



## PHYTOTHERAPEUTIC ANALYSIS OF PLANTS USED BY LOCAL INHABITANTS OF SANAMAVU FOREST, KRISHNAGIRI DISTRICT, TAMILNADU, INDIA.

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### ABSTRACT

Phytotherapeutic plants still essential for utilization in primary healthcare system, especially for people living near the protected area. Even though medicinal plant knowledge is rich in the indigenous people and traditional healers, not sharing the usage of the plants will poor the knowledge of medicinal plants usage in future. This study aimed at documenting the wild ethnomedicinal plants and to evaluate their importance in the healthcare in villages of Sanamavu Forest, Krishnagiri district of Tamil Nadu, India. The information was collected from traditional healers through interview during field visits. There was 25 important ethnomedicinal plant species belonging to 19 families were recorded from the study area, important ethnomedicinal plant like *Clematis zeylanica* (L.) Poir., *Corallocarpus epigaeus* (Rottl.) Ex Willd., *Aristolochia indica* L., *Ruta graveolens* L. were found. There is no significant difference between the habit of medicinal plant and the system of medicine. Many therapeutic plants were not only useful to cure single disease but also help to cure many diseases. An ethnomedicinal plant was too useful to cure diseases without causing side effect. It is an urgent need to preserve ethnobotanical information before they get vanished. Continuous efforts should be made to collect the information from the traditional healer before diminishing.

**Key Words:** Ethnomedicinal, Phytotherapeutic, *Clematis zeylanica*, Traditional knowledge, Sanamavu forest.

### INTRODUCTION

Ethnomedicine is the study of cultural concepts of health, disease and illness, and of the nature of local healing system. World Health Organization predicted almost 80% of the people globally rely on locally available plant resources for primary health care, since western pharmaceutical products are expensive, inaccessible or unsuitable for local population, about 90% of the nation's medicinal plants are found in forest habitats (WHO, 2003). In spite of the many achievements in the allopathic medicines, the Indian System of Medicine still carry on with providing medicinal care to majority of the people on account of their low price with no side effects (Kokataet *et al.*, 2002). Atharveda, Charak Samhita, Sushruta Samhita is the old literature which has more information about ethnomedicinal plants (Kumar *et al.*, 2005). In most of the developing countries traditional medicine and medicinal plants are used for the maintenance of good health it has been widely ascertained (UNESCO, 1996).

Indigenous population still depends upon medicinal plants to treat several ailments and they used *Hemelia patens* most frequently in papantla, veracruz, mexico (Ednardoet *et al.*, 2019). Medicinal plants were reported to be effective due to the presence of bioactive secondary metabolites such as alkaloids, tannins, flavonoids, and phenolic compounds, which have interesting pharmacophores (Osuagwuet *et al.*, 2015). In the last few decades there has been a rapid growth in the field of traditional medicine (Thamacin, 2014). An increasing cartel on the use of medicinal plants in the industrialized communities has been traced to the extraction and development of several drugs from traditionally used herbal remedies (UNOSCO, 1998). About 20% of the drugs in modern allopathic medicine are derived from plant sources (FAO, 1995). Drugs obtained from herbs are safer in the treatment of various diseases (Ayyanar and Ignacimuthu, 2005). Conservation of traditional knowledge for future generation is vital, as loss has already been recorded due to multiple causes. The need for novel and more effective drug derived from natural products is more important (Fabien Schuotzet *et al.*, 2020).

International trade in overall medicinal plants and their products alone is expected to be five trillion US dollars by the year 2050 (Anthira, 2020). An ethnomedicinal survey of medicinal plant was useful and long-lasting document, which can contribute to preserve knowledge of medicinal plants in the villages and also stimulate the interest of future generations on traditional healing practices (Vijayarajand Jaculin Chinna Rani, 2018).

## MATERIALS AND METHODS

The present study of uses of ethnomedicinal plants from sanamavu forest is situated in Krishnagiri district of Tamil Nadu, India (Plate-1) Total size of the forest is 819 meters and 17.79 square kilometers (Km<sup>2</sup>). Sanamavu forest is located between 12.69°N and 77.92°E. It is situated Southeast of Thorapalli, Northeast of Bale Kunda and 8 Km southeast by Samanapalli village, 9Km southwest by Kelamangalam village, 9Km southeast by Seebam village and 10Km southeast by Ettipalli village, nearest town station is Hosur. The plants were collected with help of traditional healers from sanamavu forest during field trips. Photographs of the ethnomedicinal plants were taken and identified botanical name, family, local name, medicinal uses and system of medicine.

