*, *Dhanavantari Nighantu*, *Bhavaprakasha Nighantu*, *Raja Nighantu* have indicated *Guduchi* in maximum disease conditions.

Description of actions and indications of *Guduchi* in different texts through different time frame confirms the continued use of the drug since long time. New actions such as *Balya*, *Chakshushya* and its use in *Visarpa*, *Pandu*, *Krimi*, *Arati*, *Bhrama*, and *Kasa* were reported later in *Nighantu* period.

### ***Guduchi* as *Agrya* (lead) drug**

In *Charaka Samhita*<sup>(53)</sup> and *Astanga Samgraha*<sup>(49)</sup>, *Guduchi* is considered a lead drug for the clinical condition “*Samgrahika vatahara, dipaniyashlesmahshonita vibandha prasamana*”. Further, this drug alone or with other drugs were considered as lead drugs for the digestion of *ama* and management of *Vatarakta*<sup>(66)</sup>, *Kushtha*<sup>(67)</sup> and *Jvara*. It is also designated as the best drug for *Shamana* treatment<sup>(68)</sup>.

### ***Guduchi* as vegetable**

In addition to its use as a drug the leaves of *Guduchi* is also described under *Shaka varga* (group of vegetables) in *Brihatrayee*, *Bhavaprakasha*, and *Gunaratnamala*. The leaves are said to possess similar properties as that of the stem. (Table 6)

**Table 6: *Rasapanchaka* (Ayurvedic pharmacodynamics properties) and *Doshaghata* of *Guduchi* *Patra* as reported in *Samhita* and *Nighantus* (lexicons).**

Sr. No.	<i>Samhita/Nighantu</i>	<i>Rasa</i>	<i>Guṇa</i>	<i>Virya</i>	<i>Vipaka</i>	<i>Doshaghata</i>
1	<i>Sushruta Samhita</i> <sup>(56)</sup>	<i>Tikta</i>	-	<i>Ushna</i>	<i>Madhura</i>	<i>Vataprashamaka</i>
2	<i>Ashtanga hridaya</i> <sup>(48)</sup>	<i>Tikta</i>	-	<i>Shita</i>	<i>Katu</i>	<i>Vatakaraka</i> , <i>Kaphapittashamaka</i>
3	<i>Bhavaprakasha Nighantu</i> <sup>(69)</sup>	<i>Kashaya</i> , <i>Katu</i> , <i>Tikta</i>	<i>Laghu</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosahara</i>
4	<i>Gunaratnamala</i> <sup>(10)</sup>	<i>Kashaya</i> , <i>Katu</i> , <i>Tikta</i>	<i>Laghu</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridosahara</i>



### *Guduchi Satva*

*Satva* is dried starchy water extract obtained from *Guduchi* stem. The process of *Guduchi Satva* preparation is mentioned in *Yogaratanakara*<sup>(70)</sup>, *Rasa yoga sagara*<sup>(71)</sup>, *Rasatantrasara* and *Siddhayoga samgraha*. Ayurvedic Formulary of India recommends preparation of *Guduchi Satva* from fresh stem cuttings<sup>(63)</sup>.

*Guduchi Satva* is having *Chakshushya*, *Dhatukrit*, *Medhyam*, *Vayasthapanakaram* (Prolonging younger age) properties and is indicated in *Tapam* (Burning sensation), *Daham* (Burning sensation), *Meham* (Frequent and excessive micturition), *Aruchi* (Tastelessness), *Trit* (Thirst), *Shwasa* (Difficulty in breathing), *Pandu* (Anemia) and *Raktapradaram* etc<sup>(70)</sup>. *Vataraktam*, *Pandu* (Anemia), *Teevrajwaram* (Severe fever), *Vami* (Vomiting), *Jeerna jwaram*, *Pitta Kamila*, *Pramehakam*, *Aruchi*, *Shwasakasa*, *Hikka*, *Arsha*, *Kshaya*, *Daham*, *Mootrakrichram*, *Pradaram*, *Soma rogam*, *Pitta meham*, *Sharkaram* etc..

