



ETHNOBOTANICAL STUDIES ON THOZHUKANNI AND AZHUKANNI AMONG THE KANIKKARS OF SOUTH INDIA

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ABSTRACT

Ethnobotany deals with the uses of plants by the aboriginal tribes in the local area. In Western Ghats, the Pothigai region is one of the important hot spot where the Kani tribes are largely settled. In this region, the Thozhukanni (*Desmodium gyrans* L.) is naturalized and the Azhukanni (*Cressa cretica* L.) is cultivated and used as an important drug for various ailments. In the present study an attempt is made to bring out the ethnobotanical uses of *Desmodium gyrans* L., and *Cressa cretica* L., Ethnobotanical information about the plants were collected and discussed.

Keywords: Thozhukanni, Azhukanni, ethnobotanical uses, Western Ghats.

INTRODUCTION

India has a vast area of forest lands in Western Ghats, Himalayas and Eastern Ghats regions¹. The aboriginals are the hill tribal peoples. There are about 449 tribes and sub tribes in different parts of India. Half of India's tribal people live in the forests and forest fringes and their economy is linked with the forests² In South India, nearly 130 communities of tribal peoples live in the Western Ghats region which is distributed in the states of Tamil Nadu, Kerala, Karnataka and Andrapradesh. There are 36 tribes and sub tribes in Tamil Nadu. Most of the tribal's in Tamil Nadu are cultivators, agriculture labourers are dependent on forests for their livelihood. The tribal groups in Tamil Nadu are distributed in almost all the districts and they have contributed significantly in the management of the forest.

Tribes are mostly mingled with the forest ecosystem assisting the native societies to "live in harmony with nature"³⁻⁵. Kanikkars are one among the important and largest group of tribal people living in the Pothigai region which spread in the south most part of Tamil Nadu, Vezhimalai of Kanyakumari, Agasthiyamalai of Tirunelveli districts and the Poovaru of Neyyatinkara in Trivandrum district of Kerala⁶⁻⁸. The Kanikkars are predominant hill tribes of Agasthiyamalai biosphere in Western Ghats, Tamil Nadu. In Tirunelveli zone there are five tribal settlements such as Agasthiayar Kanikudiyiruppu, Servalar, Mayilar, Periyamayilar and Inchikuzhi. In Kanyakumari district Ettukani, Pathukani Mothiramalai, Kothaiyar, Chittar, Maaranmalai, Kalikesam regions of Kani settlement^{9,10}. There are about 30 settlements together in both the states. The Pothigai region is one of the important places in the History because one of the important Siddar among the eighteen siddars, the great sage Agasthiar lived here. He had contributed a lot in the Tamil literature in the name of "Agasthiyam" after "Tholkappiam" and is the first literary evidence in the

Tamil literature. The sage Agasthiar had contributed a lot in the field of in the medicinal field and even Astrology. These Kanikkars in Tirunelveli district are mainly found in the region where this Agasthiar had said to be lived. They worship Agasthiar as a Guru and his statue is situated in the highest peak of south Tamil Nadu. The Agasthi Pothigai is about 2800 feet altitude which is situated in the Tirunelveli district and is the border area of Kerala. This Western Ghats region is one of the hot spot areas in India regarding biodiversity aspect. In this region about 800 medical plants have been registered and among them 80 plants are identified as rare and endangered species.

Ethnomedicine is one of the systems of medicine that is widely practiced among the tribal and aboriginal populations of our country for the treatment of ailments. Primitive societies have depended on herbal remedies for the treatment of diseases and disorders since time immemorial^{11,12}. Kani tribal medicinal experts are called as "Philathies". They are depository of traditional medicinal knowledge. The members of this community are familiar with several herbs and well versed in using the various herbs to cure various ailments¹⁰. They collect herbs, fruits and tubers for their own use and even they sell these products in the village markets. They cultivate the rare plants in and around the settlement and sell in the markets¹³. In the present study, the medicinal values of two medicinal plants from the Kani settlement were evaluated.

METHODOLOGY

Frequent field trips were made in the kani settlements of Pothigai region. In the Kani settlement, the head man is called as Philathy and other members are having practical knowledge of medicinal plants. They were interviewed and got the firsthand information about the uses of *Desmodium gyrans* L., and *Cressa cretica* L., were documented. Herbarium specimens were collected and



identified with the help of local flora. The data contains vernacular name, botanical name, family, habitat, description, plant parts used and its ethnomedicinal uses.

