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Evolutionary knowledge of Irular tribes in the Eastern Ghats region of Krishnagiri District, India

R. Kanthasamy*, R. Mahesh#, K. Muthuchelian# M. Maridass$ and G. Raju$

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Abstract: Ethno-medicinal knowledge among the Irular tribes of Eastern Ghats, Krishnagiri District was assessed from 2013 to 2014. Data showed is included in the interpretation as well as inference. Out of this exploration, 61 medicinal plants in 56 genera and 35 families have been documented. The members were requested that these wild plants in the field are potentially used for the treatment of various diseases. At all point examples of these plants were gathered. Plants were identified by using relevant floras and reference herbarium specimens. Most of the diseases were cured using of these plant resources by the Irular tribes. Further, there seen a shift from traditional system of medicine to allopathic system especially in young population due to the lack of awareness about therapeutic potential of ethno medicinal plants available in their village. The conservation and awareness generation are needed in this area for the better sustainability of these practices.

Keywords: Irular tribes, medicinal plants, Eastern Ghats, Krishnagiri District.

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Present Address

*Department of Botany, South Travancore Hindu College, Nagercoil - 629 002, Tamil Nadu, India.
$Department of Advanced Zoology and Biotechnology, Pioneer Kumaraswamy College, Nagercoil – 629 003, Tamil Nadu, South India.
Centre for Biodiversity and Forest Studies, School of Energy, Environment and Natural Resources, Madurai Kamaraj University, Madurai – 625 021, Tamil Nadu, India.
*E.mail: rksmsl@gmail.com

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1. Introduction

India is rich in indigenous herbal resources and offers a great scope for traditional studies. People and aborigines all over the world use enormous range of wild plants for their basic needs than the urban living floks. Plants have always been the sources of food, medicine and other necessities of life since ages. The use of plants to alleviate human suffering is as old as the evolution of human civilization itself. India possesses a great heritage of ancient systems of medicine such as Siddha, Ayurveda, Unani and Homeopathy. Nearly 2500 species of plants are used in one way or other by these systems. In addition to these traditional systems, there also exists in India a vast knowledge of tribal and folk medicine, which utilize around 7500 species of plants as medicinal. Some of the ethno botanically important species have also provided leads for the production of drugs. It is estimated that in India 90% of the prescriptions contain plant products.

Documentation of the indigenous learning through ethno-natural studies is essential for the protection and use of organic assets. In this way, deciding the nearby names and indigenous employments of plants has huge potential societal advantages. In this background the present work is aimed at gathering data from traditional herbal practitioners of Irular tribal people who use medicinal plants for curing ailments related to stomach, dental, heart, kidney, piles and other common diseases. This will provide information to the common people inhabited in urban and rural areas by using locally available medicinal plants. The present study examined the plants customarily utilized as a part of the treatment of particular diseases, and the neighbourhood names of these plants.

2. Materials and Methods

The traditional ethno botanical knowledge of people has been documented during field trips were carried out in the study area totalling 52 days during 2013 - 2014. Traditional medical practitioners used the native medicinal plants for the preparation of drugs. Mode of the drug administration, combination and dosage details were collected and documented through questionnaire as well as personal interviews (Jain, 2001).

All medicinal plant specimens were identified and verified by using relevant reference herbarium and identity of the specimens have authenticated by (Gamble, 1993 and 1994). The data contains habit, habitat, vernacular name, methods of administration, and conditions of disease, harmful effect and also natural identification.

3. Results and Discussion

Surveys were regulated to the individuals, through eye to eye interviews. The poll was controlled just to individuals who had information of therapeutic plants. Amid the meetings, demographic attributes of the members, and neighbourhood names, utilized parts and arrangement techniques for the plants were recorded. The members were requested that these wild plants in the field are potentially used for the treatment of various diseases. At all point examples of these plants were gathered.

Data showed is included in the interpretation as well as inference. Out of this exploration, 61 medicinal plants in 56 genera and 35 families have been documented. The data contain of botanical name, family, vernacular name, habitat, description, plant parts used, ethno-medicinal use, herbal formulation, dosage and original photographs of the plants.

