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ETHNOMEDICINAL PLANTS USED TO TREAT SKIN DISEASE AND POISONOUS BITES BY THE TRIBALS OF KARAMADAI RANGE, WESTERN GHATS, TAMILNADU, INDIA.

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ABSTRACT: An ethnobotanical survey was carried out among the ethnic groups (Irulas) in Karamadai Range, Western Ghats of Tamil Nadu, India. Skin diseases and poisonous bites are common in most of the tropical countries in the world especially among the tribal people who are living in forest areas due to lack of sanitation, awareness of hygienic food habits and richness of plant species. The tribal communities are still depend on wild plants for their primary healthcare and treatment of diseases. The medico-ethnomedicinal data was gathered from the traditional healers who are practicing traditional medicine. In the present study, we have documented 53 plant species belonging to 33 families, which are used by the Irulas. These ethnomedicinal plants are used to treat different types of skin diseases and poisonous bites.
Key words: Irulas, Ethnobotany, Ethnomedicine, Poisonous bites, Skin diseases.

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INTRODUCTION

India is considered as one of the 12 mega-biodiversity countries of the world having rich vegetation of about 45,000 vascular plants, with concentrated hotspots in the regions of Eastern Himalayas, Western Ghats and Andaman & Nicobar Islands. Of these, the folk medicine system of India use about 5,000 plant species with about 25,000 formulations for treating a variety of ailments, whereas the tribal medicine involves the use of over 8,000 wild plants with about 1,75,000 specific preparations/applications. Thousands and thousands of plant species used by human beings during past shows their importance in health economy, shelter clothing and food. The traditional, indigenous, folklore knowledge of medicinal plants has been accumulated in the course of many centuries based on different medicinal systems such as Ayurveda, Unani and Siddha. Most of the rural peoples are depending on local traditional healing systems for their primary health care. According to world Health Organization more than 80% of the world's population depend on the traditional medicine for their primary healthcare needs. In India more than 75% of the population relies on traditional medicine for their primary healthcare needs [11].

Ethnobotany deals with the direct relationship of plants with man. Early origins of traditional medicine must have had their roots in ethnobotanical folklore, but today, traditional medicine incorporates several well-organized, distinct systems of diagnosis and cure. In India alone, three traditional systems of medicine, namely Ayurveda, Siddha and Unani are distinguished. The use of plants in '*Ayurveda*' (2500-900 B.C.) the foundation of medicinal science in human culture has been observed as dealing with plants possessing special properties of drugs in various aspects of healing.

Further, ethnobotany includes study of foods, fibers, dyes, and tannin, other useful and harmful plants, taboos, avoidances and even magico-religious beliefs about plants [6]. Western Ghats of Tamil Nadu India is ethnobotanically very rich in having high diversity of medicinal plants. The tribal and rural people of various parts of India are highly depending on medicinal plant therapy for meeting their health care needs. This is attracting the attention of several botanists and plant scientists who directing vigorous researches towards the discovery or rediscovery of several medicinal plants along with their medicinal remedies for various diseases. Several workers were reported the utility of plants for the treatment of various diseases by the different tribal and rural people inhabiting in various region of Tamil Nadu. It is estimated that tribal people of Tamil Nadu occupy 1.05% of the total state population and 0.77% of the total tribal population of the country. Ministry of Tribal affairs presented a list of tribal communities in India for each state and Tamil Nadu contains 36 types of tribal communities and they are distributed in different districts in the forests and adjoining areas. The present communication is undertaken to ascertain the detailed information on the traditional healing potential of plant species used to cure Skin disease and Poisonous bite by Irula tribals inhabit the forest areas in Karamadai range, Western Ghats, Ciombatore District of Tamil Nadu, India.

MATERIALS AND METHODS

Study area

The Irula tribals inhabit a large area in the hilly regions of Western Ghats, Tamil Nadu. The tribal People are highly depending on medicinal plant for meeting their health care needs. The study area Karamadai Range, Western Ghats, Coimbatore District of Tamil Nadu is rich in vegetation and lies between the longitudes 76^0 - 53"and latitudes 11^0 - 18'. The study area has twelve villages which come under Nellithurai Panchayat. The total area is about 6207 Hec. long. The study concentrates on four villages. Each village is found in different elevations from 820-910 MSL. Temperature ranges from 21^0C to 30^0C. The annual average rain fall ranges from 1000 to 1400 mm.

