ETHNO–MEDICO BOTANICAL STUDY OF CHONAMPARA TRIBAL SETTLEMENT OF AGASTHYAVANAM BIOLOGICAL PARK, KERALA

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ABSTRACT

An ethno-botanical survey was carried out to collect information on the use of medicinal plants in Southern Western Ghats of India (Thiruvananthapuram district, Kerala). Information presented in this paper was gathered from the Kani tribes using an integrated approach of botanical collections, group discussions and interviews in the years 2009–2010. The informants interviewed were 10 among whom 3 were tribal practitioners. A total of 20 ethno-medicinal plant species distributed belongs to 19 families are documented in this study. The medicinal plants used by Kanis are listed with Scientific Name, family, local name, parts used, mode of preparation and medicinal uses. Generally, fresh part of the plant was used for the preparation of medicine. It was observed that the documented ethno-medicinal plants were mostly used to cure skin diseases, poison bites, stomachache and nervous disorders. The results of this study showed that these tribal people still depend on medicinal plants from forest areas for treating ailments.

KEY WORDS: Ethno-botany, Kani Tribe, Tribal practitioners.

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INTRODUCTION

Even from the pre-historic era almost all civilizations have employed plants in the treatment of human ailments. The sages of India had unparalleled knowledge on medicinal plants. “Rig Veda”, has the oldest repository of medical knowledge, which can be traced back to 4500–1600 BCE. “Rig Veda” was followed by “Atharva Veda”, in which, various medico-religious uses of plants have been cited. Over the years, the traditional Indian medicine has become rather well codified in a holistically oriented practice or system of health care as “Ayurvedic medicine”. (Singh. K.K and Anand Prakash, 1994)

There are over 53 million tribal people in India belonging to 550 communities of 227 ethnic groups. They inhabit in about 5000 forested villages or lead a nomadic life in the forest. Each tribal community has a distinct social approach and cultural identity of its own. In Kerala, the tribal communities are nearby 40 in number. Some of them are very primitive and most are advanced. The major groups of tribes in Kerala are Kani, Adiyar, Paniyar, Kurichiar, Koragar, Kurumar, Kattunaykar etc. (Panoor K 1963).

Kanis mainly inhabit the forest of Kerala - Tamilnadu border which is located in the southern most part of Western Ghats known as ‘Agasthyar Koodam’. It is believed to be the sacred abode of the great saint Agasthya and a heaven of medicinal herbs. (Sunil Anandamangalathu, 2001). It is one of the most diverse biological resources in the region.

Indian traditional systems of medicines and their practices have been transmitted to the present society because the medicinal aspects of innumerable number of plants lay hidden in the mind of traditional vaidyars. It should be elicited out for the welfare and well-being of modern society. Indigenous knowledge is the collective wisdom of individuals, families, tribes, communities and societies living in the specific geographic locations on a wide spectrum of human activities in relation to their immediate environment. Herbal drugs obtained from plants are believed to be much safer; this has been proved in the treatment of various ailments. Rural communities, in particular Kani tribes, depend on plant resources mainly for herbal medicines, food, forage, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. Dwellings, making household implements, sleeping mats, and for fire and shade. Rural people not only depend on wild plants as sources of food, medicine, fodder and fuel, but have also developed methods of resource management, which may be fundamental to the conservation of some of the world's important habitats. (Jain 1996).

The objective of this study was to assess the richness of ethno-medicinal plant species used by the Kani tribes in Chonampara tribal settlement of Agasthyavanam Biological Park forest areas and the traditional medical practices of the people. Similar ethno-botanical studies have been reported in several parts of India to protect the traditional knowledge from disappearing. Documenting the indigenous knowledge through ethno-botanical studies is important for the conservation of biological resources as well as their sustainable utilization.

Nature has blessed the Chonampara tribal settlement of Agasthyavanam Biological Park, Kerala with a very rich botanical and ethno-medicinal wealth that has been exploited continuously by the tribes. Kanis are the major inhabitants of this settlement. As far as our knowledge is concerned, there is no perfect ethno-medicinal survey of Chonampara tribal settlement. Hence an attempt has been made in the present investigation to study the Ethno-medico Botanical study of Chonampara tribal settlement of Agasthyavanam Biological Park, Kerala.