The gathered different type of plants were utilized to treat 27 sorts of infections, for example, wounds, body affliction, loose bowels, skin issues, body torment, knee issue, hack, icy, fever, asthma, kidney issue, tonic, endless issue, hurts, hair development, stomach issues, ulcer, sore throat, disease, opthalmia, typhoid, urinary bladder and ailment as far as the quantity of plants gathered in the Eastern Ghats of Peninsular India. Further, there seen a shift from traditional system of medicine to allopathic system especially in young population due to the lack of awareness about therapeutic potential of ethno-medicinal plants available in their village. Hence, it is recommended to improve the awareness over the young population so as to retain the traditional medicinal system as well as to sustain the economy of the village people. During the last few decades, there has been an increasing interest in the study of medicinal plants and their traditional use in different parts of the India.

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Table -1: Ethno-botanical data from the Eastern Ghats region of Krishnagiri District, India

S.No	Botanical Name	Family	Vernacular Name	Habit	Mode of Administrations
1	Abrus precatorius L.	Leguminosae	Kundumani	Climber	Leaf and seed powders are mixed with water and used to treat stomach pain.
2	Abutilon indicum (L.) Sweet.	Malvaceae	Thuthi	Shrub	Common crabs are boiled and ground with these leaves. The mixture is placed in a white cloth and heated. It is applied on the body to treat pain.
3	Acalypha indica L.	Euphorbiaceae	Kuppaimeni	Herb	Leaves are ground and applied externally for scabies and sores.
4	Achyranthes aspera L.	Amaranthaceae	Naayuruvi	Herb	Fruit grains are consumed for food.
5	Aegle marmelos (L.) Correa.	Rutaceae	Vilvam	Tree	The fruit resin is directly applied on hair as a hair cleaner.
6	Aerva lanata (L.) Juss.	Amaranthaceae	Koola Chedi	Herb	Leaves with spices are boiled and consumed in empty stomach for skin disorder.
7	Aloe vera (L.) Burm.f.	Asparagaceae	Sothukatthalai	Herb	Sliced leaves are given for elderly people to reduce body heat.
8	Alternanthera sessilis (L.) R.Br. ex DC.	Amaranthaceae	Ponnaganni Keerai	Herb	Leaves are cooked and consumed for improving eye sight.
9	Amaranthus spinosus L.	Amaranthaceae	Mulkeerai	Herb	Leaf paste decoction is given two table spoons orally to children up to the age of five as laxative.
10	Andrographis paniculata (Burm.f.) Nees.	Acanthaceae	Nilaveembu	Herb	Leaf paste is taken orally for snake bite.
11	Annona squamosa L.	Annonaceae	Sithapalam	Tree	Dry seed powder is mixed with the coconut oil and applied on the hair for seven days for dandruff.
12	Aristolochia bracteolata Lam.	Aristolochiaceae	Aduthinna Palai	Climber	Leaf juice is consumed to reduce stomach worms.
13	Asparagus racemosus Willd.	Asparagaceae	Majjuga Kodi	Climber	Leaf juice is administered orally to milking women as it is a milk inducer.
14	Bambusa arundinacea Willd.	Poaceae	Moongil	Tree	The young shoot tip-pieces are mixed with honey and consumed early morning in the empty stomach for three days to reduce body heat.
15	Boerhavia diffusa L.	Nyctaginaceae	Mukkirattai	Herb	The whole plant is made into a paste with cumin and taken internally to cure digestive problems.
16	Calotropis gigantea (L.) Dryand.	Apocynaceae	Erukkalai	Shrub	The root bark-decoction is given orally to the children twice for two days to cure fever.
17	Cardiospermum halicacabum L.	Sapindaceae	Mudakkathan	Climber	Leaf paste mixed with coconut oil is taken orally for curing joint pains.
18	Coccinia grandis (L.) Voigt.	Cucurbitaceae	Kovai	Climber	Leaves are boiled and eaten to treat diabetics.
19	Centella asiatica (L.) Urb.	Apiaceae	Vallarai	Herb	The leaves are boiled in water and kept soaked for overnight, distilled and drunk in the morning in empty stomach to improve memory.
20	Cissus quadrangularis L.	Vitaceae	Pirandai	Climber	Leaves are ground well into a paste and directly applied on the hair before bath for dandruff.
21	Curcuma longa L.	Zingiberaceae	Manjal	Herb	The burnt rhizome smoke is inhaled for twice a day in the morning to relieve head ache and cold.
22	Cynodon dactylon (L.) Pers.	Poaceae	Arugampullu	Herb	The whole plant juice is mixed with milk, curcuma powder and applied directly for three days for skin allergy.
23	Daemia extensa R.Br.	Apocynaceae	Ariya Kurutti Illai	Climber	Leaf-juice is mixed with limestone and applied on the neck for 10 days to treat neck gall.
24	Datura metel L.	Solanaceae	Ummatham	Herb	The leaves are ground and directly applied on the swelling place in cattle.
25	Dioscorea alata L.	Dioscoreaceae	Kattuvallikilangu	Climber	Boiled tubers are consumed as food.
26	**Eclipta prostrata (L.) L.**	**Compositae**	**Karisilanganni**	**Herb**	The powder of Eclipta prostrata, Leucas aspera and Phyllanthus niruri are mixed with butter milk and taken orally to cure jaundice.
27	Enicostema axillare (Poir. ex Lam.) A.Raynal	Gentianaceae	Vellarugu	Herb	The leaf extract is taken orally for two days in the morning in empty stomach to cure snake bite.
28	Euphorbia hirta L.	Euphorbiaceae	Amman Pacharisi	Herb	Leaf pastes with buffalo curd are taken orally in the empty stomach for seven days to treat ulcer.

