



## ETHNOMEDICINAL USES OF *CELASTRUS PANICULATUS* WILLD. KNOWN TO FOUR TRIBAL COMMUNITIES OF WAYANAD DISTRICT OF KERALA, INDIA

Sujana K. A.<sup>2\*</sup>, Joseph John<sup>1</sup>, M. K. Ratheesh Narayanan<sup>1</sup> and N. Anil Kumar<sup>1</sup>

<sup>1</sup>Community Agrobiodiversity Centre, M. S. Swaminathan Research Foundation, Puthoorvayal, P. O., Kalpetta, Wayanad, Kerala, India

<sup>2</sup>Central Botanical Laboratory, Botanical Survey of India, AJCB Indian Botanic Garden, Botanical Garden P. O., Howrah, West Bengal, India

Received on: 28/03/12 Revised on: 28/05/12 Accepted on: 10/06/12

### \*Corresponding author

Email: sujana\_kole@yahoo.com

### ABSTRACT

The present paper gives ethnomedicinal information pertains to *Celastrus paniculatus* Willd., a plant that has wider use in ayurvedic system of medicine. The study was undertaken in Wayanad plateau of Western Ghats, a global biodiversity hotspot and a locality known for its biological and ethnic diversity richness. Ethno-medicinal information available from Wayanad, known to outside world is minimum and fragmentary. A total of 984 information-bits concerned with this plant species were recorded, based on a questionnaire survey conducted amongst four tribes of the region: *Paniya*, *Adiya*, *Kattunaikka*, and *Kuruma*. Parts such as roots, leaves, barks, seeds and seed oil of this plant species found to be useful for multiple human diseases and health disorders. The collected information was grouped into 22 major disease category based on the response of the knowledge holders who participated in this study. Plant part used and mode of administration were also tabulated. The semi-nomadic socially disadvantaged tribe *Kattunaikka* found to be more knowledgeable amongst the 4 tribal communities studied.

**KEY WORDS:** *Celastrus paniculatus* Willd., Ethnic medicine, Kerala, Wayanad, Western Ghats

### INTRODUCTION

In India, the importance of Ethnomedicine in treating various ailments and ill-health has been recognized by health care experts and planners, particularly in the sector of Indigenous System of Medicine across the rural parts of India. Many plants harvested in wild in India are used by local people as medicine- next to their source of food, for shelter and various livelihood needs. Unfortunately, the continuous availability of many of such species becomes an issue for the local communities because of the obvious reasons such as: land degradation, deforestation, loss of habitats and changing climate, overexploitation, modernized agriculture and so on. Also, the change in cultural preferences in health care contributes to the loss of traditional knowledge associated with wild plants and thereby gradual disappearance of many such species from the local community health care system. The present study aimed at documentation of ethnomedicinal uses of a species falls in such category - *Celastrus paniculatus* Willd., known in Ayurveda as *Jyothishmati* - the ancient Indian system of medicine.

*Celastrus paniculatus* Willd. belongs to family Celastraceae is a largely spreading liana, distributed almost all over India up to an altitude of 2000 m is known for its ability to boost memory<sup>1</sup>. The seed extract has been extensively investigated for their neuropharmacological effects and numbers of reports are available confirming their nootropic action. In Ayurveda, the seed of this plant species used for prevention and treatment of various diseases<sup>2</sup>. The seed oil is bitter, thermogenic and intellect promoting and is useful in abdominal disorders, beri-beri and sores<sup>3</sup>. The bark is aborti-facient, the leaves are emmenagogue and leaf sap is a good antidote, the seeds are acrid, bitter, thermogenic, emollient, stimulant,

intellect promoting, digestive, laxative, emetic, expectorant, appetizer, aphrodisiac, cardio-tonic, anti-inflammatory, diuretic, emmenagogue, diaphoretic and febrifuge. In addition, studies have reported the anti-inflammatory, anticonvulsant, antimicrobial and other pharmacological effects of plant extracts<sup>4-11</sup>.

The present study explores the medicinal uses of *Celastrus paniculatus* Willd. in the health care system of *Paniya*, *Adiya*, *Kattunaikka*, and *Kuruma* tribe of Wayanad district of Kerala, India.

