

**A REVIEW ON MEDICINAL BENEFITS OF CAPPARIS SEPIARIA. (L)****Thilagavathi R.<sup>1\*</sup>, Eswaran C.<sup>2</sup> and Harihara Mahadevan M.<sup>3</sup>**<sup>1\*</sup>Research officer (S), Siddha Clinical Research Unit, Bengaluru, Karnataka, India.<sup>2</sup>Senior Research Fellow, Siddha Clinical Research Unit, Bengaluru, Karnataka, India.<sup>3</sup>Research officer (S) i/c, Siddha Clinical Research Unit, Bengaluru, Karnataka, India.Article Received on  
19 Jan. 2018,Revised on 09 Feb. 2018,  
Accepted on 01 March 2018

DOI: 10.20959/wjpr20185-11379

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Clinical Research Unit,  
Bengaluru, Karnataka, India.**ABSTRACT**

Detailed studies on the distribution and their beneficial effects of an herb is often much needed for the conservation of a taxon, such studies are lacking for many of the indigenous species in India. *Capparis sepiaria* Linn, Family Capparidaceae a profusely branched hedge plant is a rare indigenous plant in south India but has widespread distribution in many tropical and sub-tropical countries, which is used in many of the Indian system of medicine. *Capparis sepiaria* is used as an active ingredient in many of the traditional medicine especially in oils. It is indicated in digestive disorders, anorexia, asthma, cold, odema, and

abscess etc., *Capparis sepiaria* is best used for skin diseases. As it possesses anti-diabetic activity, it is used in controlling diabetes. It also acts as anti-asthmatic, anti-carcinogenic, anti-amoebic, anti-bacterial, anti-snake venom, anti-tumour activity, which will be discussed in this article.

**KEYWORDS:** *Capparis*, anti- tumour activity, Siddha medicine.**INTRODUCTION**

India is richly endowed with a wide variety of medicinal plants; these plants are widely used by all the sections of the people either directly as folk medicine or indirectly as pharmaceutical preparation of modern medicine. *Capparis* is a genus distributed in many parts of the world, with its many species showing varieties of medicinal properties. The medicinal uses of *Capparis sepiaria* are well known and the supporting scientific data available is very scanty. *Capparis sepiaria* L., belonging to the family Capparidaceae is a thorny much branched shrub traditionally used for the treatment of Jaundice, Inflammation, and Dysentery.<sup>[1]</sup>

**Capparis sepiaria Linn**

Family : Capparidaceae

English : Indian caper

Hindi : Kanthari

Telugu : Nallavuppi

Tamil : Karindu, Karunjurai, Sengathari

Marathi : Kantharyel

Kannada : Ippi

Sanskrit : Kanthari.<sup>[2]</sup>

**Morphological characteristics of Capparis sepiaria Linn**

1. Tree height: 5-11 feet
2. Colour of the plant: Pale green
3. Colour of the stem: Pale green
4. Thorns: upto 3 cm length
5. Bitterness: Mild
6. Moisturizes: Moderately dried
7. Odour: Mild chilly like smell when crush
8. Fineness: Moderately fine.<sup>[3]</sup>
9. Leaf shape: Oblong, lanceolate – elliptic
10. Leaf type: simple
11. Leaf Apex: Obtuse
12. Leaf Base: Cuneate
13. Leaf Margin: Entire
14. Flower: In corymbose, sub-umbels, white, (Flowering from February – April).
15. Fruit: A globose berry, smooth, dark blue when ripen. Seeds -2 (Fruiting April onwards).
16. Field tips: Branchlets densely fulvous or grey – pubescent, With recurved thorns, leaves glaucous beneath.

**Phytochemicals present in the aqueous extract of Capparis sepiaria (L).**

- Flavonoids
- Reducing sugars
- Saponins
- Starch

- Gums
- Mucilage.

