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## Ethnobotany of irular tribes in redhills, tamilnadu, India

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## ABSTRACT

**Objective:** The present study highlights the ethno medicinal of *Irulars* in the Redhills of Tamil Nadu. They have continuously being used till in this modern drug process. They have the capability to search for number of uses of plants. **Methods:** Extensive field surveys were conducted in the two *Irulars* villages involving 10 households. The information on medicinal plants and their utilization was collected through personal interview. **Results:** A total of 35 species affiliated to 27 families have been documented. **Discussion:** The present study observed that, the Irular tribe of the red hills having very good knowledge on the traditional medicine. **Conclusion:** This type of studies may help pharmacological research in various dimensions.

## 1. Introduction

India is proud to be rich in biodiversity possess about 8% of the estimated biodiversity of the world with around 12600 species. It is one of the 12 mega biodiversity centers with 2 hot spots of biodiversity in the Western Ghats and North–eastern region. It's also rich in ethnic diversity, there are about 67.37 million tribal people belonging to 537 tribal groups living in different geographical locations with various subsistence patterns<sup>[1, 2]</sup>. These tribal groups living in diversity rich areas possess a wealth of knowledge and skills on the utilization and conservation of food and medicinal plants<sup>[3, 4]</sup>.

According to a survey of World Health Organization, the practioners of traditional system of medicine treat about 8% of patients in India, 85% in Burma and 90% in Bangladesh<sup>[5, 6]</sup>. It is estimated that at least 2, 65,000 species of seed plants exist on earth, only less than a half percent of these have been studied exhaustively for their chemical composition and medicinal value<sup>[7,8]</sup>. A vast knowledge of how to use

the plants against different illness may be expected to have accumulated in areas where the uses of plant is still of great importance<sup>[9,10]</sup>.

The plants used in ethno medicine contain a wide range of substances that can be used to teach chronic as well as infectious diseases. They are rich in secondary metabolites and essential oils of therapeutic importance<sup>[11]</sup>. The important advantages claimed for therapeutic uses of medicinal of medicinal plants in various ailments are their safety besides being economical, effective and their easy availability<sup>[12]</sup>. Moreover it is an undeniable fact that the knowledge of indigenous people is invaluable in the present day context of biodiversity for its sustainable utilization and novel drug development programs.

The indigenous knowledge on medicinal plants gaining recognition worldwide because of its support in discovery of new drugs. Many ethno pharmacological studies on plants used in human communities have been limited to specific geographical or administration region<sup>[13,14,15]</sup>. Many quantitative and qualitative field surveys have documented on detailed utilization of specific plants for many aboriginal groups as Kadars<sup>[16,17,18,19,20,21]</sup>.

The *Irulars* they are generally called as Negribo and are small tribal community are present in various parts of India. They main occupation are snake and rat catching, they fully depend on produces and wild animals. In recent years some workers<sup>[22,23,24,25,26,27,28,29,30,31,32]</sup>. Have reported various medicinal plants used by *Irulars* tribes in Anaikatti

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Hills, Siruvani, Marauthamali and Palamali hills. There are no previous reports on the documentation of knowledge of utilization of medicinal plants for various ailments by Irular tribes of Redhills of Chennai District of Tamil Nadu. Hence, an attempt was made to document the ethno medicinal knowledge from Irular tribes residing in the study area.

## MATERIALS AND METHODS

Extensive field surveys were conducted in the two *Irulars* villages. A detailed survey was conducted involving 10 households in the two villages namely Erumavettipalayam and Thirunilaicolony. All the information's mentioned is based on first hand information on medicinal plants and their utilization, collected through personal interview with the villagers of different age group and sex, the patients as well as the key informants locally called, vaidhyas. There were two well knowledgeable vaidhyas in the study villages namely, Shri Govindan (age 49) and Mrs Mainamma (age 40). The information about plants and their local names, parts of plant used for preparation of drug of administration were documented. The information gathered from them was again crosschecked with the other residents of same community. As the *Irulars* are mostly illiterate, no structural questionnaire approach was used. The medicinal

plant species were collected from wild and also from the homestead gardens for herbarium preparation.

Identification and nomenclature of the collected plants were done based on the Flora of Presidency of Madras [33] and the Flora of Tamil Nadu Carnatic [34]. They were later verified with the help of authentic specimens at MH, Botanical Survey of India, Southern Circle, Coimbatore, India. The voucher specimens of each species have been deposited at the Herbarium of Department of Botany, Bharathiar University, Coimbatore.

