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ETHNOBOTANICAL STUDIES ON KURANGANI HILLS OF THENI DISTRICT, TAMILNADU, INDIA

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ABSTRACT

Southern Western Ghats of Tamil Nadu, houses many important hill ranges which have rich repository of medicinal plants including Kurangani hills, which is home to many rare, endangered, endemic and threatened medicinal plants. Considering the current rate of deforestation with the concurrent loss of biodiversity and loss of undocumented native knowledge is alarming and it leads to possible extinction of unrecognised medicinal plant resources due to disruptions of traditional ways of life. So, the ethnobotanical survey in the tribal settlements in Kurangani hills of theni district was commenced from May 2016 to November 2020. Data were collected with the help of standardized questionnaires from 20 random tribal respondents were interviewed between the ages of 20-85. 46 Ethnomedicinal plant species used by tribal people to manage 37 different ailments were identified and well documented.

Key words : Ethnomedicine, Kurangani hills, Theni district, Paliyar and Mudhuvar tribes.

Introduction

Ethnobotany deals with the relationship between primitive human society and their plant environment, more simple it is anthropological approach to botany. Southern Western Ghats of Tamil Nadu, houses many important hill ranges which have rich repository of medicinal plants including Kurangani hills which is home to many rare, endangered, endemic and threatened medicinal plants. The ethnobotanical investigation is a prerequisite for any developmental planning concerned with the welfare of tribal and their environment (Rao, 1996). Plants have been used in traditional medicine for several thousand years (Abu-Rabia, 2005). Considering the current rate of deforestation with the concurrent loss of biodiversity and loss of undocumented native knowledge is alarming and it leads to possible extinction of unrecognised medicinal plant resources due to disruptions of traditional ways of life (Borins, 1995). During the last few decades, there has been increasing interest in the study of traditional medicine has continuously been increasing; various ethnobotanical studies have been initiated to explore the knowledge base from the various tribal groups (Jain, 2001; Kala, 2005; Ignancimuthu *et al*., 2006; Sandha *et al*., 2006). In traditional systems of medicine the Indian medicinal plants have been used in successful management of various disease conditions like bronchial asthma, chronic fever, cold, cough, malaria, dysentery, diabetes, diarrhoea, arthritis, emetic syndrome, skin diseases, insect bites, etc., and in treatment of gastric, hepatic, cardiovascular and immunological disorders (Chopra *et al*., 1993; Sen, 1993). There are considerable economic benefits in the development of indigenous medicines and in the use of medicinal plants for the treatment of various diseases (Azaizeh *et al*., 2003). The various parts of the plant *viz*., seed, flower buds, flowers, leaves, stem, stem bark and roots are practiced in various indigenous systems of medicine and popular among the various ethnic groups in India for the cure of variety of ailments. Therefore, the current investigation aims to document the traditional medico-botanical knowledge of the Mudhuvans and Paliyars of Theni district of Kurangani hills.

Materials and Methods

Study area

The study area Kurangani hills, is located in the Southern Western Ghats of Tamilnadu. It is located about 580 Km south from the state capital Chennai. The area of investigation lies between 10°6'10"N latitude and 77°24'59"E longitude. The altitude ranges from 700 to 1800m. The temperature ranges from 11^0C to 16^0C during winter and 22^0 C to 28^0C during summer. Kottakudi stream flows through the Kurangani hills. The unique geographical and distinct microclimate had leaded the Kurangani hills to be biologically rich area in Western Ghats. The vegetation of the region includes Thorn forest at the base, Sholas and Grassland at high altitude, Deciduous forest, Tropical Evergreen Forest, Riparian vegetation and scattered trees along plantations. The general geographical information of the district is diversified by several ranges and hills. The vegetation is classified as southern tropical forests in the plains and foot hills, dry deciduous forests, moist deciduous forests and evergreen forests in the high altitudes. In the present study, ethnobotanical surveys were carried out in the following Paliyar and Muthuvar villages of Theni District Kurangani, Muthuvagudi, Kottagudi, Kollukumalai, Naripatti, and Marayoor.

