

Ethnomedicinal plants used by *Toda* tribes of Nilgiri District, Tamilnadu, India.

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Abstract

An ethnobotanical study carried out among the ethnic group, namely, *Todas* in Nilgiri District revealed therapeutic applications of 30 plant species representing 24 families. The documented ethnomedicinal plants are used for a wide range of common ailments such as skin and stomach disorders, ulcer, common fever, rheumatism and bronchitis, and also in cosmetics. Majority of the preparations are taken orally in the form of juice extracted from the freshly collected plant parts. Leaves are the major plant parts used for the preparation of tribal medicine. Most of the plant parts are harvested from the wild. Details of botanical identity, family, local name, parts of the plant used, and mode of preparation and administration of the drug are described.

Keywords: ethnobotany, ethnomedicine, medicinal plants, Nilgiris, *Todas*.

INTRODUCTION

Ethnobotany deals with the relationship between human societies and plants. It has been recognized as a multidisciplinary science comprising many interesting and useful aspects of plants. India is a vast country with greatest emporia of plant wealth and is extremely rich in medicinal plants comprising about 8000 species (Ved *et al.*, 2001) about 70% of India's medicinal plants are found in the tropical areas mostly in various forest types spread across the Western and Eastern Ghats (Devi *et al.*, 2005). Since ancient times in India, medicinal plants were used in Indian system of medicine namely *Ayurveda* and *Siddha*. Even today, tribes and certain local communities in India practice herbal medicine to cure a variety of diseases and disorders. There are few surveys that reveal the practice of herbal medicine by tribes and indigenous communities (Bhandary *et al.*, 1996; Harsha *et al.*, 2003; Parinitha *et al.*, 2004; Suresh and Jabaraj, 2009, Penchala *et al.*, 2009). It is apparent from these survey that tribes and various communities residing in remote places follow different practices (Suresh and Jabaraj, 2009). In the present report, the information gathered from *Todas* on the plants used for treating various diseases and cosmetics in Nilgiri District of Tamilnadu, India is provided.

STUDY AREA

The Nilgiri District which spreads about 2543 sq. kilometers is located on the Western Ghats in Tamilnadu with undulating hills and elevation at an altitude of ± 2400 MSL. bounded by Kerala state on the west and Karnataka state on the east (Anonymous,

1980). Doddabetta the second highest peak in the Southern India with an altitude of 2623 is the crest of the plateau. The meeting place of Eastern and Western Ghats at Nilgiri hills on the western region is mostly surrounded by reserve forests. The district consists of different climatic zones and variable topography. The annual rainfall is ranging from 150 to 280 cm and temperature ranges from a minimum of 0°C to a maximum of 30°C (Udayan *et al.*, 2007). This makes Nilgiris a perfect place for many anthropologically significant ethnic groups such as *Todas*, *Kotas*, *Irulas*, *Kurumbas*, *Paniyans* and *Kattunayakkas*, (Anonymous, 1987) who spread over the length and breadth of this District. These ethnic groups inhabit the Western Ghats from 700 BC and the Nilgiri Hills from 1200 BC (Hockings, 1975).

ANTHROPOLOGY

The tribes constitute 4.32% of the tribal population now settled in the Nilgiri District (Suresh and Norman, 2009). It is interesting to note that out of 36 scheduled tribes in Tamilnadu, only 6 were classified as "Primitive tribal groups" by the Government of India. All such 6 scheduled tribes *viz.*, *Todas*, *Kotas*, *Irulas*, *Krumbas*, *Paniyas* and *Kattunayakkas* live here, even now (Udayan *et al.*, 2007).

Among these tribes, the primitive tribal group is "*Todas*" who enjoy their habitation in the limited circle of Udhagamandalam and its surrounding (Prabhakar and Gadgil, 1994). They have extraordinary skills in the identification of plant species, medicinal plants and their utilization (Rajan *et al.*, 2002). However, their population in these areas is very less and is getting endangered.