THOZHUKANNI

The botanical name of the plant is *Desmodium gyrans* belongs to the family Fabaceae. It is known as Indian Telegraph plant, Dancing plant, Snake charmer's root in English, Thozhukanni in Malayalam, Suriyan Vanangi and Aravaattippachchilai in Tamil. "Thozhukanni" is a herbaceous plant found naturally and cultivated in an around the Kani settlement at higher elevations. Trifoliate leaf is a specific nature of this plant. Among the three leaflets the centre one is larger and the two laterals are smaller in size. After the sun rise, when the light rays falls on the leaflets, the two small lateral leaves shows a rithamic movement of folding upwards and relax later. It is going on throughout day light period. Because of this type of specific movement, these tribals call this as "Suriyan Vanangi" as the plant welcomes the Sun during the day light period. Physiologically it is a natural light induced movement in *Desmodium*. In English it is popularly known as "Telegraphic plant" because of the trifoliate leaves movement which resembles the Telegraphic instrument movement under the slightest influence of touch, sunshine, warmth or small vibrations in the environment. The movements are caused by the swelling and shrinking of motor cells in special organs buried deep within the leaves. The movement of water molecules causes the motor cells in the leaves to shrink or swell and as the water enters and exits, the plant's leaflets switch on this of movement due to photo tactic¹⁴.

Description

Desmodium gyrans L., is a small erect, diffusely branched herbaceous plant attains a height of 90 cm with prostrate branches too. The leaves are trifoliate and the leaflets are dissimilar in size and lanceolate. The flowers are white, produced racemes on terminal and auxiliary. It blooms during the month of November to January. The fruits are legumes, moniliform shape having 4- 6 jointed pods and seed are reniform. The plant is bitter, thermogenic and nervine tonic. The plant contains small amount of Tryptamine alkaloids in leaf, stem and root. It may have the narcotic effect¹⁴

Medicinal properties

The following are the important medicinal uses of *Desmodium gyrans L.*, and in Kannikar settlement it is being followed.

Antidote: The powdered leaf is mixed with pepper and cumin and is given as an antidote. The root powder is also given as antidote for snake bite because of this property the plant is called as "Snake charmer's root".

Antioxidant: The powdered leaf is mixed with pepper and cumin seed and the extract is prepared. This extract has an antioxidant property.

Aphrodisiac: Fresh leaves were taken in the early morning after sunrise and in the evening before sunset and are made into a paste. The paste is mixed with cow milk or coconut milk and is given twice a day for seven days consecutively before food. It acts as an Aphrodisiac.

Carminative: The leaves are collected, shade dried and powdered. The powder is mixed with a pitch of cumin and boiled with water. This extract is used as Carminative.

Cough and fever: The leaves are dried in the shade and mixed with bark of neem and rhizome of *Alpinia* (chitarathai) and extracted is obtained with hot water. This extract is given for common fever, cough, asthma and bronchitis.

Diabetes: The leaf juice is mixed with a pinch of pepper and a decoction is prepared. The diabetic patient can consume this decoction to reduce the urine sugar level.

Digestive stimulant: The leaf juice is mixed with a pinch of pepper and is used as a digestive stimulant and even for food poison.

Febrifuge: The leaf juice is mixed with a pinch of pepper a decoction is prepared and is given to young babies as a febrifuge.

Menorrhagia: The whole plant is dried and powdered. The powder is mixed with young tender coconut water and young tender pomegranate fruit juice at the ratio of 1:1 and given it twice a day to arrest excessive bleeding and Menorrhagia.

Scabies: Leaves are made into a paste with pitch of turmeric and common salt is applied to treat Scabies.

Strengthening the cardiac system: The whole plant is powdered and extracted with cold water for overnight and the extract is taken in the morning for strengthening the cardiac system.

Vadha: The whole plant is dried and made into powder mixed with thippili (*Piper longum*), kurumiliagu (*Piper nigrum*) and dried ginger and is administrated for Vadha, Pidha and Kapha. It is mainly used in vitiated condition of Vadha.

Wounds: The leaf paste applied on the fresh cut wounds for wound healing.

AZHUKANNI

The Botanical name of the plant is *Cressa cretica L.*, belongs to the family Convolvaceae. It is a very small herbaceous plant common in sandy shore of South India. The tribal people mostly cultivate this plant in the low elevations. The vernacular name of the plant is Azhukanni because during the day time a very tiny water droplets shedding from the tip of this leaves which resemble the tears. The droplets are having salt taste as the tears. So it is called as "Uppucanakai" in Tamil. In Sanskrit it is called as Rudhuravanthi because it is having great medicinal potentialities^{14,15}.