Multiday survey programme was conducted in different seasons during the Year 2015-2016. About 12 forest areas were surveyed and 322 plant species have been collected and identified. Among this 53 genera belonging to 33 families are discussed in the present paper with their taxonomical identification and diversity status.

The Tribals in the settlements were approached through mediators who had good relationships with the tribals such as forest officials and tribal chief. Resource persons (informants or tribal practitioners or traditional healers) with the knowledge of medicinal preparations were selected to gather the information. The ethnobotanical data (mode of preparation, Medicinal uses) were collected through interviews and discussion among the tribal practitioners in and around the study area. Data were also collected through questionnaires in their local language. In addition to the botanical names and medicinal uses, detailed information about mode of preparation (i.e., decoction, paste, powder and juice) was also collected. The medicinal plants were identified photographed and sample specimens were collected for the preparation of herbarium. The collected medicinal plants were identified taxonomically using The Flora of Presidency of Madras and The Flora of Tamil Nadu Carnatic. The specimens are deposited in the herbarium of Vellalar College for Women, Department of Botany, Thindal, Erode. Photograph of few surveyed species are given in plate-1

RESULTS AND DISCUSSION

Herbal remedies are considered the oldest forms of health care known to mankind on this earth. Prior to the development of modern medicine, the traditional systems of medicine that have evolved over the centuries within various communities, are still maintained as a great traditional knowledge base in herbal medicines [10]. The tribal knowledge of the indigenous uses of native medicinal plants before their complete assimilation into the urban areas to join the mainstreams of life needs to be studied and documented. In the present investigation 53 plants belonging to 33 families were found to be used by Irula tribals in traditional medicine system for the treatment of skin diseases and poisonous bites. Among them, 37 plants are used to treat skin diseases and 16 plants are used for the treatment of poisonous bite. Table-1 & Fig-1 depicts the list of 37 plants used to treat skin diseases by Irulas. According to the present observation the leaf decoction of *Abutilon indium, Commelina bengalensis*, *Grewia damine* and *Phaulopsis imbricatum* was used to treat skin diseases. Ayyanar and Ignacimuthu (2004) have reported 14 plants are used for the treatment of skin diseases, 15 plants are used for the treatment of poisonous bites and Sharma Laxmikant et al., (2003) have listed 13 plants for the treatment of skin diseases. Twenty four important plants are commonly used by the tribals in the sub-Himalayan Tarai Region of Uttar Pradesh for the treatment of skin diseases [1]. We have recorded that leaves of *Azadirachta indica* is used for the treatment of skin irritation. The present finding is corroborate with the previous report [14]. Kani tribals use tubers of *Gloriosa superba* to treat skin diseases [7]. This is in agreement with our present finding.

Snake bite is a serious medical, social and economic problem in many parts of the world, especially in the tropical and subtropical countries. Traditional herbal medicine is readily available in rural areas for the treatment of snake bite. Application of the plant or its sap onto the bite area, chewing leaves and bark or drinking plant extracts or decoctions are some procedures intended to counteract snake venom activity. Plants are used either single or in combination, a antidotes for snake envenomation by rural populations in India and in many parts of the world. Plants are reputed to neutralize the action of snake venom, with a plethora of plants claimed to be antidotes for snake bites in folk medicine [8]. Based on Table -2 & Fig -2 16 plant species were used to treat poisonous bites the observation recorded during the study are as follows Root decoction of *Albizzia amara, Cucumis trigonus, Ipomaea staphylina, Mucuna pruriens, Zizyphus nummularia* was used to treat poisonous bite. whereas, aerial part of *Eclipta prostrate* [9], root of *Gymnema Sylvester* and whole plant of *Andrographis paniculata* are used against snake bites in folk medicine [12]. The bark powder of *Moringa oleifera* have antisnake properties [3].