**Phytochemicals present in the ethanolic extract of *Capparis sepiaria* (L).**

- Alkaloids
- Flavonoids
- Glycosides
- Proteins
- Reducing sugars
- Saponins
- Starch
- Steroids
- Tannins
- Mucilage
- Gums.<sup>[3]</sup>

**Chemical composition of *Capparis sepiaria* Linn.**

- Acid insoluble ash (1.70%)
- Total ash (8.68%)
- Water soluble ash (3.42%)
- Water extractive (31.55%)
- Alcohol extractive (5.06%)
- Foaming index (105.26 Unit)
- Loss on drying (9.84%)
- Swelling index (4.16%).<sup>[4]</sup>

**Pharmacological action of *Capparis sepiaria* Linn.****Anti-tumour activity**

1. The methanol extract of *Capparis sepiaria* L., [MECS] bark was evaluated for anti-tumour activity against Ehrlich ascities carcinoma [EAC – bearing swiss albino mice. The study demonstrates that the MECS by decreasing the nutritional fluid volume and arresting the tumour growth increases the life span of EAC -bearing mice. Results indicate that the MECS exhibited significant anti-tumour activity in EAC bearing mice.<sup>[5]</sup>

2. The methanol extract of *Capparis sepiaria* L., [MECS] bark was evaluated for anti-tumour activity against Dalton's ascities Lymphoma [DAL] -bearing swiss albino mice. The study demonstrates that the MECS increased the lifespan of DAL-tumour bearing mice and decreases the lipid peroxidation and there by augmented the endogenous anti-oxidant enzymes in the liver. The results indicate that MECS exhibited significant anti-tumour activity in DAL-Bearing mice.<sup>[6]</sup>

#### **Anti-diabetic activity**

The Ethanol extract of *Capparis sepiaria* L., leaves were evaluated for anti-diabetic activity against streptozotocin induced diabetic rats and compared against normal saline control and the standard glibenclamide, the study suggest that the *Capparis sepiaria* L., leaves may be prescribed as an adjunct to traditional formulation and drug treatment for controlling diabetes.<sup>[7]</sup>

#### **Hepato -Protective activity**

The hepato -protective activity of *Capparis sepiaria* L., stem was evaluated against carbon-tetrachloride induced hepato toxicity and compared against standard silymarin in albino rats. The extract produces significant ( $P < 0.01$ ) reduction in the elevated levels of aspartate transaminase (AST), alanine transaminase (ALT), total bilirubin (TB) and rise of decreased total protein level when compared with the toxic control. The result of the study suggests that the alcohol extract of *Capparis sepiaria* stem at a dose of 100mg/kg, showed significant hepato protective activity which may be related to the genus.<sup>[8]</sup>

#### **Anti-Inflammatory activity**

Anti-inflammatory activity was evaluated with the ethanolic extract of leaves of *Capparis sepiaria* L., in wistar rats. The anti-inflammatory activity was carried out in different methods such as Carrageenan, cotton pellet and cotton oil induced Oedema. The results indicate that *Capparis sepiaria* extract is bioactive agent and having significant results in anti-inflammatory action by inhibition of the exudation, and leukocytes recruitment into the inflamed tissues.<sup>[9]</sup>

#### **Anti-Bacterial activity**

The ethanolic extract of *Capparis sepiaria* L., leaves and fruits were tested for their anti-bacterial activity against six specific bacteria, *Bacillus subtilis*, *Escherichia coli*, *Enterococcus faecalis*, *Klebsiella* sp., *Pseudomonas aeruginosa* and *Staphylococcus aureus*. The study

concluded that the ethanolic leaf and fruit extracts of *Capparis sepiaria* L., showed concentration dependent anti-bacterial activity. The extract showed maximum activity in the highest concentration of 1000ppm used in the study. Ethanolic fruit extracts of Capp.<sup>[10]</sup>

### Uses of *Capparis sepiaria* L., in other countries

1. In Tanzania, *Capparis sepiaria* L., root powder is taken in porridge or as tea to treat anthrax and cancer, the root bark is used against fever and stomach complaints.
2. In Kenya root decoctions are inhaled to treat pain in the chest.
3. In South Africa *Capparis sepiaria* L., are given to livestock to treat gall bladder problems.
4. In West Africa, root powder is used to treat wounds and against ticks.
5. In Nigeria *Capparis sepiaria* L., is used as a hunting poison, whereas roots are chewed as a remedy against toothache.
6. In West Africa and Madagascar, the fruit is considered as Aphrodisiac.
7. In tropical Asia, *Capparis sepiaria* L., is used to treat fever, liver disorders and diarrhoea and as alterative and tonic.<sup>[11]</sup>