Description

This plant is generally known as alkali weed, shrubby, growing a height of 30 cm. In India it is commonly found along the sandy sea shores. The leaves are small densely arranged. The leaves are numerous, stalk-less, small, ovate, acute tipped, hairy or ashy-velvety. Flowers are small, pink, nearly stalk-less and arise in the upper leaf axis, forming a many flowered head. Flowers are funnel shaped. Flowering occurs in the month of December-February¹⁶

Medicinal properties

Antihelmintic: The whole plant is dried, powdered and extracted with hot water and is used as Antihelmintic.

Aphrodisiac: Fresh plant twig with leaves and flowers are collected and juice is extracted with water and is taken immediately at an empty stomach for 41 days before taking any food. This will act as Aphrodisiac.

Asthma: Fresh leaves are collected and mixed with the leaves of *Tylophora asthmatica* and *Allium cepa*, Cumin and Pepper and are made into a paste. This paste is taken for 3 days after food to cure asthma.

Bilious: Leaves made into a paste with a pinch of turmeric and applied on the boils.

Blood purifier: The whole plant is dried, powdered and is extracted with water along with fresh ginger or cardamomum and this extract is used as blood purifier.

Constipation: The decoction of plant is taken in the night to remove constipation.

Diabetes: Fresh leaves were collected and juice is extracted with water and 5 ml juice is taken early morning for six consecutive days before taking any food.

Heath tonic: The whole plant extract is used as a heath tonic.

Jaundice: The whole plant is crushed in water with few black pepper and sugar candy and the mixture is taken for few days to cure chronic fever and jaundice.

Scabies: The leaves are made into a paste along with *Curcuma aromatica* and pitch of turmeric for scabies.

Sores: The leaves are made into paste and are applied on sores.

Stomachic: 10 gram of root is boiled with one tumbler of water and reduced to 1/3 volume. The root extract is taken as such for Stomachic

Tonic: The dried powder of roots and leaves are extracted in hot water and is taken as tonic after hardwork.

Discussion

The kanikkar tribals has the ability to discern the character of various plants and their beneficial properties¹⁷. The pioneer worker in field of ethnobotany especially in Kannikkar's was E.K. Janaki Ammal. Followed by many workers like William Jeba Dhass (1978),

Nagendra Prasad and E.K. Janaki Ammal (1980), Ayyanar and Ignacimuthu (2005), John De Britto (2007) and many others made some novel attempt on the ethnobotanical studies¹⁸⁻²¹ in various parts of India and in other parts of the world²²⁻²⁵.

Thozhukanni is referred as a truly "Little known Jewel" because not much of research work is not carried out in the plant but it possess lot of medicinal properties. The medicinal property is may be due to the presence of Tryptamine alkaloid and the hormone which induce the well known telegraphic movement. Some scientists consider this movement is due to light or some ultrasound. Since the Kannikkars are nemotic agriculturalist and they live in jungle often met with poisonous creatures. *Desmodium gyrans L.*, is used as well known common Antidote in the kannikar settlement.

In search of sanjeevani, Azhukanni has been placed at the top of the list of 17 plant species that reflect the features of Sanjeevani. Sanjeevani is a mythical herb from the epic Ramayana, said to posses the ability to 'resurrect' life²⁶. The shedding of tears like droplet of this plant leaf is a hormonal activity which is induced by either light or small sound vibration. The curative property of this plant is due to the presence of flavones, microelements like lead, copper, zinc and nickel. *Cressa cretica* contained moderate amount of terpenes and tannins and small amount of saponins and flavonoids. Both the plants have many common uses like anthelmintic, stomachic, asthma, urinary discharges and for skin diseases²⁷⁻²⁹. It is reported that recently this plant attains important as it testicular function and antifertility activity and both the plants have specific medicinal properties as Aphrodisiac, blood purifier and cardiac tonic³⁰.

CONCLUSION

During the last few decades there has been an exponential growth in the field of herbal medicine and these drugs are gaining popularity in developed and developing countries because of their natural resources and it has fewer side effects for human beings. As India is a developing country and having great natural resources in the field of ethnobotany is emerging as one of the new field in the medical sciences. More over in South India, the Kani tribes are the largest group of people they are using the herbs in and around them for treating their ailments.

In the present study, the ethnobotanical uses of *Desmodium gyrans* and *Cressa cretica* plants are widely used in their treatise. Both plants have many common medicinal properties. Both the plants are used for common ailments like Vadha, Pidha, Kapha, diabetic, asthma, skin ailments, antihelmintic, anti inflammatory and fever. In addition to that these plants have been used as a blood purifier, cardiotoxic and especially as Aphrodisiac. This information will throw new lights in the field of medico-pharmacological studies. It is not only essential to conserve the wealth of information lingering among the tribals but also to apply them on modern bio



medical and agro-technological lines to meet a ever increasing requirements of mankind in medicine and agriculture.

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