

## Traditional Remedies Used by the Inhabitants of Keezhakrishnanputhoor - A Coastal Village of Kanyakumari District, Tamilnadu, India

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### Abstract

**Objective:** Traditional medicinal practices by the people of Keezhakrishnanputhoor village of Kanyakumari district, Tamilnadu, India were documented by Participatory Rural Appraisal (PRA) method and interview schedules.

**Key Findings:** A total of 43 taxa belonging 41 genera and 28 families used to cure 23 different ailments were recorded. Most of the plants were used in the treatment of fever, intestinal worms, cold, cough, etc. Plants belonging to the family Euphorbiaceae and Liliaceae were the predominantly used taxa. The information on binomial with family, plant parts used, method of preparation, precise dose and mode of use to treat various ailments are elucidated.

**Conclusions:** The data recorded can possibly be used as the potential source for discovering modern medicine. Further investigations are used to identify the availability of chemical compounds present in various medicinal plants, which are useful for producing more number of pharmaceutical drugs in low cost.

**Keywords:** Herbal medicine; Kanyakumari; Keezhakrishnanputhoor; Traditional knowledge

**Abbreviations:** PRA: Participatory Rural Appraisal; WHO: World Health Organization

### Introduction

Herbal medicines are considered as the oldest forms of healthcare known to mankind [1]. According to World Health Organization (WHO) ca. 65-80% of the world's population in developing countries depends on plant parts for their primary healthcare due to their poverty and lack of access to modern medicines [2]. Traditional knowledge about medicinal plants has been passed on orally from generation without any written document and is still retained by various indigenous groups of people around the world [3]. Traditional medicines are easy to consume by the rural people because they were obtained from the local plant species seen around us.

Traditional knowledge on uses of plant parts as medicine used by the tribal and rural people were well documented in many literatures [4-11]. It has been estimated that about 35,000 plant taxa are being used for medicinal purposes, whereas in India, more than 7,000-7,500 plant taxa are used for their therapeutic efficacy [3,12,13]. There are still big gaps in the work of completing an exhaustive inventory of the medicinal plants of India. There is at the moment no exhaustive and reliable inventory available of all the medicinal plants of India used different ethnic communities in different ecosystems. Keeping this fact, an attempt has been made to document the ethnobotanical wealth of the agriculturists of the Keezhakrishnanputhoor village of Kanyakumari district, Tamilnadu, India.

### Methodology

Keezhakrishnanputhoor, a coastal village situated along the southwest coast of Kanyakumari district, Tamilnadu, India. The vegetation of this area is dominated by coconut (var. west coast tall), mango, palmyra palm, tamarind, etc. The communities residing in this area are Nadars, Pariyars and Muslims. Majority of the people of this area are agriculturists and they mainly depend on the agroforestry plants for their livelihoods. Women play a major role in medicinal practices of this area.

The investigation was carried out during May 2013 to June 2014. Information was collected through direct field visits interviewing the elderly women with in the age group of 35-75 in their local language (Tamil). The data were systematically recorded in the field itself. A total of 14 informants were interviewed during the study period. Vernacular name, parts used, mode of preparation and dosage to cure different ailments were collected and recorded from those people. Plants specimens were identified with the local and regional floras [14-16]. Information on medicinal usage of plant species has been recorded and the details are tabulated (Table 1).

### Result and Discussion

In the present study, a total of 43 plant species belonging to 41 genera and 28 families used in the treatment of 23 different ailments were recorded. Most of the plants recorded were used as food as well as medicine by the people residing in the village of Keezhakrishnanputhoor. Family-wise distribution of medicinal plants shows that Liliaceae and Euphorbiaceae are the dominant families in terms of medicinal usage with 3 species each followed by Amaranthaceae, Acanthaceae, Arcaceae, Apiaceae, Asclepiadaceae, Rutaceae, Zingiberaceae, Poaceae, Myrtaceae and Fabaceae with 2 species each whereas, 14 families were monospecific. Of the 43 plant species recorded, 10 species were used in the treatment of fever, 7 species were used to treat intestinal worms, cold and cough, 5 species were given to pregnant ladies for gas problems, digestion and to maintain good health of the baby, 4 species were used to treat wounds, ulcer, cholera, small pox and chicken pox,