### *Guduchi* as an ingredient

About 2391 Ayurveda formulations contain *Guduchi* as an ingredient. These formulations, in more than 24 dosage forms ( *Kwatha*, *Churna*, *Gutika*, *Ghrita*, *Avaleha*, *Taila*, *Guggulu*, *Swarasa*, *Kalka*, *Asava*, *Arishta*, *Arka*, *Modaka*, *Yavagu*, *Hima*, *Bhasma*, *Kshara*, *Satva*, *Vataka*, *Kshirapaka*, *Sneha*, *Takra*, *Yusha and jala*), are indicated to combat almost 95 clinical conditions. Among these, maximum indications are related to the management of *Jvara* , *Vatarakta*, *Kushtha* and *Vatavyadhi*.<sup>(72)</sup>

Its versatile use in multiple clinical conditions and in various dosage forms justifies *bhishagpriya* (favored by physicians) as one of its synonym.

### Scientific validation

*Guduchi* is in Ayurveda clinical practice since ages. Recent scientific studies have validated many of its traditional claims. Details of traditional uses of *Guduchi* and reported scientific studies validating the long run uses are presented in Table 7.

**Table 7: Traditional uses of *Guduchi* and their scientific validations**

Sl No	Activity reported	Pronounced Ayurveda Activities
1.	Anti-oxidant activity <sup>(73,74)</sup> , Anti complement activity and immunomodulating activity <sup>(75,76)</sup> , Anti-HIV potential <sup>(77)</sup> , Ameliorative effect <sup>(91)</sup> , Neuroprotective effect <sup>(113)</sup> , Radio protective and Cytoprotective activity <sup>(114)</sup> <b>Clinical:</b> Children growth <sup>(78)</sup>	<i>Rasayana</i>
2.	Antimicrobial activity <sup>(79)</sup>	<i>Krimi</i>
3.	Ant diabetic activity <sup>(80)</sup> , Hypoglycemic activity <sup>(81)</sup> , Diabetic neuropathy and gastropathy <sup>(82)</sup> , Diabetic retinopathy <sup>(83)</sup> , Cataract <sup>(84)</sup> , <b>Clinical:</b> Antihyperglycemic <sup>(85)</sup> , Diabetes mellitus <sup>(86)</sup>	<i>Prameha</i> , <i>Timira</i> , <i>Madhumeha</i>
4.	Antidiarrheal activity <sup>(87)</sup>	<i>Atisara</i>
5.	Antiasthmatic activity <sup>(88)</sup> Allergic rhinitis <sup>(118)</sup>	<i>Shwasa</i>
6.	Antipyretic activity <sup>(89)</sup>	<i>Jvara</i>
7.	Cardioprotective effect <sup>(90,91)</sup>	<i>Hridaroga</i>
8.	Learning and memory enhance <sup>(92,93)</sup> , Antistress activity <sup>(94)</sup> , Aantidepressant activity <sup>(95)</sup> Antipsychotic activity <sup>(116)</sup>	<i>Medhya</i> , <i>Bharma</i>
9.	Obstructive jaundice <sup>(96)</sup> , Hepatoprotective activity <sup>(97)</sup>	<i>Kamala</i>
10.	Parkinson's disease <sup>(98)</sup> , Antiosteoporotic activity <sup>(99)</sup> , Analgesic activity <sup>(100)</sup> , Anti-inflammatory activity <sup>(101)</sup> , <b>Clinical:</b> Gouty Arthritis <sup>(102)</sup>	<i>Vataroga Vatarakta</i> , <i>vedanasthapana</i> , <i>Sandhaniya</i> , <i>Shothahara</i> ,



