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Ethnobotanical Studies among Villagers from Dharapuram Taluk, Tamil Nadu, India

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Abstract: People care about all this variety of life, about sustaining and enhancing genetic resources, recovering endangered species, restoring riparian areas, maintaining old growth or consuming trees. The answer is both aesthetic and practical. A diversity of living things provides subtle needs; people enjoy picnicking, visiting seashores and a variety of other recreational activities. Our homes, air live stock, vegetables, fruits and grains are all products of diverse and healthy ecosystems. Diverse communities of plants, animals and microorganisms also provide indispensable ecological services. They recycle wastes, maintain the chemical composition of the atmosphere and play a major role in determining the world's climate. Many people also feel that we must maintain biodiversity because our role as the dominant species on earth confers upon us the responsibility for the wide and careful stewardship of life. But the value of biodiversity goes for beyond the aesthetic aspects. The present observation is ethno botanical survey was carried out among the villagers from the Dharapuram taluk,Tamilnadu state, India.

Key words: Ethnobotany · Dharapuram taluk · Plants · Communities

INTRODUCTION

Ethnobotany records the history and current state of human kind, even while foretelling the future. As a discipline ethnobotany gives us a profound understanding and appreciation of the richness and intimacy of relationships between humans and nature. Nowhere is this more extensively or vividly told than on the Indian subcontinent, where ancient texts, such as Rig Veda and those of the present, for example [1,2], exist in historical connectedness.

Observations concerning the human use of, beliefs about and other interactions with plants are the foundation of ethnobotany and while many details remain to be filled in the outlines are largely in place. Arguably, the future of ethnobotany lies not simply in adding to the observational foundation, but rather in using the knowledge base to effectively address the current concerns of human kind.

Much of ethnobotanical practice is an amalgam of other disciplines and thought and a reflection of the broader happenings of the world. The relationship between ethnobotany and phytomorphology to illustrate ethnobotany's ongoing dependence on basic science for its unifying principles. Before turning to the challenges to ethnobotany and consider two impinging influences. One is found in our mindsets, *i.e.,* the ways that our interests and biases frame the issues to be addressed and the questions to be asked. The other is in the sorts of externalities that now shape and will continue to shape ethnobotany in the future. Of these, the growing size of the human population, the extent of poverty, the state of the ecosphere and ever increasing human knowledge clearly stand out.

India is perhaps the richest repository of traditional knowledge on the medicinal uses of plants. The country possesses an ancient system of health care based chiefly medicinal plants of diverse nature, ranging from higher plants to microorganisms, from which more than 80% of therapeutic products are derived and have been used for 6000 -7000 years.

In the past, human health was taken care of by sages, monks, devoted social workers and physicians of traditional medicines, using plants as therapeutic agents.

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Their objective was solely to serve mankind in professional manner, not for commercial gain. Forests have been the chief source of these medicinal plants.

At present, India is experiencing great pressure on its resources due to its fast growing population, from 238 million in 1901, to 843 million in 1991. During the past two decades, all the above mentioned human activities, together with large scale commercialization of plant based drugs and demand from the pharmaceutical industry for domestic needs, as well as for exports during the past two decades, have resulted in scarcity of medicinal plant species in our forests and plains. This situation is aggravated by the fact that India does not have an organized system for the cultivation of important medicinal plants [3].

The world health organization [4] has estimated that 80% of the population of developing countries being unable to afford pharmaceutical drugs rely on traditional medicines, mainly plant based, to sustain their primary health care needs. India is one of the most medico-culturally diverse countries in the world where the medicinal plant sector is part of a time honoured tradition that is respected even today. Here, the main tradition that is respected even today. Here, the main traditional systems of medicine include Ayurveda, Unani and Sidha [5]. The earliest mention of the use of plants in medicine is found in the Rigveda which was written between 4500 and 1600 BC. It is however in Ayurveda that the specific properties of plants and their use as medicinal drugs has been dealt with in great detail -'Ayurveda' literally translated means science of life. Ananthacharya [6] in defining this system of medicine said Ayurveda scrutinizes the subtle process of life, studies its nature, ways and conditions of development and deduces there from a universal course of conduct for man's guidance in life.