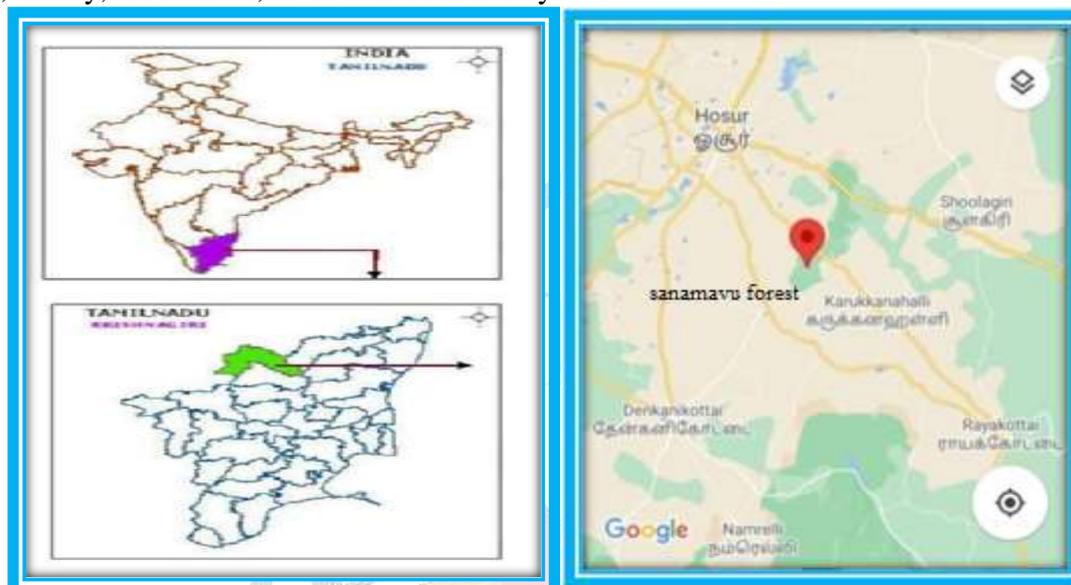


Plate-1 Location map of the selected study area- Sanamavu Forest

## RESULTS AND DISCUSSION

In this analysis of therapeutic plants collection carried out in Sanamavu forest, Hosur, Krishnagiri, Tamilnadu, India, where found medicinally important plant species, which are used to cure many diseases such as stroke, rheumatism and blood pressure, tumor, diabetics, snake bite, infertility, snakebite, fever, diabetes, eczema, toothache, cough, cold, ulcer, kidney stone, piles, tumor, asthma etc.,. Traditionally, treasure of insight has been passed on engendering without any written document and still retained by various aboriginal groups around the world (Perumal Samy and Ignacimuthu, 2000).