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Sl. No	Plant Name	Family	Vernacular Name	Parts Used	Nature of the Drug	Preparation	Diseases	Application
1.	<i>Aerva lanata</i> (L.) Juss. ex Schultes	Amaranthaceae	Sirupulai	Whole Plant	Decoction	Whole plant boiled in water and filtered	Kidney stones	1 cup taken orally for 7 days
2.	<i>Allium cepa</i> L.	Liliaceae	Vengayam	Bulb	Paste	Grind well	Wounds caused by glass pieces	Tie in the wounded region till it gets cured
3.	<i>Allium sativum</i> L.	Liliaceae	Vellaipoondu	Bulb	Paste	Cooked and grind well	Gas problems in Pregnant ladies	Taken orally once in a week
4.	<i>Aloe vera</i> (L.) Burm. f.	Liliaceae	Sothukathalai	Leaf	Gel	As such	Ulcer	A small spoon of gel taken orally once for 41 days
							Diabetes	A small spoon of gel taken orally once daily
5.	<i>Amaranthus viridis</i> L.	Amaranthaceae	Arakeerai	Stem, Leaf	Cooked	-	Piles	Taken orally once in a week
6.	<i>Anacardium occidentale</i> L.	Anacardiaceae	Kolamavu	Thalamus	Juice	Crush well	Digestion problems	Taken orally once for 1 or 2 days
7.	<i>Andrographis paniculata</i> (Burm.f.) Wall. ex Nees	Acanthaceae	Siriyangai	Leaves	Paste	Grind well	Poisonous bites caused by insects	Taken orally twice for 3 days
8.	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Vembu	Bark	Decoction	Boil along with bark of <i>Moringa oleifera</i> , few leaves of <i>Tephrosia purpurea</i> , <i>Pergularia daemia</i> , and a small piece of <i>Zingiber officinale</i> dried rhizome	Fever	Taken orally twice for 2 days
				Tender Leaves	Paste	Grind well with garlic powder	Intestinal worms	Taken orally once
					Decoction	Boil along with the leaves of <i>Ocimum tenuiflorum</i> , seeds of <i>Coriandrum sativum</i> and a small piece of <i>Zingiber officinale</i> dried rhizome	Fever	Taken orally for a few days
9.	<i>Brassica oleracea</i> L. var. <i>capitata</i> L.	Brassicaceae	Muttaikose	Flower	Paste	Grind well	Gas problems	Taken orally twice with a cup of water
10.	<i>Borassus flabellifer</i> L.	Arecaceae	Panai	Tender fruit	Gel	Taken as such	Act as a coolant to the body for small pox and chicken pox	Taken orally till it completely gets cured
				Ripened fruit		Crush and apply	Hair wash	Applied on hair once in a month while bathing
11.	<i>Carica papaya</i> L.	Caricaceae	Pappali	Ripened fruit	Raw	-	Intestinal worms	Taken orally at the time of problem
				Leaf	Paste	Take tender leaves and grind well	Chikungunea	Taken orally once in morning for 3 days
12.	<i>Citrus sinensis</i> (L.) Osbeck	Rutaceae	Orange	Fruit	Raw	-	Act as a coolant to the body for small pox and chicken pox	Taken orally till it completely gets cured
13.	<i>Cleome gynandra</i> L.	Capparaceae	Thaivalai	Leaf	Paste	Grind well with little lime	Migraine	Apply externally on forehead for 7 days
					Juice	Crush well	Ear ache	Poured into the ear twice for 2 days
14.	<i>Cocos nucifera</i> L.	Arecaceae	Thennai	Tender fruit	Water	-	Act as a coolant to the body for small pox and chicken pox	Taken orally till it completely gets cured
15.				Fruit coir	Juice	Grind and crush. Juice obtained is boiled along with the leaves of <i>Tylophora indica</i> in a mud pot and filtered.	Wounds caused by poisonous objects like Nails, spines etc	Applied on the affected region for 3 days
16.	<i>Coriandrum sativum</i> L.	Apiaceae	Kothamalli	Leaves	Decoction	Boil along with seeds of <i>Trigonella foenum-graecum</i> and leaves of <i>Moringa oleifera</i> , <i>Murraya koenigii</i> and water	Pregnant ladies to maintain the health of baby	Taken orally once in a week