## RESULTS

The present study is an aspire to document the indigenous knowledge of the biodiversity of Red hills of Tamil Nadu. A total of 35 species affiliated to 27 families have been documented (Table-1).

The Papillionaceous family 5 species are adequately used in the preparation of ethno medicine followed by Acacanthaceae, Poaceae, Malvaceae, Euphorbiaceae and Zingiberaceae (each with two species) and rest of the families have only one species each.

Analysis of habit forms indicates 14 species of herbs, tree species of 10, shrubs species of 8, 2 species of twiner and only one species of climber. It clearly indicates that

**Table -1**

List of medicinal plants collected from Red hills, Tamil Nadu

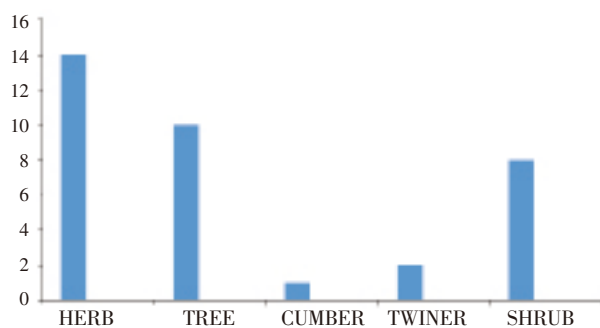
Binominal name & Common name	Family	Habit	Part (s) used	Diseases	Mode of Administration
Cassia aruiculata L.(Avaram poo)	Caesalpiniaceae	Shrub	Fruit Flower	Dandruff Stop drinking	Fruit juice is applied on head region. Dried and powdered flower is mixed with milk or taken as paste.
Calotropis gigantea R.Br. (Eruk poo)	Asclepiadaceae	Shrub	Latex	Dog bite	Applied directly on the affected area.
Polyalthia longifolia Soon. (Ashoka poo)	Annonaceae	Tree	Flower	Loose motion	Dried flower and cumin seeds are mixed with gingerly oil and eaten.
Tamarindus indica L. (Puli)	Caesalpiniaceae	Tree	Leaves	Hand pain	Leaves tied in a cotton cloth and heated, later massage done.
Anacardium occidentale L. (Cashewnut)	Anacardiaceae	Tree	Endosperm	Tooth problems	Fried to dark black and powder, added with tooth powder and brush daily.
Prosopis cineraria L. ( Vanni maram)	Mimosaceae	Tree	Bark	Snake bite	Paste of bark tied on the affected area.
Aristolochia indica L. ( Garudakodi)	Aristolochiaceae	Perennial Twiner	Leaves	Snake bites	Extract is applied orally.
Justicia adhatoda L. ( Adhathoda)	Acanthaceae	Shrub	Leaves	Sinus problems	Eaten raw.
Cyclea peltata Diels (Senthali kodi)	Menispermaceae	Climbing Shrub	Stem	Fever	Decoction is taken.
Cynodon dactylon Pers. ( Arum pul)	Poaceae	Herb	Leaves	Blood purifier	Leave juice is given orally.
Ipomoea lacunosa L. (Thali keeri)	Convolvulaceae	Twiner	Leaves	Bone fractures	Leaf paste is applied.
Delonia elata Gamble (Vadhanarya)	Caesalpiniaceae	Tree	Leaves	Piles	Applied as paste.
Achyranthes aspera L. (Nayurivi)	Amaranthaceae	Erect Herb	Leaves	Scorpion bites	Leave extract is taken.
Cardiospermum halicacabum L. (Mudukottan)	Sapindaceae	Twining Herb	Leaves	Ear pain	Leave juice used to cure.
Vitex negundo L. ( Nochi)	Verberanceae	Tree	Leaves	Head ache	Leaves are tied on forehead.

