

# STUDY ON TRADITIONAL IMPORTANCE OF CELASTRUS PANICULATUS WILD

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## ABSTRACT

Herbal medicinal plants are used for the treatment of a wide variety of disorders, and it is not an exaggeration to say that the use of medicinal plants has been around for as long as people have been there to use them. In India, people have been using different herbs to treat various ailments as far back as prehistoric times. Ayurveda is an ancient traditional medical system that has been practised in India from around 200 B.C. It makes use of a vast number of medicinal herbs that are employed in the prevention and treatment of a wide variety of disorders. One of these is the plant known as *C. paniculatus*, which has been called the "Elixir of life" for many years. It is known as "Jyotishmati" in Ayurveda because it is believed to improve one's "medha" (intellect) and "smruti" (memory) and because of these benefits, Ayurveda recognizes it. Deodar, K.A. and Shinde, N.W (2015) Because of the long-standing traditions surrounding the consumption of natural drugs, it is clear that medicinal plants, with all of the intraspecific variation that they possess, constitute a chemical and therapeutic goldmine. *Cilantro paniculatus* Wild, also known as the "Tree of life" in Ayurvedic medicine, is a member of the Celastraceae plant family and has been used for as long as anyone can remember to cure brain-related diseases and to improve learning and memory. For the purpose of the study, *C. paniculatus* specimens were taken from the Botanical Garden at the University of Calicut.

**KEYWORDS:** *Herbal ,medicinal plant*

## INTRODUCTION

Herbal medicinal plants are used for the treatment of a wide variety of disorders, and it is not an exaggeration to say that the use of medicinal plants has been around for as long as people have been there to use them. The market for herbal medicine had a turnover of approximately US\$ 30 billion in the year 2000 in the countries of the United States, Australia, and Canada. This figure had climbed by 5–15 percent by the turn of the century. The annual market for herbal medicine around the globe has already reached a staggering 60 billion dollars. Industrialized cultures have made discoveries that have led to the extraction of active ingredients from plants and the production of a number of medications and chemotherapeutic agents, both from the plants themselves and from rural herbal cures that have been traditionally employed. *Celastrus paniculatus* is one of the plants that has a rich source of therapeutically and medicinally potentially active ingredients, and it is one of the plants that is used in traditional Chinese medicine.

The name "Black seed oil plant" is usually given to the *Celastrus paniculatus* plant. It is a huge climbing unarmed shrub that is deciduous and attains a height of 10 metres. It has long thin elongating branches that are reddish brown, and its stem can reach a diameter of up to 23 centimetres. Its surface is covered with elongate lenticles. The leaves are simple, alternating, and range in size from 6-10 to 3-6 centimetres. oblong or obovate in shape, with a short acumen, crenate-serrate in the upper half, generally entire near the base, crenulate, coriaceous, glabrous, base rounded or acute, with petioles that are between 6 and 12 millimetres in length. Inflorescence is paniculate. Flowers may be yellowish or greenish white in colour, and they are arranged in terminal pyramidal panicles that range in length from 5 to 15 centimetres. Pedicels are pubescent, and bracts are tiny and lanceolate. The exterior of the calyx is pubescent; the lobes are semi-orbicular and ciliate; the petals are three millimetres long, oblong, and rounded at the apex. Anthers are oblong and about 2 millimetres long, and the rudimentary ovary is small, subconical, and somewhat three-toothed at the tip. Stamens are inserted on the periphery of the disc, and the filaments are short.

Male flowers have these characteristics. In female flowers, the ovary is globose and tapers into a short, stout style; the stigma is glabrous and has three lobes; the stamens are inserted on the edge of the disc, which is larger than the disc in male flowers; the anthers are small, pollen-free, ovate, acute, or subtriangular, and are shorter than one millimetre in length. 9–12 millimetres in diameter, subglobose, bright yellow, transversely wrinkled, three-valved capsule with the valves spreading after dehiscing and staying connected at the base, exposing the seeds. Capsule shape is subglobose. Seeds 1–6, which are usually solitary and are entirely encased in a crimson, fleshy aril (Almeida, 1996; Londhe, 2000; Rammooorthy, 2000). The plants can either form dense shrubs along the slopes of the hilly terrain or develop as climbers to reach the summit of the mountain. It has a wide distribution in Asia, particularly in China, and has been documented in Sri Lanka and the Maldives (Mathur et al., 1993). (Bot. Inst. of Chinese Academy of science, 1985). The Indian subcontinent is its place of origin; nonetheless, it is known to grow wild in many locations across the world, including Australia, China, Taiwan, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Nepal, Thailand, Vietnam, and a number of Pacific islands (Singh et al., 1996).



Fig.1 *Celastrus paniculatus*

#### OBJECTIVE:

1. To study of study on medicinal important of *celastrus paniculatus* wild and its benefit ,causes.

2. To establish a micropropagation protocol that is both effective and quick in order to facilitate the large-scale production of *C. paniculatus*.
3. A qualitative chemical evaluation of in vitro produced clones utilising TLC and HPTLC analysis to guarantee that the clones are genetically faithful to the parent strain.