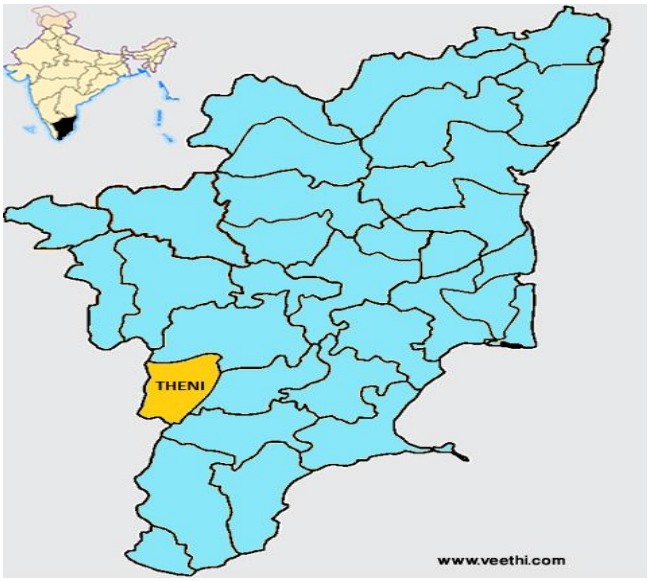

Fig. 1 : Location Map.

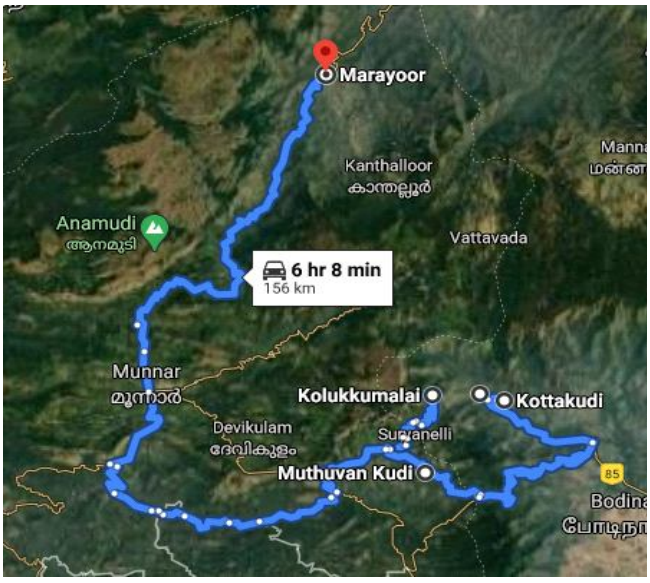

Fig. 2 : Study area.

Tribal Communities of Kurangani Hills

There are two types of tribal communities inhabiting the villages of Theni District *viz.*, Paliyars and Mudhuvars. The Paliyar tribals inhabit a narrow strip of Western Ghats in the hilly regions of Madurai, Dindigul, Theni, Tirunelveli and Virudhunagar Districts of Tamil Nadu and Idukki District of Kerala.

Methodology

The fieldwork in the tribal settlements in theni district was commenced from October 2015 to November 2020. The tribal settlements were located through a number of field surveys and there were 190 informants between the ages of 25 and 85 were consulted to gather medicinal information. Resource persons (informants or tribal practitioners or traditional healers) with the knowledge of medicinal plants were selected based on the experience in the preparation of medicines, whether he/she is a professional medicine man or women, their willingness to share their traditional knowledge and their way of acquiring knowledge as per the methodology suggested by Jain (1987). The information was collected through questionnaire, interviews and discussions among the tribal practitioners in their local language (Tamil). The questionnaire allowed descriptive responses on the plant prescribed, such as part of the plant used, medicinal uses, detailed information about mode of preparation (*i.e.*, decoction, paste, powder and juice), form of usage either fresh or dried and method of application. The collected plant species were identified taxonomically using "*Flora of Presidency of Madras* (Gamble, 1935) and *Flora of Tamil Nadu Carnatic*" (Matthew, 1983). The identified plant specimens were then confirmed with the herbaria of Botanical Survey of India (BSI), Southern Circle, Coimbatore, India. All the specimens were deposited in Saraswathi Narayanan College Herbarium (SNCH).

