



**INTERNATIONAL JOURNAL OF
PHARMACEUTICAL SCIENCES**
[ISSN: 0975-4725; CODEN(USA): IJPS00]
Journal Homepage: <https://www.ijpsjournal.com>



Review Article

A Detailed Pharmacological Review on Clitoria Ternatea

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ARTICLE INFO

Published: 24 April. 2025

Keywords:

Clitoria Ternatea, Brain Tonic, Memory Booster, Anti-Inflammatory, Anti-Cancer, Ayurveda, Health, Anti-Stress.

DOI:

10.5281/zenodo.15275328

ABSTRACT

Clitoria ternatea often called Shankhpushpi or butterfly pea is a member of the Fabaceae family. It is a perennial herb with beautiful blue Flowers that has various health advantages and is used as traditional medicine. India, Sri Lanka, Malaysia, and the Philippines are among the tropical Asian countries where it can be found. The plant has been shown to boost memory, lower anxiety, increase brain function, and support general wellness. In addition to treating snake bites, Clitoria ternatea's leaves, roots, and seeds are also used to cure indigestion, migraines, eye conditions, and urinary issues. Clitoria ternatea has medicinal qualities due to the presence of beneficial phytochemicals like flavonoids, alkaloids, terpenoids, anthocyanins, and saponins. Its flowers contain anthocyanins that give them their vibrant blue colour and have been studied for their antioxidant and anti-inflammatory effects. Additionally, the plant has shown antimicrobial, anti-cancer, anti-stress, and neuroprotective activities in scientific studies. It is also known to be used in Ayurvedic practices as a memory booster, brain tonic, and to alleviate various ailments like asthma, fever, and skin disorders. In summary, Clitoria ternatea is a multi-functional plant that has traditional and modern medicinal applications, ranging from brain enhancement to treating respiratory and skin issues.


INTRODUCTION

Clitoria ternatea (CT), is a member of the Fabaceae family, is commonly known as butterfly pea, Asian chump bodies, blue pea, cordofan pea, and Darwin pea. (Antonyms Clitoris principissae) It's an elliptic, blunt imperishable herbaceous factory that thrives in damp, neutral soil and grows as a

vine or creeper ^[1]. It's an imperishable twinning herbaceous factory, with Seven elliptic, blunt leaves, terete and pubescent stems, spectacular flowers with, a pictorial deep blue; solitary, with light unheroic markings. It is about 4 cm long and 3 cm wide in size. Some kinds yield white flowers. The fruit capsules are compressed and direct. Each cover contains 6 to 10 seeds which is 5-7cm long

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Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.



and flat^[2]. *Clitoria ternatea* Linn. locally known as Shankhpushpi. One of the medhyarasayana factories, Shankhpushpi is said to stimulate the mind, revitalize the body and nerve system, improve the body's air quality, and improve overall health to induce healthy aging^[3]. Additionally, it is used to treat leprosy, dropsy, goitre, chronic bronchitis, mucous infections, visual weakness, skin disorders, sore throats, and excrescences^[4]. *Clitoria ternatea* is now extensively distributed throughout the sticky, tableland tropics being both naturally and in polish although no advanced pasturage cultivars have been developed^[5,6]. CT is a majorly cultivated plant in the Asian region including India, Malaysia, Burma, Sri Lanka, and the Philippines^[7,8]. The phytochemical ingredients of these shops revealed that colourful secondary metabolites like flavonoids, anthocyanin glycosides, pentacyclic triterpenoids and phytosterols have been insulated from this factory^[9].

1. Physical Properties:

0.5 to 3 m is the range of length of the slender, corkscrewing stems of *Clitoria ternate*. The pinnate leaves are 3- to 5-cm long, with elliptic to lanceolate circulars on the underside that are soon pubescent. Single flowers range in colour from deep blue to blue mauve, and they are just 4–5 cm long with a very short pedicel. Up to 10 seeds are contained in flat, straight, beaked capsules that are 6–12 cm length, 0.7–1.2 mm diameter, and somewhat pubescent. The seeds are 4.5–7 mm long, 3- 4 mm broad, olive, brown or black, and often speckled^[10]. *Clitoria ternatea*'s root system is made up of many thin side roots and a reasonably robust taproot with multiple branches. There are multicellular trichomes with two primitive cells beneath the terminal cells. A dorsiventral structure was observed in in transverse section splint. All along the mode

polychromatic chargers of calcium ox alate are present. The tone – island number is 7.5 and palisade rate is 6.0. The capsules are (5- 10 cm) long, flat and 6- 11 planted.^[11,12] Cortex is composed of 10 12 layers of thin- walled nearly polygonal or tangentially stretched cells, packed with substantially composite bounce grains.^[11,13] All the shaft cells are completely packed with bounce grains and many contain calcium oxalate chargers.^[11,14,15]