17.	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Arugampul	Leaves	Paste	Grind well	Health Improvement	Taken orally along with milk daily in early morning
18.	<i>Euphorbia tirucalli</i> L.	Euphorbiaceae	Kodukalli	Leaves	Juice	Leaf burnt and crushed	Intestinal Problems of small children	½ spoon of juice is given orally at the time of problem
19.	<i>Ferula asafoetida</i> L.	Apiaceae	Perungayam	Resin	Decoction	Boiled along with bulb of <i>Allium sativum</i> and <i>Zingiber officinale</i> rhizome	Intestinal problems	Taken orally once
	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Semparuthi	Flower petals	Raw		Ulcer	Taken orally once in a week
20.	<i>Jatropha curcas</i> L.	Euphorbiaceae	Kattamanaku	Leaf	Latex	Pinch off the leaf from the stem and collect latex	Tooth ache	Applied on the infected teeth till it gets cured
							Cuts	Applied on the wounded region for 2 days
21.	<i>Justicia adhatoda</i> L.	Acanthaceae	Adatodai	Leaves	Vapour	Boiled along with the few leaves of <i>Azadirachta indica</i> , <i>Ocimum tenuiflorum</i> , rhizome of <i>Zingiber officinale</i> and leaves and dried fruits of <i>Piper nigrum</i> in a closed pot.	Cold	Inhale the vapour twice for 2 days
22.	<i>Moringa oleifera</i> Gaertn. Fruct.	Moringaceae	Murungai	Flowers	Cooked	-	Ulcer	Daily usage controls ulcer
				Leaves	Decoction	Taken along with a little salt	Pain caused during menstrual cycle	Taken orally once for 3 days
					Paste	Grind well	Intestinal problems	Taken orally once
23.	<i>Musa paradisiaca</i> L.	Musaceae	Vazhai	Pseudo-stem	Juice	Grind well and filter	Kidney stones	1 cup taken orally for 7 days
24.	<i>Ocimum basilicum</i> L.	Lamiaceae	Tirunirrupachillai	Leaves	Juice	Crush well	Ear ache	Poured in to the ear twice for 2 days
25.	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Tulasi	Leaves	Decoction	Boiled along with leaves of <i>Azadirachta indica</i> , dried rhizome of <i>Zingiber officinale</i> and dried fruits of <i>Piper nigrum</i>	Cold and Cough	Taken orally once for 3 days
26.	<i>Oryza sativa</i> L.	Poaceae	Nell	Grains	Decoction	Roasted grains are boiled along with the leaves of <i>Psidium guajava</i> , rhizome of <i>Zingiber officinale</i> and resin of <i>Ferula asafetida</i>	Cholera	Taken orally twice for 2 days
27.	<i>Phyllanthus amarus</i> Schum. & Thonn.	Euphorbiaceae	Keezhaneli	Whole plant	Decoction	Boil in water and filter	Jaundice	Taken orally twice for 3 weeks
28.	<i>Piper longum</i> L.	Piperaceae	Thippili	Dried fruit	Powder	Grind well	Cough	Taken orally twice for 2 days
29.	<i>Piper nigrum</i> L.	Piperaceae	Nallamilagu	Dried fruit	Paste	Grind along with bulb of <i>Allium cepa</i>	Cold	Apply externally on forehead for 5 days
30.	<i>Psidium guajava</i> L.	Myrtaceae	Koyya	Fruit	Raw	-	Increase blood after malarial fever	Taken orally till it completely gets cured
31.	<i>Punica granatum</i> L.	Punicaceae	Mathulai	Fruit	Raw	-	Increase blood after malarial fever	Taken orally till it completely gets cured
32.	<i>Rosa damascena</i> Mill. Gard.	Rosaceae	Irosa	Flower	Paste	Mix dried petal power along with turmeric powder and water	Pimples	Applied externally during bathing
33.	<i>Santalum albam</i> L.	Santalaceae	Santhanam	Wood	Paste	Rub well with little water in stone to make paste	Pimples	Applied externally during bathing
34.	<i>Solanum nigrum</i> L.	Solanaceae	Manatakkali	Leaves	Decoction	Boil in water and filter	Ulcer	Taken orally once for 30 days
35.	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Naval	Seeds	Powder	-	Diabetes	Taken orally along with hot water early morning
36.	<i>Trigonella foenum-graecum</i> L.	Fabaceae	Venthayam	Seeds	Paste	Boil and Grind well along with the rhizome of <i>Allium sativum</i>	Pregnant ladies for easy digestion	Taken orally once in a week
					Paste	Grind well along with the rhizome of <i>Allium cepa</i>	Gas problems	Taken orally once at the time of problem
37.	<i>Tylophora indica</i> (Burm. f.) Merr.	Asclepiadaceae	Nancharuttan	Roots	Paste	Grind well along with the rhizome of <i>Allium cepa</i> and salt	Mumps	Applied in the affected region for 3 days