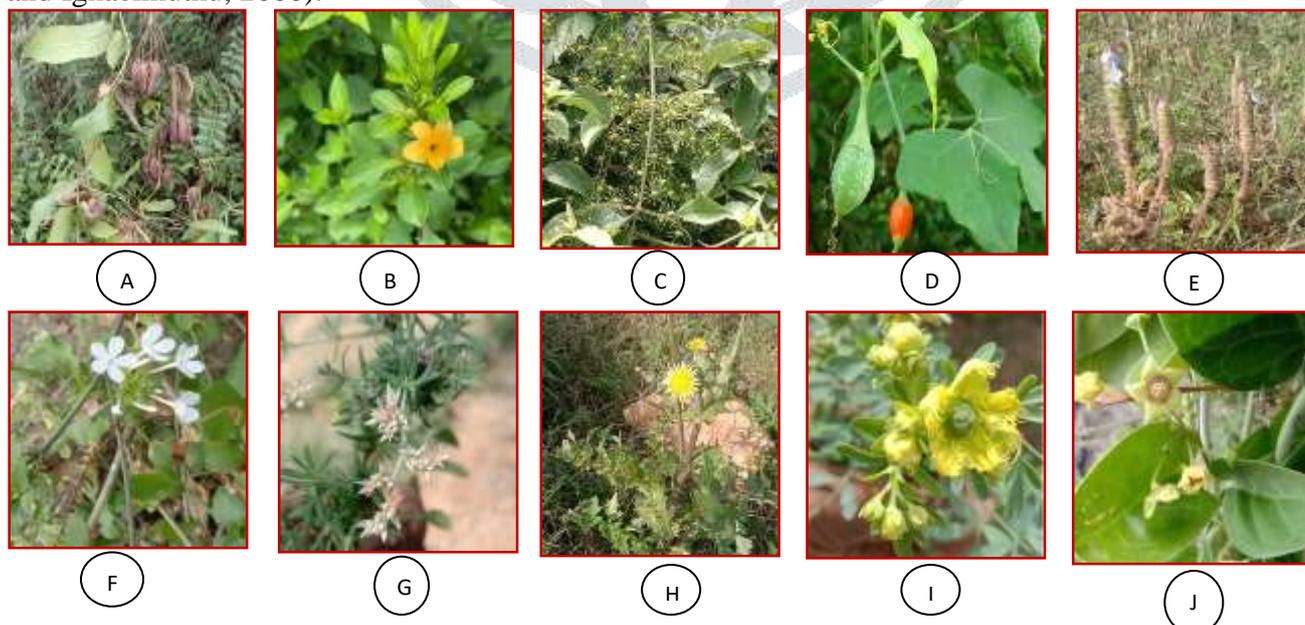


Plate-2: Habit of the selected samples

A) *Aristolochia indica* L. B) *Barleria prionitis* L. C) *Clematis zeylanica* (L.) Pori.

D) *Corallocarpus epigaeus* (Rottl.) Ex Willd. E) *Plectranthus amboinicus* (Lour.) Spreng. F) *Plumbago zylanica* L. G) *Polycarpaeacorymbosa* (L.) Lam. H) *Sonchus oleraceus* L. I) *Ruta graveolens* L. J) *Tylophora indica* (Burm f.)

Data collected about phototherapeutic plants used by local inhabitant of Sanamavu forest (Table-1) are tabulated with their binomial name, family, vernacular names, uses, system of medicine and reference.

**Table -1: Showing phytotherapeutic plants in selected area**

S. No	Binomial Name	Family	Vernacular name	Habit	Uses	System of Medicine	References
1	<i>Andrographis peniculata</i> (Burm.f) Nees.	Acanthaceae	Nilavambu	Herb	Leaves used to treat snakebite, diabetes & fever	Ayurveda Unani & Siddha	Radias D.K. <i>et al.</i> , (2020)
2	<i>Aristolochia indica</i> L.	Aristolochiaceae	Eswaramooli	Climber	Leaves used to treat snakebite, eczema.	Ayurveda	Abhijit Dey <i>et al.</i> , (2011).
3	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Veppamaram	Tree	Bark, Leaves and Flowers used to treat diabetes.	Ayurveda, Siddha, Unani,	Shipra Gautam <i>et al.</i> , (2021).
4	<i>Barleria prionitis</i> L.	Acanthaceae	Chemmulli	Shrub	Leaves used to treat fever, toothache & whooping cough	Ayurveda	Banerjee D. <i>et al.</i> ,(2012).
5	<i>Bidens pilosa</i> L.	Astraceae	Mukkuthi	Herb	Leaves used to treat snakebite, Tumors and wounds.	Folk medicine	Arlena P. Bartolome <i>et al.</i> , (2013).
6	<i>Blepharis maderaspatensis</i> (L) Heyne. Ex. Roth.	Acanthaceae	Nethirappndu	Herb	Leaves are used to treat headache &heals wound	Ayurveda & Siddha.	Devang Y.Joshniet. <i>al.</i> , (2021).
7	<i>Carissa carandas</i> L.	Apocyanaceae	Kilakkai	Shrub	Root used to treat itches, rheumatism.	Ayurveda, Unani and Homoeopathy.	Akanshasinghet. <i>al.</i> , (2015).
8	<i>Cassia auriculata</i> L. Sp. SL	Caesalpinaceae	Aavarai	Shrub	Leaves and flowers reduce body heat & diabetes.	Ayurveda & Siddha.	Guruprassad C. Nilleet. <i>al.</i> , (2021).
9	<i>Clematis zeylanica</i> (L.) Pori. Syn: <i>Naravelia zeylanica</i> (Linn.) DC.	Ranunculaceae	Vatamkolli	Climber	Leaves used to treat stroke & Blood Pressure.	Ayurveda	Nikhil Varghese <i>et al.</i> , (2017).
10	<i>Corallo carpusepigaeus</i> (Rottl.) Ex Willd.	Cucurbitaceae	Garudankilangu	Climber	Tubers used to treat snakebite & skin disease	Ayurveda & Siddha.	Kishor A. Kothawader, (2018).
11	<i>Enicostemma axillare</i> (Lam.) A. Raynal.	Gentianaceae	Vellarugu	Herb	Leaves used to treat snakebite &rheumatism	Ayurveda, Siddha& Unani	Jaishree V. <i>et al.</i> ,
12	<i>Ficus religiosa</i> L.	Moraceae	Peepal tree &Arasamaram	Tree	Leaves used to treat asthma and stroke	Ayurveda & Siddha.	Chinmay Kapileet <i>al.</i> , (2022).
13	<i>Kigelia pinata</i> D.C.	Bignoniaceae	Yaani pudukkan	Tree	Rheumatism and Cancer	Folk medicine.	Bishwo Raj Dhunganaet. <i>al.</i> , (2016).
14	<i>Lannea coromandelica</i> Houtt. Merrill.	Anacardiaceae	Odiyamaram	Tree	Bark used to treat ulcer and dysentery	Ayurveda &Siddha,	Rajesh R. (2021)
15	<i>Melia azedarach</i> L.	Meliaceae	Malaivembu	Tree	Leaves& bark used to treat Malaria, rheumatism	Ayurveda & Unani	Deepika Sharma & Yash Paul. (2016).
16	<i>Mundulea sericea</i> (Willd.) A. Chev.	Fabaceae	Kattupurachu	Tree	Root used to treat miscarriage women (infertility)	-	Bester <i>et al.</i> , (2008).
17	<i>Pedaliium murex</i> L.	Pedaliaceae	Aanienerunji	Herb	Leaves used to treat urinary infection and kidney stone.	Ayurveda	Ganesh R. Bharskar, (2020).
18	<i>Pergularia daemia</i> (Forssst) Chiov.	Asclepiadaceae	Velipparuthi	Climber	Leaves and roots used to treat diabetics.	Ayurveda & folk medicine.	Raman R Chandaket <i>al.</i> , (2019).
19	<i>Plectranthus amboinicus</i> (Lour.) Spreng.	Lamiaceae	Karpooravalli		Leaves used to treat sore throat, cough and asthma.	Ayurveda, Siddha &Unani	Punetkumaret. <i>al.</i> , (2020)

