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Natural products used by the Kanikkars of Kanyakumari district, Tamil Nadu, India

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An attempt has been made to identify folklore medicinally important plants frequently used by the Kannikars tribal residing in the part of Kanyakumari Wild Life Sanctuary of Kanyakumari District, Tamil Nadu. Kannikars are the dominant tribal group in this region. The survey was conducted in eighteen Kannikars settlement of Pechiparai Panchayat. Through general conversations with traditional healers the details of medicinal plants used, mode of treatments, methods of preparation and type of administration was collected and documented. About 38 plants belonging to 22 families are documented. The wild plants found in this region are used for treating skin diseases, fever and other ailments including bites of snakes, spiders and scorpions are enumerated in the present paper. Kannikars are mostly using the leaves of plants followed by roots sometimes the whole plants, seed and fruits. The common diseases treated by the herbal practitioner were asthma, digestive problems, animal bites and skin diseases. Most of the plants are belonging to Fabaceae followed by Asteraceae and Acanthaceae.

Keyword: Ethno medicine, Kannikars, Kanyakumari.

1. Introduction

Since time immemorial man has used parts of plants in treatment and prevention of many ailments (Chah *et al.*, 2006). Our ancestors made new discoveries of the healing power of plants through trial and error. Although some of the therapeutic properties attributed to plants have proven too erroneous, medicinal plant therapy is based on the empirical finding of hundreds and thousands of years (Gurib- Fakim, 2006). WHO has estimated that at least 80% of all the global inhabitants rely on traditional systems of medicine for their primary health needs and these systems are largely plant based. Ethno medicines have received renewed global attention of scientists in India and abroad because of their wide local acceptability, and providing leads to the discovery of new drugs of plant origin.

India has a rich tradition in medicinal plant study and is one of the twelve mega biodiversity centers and eighteen hot spots in Eastern Himalayas and Western Ghats apart from being known for ancient civilization and deep-rooted in tradition, is also known for its rich diversity, both cultural as well as biological (Ravikumar *et al.*, 2000). Ethno biological surveys indicated that about 8000 species of medicinal plants are used as food, medicine, phytochemical, biocides and other products. The traditional healers are dwindling in numbers and the indigenous traditional knowledge of medicinal plants of various ethnic communities which has been transmitted orally for centuries is disappearing from the face of the earth due to the advent of modern technology, transformation of traditional culture (Ganesan *et al.*, 2004) changing pattern of climatic conditions and scarcity of species due to over grazing by

animals which is caused by human activities. In addition to these there is a grave danger of traditional knowledge disappearing soon since the younger generation is not interested to carry on this tradition (Rajadurai *et al.*, 2009). It is, therefore, important that before this rich unwritten folk-lore on uses of plants and plant resources becomes lost forever it should be properly documented and preserved (Rao, and Henry, 1997). Therefore it becomes the responsibility of the scientific community to unravel the information and to document it for availability to the whole world for the benefit of human being.

The Kannikars are the predominant and local inhabitant, inhabiting the Southern tip of Western

Ghat region of Kanyakumari district, Tamilnadu. The members of this community are familiar with several herbs and well versed in using these herbs in various ailments including snake and spider bites. Although a number of reports are available on ethno botany of Kanyakumari district (Anitha *et al.*, 2008; Kingston *et al.*, 2009; Ayyanar and Ignacimuthu, 2009; Sukumaran and Raj, 2010 and Ariharan *et al.*, 2012).

the detailed study on ethno medicinal plants used to cure different diseases by Kannikars tribes of Kanyakumari district has not been explored to the desired level. So, the present study is started with the aim to collect the information on the present status of medicinal plants used by the Kanikkars of Kanyakumari district.