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Table 1. Lists of plants, name of the family, local names, plant parts used and the mode of preparation and administration by the todas of Nilgiris, South India.

S. No	Name of the plant	Family	Local name (Toda tribes)	Plant parts used	Mode of preparation and administration.
1.	<i>Aclyranthes bidentata</i> Blume	Amaranthaceae	<i>Angasth</i>	Leaves	Leaves are crushed and the juice is applied on the nails to keep the nails flat and shining.
2.	<i>Acorus calamus</i> L.	Araceae	<i>Visambu</i>	Root	Dried extract of roots are added with milk and taken orally to cure stomach pain.
3.	<i>Ageratina adenophora</i> (Spreng.) King & H. Rob.	Asteraceae	<i>Peenary</i>	Leaves	Leaf extract is applied externally to wounds or cuts to stop bleeding.
4.	<i>Aloe vera</i> (L.) Burm.f.	Liliaceae	<i>Choththu kathalai</i>	Leaves	Aloe gel is used for sun and radiation burns. It also used to treat skin blemishes, acne and pimples.
5.	<i>Bambusa aurundinacea</i> (Retz). Roxb.	Poaceae	<i>Moongil</i>	Leaves	Leaf juice is applied externally for cuts and wounds for quick relief.
6.	<i>Berberis tinctoria</i> Lesch.	Berberidaceae	<i>Takmil</i>	Leaves and fruits	Leaf juice mixed with water and taken orally. It cures headache.
7.	<i>Brassica juncea</i> (L.) Czernj.	Brassicaceae	<i>Kadugu</i>	Leaves and seeds.	Leaves crushed, the juice is used as drops in the ear. It relieves the ear pain. Seeds are used as food.
8.	<i>Centella asiatica</i> (L.) Urban.	Apiaceae	<i>Vallarai</i>	Leaves and Root	Leaves and roots are smashed together, added with milk and taken orally. It helps to reduce white discharge in women.
9.	<i>Chenopodium album</i> L.	Chenopodiaceae	<i>Parupukkeerai</i>	Leaves	Leaves are used as greens. It is a natural coolant and promotes digestion.
10.	<i>Cuscuta reflexa</i> Roxb.	Cuscutaceae	<i>Amarbel</i>	Seeds	Seeds were powdered and applied on hair with water to reduce hair falling.
11.	<i>Decaschistia crotonifolia</i> Wight.	Malvaceae	<i>Pappy</i>	Fruits	The Fruit is edible. It cures diabetes and blood pressure.
12.	<i>Elaeagnus kologae</i> Schltldl.	Elaeagnaceae	<i>Parskuti</i>	Leaves	Leaf juice with water is taken orally which cures headache. Fruit is edible.
13.	<i>Elaeagnus indica</i> Servett.	Elaeagnaceae	<i>Brezjum</i>	Leaves	Leaves are chewed to cure headache.
14.	<i>Euphorbia rothiana</i> Spreng.	Euphorbiaceae	<i>Kabudri</i>	Whole plant	The whole plant acts as an insect repellent. Plant extract when smeared on the floors and walls prevents bed bugs and other insects.

