

**Impact
Factor
4.574**

ISSN 2349-638x

Refereed And Indexed Journal

**AAYUSHI
INTERNATIONAL
INTERDISCIPLINARY
RESEARCH JOURNAL
(AIIRJ)**

Monthly Journal

VOL-V

ISSUE-VI

June

2018

Address

• Vikram Nagar, Boudhi Chouk, Latur.
• Tq. Latur, Dis. Latur 413512 (MS.)
• (+91) 9922455749, (+91) 8999250451

Email

• aiirjpramod@gmail.com
• aayushijournal@gmail.com

Website

• www.aiirjournal.com

CHIEF EDITOR – PRAMOD PRAKASHRAO TANDALE

A Review on Guduchi According to Ayurvedic Texts**Rupali S.Ankushe ,**

P.G Scholar,
Dept of Dravaygun Vighyan,
C.S.M.S.S Ayurved college & Hospital,
Aurangabad, Maharashtra, India.

P.P. Surve

Assistant Professor,
Dept of Dravaygun Vighyan,
C.S.M.S.S Ayurved college & Hospital,
Aurangabad, Maharashtra, India

Abstract:

Guduchi is one of the ayurvedic herb which has very significant properties. It is most highly valued and common herb in ayurvedic medicine. It has been used for treatment many years ago. There were so many things which was written by anicient aacharyas. It is commonly called as "Gulvel." It possesses rasayana and immunomodulatory properties which has more significance in today's life. In recent years it is studied about its biological characters and medicinal properties. Its scientific name ic Tinospora cardifolia and it is included under menispermiacece family.it is woody climbing shrub that is deciducous and perennial. It is often seen growing on mango and neemb according to texts. But oftely it grows on dadim tree, or guvea tree. It grows on whivh tree its medicinal properties changes accordinging to that out of which guduchi which is grown on neemb is the best for medicinal use. It rasa is tikta, katu, veerya is ushna, vipak madhur and guna laghu, snighda. Guduchi having tridoshshamak prabhav. It is cultivated either by stem or seeds. It possess antiinflammory, antipyretic, anthelminthic, aphrodisiac, braintonic, blood purifier, hepatoprotective, antidiabetic.

Keywords: Rasayana, Tridoshshamak, aphrodisiac**Introduction**

Gudichi or gulwel or giloya is one of the mlost valued ayurvedic herb which is used in medicine. It posseses on eof gthe best properties like rasayana, immunomodulatory. It has reach history in indian sub content where it has been used written about 1000 of years1.Guduchi as it is most commonly called is gulwel it has been described one which protects the body.The sanskriyt and hindi name amrita is derived from ancient hindu scriptures whwew amrita was used to keep gods from growing ill and old. It is no wonder that it is also referred to as "nectar of immortality" and "heavenly elixir". Its scientific name is Tinospora cordifolia and is in the family Menispermaceae.

Synonyms of guduchi

Amara
Amrutvalli
Amrutha
Amrutrha
Chinnruha
Chinnotbhava
Vastadanti

Vernacular name of guduchi2

Marathi : Gulvel

Hindi : Giloe, Gurcha

Assamese : Siddhilata, Amaralata

Bengali : Gulancha

Gujarati : Galac, Garo

Kannada : Amrutaballi

Kashmiri : Amrita, Gilo
Malayalam : Chittamrutu
Oriya : Guluchi
Punjabi : Gilo
Tamil : Seendal, Seendilkodi
Telugu : Thippateega
Urdu : Gilo

It is a woody climbing shrub that is deciduous and perennial. This herbaceous vine grows on hedges and trees. It is often seen growing up Mango or Neem trees. Herbalist Sebastian Pole writes that "those growing up neem trees are said to be the best as the synergy between these two bitter plants enhances guduchi's efficacy." It is indigenous to areas of India, Myanmar, and Sri Lanka. Guduchi typically grows in deciduous and dry forests at elevations up to 1000 ft. Its flowers bloom in summer. The male flower is small, yellow or green in color, and occurs in clusters. Female flowers are usually solitary and are green. The fruits are the size and shape of a large pea and turn from green to red when ripe in winter. The leaves are heart shaped (giving the name cordifolia to the plant) and mucilaginous. Its stems, when fresh, have a green succulent bark covered by a thin brown bark and are studded with warty lenticels. When dry, the stem shrinks and the bark separate from the wood. The roots are long narrow aerial roots that arise from the branches. The stems, leaves, and roots are used in medicine. All three parts should be collected in the summer when the bitter qualities are most abundant and, if not used fresh, dried in the shade. Guduchi grows well without fertilizer or pesticide making it simple to grow. It is easy to recognize and can be propagated by cuttings.^{3,4,5,6}

Pharmacognosy

a) Macroscopic⁷

Drug occurs in pieces of varying thickness ranging from 0.6-5 cm in diameter, young stems green with smooth surfaces and swelling at nodes, older ones show a light brown surface marked with warty protuberances due to circular lenticels; transversely smoothed surface shows a radial structure with conspicuous medullary rays traversing porous tissues, taste bitter.

