



Received on 22 May, 2014; received in revised form, 01 August, 2014; accepted, 16 September, 2014; published 01 January, 2015

ETHNOPHARMACOBOTANICAL INFORMATIONS OF SOME HERBACEOUS MEDICINAL PLANTS USED BY *TODA* TRIBES OF THIASHOLA, MANJOOR, NILGIRIS, WESTERN GHATS, TAMILNADU, INDIA

S. Sharmila*, K. Kalaichelvi and P. Abirami

PG and Research Department of Botany, Vellalar College for Women, Thindal, Erode - 638012, Tamil Nadu, India.

Keywords:

Herbaceous, Ethnobotany, Ailments, Todas, Thiashola.

Correspondence to Author:

S. Sharmila

Assistant Professor,
Department of Botany,
Vellalar College for Women,
Thindal, Erode – 638012,
Tamil Nadu, India.


E-mail: drsharmilas@yahoo.com

ABSTRACT: The present paper highlights the therapeutic uses of herbaceous medicinal plants used for various ailments by Toda tribe living in the pockets of Western Ghats of Tamil Nadu are inhabitants of Thiashola, Manjoor, Nilgiri District. A total of 32 plant species belonging to 18 families used by them as herbal medicines to treat several common diseases such as Asthma, antidote, contraceptive and night blindness, skin and stomach disorders, ulcer, common fever, rheumatism, bronchitis, cancer etc., Leaves are the most widely used plant part. During the present study it has been observed that the ethnobotanical systems and herbal medicines as therapeutic agents are of a paramount importance in addressing health problems of traditional communities. The indigenous knowledge available with these people plays an important role in quick and proper identification of natural resources.

INTRODUCTION: India is the largest producer of medicinal plants and is rightly called the "Botanical garden of the World". The medicinal plants, besides having natural therapeutic values against various diseases, also provide high quality of food and raw materials for livelihood¹. Popular knowledge of plants which can be used by humans is based on thousands of years' experience. It is essential to make the complete inventory of the medicinal component of the flora of any country for conservation and sustainable use. The conservation of threatened and endangered medicinal species in the wild is indispensable². Ethnobotanical Knowledge is very ancient in India. It deals with the direct, traditional and natural relationship between human societies and plants.

Ethnobotanical studies assume great importance in enhancing our knowledge about the plants grow and used by native/tribal communities, the rich diversity assembled by them for their sustenance and the different means adopted by them for its preservation and conservation³. Ethno-medicinal documentation of tribal health system will be of great advantage to our pharmacologists and biotechnologists to develop potential medicine for treatment of several diseases and disorders.

India is a vast country with greatest emporia of plant wealth and is extremely rich in medicinal plants comprising about 8000 species⁴ about 70% of India's medicinal plants are found in the tropical areas mostly in various forest types spread across the Western and Eastern Ghats⁵. Since ancient times in India, medicinal plants were used in Indian system of medicine namely Ayurveda and Sidha. 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

<p>QUICK RESPONSE CODE</p> 	<p>DOI: 10.13040/IJPSR.0975-8232.6(1).315-20</p>
<p>Article can be accessed online on: www.ijpsr.com</p>	
<p>DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.6(1).315-20</p>	

indigenous communities⁶⁻¹⁰. It is apparent from this survey that tribes and various communities residing in remote places follow different practices⁹. Ethnomedicinal knowledge still retained by these traditional communities need to be explored properly before erosion under the impact of modern consumeristic market economy¹¹.

In Tamil Nadu, several tribals inhabiting Western Ghats such as *Todas* seem endowed with a rich knowledge of herbals, especially ailments like rheumatism. The study focuses on the ethnomedicinal plants used by *Todas* settled in the forest area of the Thiashola, Manjoor, Western Ghats, Nilgiri District of Tamilnadu, India (**Plate 1**). In the present report, the information gathered from *Todas* on the herbaceous medicinal plants used for treating various diseases in Thiashola is provided (**Plate 2**).



PLATE 1: ORIGIN POINT OF THE STUDY SHOLA



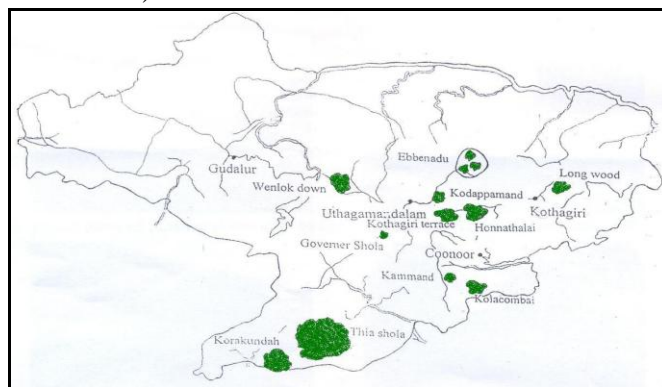
PLATE 2: INVESTIGATOR GATHERING INFORMATION ON ETHNOMEDICINAL PLANTS FROM THE TODA TRIBE AT THIASHOLA.