Fig. 1: *Clitoria ternatea*

2. Traditional Use:

Clitoria ternatea is used as a medicine for a variety of ailments and is regarded as a genuinely bioactive plant. The seeds are used as a cathartic and the roots as a diuretic.^[16] The roots, seeds, and leaves of CT have long been used extensively as a brain alcohol in traditional medicine, especially in Ayurveda, where it is thought to improve memory and intelligence.^[17] According to Sangu Pushpam, a native remedy in Tamil Nadu's Kancheepuram area, root cream is diluted with water and administered orally to treat eye disorders, head injuries, and indigestion.^[18] It is used as a diuretic claimed by Chhattisgarh state. For two weeks, crushed fresh root bark is consumed with a mug of warm milk. With a mug of water 50g of crushed seeds are given once a day for 3 days as a purgative.^[19] The CT is boiled in water and the water is drained via fabric, according to Rajshahi

quarter in Bangladesh. For seven days, 1/32 kg of simulated water is recommended for urinary issues. ^[20] In Assam, leaf juice is combined with tar and administered to the area of the brain to cure headaches and conterminous gland lumps. Juice is used as a preventative measure for snake bites. ^[21] The effectiveness of antiviral shops in Tamil Nadu was measured, and CT extract showed the strongest effect. ^[22] This further supports the scientific evidence that traditional plant remedies are effective in treating infectious diseases. ^[23] For constipation, Clitoria ternatea seed cream was administered with pepper. Townies from Tamil Nadu's Dharapuram Taluk provided this information. ^[24], CT leaves and roots are used to treat UTIs, burning sensations in the urinary system, and frequent and absent urine, according to Bangladesh's Tripura lineage. In Karnataka, India's Uttara Kannada sector, root juice is applied topically to lower fever. ^[25] For eruptions, leaves are infused. For the observance-stitch, warm flake juice combined with ordinary tar is put around the cognizance. Poultices made from leaves are applied to blown joints. Seeds are used as an

Antihelmintic, purgative, and mild laxative. The seeds are burned for disruptions, as well as for asthmatic pall inhalation. Also used for skin disorders, eye infections, and throat issues. For facial care, root ash is used. Hostility is treated with root cream. Applying root juice to the nose can help with migraines. Apply the root juice to the boils after mixing it with gusto if the boils are painful. All things considered, CT is a classic Ayurvedic medication that is utilized as an anti-convulsant, anxiolytic, brain alcohol, memory and intelligence-depressant, and calming agent. ^[11, 27]



Fig. 2: Plant Of Clitoria Ternatea

Table 1: Traditional uses of Clitoria ternatea

Sr. No.	Parts of plant usable	Function
1	Root	Diuretic, Treat indigestion, Eye diseases and Headache, Brain tonic, memory and intelligence enhancer, UTI, burning sensation in urinary tract, Fever reduction, Facial care, Jaundice, Migraine, Painful boils.
2	Seeds	Cathartic, purgative, treat constipation, Brain tonic, memory and intelligence enhancer, Laxative, Antihelmintic, Hiccups, Asthma, throat infections
3	Leaves (juice)	(with salt) applied around ears in headache and swelling of adjacent gland to relieve pain. an anti-dote against snake-bite, Brain tonic, memory and intelligence enhancer, UTI, burning sensation in urinary tract, Eruptions
4	Flower	cure infections of eye and for headache, antidote for snake-bites
5	Boiled parts	Urinary problems