38.	<i>Vigna radiata</i> (L.) R. Wilczek	Fabaceae	Pachaipayir	Seeds	Paste	Grind well along with the seeds of <i>Coriandrum sativum</i>	Head ache	Applied on the head for 2 days
39.	<i>Vitis vinifera</i> L.	Vitaceae	Grapes	Fruit	Raw	-	Act as a coolant to the body for small pox and chicken pox	Taken orally till it completely gets cured
40.	<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Injii	Rhizome	Decoction	Boil in water and filter	Cough	Taken orally for 2 days

Table 1: Medicinal plants used by the inhabitants of Keezhakrishnanputhoor village.

3 species taken for headache, pimples, gas problems, diabetes, earache, kidney stones, and mumps and one species for digestion, hair wash, health improvement, jaundice, piles, and poisonous bites.

The plant parts were used as decoction, paste, powder, cooked and as raw form (Figure 1). Paste and decoction were the mainly used form of medicine in the study area. People use whole plant, leaves, stem, pseudostem, roots, barks, seeds, fruits, rhizome, thalamus, flower, gel, resin and latex for their medicinal purposes (Figure 2). Fresh plant parts were commonly used for the medicine preparation. Leaves were predominantly used than other parts of the plants for the medicinal purpose and it was also agreed by the precedent ethnobotanical researches [17-20]. Juice and paste formulations were quite common for external applications [20] and internal application predominates over external application which was also cited in the earlier studies [17,21,22] (Figure 3). Though many plant species were utilized as a single drug for the treatment of certain diseases, a few plant species were given in combination with other plant species also.

Leaf paste of *Andrographis paniculata* (Burm.f.) Wallich ex Nees is used to treat poisonous bites [17,23,24]. *Aloe vera* (L.) Burm. f. gel and *Solanum nigrum* L. leaf decoction is used to cure ulcer [19,25,26]. Whole plant juice extracted from *Phyllanthus amarus* Schum. & Thonn. is used to cure jaundice [27]. Dried seed powder of *Piper nigrum* L. is

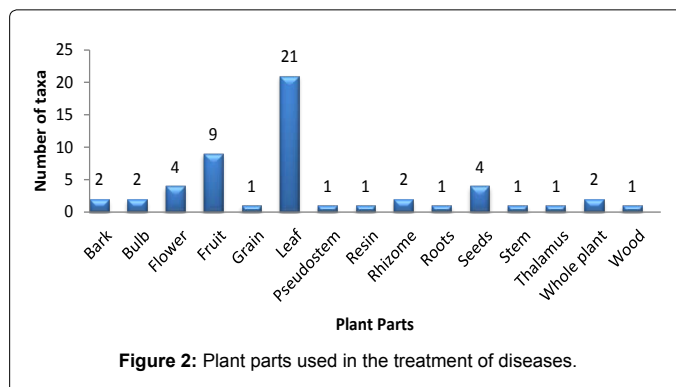


Figure 2: Plant parts used in the treatment of diseases.