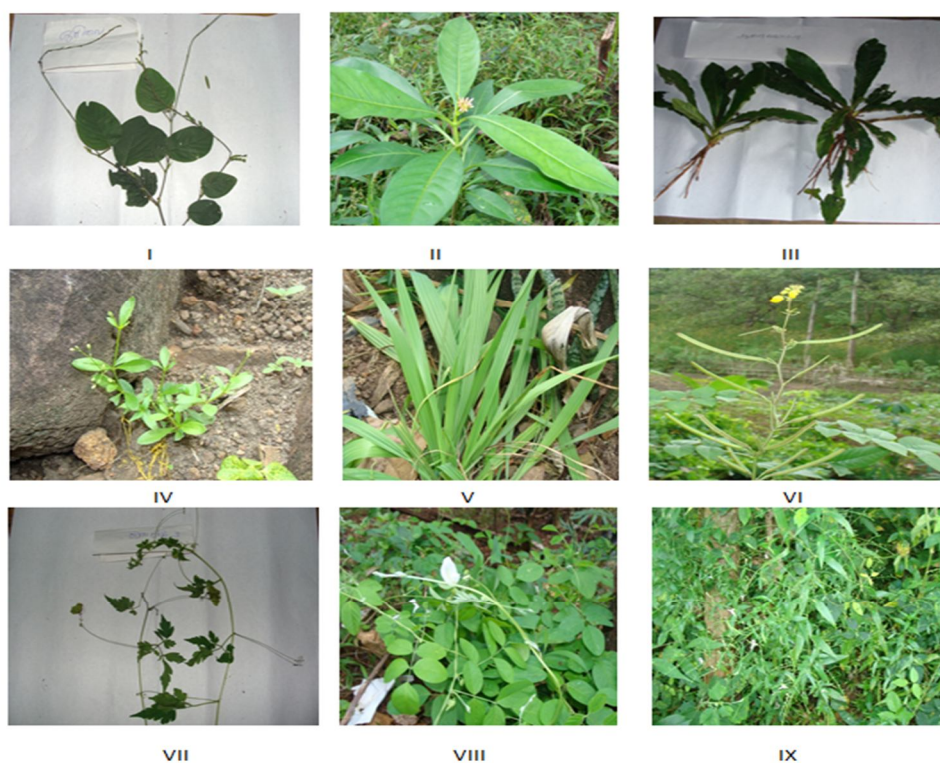


Plate -1: Ethnomedicinal plants of Kannikars of Kanyakumari district.

Desmodium gangeticum (L.) DC (I), *Ophiorrhiza mungos* L (II), *Elephantopus scaber* L. (III), *Veronia cinerea* L. (IV), *Bellicoryne plumbaginifolia* (V), *Cassia occidentalis* Linn. (VI), *Cardiospermum halicababum* Linn. (VII); *Clitoria mariana* Linn. (VIII) and *Andrographis paniculata* Nees (IX).

2. Methodology

2.1 Study area and ethnic people

The study was conducted during 2009 -2010 under the project of “Survey of medicinal plants of Kannikars of Kanyakumari District,

Tamilnadu” funded by University Grant Commission to collect the information on plants used by traditional healers in the Southern tip of Western Ghat. The selected study area is Kani settlements of Kanyakumari district, Tamil Nadu.

Kanyakumari district is the southernmost part of Western Ghats region which is located between 77° 15' and 77° 36' of east of longitude and 8° 03' and 8° 35' north of Latitude. The fieldwork was conducted in several villages namely Mothiramalai, Thottamalai, Chappangupparai, Koovaikadu, Kothaiyar, Alamparai, Koruvakuzhi, Kothaiyar, Koovaikadu, Puravilai, Valayamthanki, Thottamalai, Chappangupparai, Vannachipparai, Mothiramalai, Thottamalai, Chappangupparai, Koovaikadu of Pechiparai Panchayat situated in the southern tip of Western Ghat region of Kanyakumari District. Kanikkar tribal living scattered in 24 forests settlements in Tamil Nadu. More than 200 families and nearly 1500 members of Kannikars are found in the study area. During the visit their daily activities were closely observed and interpersonal contacts were established by frequent visits. During the course of exploration of medicinal plants the information has been gathered from seven informants (6 males and 1 female) between the ages of 47 to 78 in the study area. Among them

three are regular tribal practitioners and are gone deep into the jungle for the collection of medicinal leaves.