b) Microscopic⁸

It means the transfer section of guduchi stem which shows outer most layer of cork. Transverse section of stem shows outer-most layer of cork, differentiating into outer zone of thick-walled brownish and compressed cells, inner zone of thin walled colorless, tangentially arranged 3-4 rows of cells, cork broken at some places due to opening of lenticels, followed by 5 or more rows of secondary cortex of which the cells of outer rows smaller than the inner one, just within the opening of lenticels, groups of sclereids consisting of 2-10 cells found in secondary cortex region, outer zone of cortex consists of 3--5 rows of irregularly arranged, tangentially elongated chlorenchymatous cells, cortical cells situated towards inner side, polygonal in shape and filled with plenty of starch grains, simple, ovoid, or irregularly ovoid-elliptical, occasionally compound of 2-4 components, several secretory cells, found scattered in the cortex, pericyclic fibers lignified with wide lumen and pointed ends, associated with a large number of crystal fibers containing a single prism in each chamber, vascular zone composed of 10-12 or more wedge-shaped strips of xylem, externally surrounded by semi-circular strips of phloem, alternating, with wide medullary rays, phloem consists of sieve tube, companion cells and phloem parenchyma of polygonal or tangentially elongated cells, some of them contain crystals of calcium oxalate, cambium composed of one to two layers of tangentially elongated cells in each vascular bundle, xylem consists of vessels, tracheids, parenchyma and fibers, in primary xylem, vessels comparatively narrow devoid of tyloses, secondary xylem elements thickwalled,

lignified, vessels cylindrical in shape bearing bordered pits on their walls some large vessels possess several tyloses and often contain transverse septa, medullary rays 15-20 or more cells wide containing rounded, hemispherical, oblong, ovoid, with faintly marked concentric striations and central hilum appearing like a point, starch grains of 5.5-11.20 μ in diameter and 6- 11.28 μ in length, pith composed of large, thin-walled cells mostly containing starch grains.

Ayurvedic Properties:

Rasa : Tikta, Katu

Guna : Laghu, Snigdha

Veerya : Ushna

Vipaka : Madhura

Prabhava : Tridosahara

Parts used: Stem, Root, Leaves

Guduchi has been described in various mahakashay according to Acharya charak which are as follow

1. Truptinghana Mahakashay
2. Stanayashodana Mahakashay
3. Trushnanigrahan Mahakashay
4. Dahaprashaman Mahakashay

Cultivation

The plant is easily cultivated by stem cuttings. It is a woody climbing shrub that is deciduous and perennial, according to the ayurvedic text it is specially grown on nimb tree or mango tree due to that properties of nimb oftenly seen in guduchi. It is perfectly matches to and grow in all types of soil under the varying climatic condition. It can also be propagated with the help of sowing of seeds in monsoon.

Substitutes and Adulterants¹⁰

The commonest species of *Tinospora* with which *T. cordifolia* is likely to be substituted or adulterated are *T. sinensis* (Lour.) Merr. and *T. crispa* (Linn.) Miers ex Hook. f. and Th. The extract of Guduchi (Guduchi Satva) is adulterated with powder/flour of potato/sweet potato/arrowroot/banana.

Indication

Different ayurvedic Acharya mention the medicinal properties of guduchi. In ancient time whole plant was used to treat in various disease condition. This medicinal herb scientifically name as *Tinospora cardifolia* (Wild). It possesses various medicinal property due to which it is helpful in several health condition. In day to day practice many doctors is used for many health condition. The extract of guduchi is available in market in the form of powder or capsule.

Medicinal property of guduchi is as follow

1. Brain tonic: It is included in medhyarasayana that means brain stimulator. It increases mind powers like memory, comprehension, intellectuality and reduces stress, mental instability.
2. Aphrodisiac: Its regular use helps to detoxify male reproductive system and rejuvenate it. It acts as a very good rasayan and vajikaran. Due to its vajikaran property it helps to increase the sperm count, sperm motility, and erection time.
3. Anti-inflammatory in joint pain: It helps to reduce pain and swelling of joints. Guduchi is helpful in many joint disorders like osteoarthritis, gouty arthritis, arthritis.

4. Anti pyretic: As it described in jwara chikitasa aadhyha according to Acharya charak it is very good antipiratic drug. Due to its tikta rasa it act as antipiratic.

5. Chronic cough: Guduchi helps to reduce the chronic cough due to ushna veerya as it is immunimodulator it helps to boost the immunity of lungs and helps relief the cough.

6. Anthelmenthic (intestine): It act as krimighana specially acts on intestinal floral krimi. Regular use of guduchi satva increases resistance of intestine to intestinal parasites.

7. Immunomodulator: Guduchi is best immunomodulator out of which neemb guduchi is possess higher immunomodulatory potential. It was proved that guduchi sattava increses the white blood cell count which acts defensive in body.