11.	Anti-allergic activity <sup>(103)</sup>	<i>Visarpa , Kushtha, Kandu, Udarda, kotha</i>
12.	Gastroprotective activity <sup>(104)</sup> Antiulcer effect <sup>(87)</sup> ,	<i>Aama, Chhardi, Amlapitta</i>
13.	Hypolipidemic effect <sup>(105)</sup> , Anticancer activity <sup>(106)</sup> , Antineoplastic activity <sup>(107)</sup> , Wound healing <sup>(108)</sup> , Antitumor activity <sup>(109)</sup> , Antidyslipidemic Activity <sup>(112)</sup>	<i>Sihaulya, Granthi, Arbuda, Vranaroopana</i>
14.	Uricosuric activity <sup>(110)</sup> , Aphrodisiac property <sup>(111)</sup> , Antifeedant activity <sup>(115)</sup> , Antifertility effect <sup>(117)</sup> ,	

### **Guduchi in Pharmaceutics**

*Guduchi* is used in *Marana*, *Murchana*, *Jarana*, and *Shodhana Samskara* of *Parada*. It is also used for processing of various other metals like *Abhraka Marana*, *Gandhaka Shodhana*, *Loha Shodhana*, *Tamrabhasma amritikarana*, *Vajra Bhasma Vidhi* etc. (Table-8). *Rasashastra* recommends the processing of drugs of metallic origin; through a systemic approach namely *Samskara*, which is capable of refining the properties of drug. *Shodhana* is a process of purification and detoxification of the drug to enhance the safety the drug. *Marana* (incineration) and *Jarana* (calcination)<sup>(119)</sup> are

used to remove *Visha* (toxic compounds), and to convert them to chemically modified compounds which are less toxic.

*Guduchi* is one commonly recommended drug in *Rasashastra* classics. It is one among the few drugs advocated to be used in fresh condition<sup>(68)</sup>. The recommendation of using *Guduchi* and other drugs like *Shunthi*, *Maricha* and *Pippali* in fresh conditions suggests their high hygroscopic nature and change in phyto-constituents upon drying, which needs a detailed investigation.

**Table 8: Use of *Guduchi* in processing of *Parada* (mercury) and other metals**

SI No	Parada / other metals	Uses
1.	<b>Rasa/Parada</b>	<i>Dhumra Vedhi Parada Nirmana Vidhi</i> <sup>(39)</sup> , <i>Parada Jarana Prakara</i> <sup>(33)</sup> , <i>Parada Maraka Gana</i> <sup>(40,42)</sup> , <i>Parada Marana</i> , <i>Parada Murchhana</i> , <i>Parada Shodhana drivitiya vidhi</i> <sup>(36)</sup> , <i>Suta marana jarana niyamanakara</i> <sup>(38)</sup>
2	<b>Maharasa/ Uparasa</b>	<i>Abharaka Marana</i> <sup>(37)</sup> , <i>Shataputi Abhraka Bhasma</i> <sup>(35)</sup> , <i>Gandhaka shodhana</i> <sup>(41)</sup> , <i>Kantaloha Shodhana</i> <sup>(33)</sup> , <i>Kotivedhi Maharasa</i> , <i>Loha Dravana Vidhi</i> <sup>(39)</sup> , <i>Lauha maranartha bhesaja drya</i> <sup>(42)</sup> , <i>Loha Shodhana Vidhi</i> <sup>(39,44)</sup> , <i>Mandura bhasma nirmana vidhi</i> <sup>(52)</sup> , <i>Mandura Shuddhi</i> <sup>(42)</sup> , <i>Shilajita Shodhana</i> <sup>(35)</sup>
3	<b>Dhatu</b>	<i>Swarnabhasma vidhi</i> <sup>(41)</sup> , <i>Tamra Bhasma</i> <sup>(45)</sup> , <i>Tamra marana</i> <sup>(47)</sup> , <i>Tamra Shodhana Vidhi</i> <sup>(39)</sup> , <i>Tamrabhasma amritikarana</i> <sup>(41)</sup>
4	<b>Ratna</b>	<i>Mukta Shodhana</i> <sup>(50)</sup> , <i>Vajra Bhasma Vidhi</i> <sup>(39)</sup> , <i>Vajra Marana Vidhi</i> <sup>(33)</sup>
5	<b>Other</b>	<i>Drutimelapanam</i> <sup>(33)</sup> , <i>Guduchi Kalpa</i> <sup>(55)</sup> , <i>Guggulu Shodhana</i> <sup>(36,41,43,50,51)</sup>

