

Original Article

TRADITIONAL MEDICINAL PLANTS USED BY LOCAL PEOPLE OF KAILASAKONA- A SACRED GROVE OF CHITTOOR DISTRICT, ANDHRA PRADESH, INDIA

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ABSTRACT

Objective: The present study deals with the documentation of traditional medicinal knowledge from local people of Kailasakona Sacred Grove, Chittoor District, Andhra Pradesh, India.

Methods: The medicinal plants used by local people of Kailasakona Sacred Grove were documented through a structural questionnaire from the time period of 2013-2014 and cross checked the ethnomedicinal values with Dr. Duke's Phytochemical and Ethnobotanical database.

Results: The present study deals ethnomedicinal values of plants against 25 types of ailments/diseases are explored by using 31 medicinal plants, belongs to 25 families. Among the 31 medicinal plants, most of the drug preparations are made from shrubs followed by trees, herbs, climbers and stragglers. Among the plant parts leaf is used higher percentage for the preparation of drugs followed by fruit, latex, root, stem bark, whole plant, flower, root bark and seed. Paste form and oral administration of the drugs are most prevalent.

Conclusion: The ethnomedicinal data get from Kailasakona Sacred Grove indicates the people of this area possess good knowledge on medicinal plants. However, lack of followers as well as practitioners the ethnomedicinal data is dwindling rapidly. There is no proper documentation studies are taken so far to this area. Hence the present study was undertaken to document the medicinal knowledge from local people of Kailasakona Sacred Grove. Coincidence of cross checked documented medicinal data with Dr. Duke's Phytochemical and Ethnobotanical database shows medicinal significance of Kailasakona Sacred Grove area local people.

Keywords: Local villagers, Medicinal plants, Indigenous knowledge, Kailasakona Sacred Grove.

INTRODUCTION

Vast ethnobotanical knowledge exists in India from ancient times. Since the 1950s, the study of ethnobotany has intensified [1]. India is a vast country with a variety of topographies, climates, vegetation, and people. When discussing ethnobotany in India, we can consider two groups of people, those living in small cities or rural villages and tribal peoples which live in remote villages [2]. Ethnic and indigenous people who reside in the forest and villages bordering the forest depend on plant resources; and they possess rich knowledge on medicinal values of plants and their uses [3]. With the advent of human civilization, many systems of therapy have been developed primarily based on plants. In India, drugs of herbal origin have been used in traditional systems of medicine such as Unani, Ayurveda and Siddha [4]. Ethnobotany is a preliminary method of research, suitable for gathering information on the use of plants. It has been proven, time and time again, that the 'quack' medical knowledge handed down by the common people constitutes sources of information useful for scientific research and that many plants utilized exclusively in popular tradition, when exposed under scientific examination, have been found to be useful for different sectors in the industry therefore, science and tradition have a strong connection between them; science in fact has often traditional origin [5]. Since ages, man relied on plants as a sole source of medicine. The knowledge has been transmitted orally from generation to generation [6], and most of the traditional knowledge had faded away due to lack of proper documentation and lack of more number of practitioners [7, 8]. The art of herbal healing has very deep roots in Indian culture and folklore. Even today in most of the rural areas, people depending on local traditional healing systems for their primary health care [9]. Documentation of indigenous knowledge through ethnobotanical studies is an important for the conservation and utilization of biological resources [10].

Sacred groves are segments of landscape containing vegetation and other forms of life and geographical features that are delimited and protected by human societies to keep them in a relatively

undisturbed state. It is the expression of the relationship of man with the divine or with nature [11]. The phenomenon of beliefs in sacred groves is ancient. The tract of virgin forest harboring rich biodiversity, protected by the local people based on the ground of indigenous cultural and religious beliefs, and taboos is called Sacred Grove. They are the repositories of rare and endemic species and can be regarded as the remnant of the primary forest left untouched by the local inhabitants and protected by them due to the belief that the deities reside in these forests [12].

Around 14,000 Sacred Groves have been reported from all over India. [13,14]. A total of 677 Sacred Groves have been reported from Andhra Pradesh (Seemandhra) among them highest 118 Sacred Groves are recorded from Chittoor District [15]. Many ethnomedicinal explorations are made in the Sacred Groves of Chittoor District shows the wealth of the sacred groves and their defenders [16-18].