20	<i>Plumbago zylanica</i> L.	Plumbaginaceae	Chithiramoolam	Climber	Leaves are used to treat piles, itching and rheumatism	Ayurveda, folk siddha&unani,	Manu Pant <i>et. al.</i> , (2012).
21	<i>Polycarphaea corymbosa</i> (L.) Lam.	Caryophyllaceae	Nilachadachi	Herb	Roots and leaves paste applied external for snakebite	Ayurveda, siddha&unani.	Sindhu S. Manorama S. (2012).
22	<i>Ruellia tuberosa</i> L.	Acanthaceae	Kiranthinayagam	Herb	Leaves used to treat Diabetics	Ayurveda and folk medicine	Trinh NhatThi Pham (2022).
23	<i>Ruta graveolens</i> L.	Rutaceae	Aruvathampachai	Herb	Leaves used to treat women after the delivery	Ayurveda, Homoeopathy, siddha&unani	Kannan R. Babu UV. (2012).
24	<i>Sonchus oleraceus</i> L.	Asteraceae	Kootamulangi	Herb	Leaves used to treat tumor and diarrhea	Ancient medicine system	Abhiject V. Puri <i>et. al.</i> , (2018).
25	<i>Tylophora indica</i> (Burm f.)	Asclepiadaceae	Naay-palai	Climber	Leaves used to treat asthma, cancer & fever	Ayurveda, siddha & folk	Sabitha Rani A. <i>et.al.</i> , (2012).

## ONE WAY ANOVA TEST

### Research Hypothesis

**Null Hypothesis:** There is no significant difference between the habit and the system of medicine.

**Alternate Hypothesis:** There is a significant difference between the habit and the system of medicine.

Table -2: Anova Result - Output Statistics - Oneway

ANOVA						
	Sum of Squares	df	Mean Square	F	Sig.	
Siddha	Between Groups	.173	3	.058	.200	.895
	Within Groups	6.067	21	.289		
	Total	6.240	24			
Unani	Between Groups	.325	3	.108	.409	.748
	Within Groups	5.300	20	.265		
	Total	5.625	23			
Folk	Between Groups	.325	3	.108	.596	.625
	Within Groups	3.633	20	.182		
	Total	3.958	23			
Homeopathy	Between Groups	.267	3	.089	1.135	.359
	Within Groups	1.567	20	.078		
	Total	1.833	23			
Ancient	Between Groups	.058	3	.019	.432	.732
	Within Groups	.900	20	.045		
	Total	.958	23			
Ayurveda	Between Groups	.403	3	.134	1.208	.332
	Within Groups	2.222	20	.111		
	Total	2.625	23			

### Interpretation

There is no significant difference between the habit and the system of medicine (Folk, Unani, Homeopathy, ancient Medicine, Ayurveda & Siddha) where the Probability for Siddha is 0.895, for Folk is 0.625, for Unani is 0.745, for Homeopathy is 0.359, for ancient medicine is 0.732 and for Ayurvedha is 0.332 which is greater than 0.05 at the

confidence level of 95%. It is concluded that there is no significant difference between the habit and the system of medicine.