## Conclusion

Among all medicinal plants used in Ayurveda, *Guduchi* is of greater medicinal value. Ayurvedic pharmacodynamics of *Guduchi* unveils that it possesses *Tikta*, *Kashaya*, *Katu Rasa*, *Ushna Veerya* and *Madhura Vipaka* and pacifies *Tridosha*. *Guduchi* possesses 14 important pharmacological actions and indicated in 21 clinical conditions. It is also used for *Shodhana* (processing/purification procedure), *Marana* (calcination) and *Jarana* (incineration) of

*Parada*, *Maharasa/Uparasa*, *Dhatu* and *Ratna/Uparatna*. It's easy propagation, affordable price, diverse uses and effective pharmacological actions proves it as an ambrosia among the drugs used in Ayurveda. This review may help further scientific researches to explore all pharmacological properties of *Guduchi* delineated in various *Nighantus* (lexicons) as are observed through search form all existing literature both classical and contemporary.

Figure 1. *Kundali* and *Chakralakshanika* as two synonyms of *Guduchi*

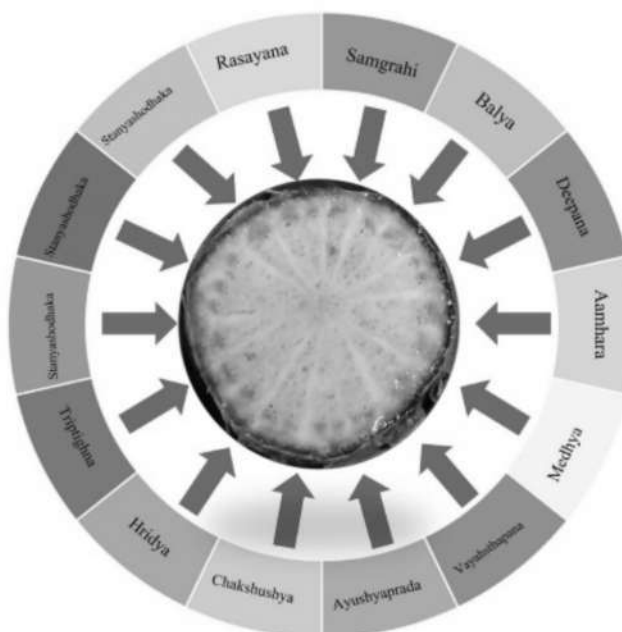


Fig. 2 Various action (*Karma*) attributed to *Guduchi*

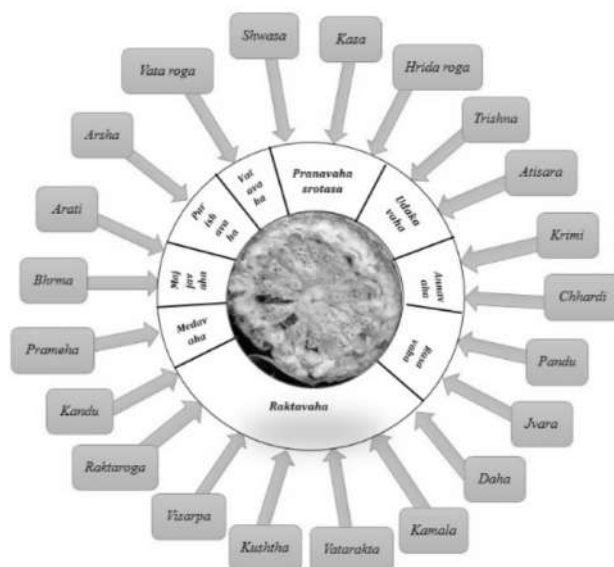


Fig. 3 *Guduchi* and its indications

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