Results and Discussion

In the present investigation, 46 Angiosperms have been documented for folklore medicinal plants used by paliyar and mudhuvar tribes of Kurangani hills. Among these medicinal plants, 13 species are cultivated around

Table 1 : List of medicinal plants collected from Kurangani Hills, Tamil Nadu.

S. no.	Botanical name	Family	Local name	Part (s) used	Mode of Action
1.	*Atylosia rugosa* W.& A.	Fabaceae	Betlagida	Leaves	Swellings in legs
2.	*Arisaema leshnaultii* Bl	Araceae	Alukodai	Whole plant	Paralysis
3.	*Argemone mexicana* Linn.	Papavaracaeae	Mullumothakka	Flower	Eye diseases
4.	*Andrographis paniculata* Nees.	Acanthaceae	Nelavi	Leaves	Diabetes
5.	*Aerva lanata* Juss.	Amaranthaceae	Cerupulai	Leaves	Asthma
6.	*Amaranthus spinosus* Linn.	Amaranthaceae	Mullukeerai	Root	Allergies during pregnancy
7.	*Baeolepis nervosa* Wt.&Arn.	Periplocaceae	Kabli	Root and leaves	Dental diseases (gingivitis)
8.	*Brassica juncea* Hook. f. & Thoms.	Brassicaceae	Kadugu	Seeds and leaves	Eye diseases (white patch on the pupil)
9.	*Berberis tinctoria* Lesch.	Berberidaceae	Jakkalchedi	Root	Jaundice, Stomach ache, Wounds
10.	*Barleria buxifolia* Linn.	Acanthaceae	Karegida	Root	Swelling of testes (vemereal) and sexually Transmitted Diseases
11.	*Cassia fistula* Linn.	Caesalpinaceae	Konnemara	Stem bark, root bark	Snake bite, tumour (Locally 'Bipri')
12.	*Cassia pumila* Lamk.	Caesalpinaceae	Agorai, kakkuttai soppu	Leaves	Veterinary
13.	*Cipadessa baccifera* Miq.	Meliaceae	Marappa	Tender leaves	Veterinary, (body heat in cattle)
14.	*Chloroxylon swietienia* DC.	Flindersiaceae	Porinjamara	Leaves, stem bark	Fish poison, toothache
15.	*Daemia extensa* R.Br.	Asclepiadaceae	Konduga soppu, veliparuthi	Leaves	Asthma (or) wheezing in children
16.	*Dioscorea oppositifolia* Linn.	Dioscoreaceae	Riyakangu	Tuber	Constipation, kidney disorders, anodyne during delivery, edible (famine food)
17.	*Dodonea viscosa* Linn.	Sapindaceae	Virali	Stem, leaves	Bone fracture, veterinary
18.	*Elaeagnus kologo* Schlecht.	Elaeagnaceae	Kolanga, kolangannu	Root	Heart pain, fever
19.	*Glycosmis cochincinensis* Pierre.	Rutaceae	Papparatte	Root	Tumour (locally viprithi)
20.	*Gmelia arborea* Roxb.	Verbenaceae	Umgida	Root	Urinary disease
21.	*Givotia rottleriformis* Linn.	Euphorbiaceae	Panduvamara	Leaves ,bark	Mouth ulcer, body heat, dysentery, vomiting and vinereal diseases.
22.	*Ficus aspertima* Roxb	Moraceae	Peeathi	Fruit	Blood purification
23.	*Ficus glomerata* Roxb.	Moraceae	Athi	Stem bark	Wounds in cattles

Table 1 continued...