### Relationship between Dependent and Independent variables

The diagram shows the relationship between the habit and the system of medicine. In this analysis, under the habit, 1 represents Herbs, 2 represents the Shrub, 3 represents the Climber and 4 represents the Tree. Using this diagram, we can find the individual relationship between the dependent and independent variables.

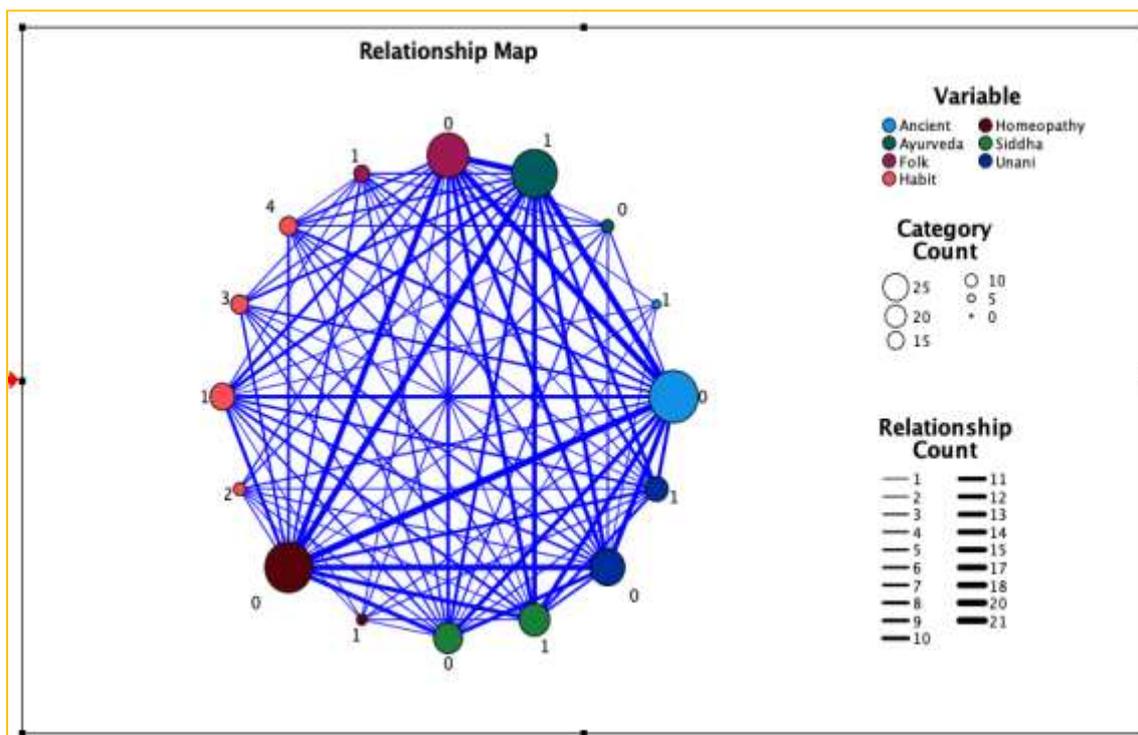


Plate -3 Relationships between Ethnomedicinal plants habit and used in Medicine system

### SUMMARY AND CONCLUSION

Since ancient time people have tried to detect medications to alleviate pain and cure different types of illnesses. Due to development of modern medicine, utilization of medicinal plants and the healing properties were vanished. But still Phytotherapeutic plants are the major source of medicine for the local communities and also major tool for the development of new drugs; safer in the treatment of various diseases. Happy life is living without illness, for which we have to collect and conserve the information about ethnomedicinal plants. In the relationship between Phytotherapeutic plants habit and the system of medicine not shows any significance. This phytotherapeutic analysis of plants used by local communities in Sanamavu forest not only useful to identify therapeutic plants but also helps the botanist and researchers to continue further analysis through pharmaceutical industries to producing new drugs for mankind.

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