### *Capparis sepiaria* (*Sengathari*) in Siddha Literature

#### Other Names

*Karunjoorai*

*Vinthalaiyam*

*Abanthasam*

*Amanthalam*

*Alanthal.*<sup>[12]</sup>

“*Sengatharip peyarai cheppa kelu*

*Seviamang koshtagama nethira pushpin*

*Nangana sarvangi ratha pushpikavam*

*Narpattaich charuthanil nallabhagam*

*Sembanalembana verchatril velli*

*Sembagum poochatril thangam sembagum*

*Pambana pazhachatril ayamum sembagum*

*Padiyathor sengatharip perumame*“

- *Bogar karukadai nigandu* -500

*seviyam, koshtagam, nethirapushpi, sarvangi, rathapushpika*<sup>[13]</sup> are the other names of *sengathari*.

**Properties (Gunagal) of Sengathari**

1. The juice of *sengathari* root make silver (*velli*) into copper (*sembu*).
2. The juice of *sengathari* flower make gold (*thangam*) into copper (*sembu*).
3. The juice of *sengathari* fruit make iron (*ayam*) into copper (*sembu*).<sup>[13]</sup>

**Properties (Gunagal) of Sengathari root**

“*Sengathari chadaikuth theeratha vanmegam*

*Pongi varukirandhip punpuraigal-thangukinra*

*Sandhiga sileshmandh thanitha mahavatha*

*Muthigai vitodum mozhi”*

The root of *sengathari* cures *premega nee r*(Excessive urethral discharge), *ottuppur* *puraigal*(Ulcer with sinuses, *Vatha* diseases (All types of Arthritis) which causes swelling of the joints.<sup>[14]</sup>

**Siddha medicines which includes Sengathari**

S. No	Medicine	Dosage	Indication
1	Sarvakulanthaga thylam	External application-for head bath	Sayam (Tuberculosis), Irumal (Cough), Vatha kasam (Sarvaroham).
2	Sengathari ennai	1 kasu eddai	Vathakarappan, Vishangal (All types of Poison)
3	Karunkozhi chooranam	Mooviral	Soolai (Painful diseases), kiranthi (Syphilitic ulcer), mootuvali (Arthritis), vipuruthi (Carcinoma), uthira vayu (Menstrual disorders), vatha noigal (All types of Arthritis).
4	Notchi ennai	Both External and Internal	Karappan (Eczema), Sengkarappan (Infantile eczema), Ari karappan (Itching eczema), Veengu karappan
5	Vellarugu chooranam	Mooviral with honey	Kadivishagal (Poisonous bites & stings), Karappan (Eczema), Soolai (Painful diseases), Kiranthe (Syphilitic ulcer).
6	Echvaramoolich chooranam	Mooviral with hot water	Karappan (Eczema), Veekam (Odema/Swelling). <sup>[15]</sup>
7	Arkkathi ennai	1 varagan eddai(4gm)	Vatha rohagal (Arthritis).
8.	Mukkottennai	1 kasu eddai(10gm)	Sanni patham (Delirium). <sup>[16]</sup>
9	Sengathari ennai	5-10 ml twice a day.	Thondai putru (Throat cancer), Na putru (Tongue cancer), vaiputru (Oral cancer), Nakku vedippu (Fissured tongue), Uhadu veluppu (Pale lipa), Nakku kopulam (Tongue boils), Vai kirandhi (A type of adenitis).
10	Peisori chooranam	1-2 gm twice a day	Peisori(urticaria), sagala karappan (All types of eczema), kiranthe (Syphilitic ulcer). <sup>[17]</sup>

**CONCLUSION**

The promotive, corrective, preventive and curative approach in the medicinal plants possessing such properties are indeed the strength of the Siddha system of medicine. It is quite logical to say that a serious and in-depth study and research on the vast treasure in Siddha system of medicine, particularly their theoretical bases and philosophical explanations may open up new exciting awareness of knowledge under several basis. *Sengathari* is a rare plant, with the multiple medicinal usages. As it possesses the anti-tumour activity, detailed study must be carried out to evaluate its usages scientifically.

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