Study area

The mountains along the west coast of peninsular India, the Western Ghats, constitute one of the unique biological regions and it extends from the southern tip of the peninsula (8° N) northwards and about 1600 km to the mouth of river Tapti (21° N). Among the various bio-geographic zones of India, Western Ghats contain high degree of endemism and is very rich in its medicinal wealth. The forests and hills of this region is a treasure house, nearly of about 2000 species of higher plants, 92 species of amphibians, 89 species of reptiles, 15 species of birds and 12 species of mammals are endemic to Western Ghats¹²⁻¹⁴. The Nilgiri Biosphere Reserve or Blue Mountains is an International Biosphere Reserve occupies a total area of 2542.49 Sq Kms, located in the Western Ghats of Palghat Gap.

The sholas are the residual forests confined to the sheltered sites such as the valleys, glens, hollows and depressions where moisture is good in all the basins of the Nilgiris¹⁵. The Thiashola, one of the undisturbed subtropical montane wet evergreen forest located in The Nilgiris at Manjoor, Southern Western Ghats, harbours a high number of medicinal and other economically important plants in its understorey despite the existence of adequate soil moisture at all times of the year¹⁶.

However, the documentation of medicinal value and ecological features of such important plants of this region have not been completely executed. Hence the present study was aimed to explore the availability of herbaceous medicinal plants and their ecological status used by *Toda* tribes in Thiashola understorey of The Nilgiris (**Map-1**). Nilgiris was called as Todamala (the Toda Mountains).



MAP 1. LOCATION OF THE STUDY SHOLA SHOWING VEGETATION PATTERN

MATERIALS AND METHODS:

With the assistance of experienced and elderly tribes traditional knowledge the field survey was carried out in Thiashola, Manjoor, Nilgiris South Division, Western Ghats during 2009 and 2010. The ethnobotanical data were collected through interviews and discussions among the herbal practitioners in and around the study area. Field trips were undertaken to tribal areas and information was obtained through informal interviews with elderly tribals. The data were recorded through a modified schedule based on¹⁷⁻²⁰.

Plants were collected in their flowering and fruiting seasons from the natural habitat. While collecting the individual plant species, a thorough observation was made regarding the location, natural habitat, distribution pattern, habit, nature of roots, tubers, bulbs or rhizomes, floral and fruit characteristics etc. Seasonal variations, flowering and fruiting stages were also recorded and were entered on the spot in the field note book.

The collected specimens were pressed properly. Dried specimens were poisoned with 0.1% HgCl₂ following the method of²¹. All the informations were transferred from the field note book to the right hand corner of the herbarium sheet for ready identification. The voucher specimens were deposited in Department of Botany, Vellalar College for Woman, Thindal, and Erode. Photographs were also taken to supplement the herbarium.

The collected plants were identified with the help of the existing Floras²²⁻²⁴ and compared with type specimens available in the herbarium of Botanical Survey of India, Southern Circle, TNAU Campus, Coimbatore, Tamil Nadu. The ethnobotanical data collected through interview were documented alphabetically with their binomial, vernacular names, ecological status, parts used and medicinal uses.

RESULTS AND DISCUSSION:

In the present ethnopharmacobotanical survey 32 species of herbaceous medicinal plants representing 18 families were recorded (**Table 1 and Plate 3**). The family Asteraceae constituted the highest

number of species. The Todas use these plants to cure diseases like Asthma, antidote, contraceptive and night blindness²⁶, skin and stomach disorders, ulcer, common fever, rheumatism²⁷, bronchitis, cancer²⁸ etc., Leaves are the most widely used plant part (**Fig 1**). 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 juice¹⁰. 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.

The Todas, a tribal community lives in the pockets of Western Ghats of Tamil Nadu are inhabitants of Thiashola. The shola receives an average annual rainfall of ca. 1199 mm. The monthly average minimum temperature varied from 15.2°C to 26.9°C.