The Kailasakona sacred grove has been given a serial number of 125 in CPREEC ENVIS, 2014 database [15]. The area is not explored so far of ethnomedicinal importance. Hence the present study has been undertaken to document the importance of medicinal plants and dependency of the local villagers on the wild plants for their daily ailments.

MATERIALS AND METHODS

Study area

Kailasakona waterfalls (Kona falls) are a natural perennial waterfall in the valley of Nagari Hills in Chittoor District of Andhra Pradesh, India (Fig.1) with the latitude 13°23'17.6"N, longitude 79°37'56.9"E and mean sea level of 134 meters. The water originates from a split in the mass rock. The water here is crystal clear having considerable mineral values. There is a small temple of Lord Shiva and Parvati near the waterfall. Local people believed that the water here, has some medicinal powers and can heal ailments. As per the puranas, Lord Kailasanatheswara Swami attended the marriage of Lord

Venkateshwara Swami and Goddesses Padmavathi at Narayanavaram here. He then selected this water fall for performing penance for some time. Hence this Sacred Grove is named as Kailasakona.

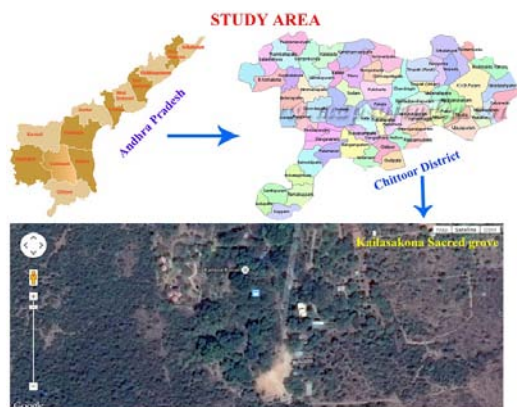


Fig. 1: Location Kailasakona Sacred grove area

Data collection

Preparing the questionnaires

A structural questionnaire was used to elicit information from them, and methodology used based on the methods available in literature [19] and compared the herbarium of Dept. of Botany, S. V. University. During the study local name of the plants, parts used,

mode of preparation and administration with modification of medicine was recorded. Identification of plants with Flora of Madras presidency [20]. The ethnobotanical data collected from this Sacred Grove is cross checked with ethnobotanical data of Dr. Duke's Phytochemical and Ethnobotanical data base.

RESULTS AND DISCUSSION

The study reveals that the people of local villages of Kailasakona use 31 medicinal plant species belonging to 25 families. The plants were used to treat 25 types of common human ailments (table 1, Fig.2). According to the habit of plants, shrubs (09) are the most utilized plants followed by trees (08), herbs (07), climbers (04) and stragglers (03) (Fig.3). Informants of the study area harvested different plant parts for preparation of traditional drugs. Among the plant parts, Leaf (44%) are used for the preparation of medicines predominantly followed by Fruit (11%), latex (09%), root (09%), stem bark (09%), whole plant (09%), flower (03%), root bark (03%) and seed (03%). (Fig.4). The most prevalent method of preparation of drug form are Paste (33%), Decoction (28%), Juice (20%), Natural form (08%), Powder (08%) and Crushed form (03%) (Fig.5). People of the study area mostly administer traditional medicine orally. This accounted for 59%, followed by topical (41%) (Fig.6). Dr. Dukes ethnobotanical data is correlated from the documented plants to this area (table 2). The correlated 21 medicinal plants among the 31 are *A. caesia*, *A. hispidum*, *A. salvifolium*, *A. scholaris*, *C. floribunda*, *C. trifoliata*, *C. procumbens*, *D. ebum*, *F. hispida*, *I. frutescens*, *I. aspalathoides*, *I. carnea*, *M. edule*, *M. oppositifolia*, *P. reticulatus*, *P. aculeata*, *S. Spinosa*, *T. asiatica*, *T. orientalis* and *X. Indicum*. Medicinal plants documented from different sacred groves of Chittoor District shows importance of medicinal values of many important medicinal plants, wealth of the sacred groves [16-18].