Taxonomy: -**Table 2: Taxonomy of *Clitoria ternatea*.**

Sr. no.	Domain	Eukaryote
1	Kingdom	Plantae
2	Phylum	Spermatophyta
3	Subphylum	Angiospermae
4	Family	Fabaceae
5	Subfamily	Papilionoidea
6	Genus	Clitoria
7	Species	Clitoria ternatea

3. Phytoconstituents of *Clitoria ternatea*.

The plant parts that have reportedly been used since ancient times are roots, seeds, and leaves.^[5]

The main phytoconstituents of *Clitoria ternatea* are pentacyclic triterpenoids, such as taraxerol and taraxerone.^[23, 24] Ternatins, alkaloids,

flavonoids, saponins, tannins, carbohydrates, proteins, resins, starch, taraxerol, and taraxerone are present in the roots according to the studies.^[25]

Using a new High Performance Thin Layer Chromatography method that is simple, sensitive, accurate, and selective, taraxerol in *Clitoria ternatea* Linn was identified. The analysis was carried out on Thin Layer Chromatography aluminium plates. Numerous secondary metabolites, including triterpenoids, flavanol glycosides, anthocyanins, and steroids, have been discovered from *Clitoria ternatea* Linn.^[18]

Clitoria ternatea L. leaves yielded four kaempferol glycosides: I, II, III, and IV. The compounds kaempferol-3-glucoside (I), kaempferol-3-rutinoside (II), and kaempferol-3-neohesperidoside (III) were identified by Ultra Violet, Protein Magnetic Resonance, and Mass Spectrometry. Based on spectral data, (IV), C₃₃H₄₀O₁₉, mp: 198, was identified as Kaempferol-3-orhamnosylglucoside and given the name clitorin. The seeds contain an anthoxanthin glucoside, pentosan, water-soluble mucilage, adenosine, delphinidin-3,3,5-triglucoside,

necessary amino acids, greenish yellow fixed oil, and a nucleoprotein with an amino acid sequence resembling that of insulin.^[27] p-hydroxycinnamic acid polypeptide, 6% ash, a lethal alkaloid, ethyl D-galactopyranoside, a bitter acid resin, tannic acid, 3,5,7,4-tetrahydroxy-flavone-3-

rhamoglycoside, and finotin, an extremely basic protein.^[8,28] G-sitosterol, β -sitosterol,

hexacosanol, and anthocyanin glucoside are all found in *Yoganarasimhan* seeds.^[29, 30]

It has also been demonstrated to be homologous to plant defensins and contains antifungal proteins.^[31]

A lectin found in *Clitoria ternatea* seeds agglutinated human B erythrocytes treated with trypsin, according to Aabgeena et al. An alternative high yielding purification approach for the *Clitoria ternatea* lectin, known as CTL, found in the seeds of this Leguminosae family member was attempted since the purified lectin was discovered to be a potential tool for cancer investigations.^[33]

Another study showed that the juvenile *Clitoria ternatea* flowers contained eight anthocyanins (Ternatins C1, C2, C3, C4, C5, and D3, as well as preternatins A3 and C4) and minimal delphinidin glycosides.^[34]

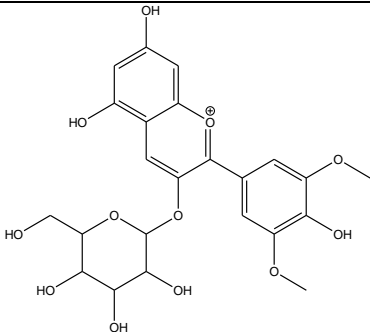
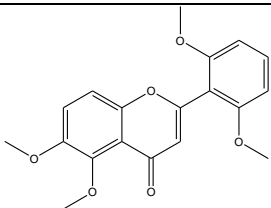
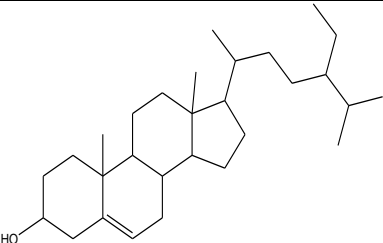
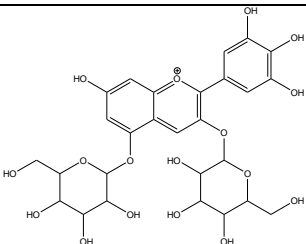
Malonylated flavanol glycosides were extracted using LC/MS/MS from the petals of *Clitoria ternatea* with varying petal hues, according to a recent study,^[35] it was discovered that five new anthocyanins, Ternatins A3, B3, B4,