The ethno medicinal information was collected through general conversations with traditional healers and questionnaires were used to gather their knowledge. Details of medicinal plants used, mode of treatments, methods of preparation and type of administration were documented by interacting with them as well as through direct observations. The information collected was validated by comparing the information given by the local people.

3. Result

The result of this study have revealed 38 plant species belonging to 22 families that are used for various purposes by Kani traditional healers of Kanyakumari district (Table 1). Leaves were found most frequently used part followed by root, whole plants and fruits.

Table 1: Plant parts used by Kani tribes of Kanyakumari district for various ailments

SI. No	Botanical Name	Family	Vernacular name	Plant part(s) used
1	<i>Aerva lanata</i> (L.) Juss.ex Schultes	Amaranthaceae	Kannupeelai	Leaves
2	<i>Abutilon indicum</i> (Link.) Sweet	Malvaceae	Tutti	Leaves
3	<i>Acalypha fruticosa</i> Forsk (or) <i>Acalypha chrysadenia</i> Suss. & Friedrich	Euphorbiaceae	Balamunja(Mal)(Tri), Sinni (Tam.)	Leaves
4	<i>Achyranthes aspera</i> Mull	Amaranthaceae	Nayuruvi (Tam.) Devil's Horsewhip (Eng)	Whole plant
5	<i>Acorus calamus</i> L.		<i>Vasampu</i>	Rhizome
6	<i>Andrographis paniculata</i> Nees	Acanthaceae	Nila vembu or kiriyath (Tri) Chiriyangai (Tam)	Leaves
7	<i>Areca catechu</i> Linn	Lauraceae	Pakku	Nut
8	<i>Asparagus racemosus</i> Willd	Asparagaceae	Thanneervittan kizhangu	Root
9	<i>Bellicoryne plumbaginifolia</i>	Liliaceae	Vishanarayani(Tri) Wild garlic (Eng.)	Bulbs
10	<i>Cassia occidentalis</i> Linn.	Caesalpiniaceae	Peithuvarai (Tam.)	Leaves and Pod
11	<i>Cassia alata</i> Linn.	Caesalpiniaceae	Yanaitthavarai	Leaves
12	<i>Cardiospermum halicababum</i> Linn.	Sapindaceae	Mudakatthan(Tam) Balloon Vine(Eng) Uzhingai (Tri)	Leaves
13	<i>Centella asiatica</i> L.	Apiaceae	Vallarai(Tam.)	Leaves
14	<i>Cinnamomum verum</i> J. Presl.	Lauraceae	Karuvappattai	Bark

