

Review on *Tinospora Cordifolia*

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Abstract-*Tinospora cordifolia* is a common climbing shrub that grows on other tree. It is commonly known as Giloy. Its native to India. It is widely used plant in Ayurvedic medicinal system. Its roots, stems and leaves are used in Ayurvedic medicine. *Tinospora Cordifolia* contains many different phytoconstituent that affect the body. Phytoconstituent such as alkaloids, glycosides, steroids, sesquiterpenoid, aliphatic compound, essential oils, mixture of fatty acids an polysaccharides. some of this phytoconstituent might have antioxidant and anti inflammatory effect. Others might affect on immune system. It plays amazing role in treatment of diabetes, inflammatory disease, jaundice, chronic fever, piles, asthma, improves Digestion. This paper presents an appraisal of medicinal properties and pharmaceutical importance of *Tinospora cordifolia*.

Key words - *Tinospora cordifolia*, Giloy, Phytoconstituent, Phytochemistry, advantage.

INTRODUCTION

Tinospora cordifolia, constantly known as Guduchi or Giloy, is a huge climbing shrub with greenish-pusillanimous flowers that grows at advanced mound and is genetically varied. It's a Menispermaceae family herbaceous vine native to the tropical corridor of the Indian Key. For generations, it has been used in traditional and ayurvedic medicine to treat a variety of affections (Modi et al., 2021) [1]. According to (Tiwari et al., 2018) [2], this herbaceous deciduous plant reaches a height of 3-4 bases and a range of 1 bottom. The stems are succulent, and long, filiform, fleshy upstanding roots form the branches. The bark is wet and slate. Brown. The leaves are cordate and membranous. The flowers are bitty and pusillanimous green in colour. This seasoning can be seen growing to a height of 300 metres in tropical Asia. It grows in a variety of soils, from acidic to alkaline, and only needs a bitsy volume of moisture to thrive. The giloy plant is set up throughout tropical India and can be set up at elevations of 1000 bases in South Asia, Indonesia, the Philippines. Thailand, Myanmar, China, and Sri Lankat (Modi et al., 2021) [1]. Virile flowers are

crowded in racemes panicles, whereas womanish flowers are solitary. Sumners and layoffs extend the blowing season. Alkaloids, steroids, diterpenoid lactones, aliphatics, and glycosides, among other active factors attained from the plant, have been isolated from various portions of the plant, including the root, stem, leaves, and whole plant, presently, the plant is more important for disquisition and the drug of various capsule forms, due to itsanti- arthritic. Malarial, hepatoprotective, vulnerable-modulatory, andanti- neoplastic goods. *Tinospora cordifolia* has several chemical factors that may have an impact on the body. Some of these chemical mixes have antioxidant parcels, while others may boost the vulnerable system's exertion. Certain mixes appeared to haveanti-cancer exertion in test brutes. The maturity of the disquisition has conducted in test tubes or on brutes. The medical parcels and nutritional composition of the giloy plant in various corridor like stems and leaves will be concentrated in this review.



Fig.1 *Tinospora Cordifolia*

Table 1 :- Taxonomical Classification :-

Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida
Order	Ranunculales
Family	Menispermaceae
Genus	<i>Tinospora</i>
Species	<i>T.cordifoila</i>

Table 2:-Vernacular Names:-

Sr.no.	Name	Language
1	Sanskrit	Guduchi, Amrita
2	Hindi	Gulantha, Giloy
3	English	Tinospora
4	Marathi	Gulvel
5	Kashmiri	Amrita, Gilo
6	Kannada	Amrutaballi, Madhuparni
7	Bengali	Gulantha
8	Gujarati	Gara, galac
9	Malayalam	Amryum, Chittamritam
10	Urdu	Gilo, Satgilo
11	Telugu	Guricha, Tippateege

Synonyms of *Tinospora cordifolia*:

1. Guduchi: That which protects .
2. Amruta: That which can act similar to the celestial to the Nectar which can make the person Immortal.
3. Chakrangi, Chakralakshaka Referring Radiating medullary rays visible on transverse section.
4. Chinnaruha, Chinnodbhava: Referring to its Propagation by stem cuttin.