15.	<i>Mahonia leschenaultii</i> Wall.	Berberidaceae	Taurian	Leaves and bark are crushed together and mixed with water and taken orally to cure stomach pain.
16.	<i>Passiflora edulis</i> Sims	Passifloraceae	Thatbute	Leaves are boiled and taken orally. It cures blood pressure. Fruits are edible.
17.	<i>Physalis peruviana</i> L.	Solanaceae	Arzatum	Fruits are edible. It cures diabetes and blood pressure.
18.	<i>Plantago erosa</i> Wall.	Plantaginaceae	Tib	The whole plant is crushed into paste and applied externally to cuts and wounds. It is also used to cure nervous fatigue and pain.
19.	<i>Phyllanthus emblica</i> Gaertn.	Euphorbiaceae	Aonla	Fruit is crushed and applied on hair to reduce dandruff and hair falling.
20.	<i>Polygonum chinense</i> L.	Polygonaceae	Muthlish kurf	The flower is burnt to inhale the smoke which cures cold and cough.
21.	<i>Pouzolzia zeylanica</i> (Linn.) Benn.	Urticaceae	Khat	Bark and leaves are powdered and applied on wounds.
22.	<i>Rhodomyrtus tomentosa</i> (Ait) Hassk.	Myrtaceae	Thacivu pazham	Leaf and Flower extracts are taken orally along with honey to cure dysentery. Fruits are edible
23.	<i>Rubus ellipticus</i> Sm	Rosaceae	Mullu pazham	Leaf juice is taken orally along with ghee and water to cure fever. The fruits are edible.
24.	<i>Solanum surattense</i> Burm.f.	Solanaceae	Kandangattiri	Fruits are chewed to cure tooth ache.
25.	<i>Spergula arvensis</i> L.	Caryophyllaceae	Thadi Kerai	Leaves used as greens. It is rich in iron content. It cures urinary infection.
26.	<i>Spilanthes caloa</i> DC.	Asteraceae	Main	When the petioles are crushed and applied in the aching teeth it reduces pain, cures gum boils and swelling etc.
27.	<i>Syzygium densiflorum</i> Wall.ex Wight & Arn.	Myrtaceae	Ktrs	Leaves and fruits are added with water and taken orally to cure diabetes.
28.	<i>Thea sinensis</i> Linn.	Theaceae	Chaya	The leaf decoction with lemon juice is used as shampoo. The decoction is taken with milk as beverage.
29.	<i>Tridax procumbens</i> L.	Asteraceae	Vettukkaya thalai	Leaf paste is applied externally against sores.
30.	<i>Trigonella foenum-graceum</i> Linnaeus.	Papilionaceae	Vendhaya keerai	Leaves are used as green. It is rich in Iron content and controls hair growth.

MATERIALS AND METHODS

Frequent field surveys were made in the Nilgiri hills during 2007- 2008 covering different seasons in the year. The ethno- botanical data (local names, mode of preparation, medicinal uses) were collected through interview and discussion with the *Toda* tribes in the study area. In addition to the vernacular names, questions were also asked about the plants prescribed, part of the plants used, medicinal use, detailed information about mode of preparation (*i.e.* decoction, paste, powder and juice), form of usage (either fresh or dried and mixtures of other plants used as ingredients). The medicinal plants were photographed and sample specimens were collected for the preparation of herbarium. The collected plant specimens were identified using the "Flora of the Presidency of Madras" (Gamble, 1953) and the "Flora of Tamilnadu Carnatic" (Matthew, 1983). The voucher specimens were deposited in Kongunadu Arts and Science College, Coimbatore, Tamilnadu., India.

RESULTS AND DISCUSSION

In the present ethnobotanical survey 30 species of medicinal plants representing 24 families were recorded (Table 1). The family Asteraceae constituted the highest number of species. The *Todas* use these plants to cure diseases like skin and stomach disorders, ulcer, common fever, rheumatism, bronchitis, etc., and in cosmetics. Leaves are the most widely used plant part. Apart from that tuber, rhizome, tender shoot, stem, petiole, etc., are also used occasionally. Medicines are administered in the form of powder, decoction, paste and juice. A majority of remedies are prepared in the form of juice from freshly collected plant parts of single species or mixing with other species according to the needs by crushing and squeezing. For few remedies, medicines are prepared after drying. Mostly the medicines are taken orally, followed by external application. It was also observed that some plants were used in more than one form of preparation.

The *Todas* even now use some of the plants, plant products, animal products, minerals, etc. for domestic purpose utilizing their traditional knowledge, which had been developed by their forefathers through trial and error methods and passed on to them orally from one generation to another. Unfortunately, due to lack of written documents, most of the traditional knowledge on medicinal plants and their uses survived only by words of mouth from generation are being slowly lost. Moreover, the herbal healers had the strong tendency to keep their knowledge secret without any documentation. Hence, all such traditional and cultural knowledge need to be appreciated and should be integrated with modern scientific techniques.