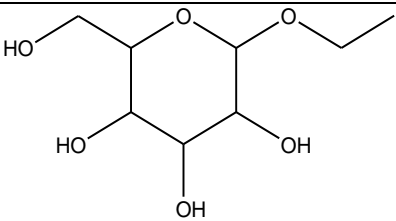
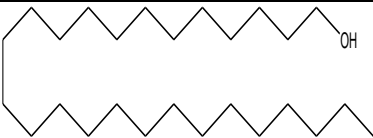
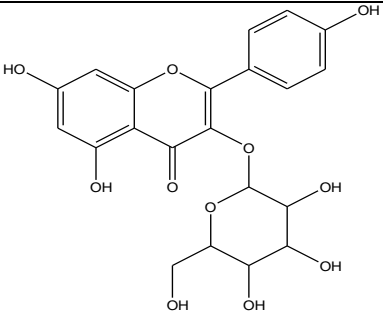
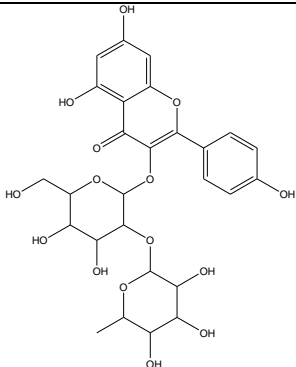
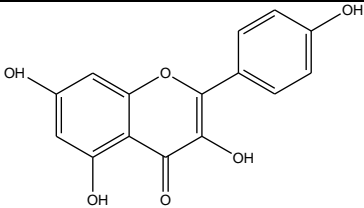
B2, and D2, were produced from *Clitoria ternatea* flowers.^[36] Kaempferol was discovered by

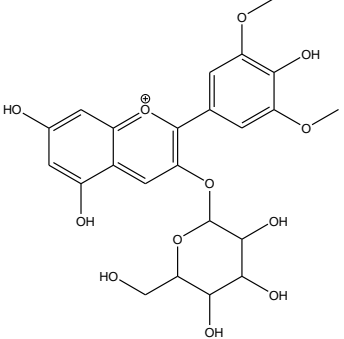
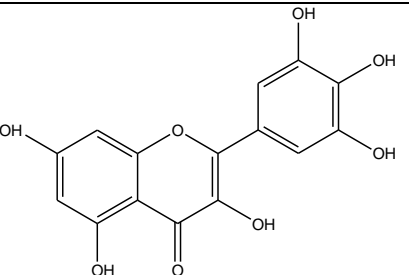
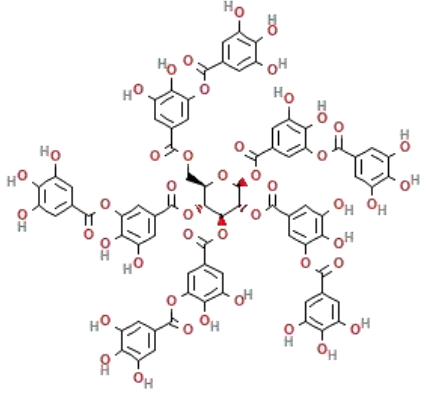
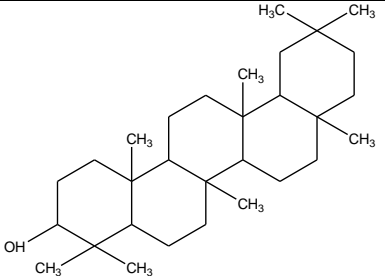


