

## RESEARCH ARTICLE

## ETHANOMEDICINAL PLANTS USED BY THE PANIYA TRIBES IN GURUSIMALAI HILLS, PANDALUR, NILIGIRI DISTRICT

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## Abstract

In the present report an attempt has been made to document the available ethno-medicinal plants and their application among Paniya tribes in Gurusimalai Hills, Pandalur, Niligiri district. Regular field trips were conducted during the months of July-November 2022. The information about the plants was recorded by means of discussion using standard questionnaire with the informers along with the field visits during the collection hours. According to the report of study, a total about 70 plant species belonging to 62 genera and 35 families for treating various kinds of ailments such as Fever, bronchitis, piles, ulcer, abdominal disorders, skin diseases, urinary discharges, snake bite, asthma, diabetes, heart diseases and weight loss. Among the parts, Root, leaves, fruits and Seeds were mainly utilised by the informants. A detailed analysis concluded that, Leaves (46 species) were the most frequently used part of a plant followed by the Fruit (15 species), Root (10 species), Seed (9 species), Whole plant parts, Flower and Bark (each 4 species), Stem (2 species) and Tuber (1 species). The most commonly used medicinal plants fell under shrub forms (25 species) followed by Herb (19 species), tree (13 species), Climber (12 species) and succulent herb (1 species). The mode of formulation preparation or administration was observed to be in the form of juice (27 species) followed by past (15 species), decoction (14 species), Powder (11 species), and vapour (3 species). The present study concluded that the native people in the study area have their unique way of utilising medicinal plants to treat different kinds of ailments. This might pave the path for developing a scientifically validated botanical or lead to semi-synthetic derivatives intended for modern medicine.

**Keywords:** Ethnomedicinal Plants, Paniya Tribes, Gurusimalai Hills and Pandalur.

## 1. INTRODUCTION

India is having a rich diversity of medicinal plants. The supply base of 90% of herbal plants is used in the mass production of Ayurveda, Siddha, Unani, and Homoeopathy systems of medicines. It was mainly collected from the forest. This wild source is gradually reduced day by day. Therefore, there is a necessity for the conservation and sustainable use of medicinal plants. In the future, ethnobotany may play an important role in sustainable development and biodiversity conservation <sup>(1)</sup>. Plants and their derivatives are used for the treatment of diseases, such plants are known as herbal medicine, which is considered part of folk or traditional medicine. For many centuries, treatment with medicinal plants was the only resource available for numerous ethnic groups, and nowadays, plants are still used in traditional medicine to treat and prevent many diseases <sup>(2-3)</sup>. These medicinal plants lie in some chemical

substances that produce a definite physiological action on the human body <sup>(4)</sup>.

Ethnobotany is defined as the study of the relationship between people and plants and most commonly refers to the study of ancient uses of plants. By the way of explanations, a study that explores the role of plants as medicine, sustenance, and natural resources is a gateway to God. India is having rich vegetation with a wide variety of plants, because of the furthestmost variations in geographical and climatic conditions prevailing in the country <sup>(5)</sup>. Medicinal plants have obtained global importance in the alternative healthcare system, for their proven and effective curative properties. Certain plant antidotes used in modern medicine have an ethnobotanical background <sup>(6-7)</sup>. The tribals have developed their traditional knowledge related to plant.

Ethnobotanical study in Gurusimalai hills, Pandalur in Nilgiri District is bound especially by the traditional knowledge of tribes. The people who

used many plants are unknown to us and the tribal residents only know it. Hence understanding the established knowledge through tribal participative research is necessary to carry on the knowledge to the next generations. To objective of the study traditional knowledge of tribes and villagers of pandalur, Nilgiri district, and Tamil Nadu through an ethnobotanical survey.

## **2. MATERIALS AND METHODS**

### **2.1. Study Area**

The present study were conducted in the Gurusimalai hills range located near Pandalur of Nilgiris district in Tamil Nadu. The Gurusimali hills are situated at 11°29' 0" N.76°20' 0" E. at an altitude of 1100 meters. The average annual temperature in pandalur is 22°C. The average annual rainfall is 3086mm. Pandalur forest is a part of Western Ghats covered with mixed deciduous vegetation.

### **2.2. Tribes of Gurusimali Hills**

Paniyas is an ethnic group of India. They inhabit the area of the Nilgiris, in the states of Tami Nadu. The paniyas also known as paniyas. A scheduled tribe, they have a population of around 94.000 individuals in Tamil Nadu 10.134. Following the abolishment of the slave - holding system, the paniyas were resettled in different areas established by the government. Paniyas were also historically reputed for their boldness. The paniyas today are a scheduled tribe. Paniyas spoken both at home and during religious ceremonies. Some paniyas also use other languages such as Malayalam, Tamil, while the paniyas in Tamilnadu use the Tamil script. They are concentrated mainly in the gudalur and pandalur taluk of the Nilgiris district. of Tamil Nadu. Most of the paniyas tribes have a great knowledge of medicinal plants that are used for first aid remedies to treat cough, cold, fever. headache. poisonous bites and some other ailments.