15	<i>Cissmpelos pareira L.</i>	Menispermaceae	Malithangi (Tri.) Little ironweed (Eng.)	Leaves
16	<i>Clitoria ternates Linn.</i>	Fabaceae	White Sangupushpam(Tam.)	Leaves
17	<i>Clitoria mariana Linn.</i>	Fabaceae	Purple Sangupushpam Tam.)	Leaves
18	<i>Costus speciosus (J.Konig) Sm.</i>	Zingiberales	Kostam, Channakkizhangu	Root
19	<i>Curcuma zedoaria Chrism)Roscoe</i>	Zingiberaceae	Kichili kilangu(Tri)	Root
20	<i>Desmodium gangeticum (L.) DC</i>	Fabaceae	Orila(Tri)	Root
21	<i>Eclipta prostrate L.</i>	Asteraceae	Karisalankanni	Leaves
22	<i>Elephantopus scaber Linn.</i>	Asteraceae	Yanaichavattadi	Leaves
23	<i>Erythrina variegata Linn.</i>	Fabaceae	Mullumurunkai	Leaves
24	<i>Evolvulus alsinoides (L.)</i>	Convolvulaceae	Vishnukarandi	Whole plant
25	<i>Foeniculum vulgare L.</i>	Umbelliferae	Karuncheeragam (Tam.) Fennel (Eng)	Fruits
26	<i>Justicia adhatoda L.</i>	Acanthaceae	Adhathoda	Leaves
27	<i>Leucas aspera (Wild)Link</i>	Lamiaceae	Thumbai	Leaves
28	<i>Ocimum sanctum Linn.</i>	Lamiaceae	Thulasi	Leaves
29	<i>Ophiorrhiza mungos L.</i>	Rubiaceae	Avalpori (Tri)	Leaves and Flower
30	<i>Pseudarthria viscida W&A</i>	Fabaceae	Moovila(Tri)	Root
31	<i>Rhinacanthus nasutus (L.) Kurz</i>	Acanthaceae	Naga malli(Tri)	Leaves
32	<i>Selaginella rupestris(L.) Sping</i>	Selaginellaceae	Garudapacha(Tri)	Leaves
33	<i>Tephrosia purpurea (L.)Pers</i>	Fabaceae	Kolingi(Tri.) Wild indigo (Eng.)	Whole plant
34	<i>Tribulus terrestris L.</i>	Zygophyllaceae	Sirunerinji	Fruits
35	<i>Trichopus zeylanicus Gaerten</i>	Dioscoriaceae	Arokyapachilai	Leaves
36	<i>Tridax procumbens L</i>	Asteraceae	Vettukayapundu	Leaves
37	<i>Veronia cinerea L.</i>	Asteraeae	Kucheri (Tri.) Purple Fleabane (Eng.)	Leaves
38	<i>Wrightia tinctoria. (Roxb.)R.Br</i>	Apocynaceae	Dandappala(Tri) Vetpalai	Leaves

4. Enumeration

- ***Aerva lanata (L.) Juss.ex Schultes***
The juice prepared from ten to fifteen grams of whole plant with 150ml of water is taken orally three times a day for a period of two days to reduce eczema.
- ***Abutilon indicum (Link.) Sweet***
Paste of fresh leaves with water applied topically to cure ringworm infection.
- ***Acalypha fruticosa Forsk (or) Acalypha chrysadenia Suess. & Friedrich***
Leaves ground into paste with water is used to treat skin diseases
- ***Achyranthes aspera Mull.***
Handful of leaves of *Foeniculum vulgare*, *Achyranthes aspera* with dry powder of *Cinnamomum verum* and *Areca catechu* boiled in coconut oil is applied for burns.
- ***Acorus calamus L.***
Decoction of pound rhizome is used to cure phlegm and paste of rhizome applied topically to control skin diseases.
- ***Andrographis paniculata Nees.***
A leaf ground to paste with little common salt is given twice daily to control fever or decoction of leaves to cure any type of fever.
- ***Asparagus racemosus Willd***
Powdered root with got's milk is given twice a day to cure leucorrhoea.
- ***Bellicoryne plumbaginifolia***
Juice of pounded bulb is given every hlf an hour duration (depends on the severity of bites) for snake bite. Leaf paste is applied on the spider bitten area. Paste of bulb is applied over the head for mental disorder.