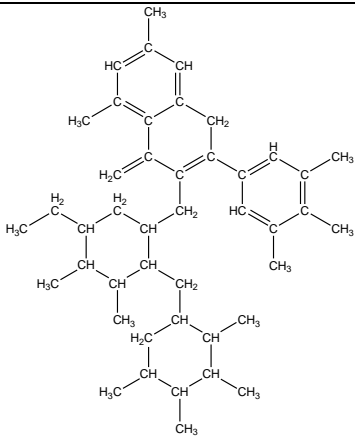
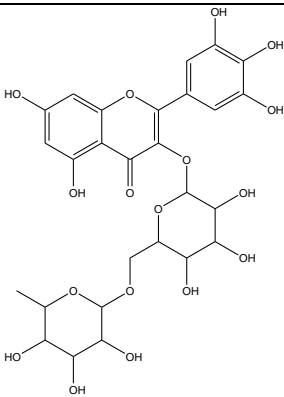
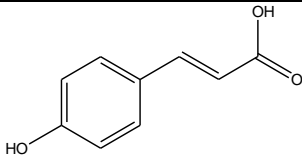
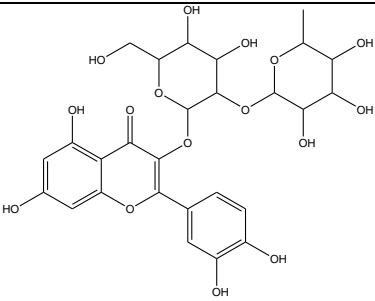
Ranaganayaki and Singh, Saito et al. detected quercetin, quercetin 3-glucoside, kaempferol-3-glucoside, and kaempferol-3-robinobioside-7-rhamnoside. [35,37,38] Phase reversal From Clitoria ternatea flowers, six Ternatins (A1, A2, B1, B2, D1, and D2) were identified using High

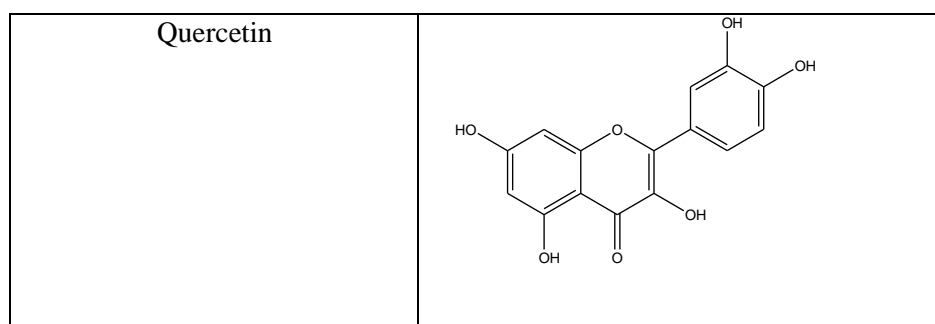
Performance Liquid Chromatography. Their structures were partially described as highly acylated derivatives of delphinidin. [39] Quantitative studies of protein, phenol, starch, carbohydrate, fat, and total soluble sugars were performed using powdered Clitoria ternatea. [40]

Phytoconstituents	Structure
3-Mono Glucoside	
Anthoxanthin Glucoside	
Beta Sitosterol	
Delphinidin-3,5-Diglucoside	

Ethyl Alpha D Galacto Pryanoside	
Hexacosanol	
Kaempferol-3-Glucoside 1	
Kaempferol-3 Neohesperidoside	
Kaempferol	

Malvidin-3-Beta Glucoside	 <p>The structure shows a malvidin aglycone core, which is a 3,5,7-trihydroxyflavylium cation. It is linked at the 3-position to a glucose molecule via a beta-glycosidic bond. The glucose is in its cyclic pyranose form, with hydroxyl groups at the 2, 3, and 6 positions and a hydroxymethyl group at the 4 position.</p>
Myriceti	 <p>The structure represents a myricetin derivative. It features a flavan-3-ol skeleton with a 3,5,7-trihydroxyphenyl group at the 2-position and a 3,4,5-trihydroxyphenyl group at the 3-position. The 4-position of the central ring has a carbonyl group, and the 5-position has a hydroxyl group.</p>
Tannic Acid	 <p>The structure depicts a complex polyphenolic molecule, specifically a gallate ester. It consists of a central gallic acid moiety (3,4,5-trihydroxybenzoic acid) esterified with multiple gallic acid units, forming a large, branched, and highly hydrophilic molecule with numerous hydroxyl and carboxylic acid groups.</p>
Taxaxerol	 <p>The structure shows a complex polycyclic steroid-like molecule. It features a fused ring system with several methyl groups (CH₃) and a hydroxyl group (OH) attached to the rings. The structure is highly branched and complex, typical of a triterpene derivative.</p>