### **2.3. Methods of Data Collection**

The present investigation was undertaken a view to study the Ethnomedicine of Paniyas from Gurusimalai hills, Western Ghats, Nilgiris district, Tamil Nadu. A good number of aboriginal tribals inhabiting at the foot hills of Western Ghats. Field work in tribal areas is the most important part of all ethnobotanical research. Before starting with field work, preliminary information about the geographical area of study, its physiographical features, climate etc., were collected. A general idea about the tribal community was acquired from earlier publication of Paniyas tribes. Ethnomedicinal reports from the present study area were also screened.

Mainly two methods were adopted in collecting ethnobotanical information from tribal people. In the first method, the herbal practitioners and other knowledgeable persons well-acquainted with plants and their properties of that area were taken on the

field. Uses of plants as given by them were recorded and voucher specimens were also collected simultaneously, for authentication of information and future record through herbaria.

In second method, plants near to the tribal hamlets were collected and brought to the tribal physician's house. During the initial survey one person had been introduced by the villagers became the key person, who led the way to introduce to other knowledgeable informants. The person from each area of the study accompanied to the field showed the plants and information as to which health conditions the plants were used and the method of preparation and administration of remedies. At that end of each interview, specimens of the plants were collected for scientific identification and herbarium preparation following standard procedures <sup>(9)</sup>. Specimen number, local name, location and identification points were remarked on each herbarium sheet. Each of the plant material was assigned field book number and documented as to family, scientific name, vernacular name (Tamil), part used medicinal uses, plant parts that were identified as having use in ethnobotany were collected and compressed. Plants species collected were identified with the help of flora books <sup>(9-10)</sup>.

## **3. RESULT AND DISCUSSION**

### **3.1. DOCUMENTATION OF ETHNOBOTANICAL KNOWLEDGE**

The present study was carried out in the Gurusimalai hills of pandalur, the Western Ghats in the Nilgiri district. Systematic field trips were conducted throughout the paniyas tribe colony of Gurusimalai hills, during the period of July to November 2022. The work is the outcome of intensive field studies undertaken in hamlet inhabited by tribal community. Explorative field trips were regularly made twice in a month to study area for all habitants to elicit information on medicinal plant used to treat various ailments. Field work is the most significant aspect in this type of study. Extensive field trips were conducted to remote rural settlements. The interviews were conducted in the local language (Tamil), information that includes local names, plant parts used, and method of utilization was gathered from for each medicinal plants. The species mentioned by the informants were taxonomically classified. The voucher specimens were collected and identified by referring to standard floras <sup>(9-10)</sup>.

In data obtained from the held survey are presented and the result of this study has revealed a total number of 70 plant species of ethnomedicinal importance belonging to 35 families of the plant kingdom and represented by 62 genera have been documented to be used by the paniyas tribe traditional healer (Table -1 ). Traditional healers were using these plants to cure the fever, stomach ache and respiratory disorders, skin disease, joint

pains, hair loss, snakebite more number of medication were used for complicated problems such as heart diseases. Kidney disorder and skin diseases, cancer the medicinal knowledge information were taken to the field and information on medicinal plants were recorded the information were asked to explain therapies of the diseases and to list plants.

Among all families Fabaceae are the most dominant families with 7 species each followed by Solanaceae with 6 species each, Rutaceae with 5 species each, Cucurbitaceae and Malvaceae with 4 species each, Amaranthaceae, Lamiaceae and Rubiaceae with 3 species each. Acanthaceae, Areceae, Aristolochiaceae, Caesalpiniaceae, Euphorbiaceae, Piperaceae, Poaceae. Sapindaceae and Umbellifers with 2 species each. Asclepiadaceae, Asphodelaceae, Asteraceae, Capparaceae, Caricaceae, Legumes, Lythraceae, Meliaceae, Menispermaceae, Moraceae, Myrtaceae, Passifloraceae. Phyllanthaceae, Rosaceae, Sapotaceae, Verbanaceae and Vitaceae with 1 species each (Table-2 ; Figure - 2). Many plant species belonging to families to Solanaceae, Fabaceae, Malvaceae, then formation collected from this study are in agreement with the previous reports.

From Life form analysis, the most commonly used medicinal plants fell under shrub forms (25 species) followed by Herb (19 species), tree (13 species), Climber (12 species) and succulent herb (1 species) (Table - 3; Figure-3). The frequent use among the indigenous communities is a result of wealth of herbaceous plants in their own environment and Gurusimalai hills harbours more number of shrubs as compared to herb, trees and climbers.