ACKNOWLEDGEMENT

Authors are thankful to Dr. Rajeshkumar, Government Arts College, Udahagamandalam, Nilgiri District. Thanks are due to the *Toda* tribes for providing information and the results of this research is dedicated to them.

REFERENCE

- Anonymous, 1980. *Establishment of Biosphere Reserves in India: Project Document - I, The Nilgiri Biosphere Reserve*, Indian National Man and Biosphere Committee, Department of Environment, New Delhi.
- Anonymous, 1987. *Nilgiri Biosphere Reserve: an overview report*, Centre for Ecological Sciences, Indian Institute of Science, Bangalore.
- Bhandary, M.J., Chandershekar, K.R. and Kaveriappa, K.M. 1996. Ethnobotany of Gowlis of Uttara Kannda District, Karnataka, *J. Eco. Tax. Bot.*, 12: 224-249.
- Devi, Ashalata, K., Khan M. L. and Tripathi R.S. 2005. Ethnomedicinal plants in the sacred groves of Manipur. *Ind. J. Trad. Know.*, 4(1): 21-32.
- Gamble, J.S. 1935. *The Flora of the Presidency of Madras*, Adlard and Son, Ltd., London.
- Harsha, V.H., Hebbar, S.S., Shripathi, V. and Hegde, G.R. 2003. Ethnomedicobotany of Uttara Kannda District, Karnataka, India- Plants in treatment of skin diseases, *J. Ethnopharmacol.*, 84: 37-40.
- Hockings P. Paikara, 1975. An Iron Age burial in South India, *Asian Perspectives*, 18(1): 26-50.
- Matthew, K.M. 1983. *The Flora of Tamilnadu Carnatic*, The Rabinat Herbarium, St. Joseph's College, Thiruchirapalli, India.
- Penchala, Goli, P., Pratap, G.P. and Sudarshanam, G. 2009. Ethnomedical studies in Talokona forest range of Chittor District, Andrapradesh, *Anc. Sci. Life.*, 28(3): 42-49.
- Prabhakar, R. and Gadgil, M., 1994. Nilgiri Biosphere Reserve: Biodiversity and population growth Survey of the Environment, *The Hindu*: 31-37.
- Parinitha, M., Harish, G.U., Vivek, N.C., Mahesh, T. and Shivanna, M.B., 2004. Ethnobotanical Wealth of Bhadra Wild Life Sanctuary in Karnataka, *Ind. J. Trad. Know.*, 3 (2): 37-50.
- Rajan, S., Jayendran, M. and Sethuraman, M., 2002. Medico ethnobotany: A study on *Toda* tribes of Nilgiri Hills, Tamilnadu, *Nat. Remedies*, 3(1): 68-72.

- Suresh, K. and Selvin Jabaraj Norman, T. 2009. Ethnomedicinal plants used by Kurumba Tribals of Nilgiri Hills, Tamilnadu, India, *Plant Archives*, 9(1): 377-379.
- Udayan, P.S., Tushar, K.V., Satheesh George and Indira Balachandran, 2007. Ethnomedicinal information from Kattunayakas tribes of Mudumalai Wildlife Sanctuary, Nilgiri District, Tamilnadu, *Ind. J. Trad. Know.*, 6(4): 574-578.
- Ved, D.K., Parthima, C.L., Morton, N. and Darshan, S. 2001. Conservation of Indian medicinal plant diversity through a novel approach of establishing a network of *in situ* gene banks. In: Uma Shaanker, R., Ganeshiah, K.N. and Bawa, K.S. (Ed.), *Forest genetic resources: Status, Threats and Conservation Strategies*, Oxford and IBH, New Delhi, P.183.