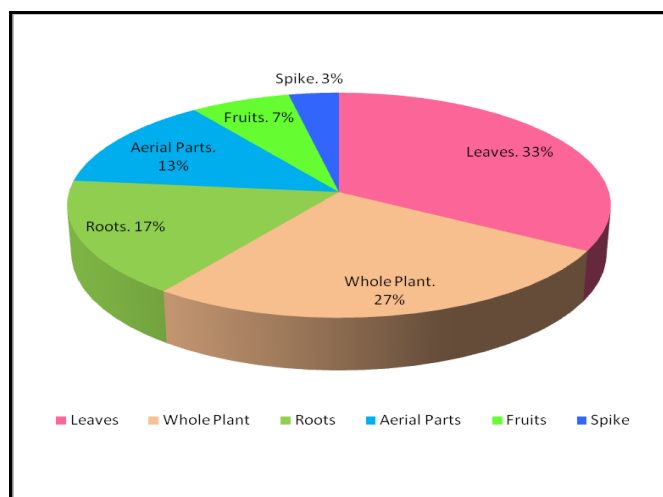


FIG. 1. PIE DIAGRAM SHOWING THE USEFUL PARTS WISE PERCENTAGE OF ETHNOMEDICINAL PLANTS OF THIASHOLA

Out of the large variety of species available in the Western Ghats, about 30 species hold a very high value for the treatment of different forms of ailments. The plant *Cayratia pedata* var. *glabra* is found to be a curing agent for many major ailments such as jaundice, ulcer, fever and antiseptic. *Cayratia pedata* and *Ophiorrhiza mungos* L. are specially recommended for various forms of tumor

¹⁶. *Achyranthes bidentata* Blume. and *Girardinia diversifolia* (Link.) Friis. are uprooted for their medicinal roots, tubers, spike and spadix to sell in local markets. Similarly, the species like *Anaphalis elliptica* DC. and *Centella asiatica* Urban. are exploited illegally by the local people. Cultivation is suggested for the species, *Achyranthes bidentata* Blume. and *Centella asiatica* in degraded sholas

and other suitable habitats in Nilgiris to meet the demand and also to conserve these species ²⁵.

Different measures have been adopted for conservation of these species. So that it may give maximum benefit to the present generation while maintaining its potential to meet the needs and appiratings of the future generation.



JUSTICIA SIMPLEX D. DON.



ANAPHALIS ELLIPTICA DC.



GIRARDINIA DIVERSIFOLIA (LINK.) FRIIS.



FRAGARIA VESCA L.



PEPEROMIA DINDIGULENSIS MIQ.



CAYRATIA PEDATA (LAM.) GAGNEP.
VAR. *GLABRA* GAMBLE

PLATE 3: SNAPSHOTS OF SOME OF THE SURVEYED SPECIES

TABLE 1: SUMMARY OF INFORMATION ABOUT THE STUDIED HERBACEOUS MEDICINAL PLANTS USED BY TODA TRIBES IN THIASHOLA, MANJOOR, NILGIRIS SOUTH DIVISION, WESTERN GHATS.