Antidiabetic: Giloy is help to control the uncontrolled blood sugar by reducing the glucose level in blood.

Blood Purifier: It act as detoxifying agents as it removes the toxins from blood. Toxins accumulated due to tobacco and alcohol consumption can be expelled out by regular use of guduchi sattava.

Hepatoprotective: It is helps to prevent the fibrosis of hepatic tissue. It helps in fatty liver. Persons, whose liver is taxed by consumption of alcohol and junk food, can be benefited by regular use of this guduchi sattava.

Physicochemical Properties of guduchi¹¹

For powder form of guduchi

Total ash : Not more than 2 %

Acid-insoluble ash : Not more than 16 %

Acid-insoluble ash : Not more than 3 %

Alcohol-sol. extractive: Not less than 3 %

Water-sol. extractive: Not less than 11 %

For fresh drug

Foreign matter : Nil

Moisture content : 75%

Ayurvedic Preparation

Guduchi is important ingredient in number of ayurvedic formulation or kalpha mostly dried stem powder is used for many herbal preparation while roots and leaves are also used however it is dried and made in to starchi extract giloya is called guduchi sattva which is highly used in many disease condition such as fever ,chronic ysentery, burning sensation diarrhea secondary syphilis, leucorrhea, jaundice, rheumatism, urinary disorders. Recently it is using in viral fever, dengue fever for improvement in the platelates count and WBCS. For that guduchi sattava with anupan of honey is used.

Fresh plant is said to be more effective than dry. Dr. K. M. Nadkarni describes how it is made "The watery extract is prepared by powdering the stem and washing out the starch with water and drying the sediment. Differnt ayurvedic formulation are punarnava aadyarishtya, trifaladishar, dashmuladiyvaghu, vishamjwarnashak panchkashay it was described by acraya cahraka.

Chemical constitutes

The stem contains alkaloidal constituents, including berberine; bitter principles, including columbin, chasmanthin, palmarin and tinosporon.

Contemporary Research

Alcoholic extract of the stem shows activity against E. coli. Active principles were found to inhibit in vitro the growth of Mycobacterium tuberculosis. Oral administration of alcoholic extract of the root resulted in a significant reduction in blood and urine glucose and in lipids in serum and

tissues of alloxan diabetic rats.¹² Guduchi has been studied for its hypoglycemic actions. Crude ethyl acetate, dichloromethane (CDM), chloroform and hexane stem extracts of *Tinospora cordifolia* was studied for inhibition of the alpha glucosidase enzyme. The enzyme was inhibited by *Tinospora* and the hyperglycemic increase was decreased by 50% in normal animals and 58% in diabetic animals. Another study used an aqueous extract of *Tinospora cordifolia* to test insulin resistance and oxidative stress in rats. *Tinospora cordifolia* treatment prevented the increase in glucose by 21.3%, insulin by 51.5%, triglycerides by 54.12%, and glucose-insulin index by 59.8 of the rats fed fructose without the addition of *Tinospora* extract. Also, *Tinospora cordifolia* treatment was effective in preventing the fructose-induced abnormalities in the liver involving lipid peroxidation, protein carbonyl groups, GSH levels, and enzymatic antioxidants.¹³ *Tinospora* supplies protection against gamma irradiation in mice.¹⁴ Administration of an alcohol stem extract to mice 1 hour before whole body gamma irradiation was shown to increase survival, prevent body weight loss, increase the number of colony forming unit counts in the spleen, restore total lymphocyte counts, increase impaired S-phase cell population and decrease irradiation induced micronuclei. In another study an aqueous extract was used on mice before being exposed to gamma radiation. The results showed various amounts of protection against the radiation through increased survival time and signs and symptoms of radiation sickness. Looking into the immune system's response to tumors one study showed the activation of tumor associated macrophages in Dalton's lymphoma, a spontaneous transplantable Tcell lymphoma, in response to an alcohol extract of *Tinospora cordifolia*. Another study by the same authors again found an increase in the count of tumor associated macrophages. The researchers also found an increase in the number and myeloid differentiation of bone marrow hematopoietic precursor cells in mice bearing Dalton's lymphoma. Further research on its anti-tumor activities used a methanol extract found that it increased the white blood cell count, maturation of bone marrow stem cells, and increased immune response as seen in macrophage activation, and plaqueforming spleen cells. The reduction in solid tumor growth was significant^{13,14,15,16}.

Conclusion

Guduchi has great medicinal value as in herbal plants many dravya are described. Due to its specific properties like immunomodulator, rasayana and vajikarna properties are highly valued in all herbal plants. There are many scientific reasons to grow guduchi in each house. Now a days it is very easy to give the patients because it is available in capsule form & powder form. It acts as a good platelet aggregating agent. Growing on nimb plant gulvel has great medicinal values so ancestors said that nimb guduchi is medicinal herb.

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