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29	Ficus benghalensis L.	Moraceae	Allamaram	Tree	Seeds are used as purgative and the prop root are used as toothbrush for curing rheumatism.
30	Ficus racemosa L.	Moraceae	Athi	Tree	The root is ground and mixed with water and taken orally for three days to treat diarrhea.
31	Gloriosa superba L.	Colchicaceae	Kalapaikilangu	Climber	The tubers are boiled and consumed for scorpion sting.
32	Gymnema sylvestre (Retz.) Schult.	Apocynaceae	Sirukurichan	Climber	Leaf is made into juice and taken orally for diabetics.
33	Hemidesmus indicus (L.) R. Br. ex Schult.	Apocynaceae	Nannari	Herb	Root extract is mixed with honey for three days and consumed orally for 30 days purify the blood.
34	Hybanthus enneaspermus (L.) F.Muell.	Violaceae	Orithalthamarai	Herb	Plant juice is consumed with milk for treating sexual disorders.
35	Justicia adhatoda L.	Acanthaceae	Adadodai	Shrub	The leaf decoction is taken internally to cure cold and cough.
36	Lawsonia inermis L.	Lythraceae	Azhavanam	Tree	Leaf paste mixed and directly applied on the hair to improve hair growth.
37	Mangifera indica L.	Anacardiaceae	Maa	Tree	The flowers are dried powdered and mixed with hot water and taken orally to control dysentery.
38	Murraya koenigii (L.) Spreng.	Rutaceae	Kariveppilai	Tree	The leaf paste is consumed to improve the black coloration as well height of hair growth also used for reducing bile juice..
39	Musa paradisiaca L.	Musaceae	Kattuvalai	Herb	Leaf juice is directly consumed for snake bite.
40	Ocimum basilicum L.	Lamiaceae	Karunthulasi	Herb	The leaf and root juice is orally taken for curing asthma.
41	Ocimum sanctum L.	Lamiaceae	Naaithulasi	Herb	Dried leaves are kept in fire and the smoke is inhaled to cure asthma.
42	Phyllanthus amarus Schumach. & Thonn.	Phyllanthaceae	Keelanelli	Herb	The plant juice and boiled rice are mixed with goat milk; it is consumed for seven days to control jaundice.
43	Phyllanthus emblica L.	Phyllanthaceae	Nelli	Tree	The crushed fruits are mixed with lemon juice and given orally for dysentery.
44	Physalis minima L.	Solanaceae	Sudakkuthakkali	Herb	Fruits are consumed to cure stomach disorders.
45	Piper nigrum L.	Piperaceae	Nallmilavoo	Climber	The dry seeds and salt are made into powder and applied over the tooth for five days at night to decrease tooth ache.
46	Pithecellobium dulce (Roxb.) Benth.	Leguminosae	Kodukkapuli	Tree	The leaf juice is taken twice a day for seven days to cure stomach ulcer.
47	Plumbago zeylanica L.	Plumbaginaceae	Chithiraimoolam	Herb	Root paste with gingily oil is applied topically to cure piles.
48	Ricinus communis L.	Euphorbiaceae	Amanakku	Shrub	The stem bark paste mixed with goat milk is given orally to pregnant women to ease the delivery process.
49	Cassia fistula L.	Leguminosae	Sarakondrai	Tree	Extract of the petals are taken orally for diges-tion.
50	Sesamum indicum L.	Pedaliaceae	Yellu	Herb	The fruits are dried in the oven and eaten to increase body strength.
51	Sesbania grandiflora (L.) Pers.	Leguminosae	Aagathi	Tree	Leaves are boiled with water and taken to cure stomach ulcers.
52	Sida acuta Burm.f.	Malvaceae	Arivalmanai Poondu	Herb	Leaf paste is applied on the surface of the body to cure urinary disorders.
53	Solanum nigrum L.	Solanaceae	Manathakkali	Shrub	Leaves and fruits are chewed and swallowed to cure mouth ulcer.
54	Solanum torvum Sw.	Solanaceae	Sundakkai	Shrub	Fruits are boiled with hot water and consumed to cure stomach ulcer.
55	Solanum trilobatum L.	Solanaceae	Thuthuvalai	Shrub	Leaves are boiled with water and mixed with ginger to treat cough and cold.
56	Tamarindus indica L.	Leguminosae	Puli	Tree	Bark is burnt and mixed with coconut oil and directly applied on fire injured spots for curing.
57	Tinospora cordifolia (Willd.) Miers.	Menispermaceae	Seenthalkodi	Climber	Leaves and fruit along with butter milk are taken internally for piles.
58	Tridax procumbens (L.) L.	Asteraceae	Thalaivetti Poondu	Herb	The leaf paste is applied in the distress part to treat scorpion bite.
59	Vitex negundo L.	Lamiaceae	Nochili	Tree	Young leaves are ground and mixed with buffalo curd and taken orally for 30 days to treat wound swelling.
60	Withania somnifera (L.) Dunal.	Solanaceae	Amkulang	Climber	Tubers are boiled and the extract is mixed with Phyllanthus emblica juice and taken twice a day for 30 days to cure sexual disorders.
61	Ziziphus mauritiana Lam.	Rhamnaceae	Illandai	Tree	Fruits are consumed for better digestion of the eaten stuffs.