### **Region of occurrence in the world**

It is a resilient plant that can adapt to a wide range of climates and different types of surroundings. It is known to grow abundantly in Australia, China, Taiwan, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Nepal, Sri-Lanka, Thailand, Vietnam, as well as many of the Pacific islands; yet, it is indigenous to the continent of India. Additionally, it has been successfully transplanted and flourished throughout all continents with the exception of Antarctica. In more recent times, people in Africa have begun to cultivate it.

### **Region of occurrence in India**

Above a height of 5900 feet (1800 metres), along the mountainside of the Himalayas, in the Western Ghats, in the Eastern Ghats, and in other ecosystems at high altitudes, this tenacious shrub has been spotted flourishing. It is a rare plant that can only be found in the state of Odisha (which was once known as Odissa). Although it can be found in all of Odisha's forest blocks, the best places to find it are the Simlipal Biosphere Reserve forest, the Karlapat sanctuary, and the Niyamgiri highlands.

### **Hypolipidemic effect**

Patil and coworkers, 2010 tested the hypolipidemic effect of *Celastrus paniculatus* seeds by first extracting the seeds with methanol and then assessing the dose of 65 mg/kg in experimentally induced hypercholesterolemia rats orally. They found that the seeds had a hypolipidemic effect. According to the findings, *Celastrus paniculatus* was just as effective as a conventional hypocholesterolemic medication in lowering total plasma cholesterol, triglyceride, and Low-density lipoprotein (LDL) levels as it was in inducing hypercholesterolemic conditions in rats. When rats were fed seed extract, there was an increase in their levels of high-density lipoprotein (HDL) cholesterol, lipoprotein lipase activity, and there was a reduction in the amount of cholesterol that was deposited in their aortas.

### **Traditional medicine**

In India, people have been using different herbs to treat various ailments as far back as prehistoric times. Ayurveda is an ancient traditional medical system that has been practised in India from around 200 B.C. It makes use of a vast number of medicinal herbs that are employed in the prevention and treatment of a wide variety of disorders. One of these is the plant known as *C. paniculatus*, which has been called the "Elixir of life" for many years. It is known as "Jyotishmati" in Ayurveda because it is believed to improve one's "medha" (intellect) and "smruti" (memory) and because of these benefits, Ayurveda recognises it. According to Ayurveda, *C. paniculatus* can be utilised in a variety of ways, depending on the dosage that is administered, including as a stimulant nerve tonic, rejuvenant, sedative, tranquillizer, and diuretic. Rheumatism, gout (Singh et al, 2010), leprosy, leucoderma, paralysis, and asthma are some of the other conditions that can be helped by using it (Gattu et.al., 1997). As a treatment for mental disease, Jyotishmati was recommended by Sushruta, Charaka, and Vagbhatta. As a brain tonic for headaches, sadness, and

swooning, Charaka prescribed an internal decoction made from the root or seed of the plant. He also used it as a laxative for the purpose of clearing the digestive tract. Internal use of seed oil was recommended by Sushruta for the treatment of neurological illnesses, urinary tract infections, skin affections, and intestinal parasites. External use of seed oil was recommended for wound healing, while internal use of leaves was recommended as a purgative. For the purpose of bringing on menstruation, Chakradatta suggested using the fried leaves of Jyotishmati. In cases of opium intoxication, the juice of the leaves was also administered as a deaddiction treatment.

According to the Ayurvedic classics, the characteristics of the oil of Jyotishmati that promote intellect and memory enhancement have been attributed to it. The oil, when combined with cow's ghee (clarified butter), was recommended for internal use in the treatment of neurological conditions and as a brain tonic (Bhavaprakasha, Raaja Nighanta, Shivadatta Nighanta). Jyotishmati Tailam (Ayurvedic) and Roughae-Malkangani (Unani) are two medicinal oils that can be purchased without a prescription and are used to treat conditions such as Bell's (Khare, 2002 and Singh et al., 2010). In the traditional medical practise of India, *C. paniculatus* is employed as an appetiser, a laxative, an emetic, and an aphrodisiac. It is also utilised in the treatment of cough and leucoderma (Vaidyaratnam, 1994). It has been said that the bark has activities that can cause abortions. It is a component of the medicine known as "Mentat syrup," which is prescribed for the treatment of mental illnesses.