Setting and the people

Kani tribals

The Kanikars, who are commonly known as ‘Kanis’ are one of the jungle tribes; mostly depend on medicinal plants growing in the
forests, inhabiting the mountains of south-Travancore. The Kanis are in Kerala mainly settled on the Western Ghats region especially Thiruvananthapuram and Kollam Districts. Majority of the Kani settlements are located in Thiruvananthapuram District. The language of the Kanis is a dialect of ‘Malayalam’, with a large admixture of ‘Tamil’ which they call ‘Malampasha’ or language of the hills. Traditional medicines are the primary healthcare resources for the Kani tribes to protect their health. Tribal practitioners are the curators of the tribal society and they have a good knowledge of medicinal plants, diseases and treatment using plants.

MATERIAL AND METHODS

Description of the study area

The study area concentrates in and around the Thiruvananthapuram district forest areas located in Kerala, South India. The area of investigation approximately lies between 85°0' to 89°0' longitude and 28°0' 37° to 0° latitude. Every village has several Kani hamlets. Their hamlets are found in different elevations from 300 m to 2,200 m MSL. There are a number of hill ranges in the study area. The climate is moderately hot and humid. The temperature varies from 16° C to 35° C. The mean annual rain fall is 2,800 mm and the tract receives both South-West and North-East monsoons.

Ethno-botanical survey

The fieldwork was conducted in several villages around the forest areas of Thiruvananthapuram district during July 2009 to December 2010 as part of the study. Ethno-botanical Wealth of Kani Tribals in Kerala are also observed. More than 30 families and nearly 175 members of Kanis are found in the study area. During the stay, their daily activities were closely observed and interpersonal contacts were established by participating in several of their social and religious ceremonies such as marriages, rituals and curing sessions. Various interviews were carried out with several elders and experienced men and women to get information on medicinal plants used by them. Queries were repeatedly made from the head Ramakrishnan Kani (MuttuKani) and different persons (Appukuttan Kani, Kunjukrishnan Kani, Sudarsanan Kani, Pachi, Gopalan Kani, Sundari, Eechan Kani, Mallan Kani, and Kuttappan Kani) in order to verify the accuracy of the information.

Interviews with tribal practitioners

The collected plant materials were identified with the help of the Kanis to get more information. During the field trips the medicinal plants were also photographed. The data were recorded in the field note books and the interview and discussions were recorded in audiotapes (Jain,1981). Polythene bags were used to keep the collected materials in fresh condition.

Collected plants were identified correctly and confirmed by Dr.Selvin Samuel (Head, Dept. of Botany, St.John’s College, Palayamkottai) referring the various Flora viz, Flora of British India by Hooker (1874), The Flora of the Nilgiri and Pulney Hill trups by Fyson (1915, 1921), The Flora of the Presidency of Madras by Gamble and Fischer (1957), Flora of TamilNadu by Nair and Nayar (1986), Excursion Flora of Central Tamil Nadu, India by Matthew (1991), The Flora of Thiruvananthapuram District were referred. The Flora of Presidency of Madras and The Flora of Tamil Nadu Carnatic were used to ascertain the nomenclature. The voucher specimens (No. SJCB 125–145) duplicate were deposited in the herbarium of Department of Botany, St.John’s College, Palayamkottai. The ethno-medico-botanical data include Botanical name of the plant, family, tribal names, medicinal claims / uses and name of the plant collector and field numbers of voucher specimen were also mentioned.
Table - 1  LIST OF ENTHOMEDICINAL PLANTS AND THEIR USE CATEGORY IN TRIBAL MEDICINE FROM KANI TRIBAL AREAS OF CHONAMPARA SETTLEMENT