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Indigenous communities have been the original owners of biodiversity. These knowledge systems are a part of a heritage in the country. Their protection, therefore, needs to be based on criteria different from the criteria of novelty used in patents.

Traditional knowledge generally passed down to the next generation verbally, in the form of odes and poems. In the process of rapid modernization and advancement of medical sciences, partially documented or undocumented knowledge on ethno-medicine began to deplete drastically. Traditional knowledge has now regained importance due to the discovery of new drugs and formulations from phyto-resources (Alves and Rosa 2007 and Pandey 2011).

Nowadays, rural life is changing into a fast life found on modern cities. This change is affecting the younger generation and overall increasing willingness to use allopathic medicines over ethno-medicines for its faster effect. Though the respondents shared that the process of collection of medicinal plants is time consuming and tedious, it was observed that villagers were more interested in selling these medicinal plants instead of using them for self-cure. But, this trade is more or less in the informal sector and so difficult to document. There is a close link between conserving biodiversity and sustaining livelihoods, which needs to be recognized and conserved. Records of the medicinal plants from ethnomedicinal records come up to be essential for enhancing the thoughtful of indigenous tribal botanical knowledge procedure. (Britto and Mahesh. 2007a and 2007b; Britto *et al*., 2008; Britto *et al*., 2010) the plants recorded in the present study demands conservation as much information regarding its uses are getting erased from the local people. Government and NGO's should take initiative to settle down this problem.

Conclusion

This study has recorded valuable medicinal plants from Eastern Ghats region og the peninsular India. The recording of traditional knowledge seeks to reduce the possibility of bio-piracy, but looks to future legislation to effectively protect the rights of the people and protecting the interests of the knowledge holders.

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