Table-1: List of folk plants used for the treatment of Skin diseases

S.No	Botanical Names	Parts used	Mode of action
1.	*Abutilon indicum G.Don*	Leaves	Extraction
2.	*Acacia leucophloea Willd.*	Bark	Decoction
3.	*Acacia planifrons W.&A.*	Leaves	Juice
4.	*Acalypha indica, L.*	Leaves and Roots	Extraction
5.	*Ageratum conyzoides, L.*	Leaves	Paste
6.	*Ailanthus excelsa Roxb.*	Bark	Paste
7.	*Aloe vera, L.*	Whole plant	Extraction
8.	*Andrographis paniculata, Nees.*	All parts	Infusion
9.	*Azadirachta indica, A. Juss.*	All parts	Extraction
10.	*Bassia latifolia, Roxb.*	Whole plant	Decoction
11.	*Boerhaavia verticillata, Poir.*	All parts	Paste
12.	*Cardiospermum helicacabum, L.*	Leaves	Extraction
13.	*Chloris barbata, L.*	Leaves	Infusion
14.	*Cissus repanda, Vahl.*	Leaves and roots	Paste
15.	*Commelina bengalensis, L.*	Whole plant	Decoction
16.	*Erythrina indica,Lam.*	Whole plant	Decoction
17.	*Eupatorium odoratum, L.*	Whole Plant	Paste
18.	*Euphorbia antiquorum, L*	Stem and Latex	Tonic
19.	*Gloriosa superba, Linn*	Leaves and bulb	Paste
20.	*Gmelina arborea, Roxb.*	Stem	Decoction
21.	*Grewia damine, Gaertn.*	Leaves	Decoction
22.	*Ipomaea cordifolia, Carey ex Voight.*	Root	Decoction
23.	*Jasminum angustifolium, (L.) Willd.*	Leaves	Decoction
24.	*Jasminum sessiliflorum, Vahl.*	Leaves and flowers	Juice, decoction
25.	*Jatropha curcus, L.*	Stem and Leaves	Decoction
26.	*Leonotis nepataefolia, R.Br.*	Whole plant	Paste
27.	*Leptadenia reticulate, (Retz.) Wight*	Leaves and roots	Juice, decoction
28.	*Lonicera japonica, Thunb.*	Stem and flower	Decoction
29.	*Mitracarpus villosus, (Sw.) Dc.*	Leaves	Paste
30.	*Opuntia monacantha, (Willd.) Haw.*	Fruit	Decoction
31.	*Phaulopsis imbricatum, (Forssk.)*	Leaves	Decoction
32.	*Pongamia glabra, Vent.*	Bark and Seed oil	Decoction
33.	*Randia dumetorum, Lam.*	All parts	Decoction
34.	*Rivea hypocrateriformis, Choisy.*	Leaves	Juice
35.	*Sapindus emarginatus, Vahl*	Leaves and Seed	Paste
36.	*Thespesia populnea, Cav.*	Leaves	Dry Powder
37.	*Zizyphus nummularia, W. & A.*	Leaves	Decoction

Table-2: List of folk plants used for the treatment of Poisonous bites

S.No	Botanical Names	Parts Used	Mode of action
1.	*Albizzia amara, Boiv.*	Bark and Root	Decoction
2.	*Andrographis paniculata, Nees.*	All parts	Infusion
3.	*Boerhaavia verticillata, Poir.*	All parts	Paste
4.	*Cardiospermum helicacabum, L.*	Leaves	Extraction
5.	*Crataeva religiosa, Forst.*	Bark	Decoction
6.	*Cucumis trigonus, Roxb.*	Root	Paste
7.	*Gyrocarpus americanus, Jacq.*	Stem and Bark	Decoction
8.	*Ipomaea staphylina, Rome. & Schult.*	Root	Tonic
9.	*Madhuca longifolia, J.F. Macbr.*	Nut	Decoction
10.	*Moringa oleifera, Lam.*	Leaves	Decoction
11.	*Mucuna pruriens, (L.)Dc.*	Root, stem and leaves	Juice, decoction
12.	*Sanseviera roxburgiana, Schult. F.*	Leaves	Tonic
13.	*Scoparia dulcis, L.*	Root	Paste
14.	*Strychnos potatorum, L.F.*	Seeds	Paste
15.	*Terminalia arjuna, W. & A.*	Bark	Paste
16.	*Zizyphus nummularia, W. & A.*	Roots, leaves and fruits	Decoction