S. No.	Botanical Name	Vernacular Name	Family	Parts Used ²⁶⁻²⁸	Medicinal Uses
1.	<i>Achyranthes bidentata</i> Blume.	Sighappu nayuruvi, Sennayuruvi	Amaranthaceae	Roots, spike and leaves	Asthma, antidote, contraceptive and night blindness
2.	<i>Ageratum conyzoides</i> L.	Vaadai chedi	Asteraceae	Leaves	Psoriasis
3.	<i>Ageratum houstonianum</i> Mill.	Not available	Asteraceae	Leaves	Wound healing
4.	<i>Anaphalis elliptica</i> DC.	Vellaragu	Asteraceae	Whole plant	Fever
5.	<i>Bidens pilosa</i> L.	Mukkutthi	Asteraceae	Leaves	Antiseptic and cough
6.	<i>Calanthe triplicata</i> Ames.	-	Orchidaceae	-	-
7.	<i>Carex baccans</i> Nees.	-	Cyperaceae	-	-
8.	<i>Cayratia pedata</i> (Lam.) A. Juss. Ex Gagnep.	Kattuppirandai	Vitaceae	Whole plant	Antiseptic
9.	<i>Cayratia pedata</i> (Lam.) Gagnep. var. <i>glabra</i> Gamble	Kattuppirandai	Vitaceae	Whole plant	Antiseptic, cancer, ulcer and refrigerant
10.	<i>Centella asiatica</i> Urban.	Vallarai	Apiaceae	Whole plant	Skin diseases
11.	<i>Clematis roylei</i> Rehder.	-	Ranunculaceae	-	-
12.	<i>Cynoglossum furcatum</i> Wallich.	Pisin ottarai	Boraginaceae	Roots	Jaundice
13.	<i>Digitaria violescens</i> Link.	Arisipullu	Poaceae	Aerial parts	Fodder
14.	<i>Eragrostis cilianensis</i> (All.) Vignolo.	Stink grass	Poaceae	Aerial parts	Fodder
15.	<i>Fragaria vesca</i> L.	Not available	Rosaceae	Whole plant	Demulcent Stimulant, headache, swollen joints and fever
16.	<i>Girardinia diversifolia</i> (Link.) Friis.	Seemai senthatti	Urticaceae	Roots and leaves	Skin diseases
17.	<i>Helichrysum hookeriana</i> Wight. & Arn.	Peru vellaragu	Asteraceae	Flowers	Fodder Cooling, aperients and small pox in children
18.	<i>Isachne kunthiana</i> (Steud.) miq.	Mosumpul	Poaceae	Aerial parts	-
19.	<i>Justicia simplex</i> D. Don.	Not available	Acanthaceae	Leaves	Wound healing
20.	<i>Launaea pinnatifida</i> Cass.	-	Asteraceae	-	-
21.	<i>Myriactis wightii</i> DC.	Aattukkali	Asteraceae	Leaves	-
22.	<i>Neonitis leschenaultii</i> (DC.) Lewis.	-	Rubiaceae	-	-
23.	<i>Ophiorrhiza mungos</i> L.	Keeripoondu	Rubiaceae	Root and Leaves	Cancer and Ulcer Pregnancy, piles, dyspepsia, stomachic, fever and dysentery
24.	<i>Oxalis corniculata</i> L.	Puliarai	Oxalidaceae	Whole plant	-
25.	<i>Peperomia dindigulensis</i> Miq.	-	Piperaceae	-	-
26.	<i>Phyllanthus virgatus</i> G. Forst.	Perukeelanelli	Euphorbiaceae	Whole plant	Bleeding Diabetes, Rhinal infections, astringent, ant dysenteric, antiseptic and deobstruent
27.	<i>Rubia cordifolia</i> L.	Oacchai muruli, Saayakkodi	Rubiaceae	Whole plant	Wound healing
28.	<i>Senecio corymbosus</i> Wall. ex DC.	Mochukkodi	Asteraceae	Leaves	Antidote, venereal diseases
29.	<i>Smilax zeylanica</i> L.	Kaattukkodi	Smilacaceae	Root	-

30.	<i>Stephania japonica</i> (Thunb.) Miers.	Molagaranai kodi	Menispermaceae	Leaves and roots	and skin troubles Antiseptic, astringent, fever and diarrhoea
31.	<i>Tetrastigma nilagiricum</i> (Miq.) B. V. Shetti.	Kattu thiratchai, Perumuruli	Vitaceae	Fruits and aerial parts	Edible
32.	<i>Zehneria mysorensis</i> Wight & Arn.	Kattu kovai	Cucurbitaceae	Fruits	Blood purifier

CONCLUSIONS: The Todas even now use these plants in different forms based on 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.

REFERENCES:

- Umadevi M, Sampath Kumar KP, Debjit Bhowmik S and Duraivel: Traditionally Used Anticancer Herbs In India. Journal of Medicinal Plants Studies 2013; 1(3): 56-74.
- Rahman MA, Mossa SJ and Al-Said SM: Medicinal Plant Diversity in the flora of Saudi Arabia – 1: a report on seven plant families. Fitoterapia 2004; 75, 149-161.
- Xavier TF, Kannan M, Lija L, Auxillia A, Rose AK and Kumar SS: Ethnobotanical study of Kani tribes in Thoduhills of Kerala, South India. Jou. Ethnopharmacol 2014; 152(1):78-90.
- Ved DK, Parthima CL, Morton N and Darshan S: Conservation of Indian Medicinal Plant diversity through a novel approach of establishing a network of in situ gene banks. In: Uma Shaanker, R., Ganeshaiah, K.N. and Bawa, K.S. (Ed.), Forest genetic resources: Status, Threats and Conservation Strategies, Oxford and IBH, New Delhi, 2001; 183.
- Devi, Ashalata K, Khan ML and Tripathi RS: Ethanomedicinal plants in the sacred groves of Manipur. Ind. J. Trad. Know. 2005; 4(1): 21-32.
- Bhandary MJ, Chandershekar KR and Kaveriappa KM: Ethnobotany of Gowlis of Uttara Kannda District, Karnataka. J. Eco. Tax. Bot., 1996; 12: 224 – 249.
- Paulsamy S, Senthilkumar P and Sivashanmugam M: Ecological status of medicinal and other economically important plants in the shola understories of Nilgiris, the Western Ghats. Natural Product Radiance, 2007; Vol 6(1), 55-61.
- The Wealth of India: A dictionary of Indian Raw materials and Industrial Products-Raw Material Series, 11 Vols, Council of Scientific and Industrial Research, New Delhi, 1940-1976.
- Harsha VH, Hebbar SS., Shripathi V and Hedge GR: Ethnomedicobotany of Uttara Kannda District, Karnataka, India-Plants in treatment of skin diseases. J. Ethnopharmacol., 2003; 84: 37-40.
- Parinitha M, Harish GU, Vivek C, Mahesh T and Shivanna MB: Ethnobotanical wealth of Bhadra Wild Life Sanctuary in Karnataka. Ind. J. Trad. Know. 2004; 3(2): 37-50.
- Suresh K and Selvin Jabaraj Norman T: Ethnomedicinal plants used by Kurumba Tribals of Nilgiri Hills, Tamilnadu, India. Plant Archives, 2009; 9(1): 377-379.
- Penchala, Goli P, Pratap GP and Sudarshanam G: Ethnomedical studies in Talokona forest range of Chittor District, Andrapradesh, Anc. Sci. Life., 2009; 28(3): 42-49.
- Behera SK, Panda, Anima, Behera Susanta K and Misra MK: Medicinal plants used by the Kandhas of Kandhamal district of Orissa. Ind. Journ. of Traditional Knowledge, 2006; 5 (4): 519-528.
- Daniel RJR: The Nilgiri biosphere reserve and its role in conserving India's biodiversity. Curr. Sci., 1993; 64: 706-708.
- Gupta BK: Declining Amphibians. Curr. Sci., 1998; 75(2): 81-84.
- Manikam VS. 2004. Floristic diversity and its conservation in India. In: Biodiversity Resources Management and Sustainable use. Center for Biodiversity and Forest Studies, Madurai-Kamaraj University, Madurai, 37-42.
- Meher-Homji VM: Some considerations on the succession of vegetation around Kodaikanal. Indian Botanical Society, 1969; XIVIII (1-2): 42-51.
- Paulsamy S: Progress report for annual review meeting under Biosphere Reserve meeting 3rd and 4th Feb, 2005. Thiruvananthapuram, Ministry of Environment and Forest, Govt. of India, NewDelhi, 2005
- Schultes RE: Tapping our heritage of ethnobotanical lore. Econ. Bot., 1960; 14: 257-262.
- Jain SK: Ethnobotany: A Manual of Ethnobotany. Science Publishers, Jodhpur. 1987b.
- Jain SK: Methods and approaches in Ethnobotany, Society of Ethnobotany, Lucknow, 1989.
- Martin GJ: Ethnobotany - A methods manual. Chapman and Hall, London, 1995; 268.
- Jain SK and Rao RR: Hand Book of Field and Herbarium Methods. New Delhi, 1970.
- Fyson PF 1915-20. The Flora of the Nilgiri and Pulney hill tops. Superintendent, Government Press, Madras, 3 Vol.
- Gamble JS and Fischer CEC: Flora of the Presidency of Madras. Botanical Survey of India, Calcutta, 3 Vol. 1957.
- Matthew KM: The Flora of the Tamil Nadu Carnatic. The Rapinet Herbarium, St. Joseph's College, Tiruchirapalli, 1983; 3: 278-279.
- Satyavathi GV, Raina MK and Sharma M: Medicinal Plants of Indi, 1976; ICMR, New Delhi, 368-370.
- Chopra RN, Chopra LC and Verma BS: Supplement to glossary of Indian Medicinal Plants, CSIR, New Delhi, 1969.

How to cite this article:

Sharmila S, Kalaichelvi K and Abirami P: Ethnopharmacobotanical Informations of Some Herbaceous Medicinal Plants Used By *Toda* Tribes of Thiashola, Manjoor, Nilgiris, Western Ghats, Tamilnadu, India. Int J Pharm Sci Res 2015; 6(1): 315-20.doi: 10.13040/IJPSR.0975-8232.6 (1).315-20.

All © 2013 are reserved by International Journal of Pharmaceutical Sciences and Research. This Journal licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

This article can be downloaded to **ANDROID OS** based mobile. Scan QR Code using Code/Bar Scanner from your mobile. (Scanners are available on Google Playstore)