Biodiversity is a part of our daily lives and livelihoods and constitutes the resources upon which families, communities, nations and future generations depend. Human society from the very beginning of its appearance on this earth has been indispensably associated with the plant kingdom for its survival [7]. Plants provide our basic food crops, building materials and medicines as well as oils, lubricants, rubber and other latexes, revins, waxes, perfumes, dyes and fibres. So far only about ten per cent of plants have ever been evaluated for their medicinal or agricultural potential and so there are certainly many new drugs and new crops yet to be discovered [8]. The World Health Organization (WHO) estimates that some 80% of the developing world relies on the traditional medicines and that, of those, 85% use plants or their extracts as the active substances [9].The present investigation was to collect the information sregarding ethnomedicinal values from the villagers in Dharapuram Taluk, Tamil Nadu state.

MATERIALS AND METHODS

Ethnobotanical survey of the villagers from Dharapuram Taluk,Tamilnadu state,India was carried out during the year 2006-2007. 31 species of plants belonging to twenty-one families used by these people to were different ailments were collected and reported.

Dharapuram Taluk: Dharapuram taluk is a wide agricultural taluk in the Erode district. Most of the communities doing agricultural practices. The river Amaravathy and Upparu are the major water resources in the taluk. Most of the village peoples having folk traditional medicine knowledge. So, collect the information from all the communities.

Description of the Study Area: The study area has a wet season from May to August, the main rainy season and a dry and windy season from September to February. There is also a short and highly variable rainfall from September to May. The mean annual temperature is 37.4°C.

Methods of Data Collection: Ethnobotanical data were collected between October 2006 to May 2007. The information was mainly gathered through semi-structured interviews. Most of the interviews and discussions were held in Dharapuram Taluk. In one day, time allotted for interview with one informant was about 3h. Information regarding gathering, preparation and use, status/abundance trend, cultivation practice of medicinal plants and their marketability were also collected. At the end of each interview, specimens of the plants cited for their medicinal are were collected and identified.

In this study, 17 knowledgeable elders (16 men and 1 woman between the ages of 41 and 77) chosen with the assistance of local administrators and community leaders, served as key informants. During the course of the study, each informant was visited three times in order to verify the reliability of the data obtained. If what was said during the first visit concerning the use of a particular medicinal plant by any informant did not agree with what was told during the second or third visit, the information was considered unreliable and had to be discarded. Repeated visits also helped to get some additional information that was not mentioned during the early interviews.

For each medicinal plant, the proportion of informants who independently reported its are against a particular disease category was assessed.

Methodology: Intensive interviews were conducted with villagers as per the methods described by Jain [10]. Repeated queries were made about the medicinal plants and their various uses.

Identification : The plant materials were identified with the help of standard local floras [11,12]. Preliminary identification was done by examining fresh plants procured from the villagers. The corresponding raw materials were collected and the morphological characters were compared with the fresh plants and vernacular names. Few respondents were more informative and co-operative; they have shown fresh plants in the habitat, which was useful for the final identification. The identification of plant materials was confirmed at the regional herbarium at Botanical Survey of India, Coimbatore.

RESULTS

The first hand information on the medicinal plants used by the villagers were arranged alphabetically by genus and species name (Table 1). The information on each plant includes botanical name, family name and vernacular name. The available ethnomedicinal properties, the method of preparation, dosage and mixture of other herbs of any are provided.

Thirty one formulations incorporating 31 plant species were identified as being used for the treatment of female reproductive disorders. These were mainly associated with maximum diseases.