This has a history of usage in traditional indigenous medical practises dating back centuries, and its brain-stimulating and anti-oxidant effects are well documented (George et al., 2010). In the literature of the Siddhas, in addition to the efficacy described above, it is stated that the oil extracted from the plant protects against weariness. *C. paniculatus*, also known as Kra-Thong-Lai, is renowned for its therapeutic significance and is included on the list of traditional Thai medicines for the treatment of intermittent fever (Old Style Doctor Association, 1964). Patients suffering from dysentery, diarrhoea, and fever were advised to chew on the root, stem, and leaves of the plant. Lactagogue treatment was recommended by practitioners of Northeastern traditional medicine. As a remedy for malaria, the powdered root barks of Kra-Thong-Lai were crushed into tablets and sold on the commercial market (Katchrinnee et al., 1989). According to Ayudhaya et al., this plant has the potential to act as an antimalarial medication (1987). In China, the plants of the genus *Celastrus*, including *C. paniculatus*, have been used for a very long time as natural insecticides (Wakabayashi et al., 1988). Additionally, these plants have been used for a very long time as an important component of traditional Chinese medicine to treat fever, chills, joint pain, edoema, rheumatoid arthritis, and bacterial infections (Chen and Liang, 2009).

### **Traditional uses**

Since prehistoric times, many diseases have been treated with plants in a variety of different ways. The ancient traditional medical practise known as Ayurveda makes use of a wide variety of plants with therapeutic properties for the purpose of illness prevention and cure. One of the plants that is employed in Ayurvedic medicine as a nervine tonic, a tranquillizer, and a diuretic, as well as in the treatment of rheumatism, gout, leprosy, and asthma is the *Celastrus paniculatus* plant. Both the Charka Samitha and the Sushruta Samitha describe the use of its roots in the treatment of headaches and depression, as a laxative and purgative, and in the treatment of urinary diseases, skin problems, and neurologic illnesses. In both Unani and Siddha medicine, it is employed for the treatment of gout as well as lumbago and weariness. In traditional Chinese medicine, it is employed as a means of treating fever, rheumatoid arthritis, edoema, and

joint pain a therapy for anorexia, constipation, cough, and skin infections are some of the traditional use of the *Celastrus paniculatus* plant in Indian traditional medicine.

1. Patients who suffered from forgetfulness were given a dosage of one seed of *Celastrus* per day as part of their diet, and they were instructed to gradually increase this amount up to a maximum of one hundred seeds per day.
2. Cognitive deficiencies in mentally retarded children can be treated with ayurvedic herbal medications that contain medicinal plants. It has been demonstrated that CP oil possesses neuroprotective and antioxidant properties.
3. Patients who suffered from forgetfulness were given a dosage of one seed of *Celastrus* per day as part of their diet, and they were instructed to gradually increase this amount up to a maximum of one hundred seeds per day.
4. Cognitive deficiencies in mentally retarded children can be treated with ayurvedic herbal medications that contain medicinal plants. It has been demonstrated that CPoil possesses neuroprotective and antioxidant properties.

### **Antimalarial activity**

Pavanand et al., 1989 conducted an in vitro test to determine whether or not an extract of *Celastrus paniculatus* containing both root bark and stem exhibited antimalarial efficacy against *Plasmodium falciparum*. The antimalarial activity of the root bark was significantly higher than that of the stem. In addition, a quinonoid triterpene was extracted from a chloroform extract and examined for in vitro antimalarial activity; nevertheless, this compound's activity was lower than that of traditional antimalarial drugs that were evaluated.

### **Cognitive enhancement activity**

According to research done by Gattu and colleagues in 1997, prolonged treatment of *Celastrus paniculatus* seed oil, when taken orally, was able to counteract the decline in rats' spatial memory caused by a blockade of central musurinic receptors. Acute administration, on the other hand, did not appreciably reverse this impact.

Bhagya et al., 2016 investigated the effects of administering *Celastrus paniculatus* oil to Wistar rats and found the same results. They began by observing and recording the behaviour of the rats in the open field. Next, they moved on to the dimly lit room for the behavioural test. After that, they moved on to the elevated plus maze, partially baited radial arm maze, and t-maze rewarded alteration task methods for the anxiety test. They found that a chronic dose of oil extracted from *Celastrus paniculatus* seeds had neuroprotective effects on chronic stress-induced cognitive impairment. These findings were based on their observations.

### **CONCLUSION**

An endangered medicinal plant, *Celastrus paiculatus* Willd., which is a member of the family Celastraceae and is used in primary healthcare as well as in the production of a variety of herbal medication formulations (Rekha et al. 2005). Leprosy, leucoderma, skin illnesses, paralysis, depression, arthritis, asthma, and cancer are only few of the diseases that this treatment is effective against in the Ayurvedic medical system (Sharma

et al. 2001, Rekha et al. 2005). The presence of certain alkaloids in this medicinal plant is primarily responsible for its impressively high therapeutic potential. These alkaloids include celastrine and paniculatine, celapagine, celapanigin, and celapanin. Because of this plant's strong potential for usage in pharmaceutical applications, the rising human and animal populations have had a significant negative impact on its status. *C. paniculatus* is presently designated an endangered species since there is no known mode of vegetative replication, poor seed viability, and a low germination rate (Arya et al. 2001). The most important result of this study was the formulation of a reliable procedure for the propagation of shoots on a big scale, which will enable the valuable plant to be manufactured in greater quantities.

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