Table 1: Documentation of ethnomedicinal data from local people of Kailasakona sacred grove

S. No.	Scientific name, Voucher no. & Vernacular	Family & Habit	Part used & Administration	Drug form	Use
1	<i>Acacia caesia</i> (L.) Willd. NY 173, Korintha	Mimosaceae (SH)	Stem bark	Paste (T)	Cough, Scabies and Wound healing
2	<i>Acanthospermum hispidum</i> DC. NY 155, Sanna palleru	Asteraceae (H)	Whole plant	Paste (T)	Skin diseases, Urinal disorders & Swellings
3	<i>Alangium salvifolium</i> (L. f) Wang. NY 105, Oodaga	Alangiaceae (T)	Root bark	Decoction (O)	Snake bite and Scorpion sting
4	<i>Albizia amara</i> (Roxb.) Boiv NY 139, Sigara	Mimosaceae (T)	Leaf	Juice (T) Paste (T)	Piles, Diarrhea Skin diseases
5	<i>Alstonia scholaris</i> (L.) R. Br. NY 141, Edakula ponna	Apocynaceae (T)	Stem bark	Decoction (O)	Fever
6	<i>Calycopteris floribunda</i> Lam. NY 137, Putangiteega	Combretaceae (St)	Fruit	Juice (O)	Diabetes Jaundice
7	<i>Cadaba trifoliata</i> (Roxb.) Wt. & Arn. NY 143, Nallagara	Capparaceae (SH)	Leaf	Paste (T)	Swellings & Worm infestations
8	<i>Caesaplinia bonduc</i> (L.) Roxb. NY 144, Gacha podha	Caesapliniaceae (SH)	Seed	Decoction (O)	Worm infestations
9	<i>Coldenia procumbens</i> L. NY 106, Hamsapadu	Boraginaceae (H)	Leaf	Paste (T)	Rheumatic pains
10	<i>Combretum albidum</i> G. Don. NY 147, Vedalateega	Combretaceae (St)	Fruit	Decoction (O)	Diarrhea & Dysentery
			Leaf	Juice (O)	Stomach ulcer
11	<i>Diospyros ebum</i> J. Koeng. NY 149, Tuki	Ebenaceae (T)	Whole plant	Paste (T)	Skin diseases & Wound healing
12	<i>Duranta repens</i> L. NY 146, Bharangi	Verbenaceae (SH)	Whole plant	Decoction (O)	Asthma, Bronchitis & Fever
13	<i>Ficus hispida</i> L. f. NY 150, Bembedu	Moraceae (T)	Latex	Natural form (T)	Wound healing
14	<i>Ichnocarpus frutescens</i> (L.) R. Br. NY 135, Pala teega	Apocynaceae (CL)	Leaf	Powder (O)	Diabetes
			Latex	Natural form (O)	Wound healing
15	<i>Indigofera aspalathoides</i> Vahl. NY 107, Nela Vemplali	Fabaceae (SH)	Leaf	Paste (T)	Leprosy
16	<i>Ipomoea carnea</i> Jacq. NY 138, Pandiri thooti	Convolvulaceae (SH)	Leaf	Paste (T)	Arthritis & Wound healing,
17	<i>Ipomoea staphylina</i> Roem. & Schult. NY 120, Teendra teega	Convolvulaceae (CL)	Leaf	Juice (O)	Bronchitis
18	<i>Ludwigia octovalvis</i> (Jacq.) Raven. NY 111, Neeru agnivandrum	Onagraceae (SH)	Leaf	Decoction (O)	Dysentery

19	<i>Memecylon edule</i> Roxb. NY 183, Alli	Lecythidaceae (T)	Fruit	Decoction (O)	Diarrhea
20	<i>Mollugo oppositifolia</i> L. NY 127, Chetarasi kura	Aizoaceae (H)	Leaf	Juice (O)	Jaundice & Skin disorders
21	<i>Orthosiphon diffusus</i> Benth. NY 128, Adavi tulasi	Lamiaceae (H)	Leaf	Decoction (O)	Hepatitis
22	<i>Phyllanthus reticulatus</i> Poir. NY 109, Nalla purugudu	Euphorbiaceae (SH)	Leaf	Decoction (O)	Snake bite
23	<i>Pisonia aculeata</i> L. NY 130, Vasikarana chettu	Nyctaginaceae (CL)	Bark Leaf	Paste Decoction (O)	Rheumatism Hepatitis
24	<i>Polyanthes tuberosa</i> L. NY 132, Tella sampengi	Agavaceae (H)	Flower	Crushed form (T)	Gonorrhea
25	<i>Sapium insigne</i> (Royle) Benth. NY 133, Garbhasula	Euphorbiaceae (T)	Latex	Natural form (T)	Psoriasis
26	<i>Scoporia dulcis</i> L. NY 110, Gurrapu tulasi	Scrophulariaceae (H)	Leaf	Juice (O)	Cough and cold
27	<i>Sida spinosa</i> L. NY 126, Nagabala	Malvaceae (SH)	Root	Paste (T)	Gonorrhea
28	<i>Tiliacora acuminata</i> Lam. NY 134, Nallangi teega	Menispermaceae (CL)	Root	Decoction (O)	Snake bite
29	<i>Toddalia asiatica</i> (L.) Lam. NY 179, Mirapa gandra	Rutaceae (St)	Leaf	Powder (O) Paste (O)	Fever Rheumatic pains
30	<i>Trema orientalis</i> (L.) Blume. NY 197, Kondajonna	Ulmaceae (T)	Root	Juice (O)	Diarrhea & Fever
31	<i>Xanthium indicum</i> Koen. NY 192, Marulamathangi	Asteraceae (H)	Fruit	Paste (T)	Small pox