Morphology of *Tinospora cordifolia*:-

- *Tinospora cordifolia* is a large, rough, imperishable, evanescent, climbing shrub.
- The stem is fleshy, succulent and climbing in nature with long filiform fleshy upstanding roots.
- The dinghy is delicate white to slate, and stem contains ensign like lenticles.
- Its leaves are simple, heart shaped, ovate, alternate or lobed, about 7-9 emboldened and membranous (Albinjose et al.,2015).[3], (Dwivedi etal., 2016). [4], (Meshram etal, 2013).[5].
- The thread like, upstanding and long filiform roots are generally arising from the branches (Singh etal., 2003).[6].
- Its flowers bloom in summer, flowers are in axillary position, 2-9 cm long raceme on pamphlet branches, androgynous, small and unheroic in colour, manly flowers are dustered while lady are generally solitary. There are six sepals that are arranged in two curls and are unheroic green in colour.(Joshi etal., 2016).[7].
- Fruits are developing during downtime season. Fruit of this factory are fleshy, orange sanguine when completely progressed.
- The seeds are twisted (Shetty etal., 2010).[8].



Phytochemistry:

The plant mainly contains alkaloids, glycosides, steroids, sesquiterpenoid, aliphatic compound, essential oils, mixture of fatty acids and polysaccharides. The alkaloids include berberine, bitter giloinin, non-glycoside giloinin gilosterol. [9].

The major phytoconstituent in *Tinospora cordifolia* include tinosporine, tinosporide. Tinosporaside, cordifolide, cordifol, heptacosanol, clerodane furano diterpene, diterpenoid furanolactone tinosporidine, columbin and b-sitosterol Berberine, Palmatine, Tembertaine, Magniflorine, Choline, and Tinosporin are reported from its stem. [10,11].

A rearranged cadinane sesquiterpene glycoside named tinocordiside, consisting of a tricyclic skeleton with a cyclobutane ring, has been isolated from the immunomodulatory aqueous fraction of the indian medicinal plant *Tinospora cordifolia*. [12].

The new clerodane furano-diterpene 2 with the molecular formula C₂₀H₂₀O₈, has been isolated from the stems of *Tinospora cocordifolia* [13].

The Indigenous medicinal plants led us to study this plant, and a hot CHCl₃ extract of the stems yielded a new clerodane furano-diterpene 2. It is found to be an epimer of 6-hydroxyarcangelisin. [13].

A new daucane-type sesquiterpene, tinocordifolin, has been isolated from the stem of *Tinospora Cordifolia*, new sesquiterpene named as tinocordifolin, together with tinocordifolioside, N trans feruloyl tyramine. [14]. Phytochemical investigation of the methanol extract of *Tinospora cordifolia* aerial parts led to the isolation of four new and seven known compounds. The structures of two new aporphine alkaloids, N-formylasimilobine 2-0-B-D-glucopyranosyl-1-2)-B-D-glucopyranoside

(tinoscorsideA, 1) and N-acetylasimilobine 2-0-8-D-glucopyranosyl-(1-2)-B-D-glucopyranoside (tinoscorside B, 2), a new clerodane diterpene, tinoscorside C (3), and a new phenylpropanoid, sinapy 14-D-B-D-apiofuranosyl- (16)-O-B-D-Glucopyranoside (tinoscorside

Active constituents of *Tinospora cordifolia*:

Active constituents of *Tinospora cordifolia* extracted from many parts of the plant such as. Leaves, stems, roots, flowers etc.

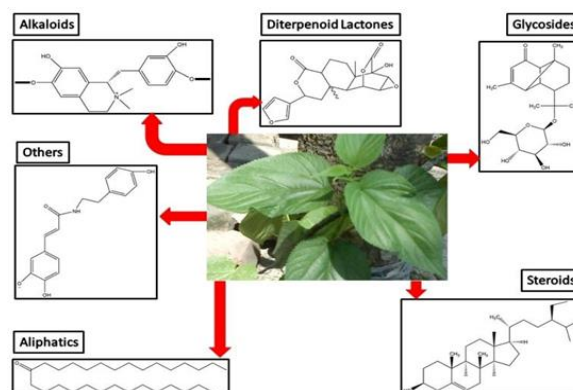


Fig 3 :- Structures of some active constituents of *Tinospora cordifolia*

Types of active component	Sources	Compounds	Biological response	Reference
Alkaloids	Root, stem	Berberine, Choline, Palmatine, Tembatarine, Magniflorine, Tinosporin, and Isocolumbin	Anticancer, diabetes, Antiviral	15
Steroids	Stem aerial Parts	Beta-Sitosterol	Induce osteoporosis in patients with early inflammatory arthritis	16
Glycosides	Stem	Tinoscorside, Cordioside	Treats parkinson’s disease and other neurological disorders	16
Aliphatic compound	Whole plant	Octacosanol	Anti-inflammatory and anti-nociceptive	17
Diterpenoid	Whole plant	Furanolactone	Anti-inflammatory, antihypertensive, Antiviral	15
Other	Root	Giloin, Tinosporic acid	Used to treat anxiety, HIV protease inhibitor	18