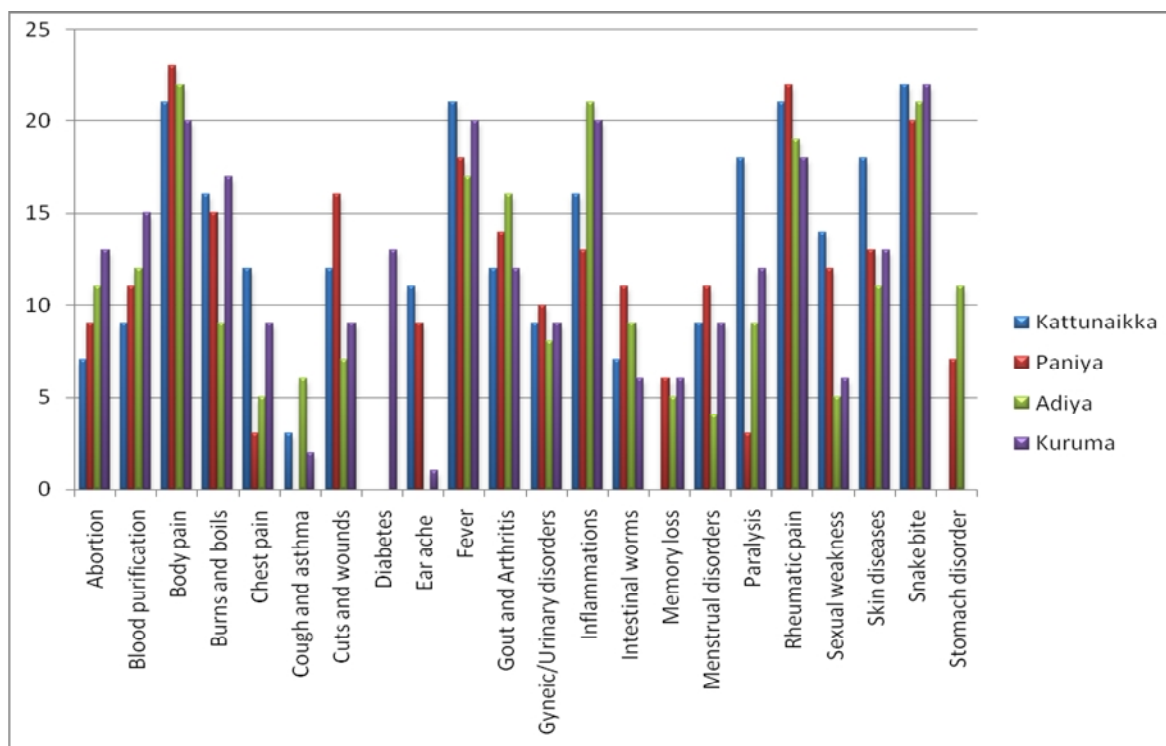
### MATERIALS AND METHODS

Ethnomedicinal uses of *Celastrus paniculatus* Willd. were collected during 2009-2011 from different parts of Wayanad district of Kerala by personal contact with knowledgeable informants including traditional healers, aged persons, vaidyas, and housewives. Critical observations were also made on the indigenous utilization of this plant for various ailments. Interaction with the group of 100 (52 men and 48 women) informants consisting of 25 knowledge holders from each tribal community viz. *Paniya*, *Adiya*, *Kattunaikka*, and *Kuruma*, were selected using simple random sampling techniques.

The *Paniya* and *Adiya* are predominantly a landless group working as wage labours; the *Kattunaikka* are traditionally a food gathering tribe and live close to the forests; the *Kuruma* are a settled community engaged in agriculture. Interviews were carried out with the help of pre-designed questionnaires related to the medicinal uses, parts used and modes of administration were also recorded in detail. The information thus gathered was compared with available published literature having proofs for their curative properties.

**Table 1: Ethnomedicinal uses of *Celastrus paniculatus* Willd.**

Plant parts used	Mode of administration
Roots	Dried roots are powdered and 2 gm of this powder given to purify the blood after the delivery every morning for 3 days. Freshly collected roots are grounded with a pinch of cumin seeds and the paste is mixed well in rice gruel and cow's milk is consumed twice in a day for 7 days to get relief from body pain. A spoonful of root paste is given after night's meal to eradicate worm from stomach. Root paste is also used in all kinds of skin diseases till it cures. Root is ground and applied for early cure of burns and boils. Roots are mixed with the juice of <i>Centella asiatica</i> and taken as an intellect enhancing tonic, daily morning in empty stomach for 15 days. Water extract of roots (10-20 ml) given internally as anti-venom against snake poison.
Barks	Stem bark paste mixed with half cup of water is administrated for the treatment of white discharge and burning sensation once in a day for 7 days. The fresh juice about 15 ml obtained from crushed stem bark is once given as an antidote to cobra venom. A decoction of the bark (50 gm of bark in 500 ml water) given orally on empty stomach for 7 days can induce abortion.
Leaves	Leaves (7 nos.) are dried and powdered with flowers (21 nos.) of Neem and taken twice only to remove intestinal worms. Leaf juice (3 drops) applied as drops in ears to cure ear ache till it cures. A paste prepared of leaves is applied affected part before going bed to relief pain in gout till it make well. Leaf juice (5ml) given once to treat stomach disorders due to indigestion. Daily intake of leaf juice (5-10) will promote memory power. Oral administration of fried leaves (5 nos.) and flowers of <i>Hibiscus rosa-sinensis</i> (5 nos.) for 5 days will induce menstruation.
Seeds/ oil	Seeds are collected from ripe fruits in the winter season. Dried seeds are crushed and boiled with water. The oil is separated from water and used as medicine to cure any type of skin diseases. Seed oil is also applied daily on gout, rheumatism, arthritis and all inflammations till cures. This oil is applied on the paralyzed parts of the body in morning and evening and a spoonful of this oil is also taken orally for 10 days. Seed-oil is massage on the whole body to keep body warmth in the cold weather. It is also applied externally and gently massaged to relieve body pain, chest pain, internal injuries and for good circulation of blood in all over the body. Occasionally it is also taken internally for quick relief from pain and swellings. Two drops of seed oil also given orally in diabetes for 10 days. Seed oil is very bitter in taste and applied on any type of cuts and wounds as an antiseptic. It is also applied on scalp against dandruff and graying of hairs. Two drops of seed oil used as nasal drops for 7 days for boosting memory power. Mixing of one spoonful of seed oil and 8 spoonful of buffalo's ghee is applied on the head for an hour is well known intellect enhancer. Decoction of seeds is also given internally to treat rheumatism. Seed oil is used to treat beriberi. Seed oil, 3-4 drops given 3 times daily to treat fever and cough. Three drops of oil mixed with yolk of egg is administrated for tuberculosis for 7 days. Seed oil (10 ml) is applied on penis, 1 hour before copulation will revert sexual weakness. Intravaginal application of 5-10 ml of seed oil prior to coitus prevents pregnancy. Seed oil (10 -15 ml) mixed with egg is good remedy for asthmatic cough and chest pain. Seed powder (1 spoonful) mixed with honey is taken empty stomach for orally to treat gastric problems or acidity.