CL: Climbers; H: Herbs; SH: Shrubs; T: Trees; ST: Straggler; O: Oral; T: Topical.



Fig. 2: Photographs of important medicinal plants documented from Kailasakona Sacred grove

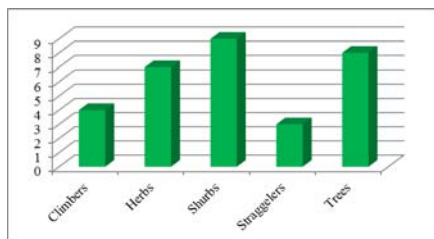


Fig. 3: Documentation of medicinal plants according to their Habit

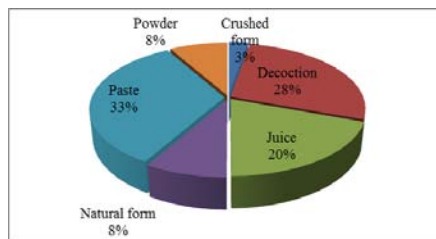


Fig. 5: Percentage of preparation of different forms of drugs

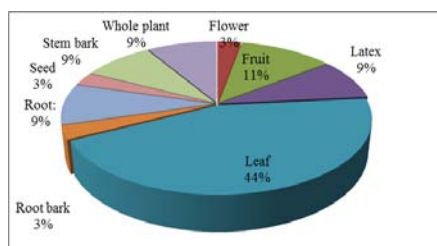


Fig. 4: Percentage of preparation of drugs from different plant parts

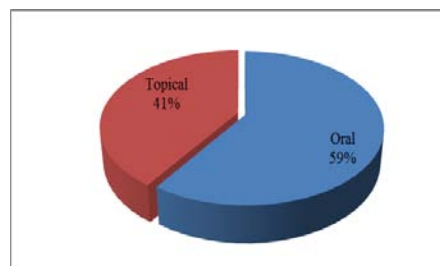


Fig. 6: Percentage of administration of drugs

Table 2: Ethnobotanical data obtained from Dr. Dukes Phytochemical and Ethnobotanical database