Achyranthes aspera, Cissus quandrangularis, Elitoria ternatea, Cactus indicus, Gymnea syhestre, Jatropha carcass, Pedalium murex, Phyclanthus amarus, Wrightia tinctoria, Cassia occidentalis, Abutilon indicum, Tinospora cordifolia, Asparagus racemosus, Curcuma domestica, Margifera indica, Moringa oleifera, Vigna mungo, Acalypha alnifolia, Alternanthera sessilis,

Table 1: Reported information on ethnomedicinal plants used by villagers from Dharapuram Taluk, Tamil Nadu,India

S. No.	Botanical name	Family	Vernacular name	Mode of administration	Diseases ailment alleged to cure
1.	*Achyranthes aspera* L.	Amaranthaceae	Nayuruvi	Roots with the flowers of *Meusa ferra* and seeds are taken in equal proportions and powdered. Pills made, mixing with jaggery are given 2-3 pills, 3 times a day for a week	Leucoderma
2.	*Cissus quadrangularis* L.	Vitaceae	Pirandai	Stem paste was prepared by adding a bit of fresh lime and this is applied on the bite	Insect-bite
3.	*Clitoria ternatea* L.	Fabaceae	Sangu poo	Seed powder mixed with pepper was given	Constipation
4.	*Cactus indicus* Roxb.	Cactaceae		One teaspoon of the plant powder mixed with sugar was taken on empty stomach, from the first day of menstrual cycle upto 20 days	Contraceptive
5.	*Gymnea sylvestre* (Retz.) R. Br. ex Schu	Asclepiadaceae		Half a teaspoon leaf powder was given daily to diabetic patients to regulate blood sugar	Diabetes
6.	*Jatropha curcas* L.	Euphorbiaceae		2-3 days of latex was installed in the air	Ear ache
7.	*Pedalium murex* L.	Pedaliaceae		Fruits mixed with seeds of *Caesalpinia crista* and resin of *Boswellia serrata* was equally powdered and applied on the testicles for a week	Hydrocoel
8.	*Phyllanthus amarus* Schurn and Thomn	Euphorbiaceae	Keelanelli	(i) Whole plant boiled in gingelly oil was filtered and applied on the head. (ii) The fresh root used with water and made a paste and gives orally or the fresh roots given orally	(i) Migraine (ii) Jaundice

Table 1: Continued

9.	*Wrightia tinctoria* R. Br.	Apocynaceae		Half of glass of root decoction was given repeatedly to reduce the attack	Epilepsy
10.	*Cassia occidentalis* L.	Leguminosae		Fresh leaves were homogenized and mixed with gingelly oil and applied on the affected part	Bone fracture, nerve dislocation
11.	*Abutilon indicum* (L.) Sweet	Malvaceae	Thuthi	The leaves were crushed and the juice was given orally. 1.5ml of the juice was given once daily to ease child birth	
12.	*Tinospora cordifolia* (Willd.) Miers. Ex. Hok. F. Thoms		Shindil Kodi	The leaf was crushed and the juice was administered twice a day after delivery as a health tonic	Health tonic
13.	*Asparagus racemosus* Willd.	Liliaceae		For a dose 6 spoonful of juice of using portion of *Aspargas racemosus* was mixed with 125 ml of cow milk and given to take. The dose was continued for week	Breast ulcer
14.	*Curcuma domestica* Valeton	Zingiberaceae		For a dose about 2 inches of using portion of *Curcuma domestica* and 3 leaves of *Solanum stramonium* were crushed together and applied over the breast for 3 hours. It is continued for 5 days	Breast ulcer
15.	*Mangifera indica* Linn.	Anacardiaceae	Mangai	Few dry leaves of *Mangifera indica* were burnt and the ash obtained was applied over the affected area	Burn injury
16.	*Moringa oleifera* Lam.	Morningaceae		For a dose about 250 gms of bark of *Moringa oleifera* are crushed finely and juice was obtained. It is given to take. The dose is continued for a week	Dysentery
17.	*Vigna mungo* Linn. *Zingiber officinale* Rose.	Fabaceae Zingiberaceae		About 100 gms of *V. mungo* are soaked for 12 hours and allowed to sprout. Then 2 inches of rhizome of *Zingiber officinale* was cleaned properly and cut into small pieces. The mixture is given to take. The dose is continued for 4 days	Mastitis
18.	*Acalypha alnifolia* Klein ex Willd	Euphorbiaceae	Sirukurunjan	Leaf juice mixed with 150 ml boiled cow milk and given two times daily upto five months against diabetes	Diabetes
19.	*Alternanthera sessilis* (L.) R. Br. ex DC.	Amaranthaceae	Koduppai	Leaf decoction given 2 times a day for 14-30 days to cure nervous disorders. The leaf juice is mixed with boiled cow milk and given in morning on empty stomach to improve the eyesight.	Eyesight improvement
20.	*Crotalaria mysorensis* Roth.	Papilionaceae	Kattu Thuvarai	Leaf and unripe fruit ground and mixed equally and prepared as paste and given 2-3 times a day with boiled cow milk to cure severe stomach pain and stomach ulcer	Stomach pain and stomach ulcer
21.	*Cissampelos pareira* L.	Menispermaceae	Malain Thanke	Root powder given early in the morning with 2-3 tea spoonful honey for stomach ulcers. Root decoction given in early morning for 15 days in severe stomach ache (50- 110 ml prescribed)	Stomach ache