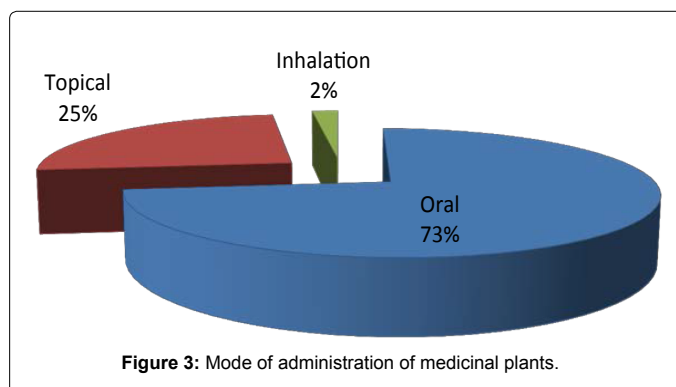


Figure 3: Mode of administration of medicinal plants.

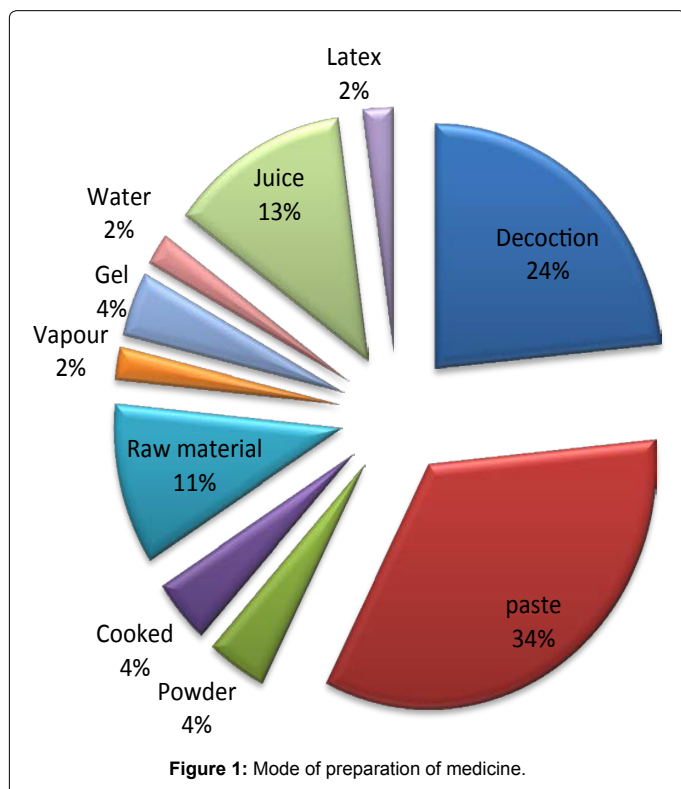


Figure 1: Mode of preparation of medicine.

used to cure cold and cough [17]. Tender leaves of *Azadirachta indica* A. Juss. was taken to relieve intestinal worms [26]. *Jatropha curcas* L. is used to cure tooth ache [28] and *Syzygium cumini* (L.) Skeels powder was used by the diabetic patients [20,29].

### Conclusion

The findings of this study reveal that common plant species seen around us also play an important role in the treatment of various ailments. Clinical investigations take a long time and are highly expensive, so the traditional medicinal knowledge is one of the best sources of treatment of different diseases. Due to the impact of urbanization, partial modernization and over exploitation of plant species for medicinal purposes there is a chance for disappearance of some plant species in near future. Therefore, appropriate measures should be taken to conserve these plants for healthy and disease free life.

### Conflict of Interest

The authors declare that they have no conflict of interest to disclose.

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