Myricetin-3-Neohesperidoside	
Myricetin-3-Rutinoside	
P-Hydroxy Cinnamic Acid	
Quercetin-3-Neohesperidoside	



Pharmacological effect

Anxiolytic activity

Compared to rats administered chlorpromazine, rats given an oral dose of 460 mg/kg of *Clitoria ternatea* alcoholic extract showed a significant increase in anxiety by taking longer to navigate the labyrinth. (Chauhan et al., 2012). The inflexion ratio and discrimination index significantly increased in the rats given 100 mg/kg of *Clitoria ternatea*, indicating the species' nootropic effect. Both analgesic and anti-inflammatory properties petroleum ether extract (60-80°C) from *Clitoria ternatea* flowers shown considerable anti-inflammatory action at both the dose level (200 and 400 mg/kg body weight) ($P < 0.01$), according to Chauhan et al. (2012)'s anti-inflammatory and analgesic tests. *Clitoria ternatea*'s methanol extract exhibited strong antipyretic properties. When administered orally to rats, a methanol extract from *Clitoria ternatea* roots was found to prevent vascular permeability brought on by acetic acid as well as rat paw oedema brought on by carrageenin (Devi et al., 2003).

Antimicrobial Activity

Several pathogenic drug-resistant Gram-positive and Gram-negative clinical isolates were used to assess the antibacterial activity of the methanolic extracts of *Clitoria ternatea*'s leaves and root (Chauhan et al., 2012). Strong antibacterial action against *Staphylococcus aureus*, the cause of fever,

Escherichia coli, and *Vibrio cholera*, which cause diarrhoea, was discovered in the leaf. Compared to root extract, leaf extract exhibited more potent antibacterial activity. It was demonstrated that the two extracts worked in a bactericidal manner. Quercetin might be a factor in the leaf extract's action. According to a different investigation, the crude extract from *Clitoria ternatea* seeds demonstrated a minimum zone of inhibition (14 ± 1.0 mm) with *Micrococcus flavus* and a maximum zone of inhibition (22 ± 0.5 mm) against *Escherichia coli* at 0.75 mg concentration. *Salmonella typhi* exhibited the largest zones of inhibition (16 ± 2 mm) in the callus extract, whereas *Escherichia coli* and *Staphylococcus aureus* had the smallest zones (12 ± 1 mm and 12 ± 0.9 mm, respectively). Using the agar well diffusion method, the antibacterial activity of alcoholic and aqueous extracts from in vitro grown Calli against Gram-negative bacteria was evaluated. *Shigella dysenteriae* and *Salmonella* spp., which cause enteric fever, were demonstrated to exhibit antibacterial activity (Shahid et al., 2009). Furthermore, Shekawat and Vijayvergia (2010) reported that the methanol crude extracts exhibited antibacterial efficacy against *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*. *Clitoria ternatea* seed crude extract shown significant antibacterial activity. The roots of this plant are specifically used to treat leucoderma (Pendbhaje, 2011).

Anti-cancer activity



According to recent reports, plants and their constituents may suppress tumors, induce apoptosis in cancer cells, and inhibit tumor angiogenesis. The most widely used herbal medicine also has tumor-suppressive properties, interferes with cell cycle progression, boosts immune function, and inhibits tumor growth (Devita, 1983). According to Ramaswamy et al. (2011), there is a strong correlation between *Clitoria ternatea* extracts and other reports of plant extracts with anti-carcinogenic or cancer-suppressive properties. According to Naeem et al. (2007), the purified lectin showed promise as a tool for cancer research.

CNS depressant activity

The narcotic, anxiolytic, antidepressant, and antistress qualities of the *Clitoria ternatea* extract were found. Narcotic, anxiolytic, antidepressant, and antistress properties were discovered in the *Clitoria ternatea* extract. Nootropic medications improve memory, learning, and intellectual performance (Gupta, 2010; Mukherjee, 2008). As *Clitoria ternatea* has calming impact on brain it is used to treat symptoms including syncope, vertigo, and brain weakness. Convulsions, stress, anxiety, depression, and cognitive behaviour were all investigated in relation to *Clitoria ternatea*. The methanolic extract of *Clitoria ternatea* was reported to have nootropic, anxiolytic, antidepressant, anticonvulsant, and antistress properties when tested with Pentylentetrazol (PTZ) and maximal electroshock (MES) (Taranalli, 2003).