**Figure 1: Number of informants against tribes and diseases**

## RESULTS AND DISCUSSION

A total of 100 informants were interviewed during the period of study. All the information collected against the plant parts were tabulated in Table 1. Total of 984 ethnomedicinal information bits were collected and all that grouped into 22 categories based on the informant's knowledge regarding the particular use. More than 10 per cent of informants know the particular use against a diseases means it can coming under major use category. An analysis of knowledge of informants regarding the ethnomedicinal uses of *Celastrus paniculatus* Willd. were also carried out (Figure 1) and it is evidenced that the primitive tribe *Kattunaikka* communities are more knowledgeable than others. Roots, leaves, barks, seeds and oil are used for different diseases. Among them seeds and seed oil found to be more useful and have different kinds of medicinal properties. Out of the 100 informant surveyed 17 peoples are aware about nootropic property of this plant. A gender based analysis was also carried out. Women are more knowledgeable on the properties and uses of this plant especially diseases like white discharge, burning sensation, blood purification after delivery and for inducing menstruation and abortion. Men have the knowledge regarding the aphrodisiac property of this plant. Eighty six informant claims this plant is useful for treating body pain and 85 people knew this plant as a good antidote against snake venom especially cobra venom. The other ethnomedicinal uses of this species are mainly reported for treating rheumatic pain, gouts/arthritis, paralysis, diabetes, fever, inflammations, chest pain, skin diseases, cuts/wounds, burns/boils, ear ache, intestinal worms and stomach disorders.

The data collected on *Celastrus paniculatus* Willd. from Wayanad will be of immense importance to phytochemists, pharmacologists and persons engaged in the preparation of herbal medicines. The single plant specific documentation may result in detection and utilization of new compounds or potential drugs for the welfare of society.

## REFERENCES

1. Nadkarni AK. Indian Materia Medica. 3<sup>rd</sup> ed. Bombay: Popular Prakashan; 1976.
2. Vaidyaratnam PSV. Indian Medicinal Plants: A Compendium of 500 species. 1<sup>st</sup> ed. Madras: Orient Longman Ltd; 1997.
3. Sastry JLN, Chuneekar KC. Dravyaguna Vijnana. 3<sup>rd</sup> ed. Varanasi: Orientalia; 2008.
4. Kumaraswamy ON, Manjunath BL. Chemical examination of the fixed oil from the seeds of *Celastrus paniculatus* Willd. Journal of Indian Chemical Society 1936; 13:353-357.
5. Warsi SA. The chemical examination of *Celastrus paniculatus*. Current Science 1940; 9: 134-135.
6. Den Hertog JR, Kruk C, Nanavati DD, Sukh Dev. Stereochemistry of malkanguniol and stereostructures of some other related polyalcohols from *Celastrus paniculatus* Willd. Tetrahedron Letter 1974; 26:2219-2222.
7. Nanavati DD. Paniculatadiol (a new triterpene diol) from *Celastrus paniculatus* Willd. (*Celastraceae*). Journal of Oil Technology Association of India 1977; 9:1-4.
8. Sengupta A, Sengupta C, Majumder UK. Chemical investigations of *Celastrus paniculatus* seed oil: Fett Wissen Technology 1987; 89:119-123.
9. Borbone N, Borrelli F, Montesano D, Izzo AA, Marino SD, Capasso R, Zollo F. Identification of a new sesquiterpene polyol ester from *Celastrus paniculatus*. Planta Medic. 2007; 73:792-794.
10. Dutta SK, Sharma BN, Sharma PV. Dulcitol from the flowers of Malkanguni (*Celastrus paniculatus* Willd.). Bull Med Ethnobot Res 1981; 2:114-115.
11. Jain MK. Chemical examination of *Celastrus paniculatus* Willd. Indian J Chem 1963; 1: 500-504.

Source of support: Nil, Conflict of interest: None Declared