- ***Cassia occidentalis* Linn.**
Leaves made into paste are given for hydrophobia or ordinary dog bite.
- ***Cassia alata* Linn.**
Fresh leaves paste used for ringworm infection.
- ***Cardiospermum halicababum* Linn.**
Decoction of whole plant is used to cure swollen legs and related kidney problems in pregnant women.
- ***Centella asiatica* L.**
Paste of leaves with water is applied topically to control eczema. The paste is taken orally to treat leucorrhoea.
- ***Cissampelos pareira* L. and *Veronia cinerea***
One tablespoon leaf juice of both *Cissampelos pareira* and *Veronia cinerea* mixed with half a cup of coconut milk and is given twice a day to relief chest pain.
- ***Clitoria ternates* Linn and *Clitoria mariana* Linn**
Leaves and stem of *Clitoria ternates* or *Clitoria mariana* ground into paste and applied topically on the throat to remove thorns in throat. The same paste is also a remedy for the corns on foot.
- ***Costus speciosus* (J.Konig) Sm**
Paste of tuber with common salt is applied on decayed tooth to relief pain. Paste of tuber with common salt and garlic is a remedy for diarrhea.
- ***Curcuma zedoaria* (Chrism) Roscoe**
Through conversation it was understood nearly 72 types of tubers were used as their food and is collected from the jungle in different season
- ***Desmodium gangeticum* (L.)DC. Plate1 (I)**
One to two grams of is heated with water to make a decoction which is used to control dysentery
Thirty to sixty ml of this decoction is given twice a day will reduce the fever, body pain and cardiac disorder.
- ***Elephantopus scaber* L. Plate 1. (III)**
Fresh leaf and rhizome paste are externally applied to treat the eczema. Fresh leaf juice is given for snake and spider bite.
- ***Erythrina variegata* L.**
Leaves juice with honey is used to kill intestinal worm and used as a stimulant for lactation and menstruation.
- ***Evolvulus alsinoides* L.**
The juice prepared from whole plant with goat's milk is taken orally three times a day for a period of three days to reduce body heat and mouth ulcer. The latex is used to remove thorns from leg.
- ***Justicia adhatoda* L.**
Leaf decoction with honey is given three times a day till the cough subsides.
- ***Leucas aspera* (Wild.)Link.**
Leaves juice is given for snake bite at an interval every one hour.
- ***Ocimum sanctum* L**
Leaf decoction is used to reduce cough and fever
- ***Ophiorrhiza mungos* L. Plate 1 (II)**
Root decoction is used to remove toxins from the body.
- ***Pseudarthria viscida* W&A**
Root decoction is used to control fever, dysentery and cardiac disorder.
- ***Rhinacanthus nasutus* (L.) Kurz**
Leaf juice applied on deep cut wounds. The wounds will close within three days.
- ***Selaginella rupestris* (L.) Sping** The leaves are crushed and used for wounds
- ***Tephrosia purpurea* (L.)Pers.**
Crushed root with common salt is applied on aching teeth. Root juice with garlic is used for dysentery.
- ***Tribulus terrestris* L.**
The fruits are used to reduce the reproductive disorders
- ***Trichopus zeylanicus* Gaerten**
Leaf juice is given as enhancer.
- ***Tridax procumbens* L.**
Leaf juice is immediately applied to cure cut wounds

- ***Veronia cinerea L. Plate 1 (IV)***
Leaf juice is given for scorpion bite. Leaf decoction is best for fever.
- ***Wrightia tinctoria.* (Roxb.) R.Br**
The leaf paste is applied topically for mumps. Coconut oil heated with the leaves of *Wrightia tinctoria* is used for psoriasis.

5. Discussion

Plants are known to provide a rich source of raw materials for traditional medicine, so traditional medicinal practices are known to still be an important component of everyday life in many regions of the world (Bussmann and Sharon, 2006). People in the remote rural areas of India are forced to resort to traditional practitioners and to use traditional medicine for the continued maintenance of their health and also to alleviate their diverse sufferings. This practice which has considerable economic importance in the tribal culture has never been properly standardized. There were diversities in the preparation and use of the herbal medicines in the different groups of tribals.

Common health problems in the study area were external problems such as burns, cuts and wounds, cough, fever, headache, poison bites and skin diseases and the largest number of medicinally important plant was used to treat these troubles. Some of the plants encountered in this survey have also been worked upon by different scientists and reported the presence of alkaloids, tannins and glycosides. Further, detailed investigations need to be carried out to bring forth and document this rich treasure of herbal medicine and to the test of scientific knowledge by investigating the curative principles and the active phytochemical constituents to test their efficacy in the health care needs as the same may be lost over a period of time. Much of the modern scientific medicines have evolved from traditional medicines. The standard attained in modern medical practice on the treatment of disease is therefore as a result of continued scientific study and investigation which have thus produced a wealth of information about the nature and physiological

activity of the many compounds extracted from plants Sonibarea and Gbileb (2008). Documenting the indigenous knowledge through ethno botanical studies is important for the conservation of biological resources as well as their sustainable utilization.

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