Nephroprotective

It has been shown that the ethanol extract of *Clitoria ternatea* possesses nephroprotective properties against APAP-induced nephrotoxicity. According to research on the phytoconstituents, nephro-protective, and antioxidant activities of

Clitoria ternatea by Saraumathy et al. (2011), it offers experimental proof that the plant increased the level of myocardial antioxidant enzymes, maintained histoarchitecture, and enhanced cardiac function after APAP administration.

Activities to reduce stress

Using rat and mouse models of cold restraint stress (CRS)-induced ulcers, lithium-induced head twitches, clonidine-induced hypothermia, sodium nitrite-induced respiratory arrest, and haloperidol-induced catalepsy, the anti-stress action of aerial components was evaluated (Chauhan et al., 2012). Impact on overall conduct significant neuropharmacological action is demonstrated by an ethanol extract of *Clitoria ternatea* roots (Gupta, 2010).

Larvicidal actions

The most promising mosquito larvicidal action was displayed by *Clitoria ternatea*. With LC50 values of 65.2, 154.5, and 54.4 ppm for *Anopheles stephensi*, *Anopheles aegypti*, and *Culex quinquefasciatus*, respectively, the methanol extracts of *Clitoria ternatea* seed extract were effective against the larvae of all three species (Chauhan et al., 2012 and Pendbhaje, 2011).

Proteolysis Activities

Endopeptidases (haemoglobin pH 3.5 and azocasein pH 6.0), carboxypeptidase benzyloxy carbonyl (CBZ-Phe-AlaPh5.2), and arylamidases lysophosphatidic acid and a N-Benzoyl-L-arginine P-nitro-analide (LPA 7.0 and BAPA 7.6) were all active in extracts of *Clitoria ternatea*'s cotyledons and the axis of resting and germinating seeds. Nonetheless, cotyledons had significant levels of arylamidase at pH 7.0 and endopeptidases at pH 3.5 (Chauhan et al., 2012). While the endopeptidases shown an increase at day 3



followed by a reduction, the activities of carboxypeptidase and arylamidase increased in cotyledons, peaking at day 9 (Chauhan et al., 2012). Endopeptidase and carboxypeptidase activities in the axial tissue increased until day 9, at which point they decreased, and arylamidase levels were low. Their involvement in the breakdown of the storage proteins is demonstrated by the rise in acidic endopeptidase and carboxypeptidase activity in sprouting cotyledons.

Antihelmintic activity

Numerous investigations on *Clitoria ternatea*'s Antihelmintic activity have been published. In comparison to the standard reference piperazine citrate, it was shown that the crude alcoholic extract of *Clitoria ternatea*, along with its ethyl acetate and methanol fractions, significantly demonstrated paralysis and also caused worm death, particularly at higher concentrations of 50 mg/ml (Chauhan et al., 2012). Using aqueous and methanol extract, the inhibitory effect of *Clitoria ternatea* leaves on free-living nematodes was assessed. Another study assessed the Antihelmintic properties of *Clitoria ternatea*'s flowers, leaves, stems, and roots on adult *Pheretimaposthuma* Indian earthworms. Compared to other extracts, the methanol extract of the root is the most effective and takes the shortest amount of time to paralyze and kill the worms. From blossoms to leaves, stems, and roots, the potency rises (Chauhan et al., 2012). The anthelmintic action of the *Clitoria ternatea* root's methanol extract may be due to the active ingredients in the extract (Pendbhaje, 2011).

Anti-hyperglycaemic

The antihyperglycemic properties of *Clitoria ternatea* were reported by Patil et al. (2011). Impact on the digestive tract. It is a mild laxative, cholagogue, antiemetic, and antidyspeptic. As a

result, it is utilized for piles, jaundice, constipation, dyspepsia, and emesis. It is used to treat duodenal and pylorus ulcers, among other conditions (Pendbhaje, 2011).