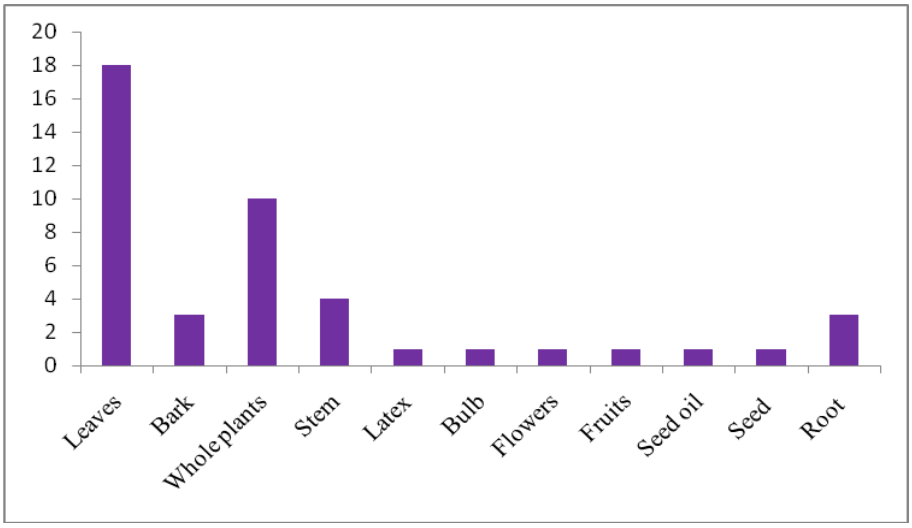

Fig -1 Part wise analysis in skin Diseases

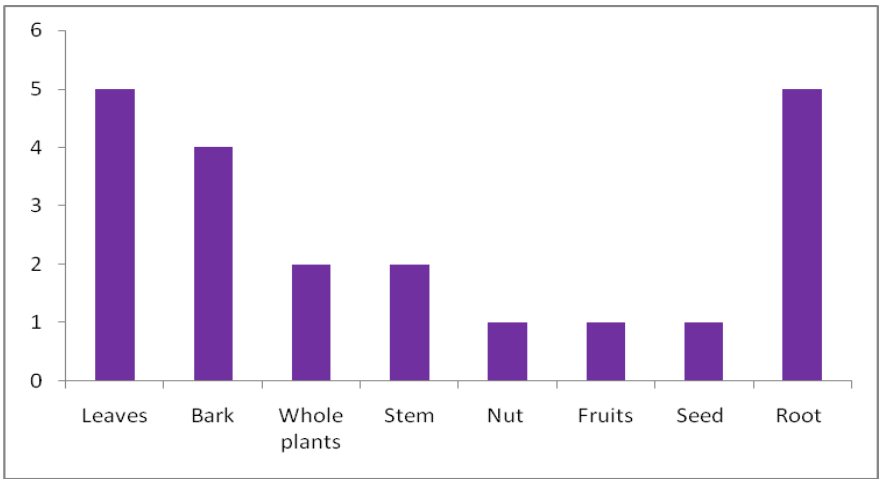

Fig -2 Part wise analysis in poisonous bites

Andrographis paniculata Nees. *Azadirachta indica, A. Juss* *Cissus repanda, Vahl.*



Crataeva religiosa Forst. *Gloriosa superba, Linn* *Ipomaea staphylina, Rome. & Schult*



Leonotis nepataefolia R.Br. *Terminalia arjuna, W. & A.* *Zizyphus nummularia, W. & A.*



Plate -1: Snapshots of some surveyed plant species

CONCLUSION

The study shows that use of herbal remedies is important among the Irulas and it reflects the revival of interest in traditional folk culture and ethnomedicine. Accurate knowledge of the plants and their medicinal properties are held by only a few individuals in this community. Some of them have a strong tendency of keeping their knowledge secret. The wealth of tribal knowledge of medicinal and other useful plants points to a great potential for research and the discovery of new drugs to fight diseases. Moreover, it may further be mentioned that over exploitation of these species in the name of medicine may lead some species ultimately to the disappearance in future. Therefore, attention should also be made on proper exploitation and utilization of these medicinal plants.

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