Table 1: Continued

22.	*Cryptolepis bucchanani* Roemer and Schultes	Ascleipiadaceae	Paal Kodi	Leaf paste used against blood clotting and muscle fracture. Root paste given for reducing body temperature during fever. Latex used for curing leucoderma-stem bark paste given 2-3 times daily to induce lactation in months	Fever and Leucoderma
23.	*Cymbopogon maritinii* (Roxb.) Watson	Poaceae	Nachathirapul	Whole plant paste mixed with hair oil and applied on the grey hair for blackening purpose	Hair blackening
24.	*Eclipta prostrata* (L.)	Asteraceae	Karisalan Kanni	Whole plant decoction given two to three times a day against fever. Leaf juice or leaf decoction used in cough and cold. Diluted and filtered leaf juice used in the treatment of eye troubles (drop by drop). Fresh paste of leaves used to promote hair growth.	Fever, cough, cold, eye troubles and hair growth
25.	*Erythrina variegata* L.	Papilionaceae	Kalyana Murungai	and mixed well (1:1) 2 to 3 spoon powder mixed with boiled cow milk and given to cue piles during pregnancy. Leaf juice given to cure whooping cough of children.	Leaf and stem bark made into a powder Cure piles during pregnancy and cough of children
26.	*Euphorbia hirta* L.	Euphorbiaceae	Amman Paccharsi	Latex is used to remove warts. Whole plant powder used in whooping cough. Leaf and root powder used to cure bronchial asthma	Warts, cough and branchial asthma
27.	*Evolvulus alsinoides* L.	Convolvulaceae	Vishnu Kiranthi	Whole plant decoction administered 2-3 times a day to cure cough and cold. Root mixed with *Andrographis paniculata* (Burm. f.) Wall. ex. Nees and *Adhatoda zeylanica* Medi. roots and then dried, powdered by mixing in equal proportions, then a spoonful of the powder administered 2-3 times a day for curing fever. Leaf paste mixed with *Phyllnathus amarus* Schum. Thomm. Leaf juice and used to cure jaundice (the patient should not take salt and oil during the treatment)	Cough, cold, fever and jaundice
28.	*Mukia maderaspatana* (L.) M. Roemer	Cucurbitaceae	Mosumosukkai	Root paste used in toothpaste. Leaf extract used against pitha disease. Fruit decoction given to children to improve memory (about 10-15 ml only). Leaf juice mixed with food given for body stimulation	Toothache, pitham and body stimulation
29.	*Pedalium murex* L.	Pedaliaceae	Yaanai Nerinji	Leaf decoction used to cure diabetes. Root paste made into small pellets and 2-3 pellets given daily with boiled cow milk for virility or vigour in men. Two spoons fruit powder mixed with *Cleome viscose* L. leaf juice given from the day sixth day of menses before bed for seven days for fertility	Diabetes, virility and fertility
30.	*Phyllanthus emblica* L.	Euphorbiaceae	Aranelli	Leaf juice used for eye infection. Fruit paste used against diarrhoea. Fruits used as cooling agent and as laxative	Eye infection, diarrhoea and laxative
31.	*Sida rhombifolia* Linn.	Malvaceae	Kurunthatti	Root decoction or root juice mixed with the boiled cow milk and used to induce sleeping	For sleeping