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Botanical Name</th>
<th>Medicinally useful parts</th>
<th>Ailments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aegle marmelos, (L.) Correa</td>
<td>Fruits</td>
<td>Diabetes, Headache, Dysentery.</td>
</tr>
<tr>
<td>2</td>
<td>Aristolochia krisagatra, Sivarajan and Pradeep.</td>
<td>Root, Leaves</td>
<td>Snake bite.</td>
</tr>
<tr>
<td>3</td>
<td>Biophytum sensitivum, DC.</td>
<td>Leaves</td>
<td>Dysentery, Vomiting</td>
</tr>
<tr>
<td>4</td>
<td>Capsicum frutescens, L.</td>
<td>Fruits</td>
<td>Post-natal-care, gastric complaints, hypertension</td>
</tr>
<tr>
<td>5</td>
<td>Catharanthus roseus (L.) G.Don</td>
<td>Leaves, Root</td>
<td>Diabetes, Cancer, Heart disorders, Leprosy, Blood purification</td>
</tr>
<tr>
<td>6</td>
<td>Caesalpinia sappan, L.</td>
<td>Heartwood, bark</td>
<td>Snake bite</td>
</tr>
<tr>
<td>7</td>
<td>Couroupita guianensis. Aubl.</td>
<td>Bark</td>
<td>Delivery pain</td>
</tr>
<tr>
<td>8</td>
<td>Cardiospermum helicacabum, L.</td>
<td>Leaves</td>
<td>Joining the broken bones.</td>
</tr>
<tr>
<td>9</td>
<td>Cissus quadrangularis, L.</td>
<td>Whole plant</td>
<td>Worms in children</td>
</tr>
<tr>
<td>10</td>
<td>Clerodendron infortunatum, Gearth.</td>
<td>Root</td>
<td>Piles</td>
</tr>
<tr>
<td>11</td>
<td>Elephantopus Scaber, L.</td>
<td>Whole plant</td>
<td>Piles, Digestion</td>
</tr>
<tr>
<td>12</td>
<td>Garcinia gummi-gutta, L.</td>
<td>Fruits</td>
<td>Diabetes, Asthma</td>
</tr>
<tr>
<td>13</td>
<td>Gymnema sylvestre (Retz.) Schult</td>
<td>Whole plant</td>
<td>Snake bite, Indigestion</td>
</tr>
<tr>
<td>14</td>
<td>Kaempferia galanga, L.</td>
<td>Rhizome</td>
<td>Headache, Hair growth</td>
</tr>
<tr>
<td>15</td>
<td>Michelia champaka, L.</td>
<td>Seeds</td>
<td>Tooth-ache</td>
</tr>
<tr>
<td>16</td>
<td>Myristica fragrans, Houtt.</td>
<td>Fruits</td>
<td>Snake bite</td>
</tr>
<tr>
<td>18</td>
<td>Ruta chalepensis. L.</td>
<td>Leaves</td>
<td>Menstrual disorders</td>
</tr>
<tr>
<td>19</td>
<td>Saraca indica, L.</td>
<td>Leaves</td>
<td>Obesity, Digestion</td>
</tr>
<tr>
<td>20</td>
<td>Trichopus zeylanicus, Gaertn.</td>
<td>Leaves</td>
<td></td>
</tr>
</tbody>
</table>

RESULTS AND DISCUSSION

In the present study, it was recorded that Kanis use about 20 medicinal plants belonging to 19 angiospermic families and 20 genera to treat various ailments such as diabetes, headache, dysentery, poisonous bites, rheumatism, heart disorders, cough, worms.
problem in children, dental pain, delivery pain, digestive troubles, cancer etc. (Table 1).

The present ethno-medicinal study helps to identify new or common medicinal herbs of tribal medicine, provide clue for new leads, for systematic Pharmaco-therapeutic and Clinical research, besides listing the local (tribal) names, for the plants. It is not only essential to conserve such a wealth of information found among the tribals but also to enumerate such details and devise a modern biomedical system to meet the ever increasing clinical requirement of mankind. *Rauvolfia serpentina* has been described to be used as a popular medicinal herb by different tribes against snakebite and insanity (Rao and Shambhu, 2002).

Due to illegal and excessive exploitation, populations of some of the medicinal plants species such as *Aegle marmelos*, *Aristolochia krisagathra*, *Sivarajan & Pradeep*, *Garcinia gummi-gutta*, *Rauvolfia serpentina*, *Benth.ex.Kurz.*, *Saraca indica*, *Trichopus zeylanicus*, *Michelia champaka*, *L. and Kaempferia galanga*, became rare, now endangered and threatened (Maikhuri, 1998). Further more, because of ban on legal collection, local medical practitioners are facing problems in getting appropriate plant parts of desired quantity for curing the various ailments. Since the traditional values, culture, faith and indigenous knowledge related to traditional health care system of *Kanis* of Chonampara tribal pocket are facing serious challenges due to acculturation, brought about by migration of the younger generation to cities and these urban migrants show a gap in the cultural beliefs and practices with those of the local inhabitants, the recording of the indigenous knowledge based on traditional health care system becomes increasingly important.