Diuretic action

The diuretic efficacy of dried whole root powder and ethanol extract was assessed; merely a single intravenous injection of the extract resulted in a moderate rise in the excretion of Na and K and a decrease in Cl, but no change in urine volume. Additionally, there was a noticeable impact on oral dosage (Chauhan et al., 2012).

Urination

Urination is increased by the urinary system *Clitoria ternatea*. Decoction has antidotal, ulcer, and dysuric and urinary problems in cattle (Pendbhaje, 2011).

Antioxidant activity

Clitoria ternatea (butterfly pea) flower extracts are utilized in Thai cosmetics, and the blooms' chemical makeup raises the possibility that they contain antioxidant properties. According to Kamkaen and Wilkinson (2009), *Clitoria ternatea* water extracts had greater antioxidant activity than ethanol extracts.

Antihistaminic activity

Using clonidine and haloperidol to induce catalepsy in mice, *Clitoria ternatea* demonstrated antihistaminic action (Taur and Patil, 2011). *Clitoria ternatea* is also used to treat filariasis, eye infections, irregular menstruation, and other conditions. In order to prevent abortion and stabilize the foetus, the white version of this plant's mashed roots is administered orally. The herb is said to be a beneficial brain tonic. The roots and seeds of *Clitoria ternatea* are used to make



"Shankhpushpi," an Ayurvedic remedy that is used as a laxative, alterative, and "tonic of the nerves." Sexually transmitted infections are also treated with it. Extracts from *Clitoria ternatea* have been used as part of "Medhya Rasayana," a rejuvenating mixture believed to be good for the brain and used to treat neurological conditions. Its leaves' juice reduces the poisons. Ginger juice and fresh leaf juice work well together to reduce excessive perspiration (Pendbhaje, 2011).

Impact on the circulatory system

It helps with gout (vatarakta) and haemorrhagic illnesses since it is a haemostatic and blood cleanser. To prevent smallpox, a hot infusion of prickly plants (dhamasa) is administered (Neelamma et al., 2016).

The respiratory system

Because it functions as an expectorant and lessens respiratory organ irritation, it is used to treat colds, coughs, and asthma. In addition, the entire plant is smoked. Decoction is used to gargle with symptoms related to the throat. Asthma and coughs produce less sticky phlegm when root juice and milk are given. If given orally, it can also treat whooping cough (Neelamma et al., 2016). impact on various illnesses. Additionally, it has been reported that goitre can be cured by the white-flowered plant's extract (Pendbhaje, 2011). The white flowered variety's root juice can be blown up the nose to cure haemorrhages (Pendbhaje, 2011).

4. CONCLUSION

Often referred to as Butterfly Pea or Shankhpushpi, *Clitoria ternatea* is a valuable and adaptable plant used in traditional medicine, particularly Ayurveda. Among its many therapeutic applications are memory

enhancement, anxiety relief, and brain tonic properties. The plant's roots, seeds, blossoms, and leaves are used to cure a variety of illnesses, including headaches, eye difficulties, digestive problems, skin concerns, asthma, and urinary problems.

Numerous bioactive substances, such as flavonoids, alkaloids, saponins, tannins, and terpenoids, are abundant in the plant and contribute to its medicinal qualities. Its anti-inflammatory, antioxidant, antibacterial, anti-cancer, and neuroprotective properties are well-known. Furthermore, it has been demonstrated that *Clitoria ternatea* contains diuretic, Antihelmintic, anti-hyperglycaemic, and stress-relieving properties, making it an effective natural treatment for a number of illnesses. The plant's potential in modern medicine is supported by scientific research, as it shows promise in areas like memory enhancement, cancer research, antimicrobial activity, and neuroprotection. Moreover, it has a well-established place in traditional practices across India, Southeast Asia, and beyond, where it's used both as a remedy and a tonic for overall health.

Overall, *Clitoria ternatea* is a valuable plant with a rich pharmacological profile, making it an important part of natural healing systems and a potential subject for further scientific research to explore its full benefits.

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HOW TO CITE: Amit Jadhav*, Sanika Sarode, Samiksha Chaher, Kalyani Sahare, A Detailed Pharmacological Review on *Clitoria Ternatea*, Int. J. of Pharm. Sci., 2025, Vol 3, Issue 4, 2980-2993 <https://doi.org/10.5281/zenodo.15275328>