Crotalaria mysorensis, Cissampelos pareira, Cryptolepis bucchanani, Cymbopogan maritinii, Eclipta prostrata, Erythrina variegata, Euphorbia hirta, Evolvulus alsirioides, Mukia maderas patana, Pedalium murex, Phyllanthus emblica and *Sida rhombifolia* were the major ethnomedicinal plants observed from the villagers of Dharapuram Taluk. The morphological view of the plants given in the Plant 1.

DISCUSSION

The medicinal plants that have been authenticated earlier for diseases and ailments in the study area are included in Table 1.

The ethnobotanical study reveals the therapeutic potential applications of 31 plant species to treat different diseases and ailments among the villagers in the study area. The present investigation has brought to light certain little known potential ethnomedicinal plants of therapeutic value employed to cure diseases such as Lecoderma, insect bite, constipation, diabetes, ear ache, hydrocoel, jaundice, epilepsy, bone fracture, breast ulcer, dysentery, eyesight improvement, stomach pain fever, cough, cold, toothache, eye infection, diarrhoea and laxative.

Traditional knowledge on utility and utilization aspects of plants has been sensing as a suitable tool for botanical and agricultural research owing to its relevance in developmental and promotional activities of new or less known economic plants [13-16].

The plants collected and reported from Dharapuram Taluk in the present study were used by the villagers in their routine treatment practices. The authors have gathered the information on thirty-one plants under utilization in the medicinal lore of village peoples. The plant specimens and their medicinal uses and ailment for which the particular plant was used are thoroughly cross verified [17-19]. The collection, identification and documentation of ethnomedicinal data on biological resources were inevitable steps for bioprospecting. The native inhabitants were well-versed with the utilization of plants of their surrounding by their long trial and error method of using the herbal plants.

These plants may serve as source of some important medicine against some major diseases. Therefore, these tribal claims should be further validated scientifically. During scientific evaluation, the process of bioprospecting using High Throughput Screening (HTS) is considered an advanced method, since this technique enables screening of thousands of plant samples in a short time.

The availability and distribution of individual plant species has to be scrutinized carefully for its future sustainable utilization. Further, the plants that fall under rare, endangered and threatened category are to be recognized separately for their proper conservation.

CONCLUSION

The Dharapuram Taluk and the vegetation are important to the region. The plants of arid regions of this region to extent their distribution deep into the phytogeographical province. Unsustainable use of land resources has serious negative effect on the flora of this region. Sometime, over exploitation of a particular species can also lead to the incidental disappearance of other non-targeted species. The natural plant resources of Dharapuram Taluk are very meager and fast disappearing, the public should be made aware of the importance of safeguarding the natural resources of this region.

At the same time, the traditional health practices and other life styles associated with wild plants of Dharapuram Taluk which had been developed by the village people of this region over a period of time should also be kept-alike. There are a lot to be done in this promising field with the active support of village people so that importance of these economically important plants could be rejuvenated for the benefit of our future generations.

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