Tribals are dependent on forest for surviving to say that they are lovers of forests. There are 35 tribal communities which are distributed in Kerala. Of these *Kanis* are the predominant group in Chonampara tribal pocket, Agasthyavanam Biological Park. *Kanis* live together in small communities under a Muttukani who wields considerable influence over them and enjoys various perquisites. Their settlements composed of lowly huts built of bamboo. Which are generally situated away from the traces of elephants on steep hill slopes of Chonampara tribal pocket, Agasthyavanam Biological Park, Kerala State.

The *Kanis* collect the honey and wax from the forest for sale thus they achieve the aid for making their livelihood. *Kanis* of the present study mainly cultivate crops like rice, tapioca, sweet potatoes and banana under the direction of Muttukani. *Kanis* celebrates several spiritual customs like *Karthika koduthi*, *Koda*, *Chattu pattu* and are preceded under the instruction of Plathi, the Priest of *Kanis*.

In total, 20 numbers of ethno-medicinal plant species were collected from the study area. All are medicinally important plants used in various medicines for curing 26 ailments. Of these 20 medicinal plants, reported from the study area used in human ailments, they used various parts of the plant such as leaves, stem, flower, fruit, bud, inflorescence, underground parts (roots, tubers, corm, and bulb), heartwood, bark, resin/gums etc.

The important ethno- medicinal plants are *Gymnema sylvestre* (Retz.) R. Br. is used to cure Diabetes, *Catharanthus roseus* (L.) G.Don is used to cure blood cancer and Leprosy, *Garcinia gummi-gutta* (L.) *Roxb.* is used to cure Piles, *Saraca indica* L is used to cure Menstrual problems, *Rauvolfia serpentina*, *Benth. ex. Kurz.* is used to cure snake bite and *Ruta chalepensis*. L is used to cure Epilepsy and leukemia.

Out of the 20 medicinal plants only 8 species such as *Aegle marmelos*, *Aristolochia krisagathra*, *Sivarajan and Pradeep*, *Garcinia gummi-gutta* (L.) *Roxb.*, *Kaempferia galanga*, *Saraca indica*, *Trichopus zeylanicus*, *Michelia champaka*, *Rauvolfia serpentina*, *Benth. ex. Kurz.* are enlisted in Red Data list of South Indian medicinal plants (FRLHT- Modified 2006).
CONCLUSION

The present study mainly focused on the medicinal aspects of various plants along with the botanical identity, habit, morphological useful parts used in traditional medicine. In this study 20 medicinal plants were gathered from the study area, which comes under 19 angiospermic families. Medicinal plants from the study area are able to cure 26 diseases such as diabetes, headache, dysentery, poisonous bites, blood impurities, rheumatism, heart disorders, cough, worms problem in children, dental pain, delivery pain, digestive troubles, cancer etc.

Most of the people prefer green medicines for curing various diseases without any side effects while using the tonic of allopathic medicines. The tribals gathers different plant parts like leaves, bark, fruit, flowers, tubers, stem, underground parts such as roots, bulb, corm, tubers etc for preparing medicinal forms like decoction, infusion, mixture, juice extract, powder, fumes etc. and sell it to earn money. Conservation of ethno-botanical resources and wild relatives of crop plants is vital for future breeding programmers. The search for economic and medicinally important plants used by tribes and aboriginals must be continued. Their preservation is necessary to secure supplies of food, fibre, drugs and medicines. The over utilization of medicinal plants will lead to the destruction of the preferable plant materials and will result in endemic condition. It is also necessary to ensure that loss of species does not impair the effective functioning of ecological processes. The over exploitation of medicinal plants should be monitored with the help of Government trainees / NGO’s for providing ideas to the tribal people for the conservation of medicinal plants and their importance. The conservation of the medicinal plants can be enhanced by the cultivation.

REFERENCES


Red Data list of South Indian medicinal plants - FRLHT- Modified version 2006


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