**Table –1**

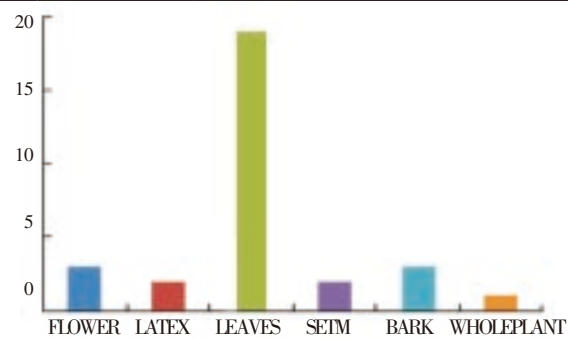
List of medicinal plants collected from Red hills, Tamil Nadu

Binominal name & Common name	Family	Habit	Part (s) used	Diseases	Mode of Administration
Acacia Arabica Willd. (Kaurvelam)	Mimosaceae	Tree	Bark	Tooth problems	Enrich the tooth gums and brush the teeth it strong the tooth roots.
Centella asiatica Urb. (Vallarai)	Apiaceae	Shrub	Leaves	Memory power	Leaf extract is given.
Hibiscus rosasinesis L. (Semparuthii)	Malvaceae	Shrub	Leaves & Flower	Hair tonic	Powdered leaves and flowers are used for hair wash.
Cymbopogon citratus Stapf. (Lemon grass)	Poaceae	Perennial Shrub	Leaves	Body pain	Leave juice is given orally.
Eclipta prostata L. (Karisalankanni)	Asteraceae	Herb	Leaves	Malaria fever	Leaves extract is taken.
Morinda tinctoria Roxb. (Nuna maram)	Rubiaceae	Tree	Bark	Cuts & wounds	Tie the bark on the affected portion.
Acorus calamus L. (Vashambu)	Araceae	Herb	Rhizome	Poisonous bites	Paste is used to remove the poisons of centipede.
Cissus quadrangularis L. (Perandai)	Vitaceae	Shrub	Whole plant	Skin disease & bone fractures	Leaves grind into paste and applied externally.
Ocimum canum Sims. (Tulasi)	Lamiaceae	Herb	Leaves	Cold & fever	Leave juice given as tonic.
Aloe barbadensis L. (Kattlai)	Liliaceae	Herb	Gel	Cooling agent	Eaten raw to cool the body.
Abutilon indium G. Don. (Suthi)	Malvaceae	Herb	Leaves	Piles & stomach ulcer	Leave extract is taken.
Syzygium cumini L. (Naval)	Myrtaceae	Tree	Fruit	Diabetes	Eaten raw.
Euphorbia hirta L. (Amampatchairisi)	Euphorbiaceae	Herb	Latex	Pimples	Directly applied.
Costus speciosus Sm. (Insulin plant)	Zingiberaceae	Herb	Leaves	Reduce sugar	Daily in empty stomach one raw leave eaten.
Andrographis paniculata Nees. (Seraniagai)	Acanthaceae	Herb	Leaves	Snake bite	Leave crushed into paste and taken twice daily.
Musa paradisiaca L. (Vahzai)	Musaceae	Tree	Pseudo stem	Kidney stone	Juice of stem is taken.
Acalypha indica L. (Kuppaimeni)	Euphorbiaceae	Erect Herb	Leaves	Cold & cough	Leave decoction taken internally.
Kalanchoe pinnata (Lam.) Pers. (Ragakanni)	Crassulaceae	Erect Herb	Leaves	Stomach ulcer	Raw leaves eaten daily in empty stomach.
Mukia maderaspatanta (L.) M. Roem. (Masumasu)	Cucurbitaceae	Climber	Whole plant	Cold & fever	Leaves extract given to children.
Curcuma aromatica L. (Kasturimal)	Zingiberaceae	Tuberous Herb	Rhizome	Pimples	Directly apply on face.

herbaceous representations are predominantly used in the ethno medicine. (Fig-1)

**Figure 1.** Analysis of Habit with respect to no. of species

It is found that the fresh leafy crude drug preparations are mostly recommended as ethno medicine and followed by flower and bark, whole plant, latex, stem, fruit and rhizome. (Fig-2)

**Figure 2.** Analysis of plant part used for preparation of remedies

## DISCUSSION

All ethno medicinal plants documented in the presence study have continuously been used and also revealed that some of them are less known and some of them supplements the available earlier data. Based on their experience and common sense, they have the capability to search for number of uses of plants. Simultaneously they have also the talent to exploit the plants of even a new area where

they have settled. The present study concluded that, the Irular tribes of the study area possess rich knowledge on the medicinal plants and their utilization. There is an urgent need for the scientific awareness about the importance of biodiversity and medicinal plants for the sustainable utilization of natural resources.

### Conflict of interest statement

We declare that we have no conflict of interest.

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