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24.	*Hemidesmus indicus* R.Br.	Asclepiadaceae	Nannari	Whole plant	Blood purifier
25.	*Hedoytis corymbosa* Linn.	Rubiaceae	Anaikachi gida	Leaves	Tinea
26.	*Mimosa pudica* Linn.	Mimosaceae	Thotal surungi, orugagida	Flower	Piles
27.	*Notholaena standleyi* Kuntze.	Adiantaceae	Kunnathave	Whole plant	Post natal problems
28.	*Opuntia dillenii* Haw.	Cactaceae	Kalli	Fruit	Piles
29.	*Orthosiphon glabratus* Benth.	Lamiaceae	Geejacky	Root and leaves	Epilepsy
30.	*Klugia notoniana* A. DC.	Gesnariaceae	Neersambrani	Aerial part, root	Body swelling, polio
31.	*Lantana camera* Linn.	Verbenaceae	Kakkannugida	Leaves	Cuts and wounds, intestinal worms
32.	*Peperomia reflexa* (L.fil.)	Piperaceae	Not known	Seed	Loss of appetite
33.	*Plantago erosa* Linn.	Plantaginaceae	Oppugida	Leaves	Muscle spasm
34.	*Phyllanthus amarus* Linn.	Euphorbiaceae	Kilanelli	Leaves	Fever, jaundice
35.	*Polygonum chinense* Linn.	Polygonaceae	Konga	Root	Vomiting, fever, tuberculosis
36.	*Rhodomyrtus tomentosa* Wt.Spic.	Myrtaceae	Thavittechedi	Stem	Dental disease
37.	*Rubia cordifolia* Linn.	Rubiaceae	Sivalikodi	Leaves, root	Insect sting, snake bite, menstrual disorders and paralysis
38.	*Sarcococca brevifolia* Stapf	Buxaceae	Kummige	Aerial part	Renderpest (Veterinary)
39.	*Sapindus emarginatus* Vahl.	Sapindaceae	Ponnemara	Stem bark	Excess bleeding during menstruation (dysmenrrhoea)
40.	*Solanum anguivi* Linn.	Solanaceae	Kunnasunde	Aerial part	Swellings of legs
41.	*Solanum xanthocarpum* Linn.	Solanaceae	Mllukathirikka gullakka	Fruit, seeds	Tooth ache
42.	*Strychnos nux-vomica* Linn.	Loganiaceae	Etti	Stem bark	Stomachache, dysentery, fever, cold
43.	*Syzygium cumini* (L). Skeels	Myrtaceae	Neri	Stem bark	Tooth ache
44.	*Tribulus terrestris* Linn.	Zygophylaceae	Nerungi	Leaves	Menstural disorders (leucorrhoea)
45.	*Zanthoxylum ovalifolium* Wt.	Rutaceae	Thottimul	Leaves and stem bark	Headache, tooth ache

the huts and jhum land rest of them collected from wild habit and habitat. The analysis of data reveals that leaves are used in 19 ailments, root used in 12 ailments, bark used to treat 8 diseases, seeds, whole plant, aerial parts and fruits used in 12 ailments, flowers used in 2 ailments. Maximum formulation are in complex mixture of two or more plant parts, preservatives such as honey, sugar, ghee etc. Recently revival of interest towards herbal drugs because of their efficiency against different ailments invites immediate attention towards herbal protection and conservation of such valuable medicinal plants. The documented plants are used to treat several diseases like

anodyne during delivery, edible (famine food), Tinea, Swellings in legs, Paralysis, Eye diseases, Diabetes, Asthma, Allergies during pregnancy, Dental diseases (gingivitis), Jaundice, Stomach ache, Wounds, sexually Transmitted Diseases, Snake bite, tumour (Locally 'Bipri'), Veterinary, Fish poison, Bone fracture, Heart pain, Urinary disease, body heat, Mouth ulcer, vomiting, dysentery, Blood purification, Piles, Post natal problems, Epilepsy, polio, Loss of appetite, Muscle spasm, Fever, tuberculosis, Insect sting, cold, Constipation by employing the preparations in the form of extracts, pastes, juices, powders, etc.

Conclusion

In ancient times, humans lived in the lap of nature and attributed divine qualities to it. It is fact that natural forests are progressively shrinking due to overexploitation, makes it obligatory to investigate scientifically and document our floristic wealth in order to use the same, rationally for development without destruction of the biological diversity (Vijayakumar and Pullaiah, 1998). Ethnobotanical research can provide a wealth of information regarding both past and present relationships between plants and the traditional societies Indigenous herbal treatment is a part of the culture and dominant mode of therapy in most of the developing countries. Many medicinal plants occurring have yet to be subjected to rigorous chemical screening and pharmacological investigation.

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