Amazing Advantages of *Tinospora cordifolia*: [19]

1. Treating Diabetes:- Diabetic patients particularly people with two treatment. They’ll even have Giloy juice to scale back glucose levels. The purchase of Giloy juices and uses it as per the directions on the bottle will be beneficial.
2. Inflammatory disease Cure:-The wizard herb Giloy has been evidenced useful treating inflammatory disease and its symptoms. This is doable because of its anti- arthritic and anti inflammatory properties. To cure arthritis, mix Giloy and ginger and for hardening joint pains, boil some milk with powdery Giloy stem in it and drink it.
3. Immunity Booster:-If you fall sick perpetually, then one reason might be that you simply have a weak system and this is often one thing you ought to address straight off. Your system need to be boosted up by purifying your blood, fighting microorganism, maintaining healthy cells,

fighting free-radicals that causes harm to your body, etc.

Rather than outlay time and cash on completely different remedies to repair these problems, all you would like to try is to use Giloy that could be a one stop remedy for all of those issues. A number of the opposite awe-inspiring advantages of Giloy removal of poisons from the body, used as a treatment for physiological state and tract Infections and fighting liver connected diseases.

4. Stress Relief:- Do you suffer from severe bouts of tension and stress? Prepare a health tonic consisting of Giloy and different herbs and produce down your anxiety and stress levels. This tonic also flush out all the toxins, can calm your mind and body and provides your memory a way required boost.
5. Cure For Jaundice:- Here could be a fast formula that you can simply try if you or somebody you recognize is suffering of jaundice. Take 20-30

Giloy leaves and grind it up immediately take a glass of butter milk and add the grounded leaves in it. Mixed it up and strain it before giving it to the patient.

6. **Stubborn Ear Wax:-**There are a unit times once removing ear wax Becomes a tedious method additionally the Ordinarily used ear buds also don't return to our Rescue. For such instances, the use of Giloy could Be a possibility. All you would like to try and do is Grind some Giloy in water and heat it up use this As an ear drop and add few drops in your ear double on a daily basis. This can be used to eliminate stubborn ear wax.
7. **Chronic Fever:-** For folks full of chronic fever or diseases, Giloy may be super useful because of its anti-pyretic nature. This helps in increasing the blood platelets, scale back symptoms of life threatening diseases and additionally take away the 3/5 Fever symptoms. Combining a pinch extract with honey may be used as a good treatment for protozoal infection.
8. **Treating Piles:-**Piles area unit quite painful and also the sooner you get eliminate it, the better. This remedy Giloy will cure all types of piles, thus make sure that you follow the directions totally. Take coriander leaves, Giloy and harad in equal measures. Take twenty grams of this mixture, add it to water and boil it. Once boiling, add some jaggary and have it twice on a daily basis.
9. **Improves Digestion:-**Another good thing about Giloy is that it will facilitate in meliorative digestion yet as cure any viscus connected ailments. Use this formula – take equal amounts of herbs, Giloy and ginger root, simmering the 3 ingredients. Taking 20-30 grams of this simmering day after day will give relieve from viscus connected ailments.
10. **Treating Asthma:-**There has been an increase within individuals.Suffering from respiratory disease. If you're a Respiratory disease patient, then recommendation For you, start chewing Giloy roots because it can facilitate in relieving from tightness of your chest, wheezing, coughing and respiration issues.

CONCLUSION

The scientific reaserch of an *Tinospora cordifolia* suggest a large biological potential of this plant. All

types of life can benefit from a plant like *Tinospora cordifolia*, which serves a various functions. This review proves that *Tinospora cordifolia* has pharmaceutically high valuable effects. ie.antidiabetic, antihypertensive, anti-inflammatory, antitoxic etc. future reaserch could expand the usage of *Tinospora cordifolia*'s phytoconstituents for the pharmaceutical sector.

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