S.No.	Name of the Plant	Duke's Ethnobotanical uses
1.	<i>Acacia caesia</i>	Bronchitis, Cough, Evil eye, Fistula, Measles, Pleurisy, Shampoo, Smallpox and Tuberculosis.
2.	<i>Acanthospermum hispidum</i>	Diuretic and Sudorific
3.	<i>Alangium salvifolium</i>	Ache (Stomach), Anasarca, Anodyne, Anus, Asthma, Bilious, Bite (Dog, Snake), Bronchitis, Cholera, Colic, Phthisis, Prolapse and Skin.
4.	<i>Alstonia scholaris</i>	Dyschezia, Fever, Nausea, Ache (Head, Leg, Lion & Tooth), Antidote (Antiaris), Beriberi, Boil, Cough, Diabetes, Enterosis, Hepatitis, Panacea, Parturition, Piles, Tonic, Vermifuge, Alterative, Aphrodisiac, Asthma, Astringent, Bronchitis, Cancer, Cholera, Diarrhea, Dysentery, Dyslactation, Expectorant, Hemiplegia, Internal, Malaria, Neuralgia, Phthisis, Pleurisy, Pneumonia, Poison (Arrow), Rheumatism, Stomachic, Tonic, Tumor and Tumor (glands).
5.	<i>Calycopteris floribunda</i>	Ache (Head), Watervine, Depurative, Piscicide and Tonic
6.	<i>Coldenia procumbens</i>	Boil, Rheumatism, Suppurative, Swelling and Tumors
7.	<i>Cadaba trifoliata</i>	Purgative and Vermifuge
8.	<i>Diospyros ebenum</i>	Astringent, Attenuant, Excrescence, Itch, Leprosy, Lithonriptic, Piscicide and ringworm
9.	<i>Duranta repens</i>	Detergent, Fatality, Fever, Insecticide, Larvicide and Stimulant
10.	<i>Ficus hispida</i>	Ache (Stomach), Boils, Diarrhea, Dysuria, Fever, Parturition, Wart, Emetic, Lactogogue and Tonic
11.	<i>Ichnocarpus frutescens</i>	Ache (Head), Alterative, Ardor, Asthma, Atrophy, Bite (Dog, Snake), Bladder, Bronchitis, Cachexia, Cholera, Convulsion, Cough, Cramp, Delirium, Demulcent, Depurative, Diabetes, Diaphoretic, Diuretic, Dysentery, Dyspepsia, Fever, Gum, Hematuria, Hemorrhage, Jaundice, Laxative, Measles, Megalospleny, Night-Blindness, Palsy, Phthisis, Pimple, Skin, Smallpox, Sore, Splenic, Stone, Syphilis, Tongue, Tonic, Tumor (Abdomen, Glands) and Wound healing.
12.	<i>Indigofera aspalathoides</i>	Abscess, Ache (Tooth), Alterative, Aphthae, Cancer, Dandruff, Demulcent, Leprosy, Syphilis and tumors.
13.	<i>Ipomoea carnea</i>	Poison
14.	<i>Memecylon edule</i>	Astringent
15.	<i>Mollugo oppositifolia</i>	Aperitif, Itch, Skin, Stomachic
16.	<i>Phyllanthus reticulatus</i>	Asthma, Sore (Throat), Diuretic, Pinworms, refrigerant
17.	<i>Pisonia aculeata</i>	Anodyne, Arthritis, Lung, Rheumatism, Scabies, Swelling, Syphilis and Venereal.
18.	<i>Sida spinosa</i>	Astringent, Bladder, Debility, Demulcent, Diaphoretic, Fever, Gleet, Gonorrhoea, Hyperglycemia, Refrigerant, Tonic and Tumors (Abdomen).
19.	<i>Toddalia asiatica</i>	Amenorrhoea, Bactericide, Carminative, Cough, Debility, Diaphoretic, Diarrhea, Fever, Flu, Gonorrhoea, Malaria, Poison, Rheumatism, Stimulant, sting (Wasp), stomach ache and Stomachic.
20.	<i>Trema orientalis</i>	Diarrhea, Glossitis, Hematuria, Sprue, Ache (Bones, Tooth), Asthma, Bronchitis, Conception, Cough, Craw- Craw, Dysentery, Epilepsy, Gargle, Hematuria, Hook worms, In appetite, Medicine, Myalgia, Parturition, Pleurisy, Pneumonia, Roundworms, Steam bath, Testicle, Throat, Veneral, Vermifuge, Wasting and Yellow fever.
21.	<i>Xanthium indicum</i>	Cancer and Tumor (Abdomen)

Due to various reasons, such as knowledgeable people in the society on medicinal plants of this area is getting lost. Since the knowledge of traditional medicine is transferred orally from generation to generation, basic information on the use of the plants, drug preparation methods, and the way of treatment of are disappearance slowly in the knowledge transfer process. Due to lack of interest among the younger generation to learn the medicinal uses of plants and practicing the treatment because it fetches very meager financial assistance to the practitioner.

Therefore, documentation of medicinal plants and the indigenous wisdom associated with them is an important in order to pass the knowledge to the next generation. Since the plant materials and the indigenous knowledge can be the basis for the invention of modern drugs on top of the heritage values of the resource.

CONCLUSION

The present attempt revealed that the local villagers of Kailasakona Sacred Grove having vast knowledge on medicinal values of

important medicinal plants. Further confirmed with the Dr. Dukes database shows the medicinal significance of plants to this Sacred Grove. The documentation of ethnomedicinal data is vital for the future breeding program, and research works to validate the important phytochemicals. Moreover, these plants may produce gene pool of medicinal plants. So that these plants and knowledge of the people are conserved before they will be lost forever. This is high time to validate the medicinal values of this area to explore to the globe, and this data is useful for pharmacists and conservation biologists.

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CONFLICT OF INTERESTS

Declared None.

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