Among the different plant parts used Leaves (46 species) were the most frequently used part of a plant followed by the Fruit (15 species), Root (10 species), Seed (9 species), Whole plant parts, Flower and Bark (each 4 species), Stem (2 species) and Tuber (1 species) (Table-4; Figure-4). Many indigenous communities throughout the world also mostly utilize leaves for the preparation of herbal medicines <sup>(11)</sup>. The reason why leaves are used mostly is that they are collected very easily than underground parts, flowers, fruits etc. <sup>(12)</sup>.

Paniyas tribes adopted various mode of preparation of medicine for curing various ailments. Various parts from different plants in the form of paste, decoction, powder, juice, infusion, pill, chrisim

and raw material were used. The paste was prepared by grinding the fresh or dried plant parts with oil or water. The powder was prepared by grinding of shade dried plant parts. The decoction was obtained by boiling plant parts in water and volume was reduced to one fourth (optional). Inhalation was done by burning of plant parts and inhaling the smoke through nose or mouth <sup>(13)</sup>. The preparation and utilization of plant parts were grouped in to eight categories. The mode of formulation preparation or administration was observed to be in the form of juice (27 species) followed by past (15 species), decoction (14 species), Powder (11 species), and vapour (3 species) Table-5; Figure - 5.

The knowledge of plants has been accumulated in the course of many centuries based on different medicinal systems such as Ayurvedha, unani and siddha. In India it is reported that ,traditional healers use 2500 plant species and 100 species of plants serve as regular source of medicine <sup>(14)</sup> since the interest in traditional medicine has been increasing ,the study of plants have gained prominence to explore the traditional knowledge particularly in developing countries <sup>(15)</sup>. India is one the most medico- culturally diverse country in the world where the medicinal plants sector is part of a time honoured tradition that is respected even today <sup>(16)</sup>.

The exploitation of natural resources by the local population has resulted in depletion of the biodiversity of forest communities. Forest degradation is usually accompanied by species extinction, reduction in biodiversity and decrease in primary productivity. Consequently, there is a growing interest in quantifying habitat characteristics like forest structure, floristic composition and species richness in India forest. The most important aspect of the tribal medicinal is that fresh plant material is used for the preparation of medicine. Alternatively, if the fresh plant parts are not available, dried plant materials are used. For this reason, several plants served as edible food and alternative remedy to cure a more than single diseases. From this study it is clear that tribals possess innate ability the character of plants and exploit the plants resources to meet their health care needs.

**Table 1: List of Ethnomedicinal Plants Used By Paniya Tribes, Gurusimalai Hills, Nilgiri District**

S.No	BOTANICAL NAME	FAMILY	VERNACULAR NAME	HABIT	PARTS USES	MODE OF ADMINISTRATION
1	<i>Abrus precatorius</i> L.	Fabaceae	Kuntrin mani	Shrub	Root	Decoction of roots it used to cure fever, bronchitis, hepatitis.

2	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Thuthi	Shrub	Leaves	The leaf paste are used for piles, ulcer
3	<i>Achyranthus aspera</i> L.	Amaranthaceae	Nayuruvi	Herb	Leaf, root	Decoction prepared from the leaf and root of this plant is given for inflammatory condition of the body. Decoction of the roots in helpful to cure abdominal disorders.
4	<i>Aglaia elaeagnoidea</i> (A.Juss.) Benth.	Meliaceae	Chokkali	Tree	Fruit	Fruit edible to fever, skin diseases.
5	<i>Aloe vera</i> (L.)Burm.	Liliaceae	Katrazhai	Succulent	Stem	This plant as used as proven to skin healer – cuts & insect bites, itching and skin swelling succulent plants.
6	<i>Amaranthus tricolor</i> L.	Amaranthaceae	Thandukeerai	Shrub	Whole Plant	Juice taken from the entire plant and drink cure urinary discharges.
7	<i>Aristolochia bracteolata</i> Lam.	Aristolochiaceae	Aduthinnappalai	Herb	Root	Decoction of roots is used to cure stomach pain.
8	<i>Aristolochia indica</i> L.	Aristolochiaceae	Garudakoli	Climber	Leaf	The leaf decoction applies on the snake bite swelling and drink cure the vomiting.
9	<i>Artocarpus heterophyllus</i> Lam.	Moraceae	Pala	Tree	Root, leaves	Root, leaves juice is used skin diseases, ulcer, asthma.
10	<i>Borreria verticillate</i> L.	Rubiaceae	Nathaisoori	Herb	Root	Root paste are used leucorrhoea.
11	<i>Calamus rotang</i> L.	Arecaceae	Pirambu	Climbing	Tuber	It used to cold, cough and fever.
12	<i>Capparis divaricate</i> Lam.	Capparidaceae	Thorrati	Shrub	Bark, leaves	This paste is used in dysentery, stomach problems.
13	<i>Capsicum frutescens</i> L.	Capparidaceae	Ganmillakai	Shrub	Fruit	The juice obtained from fruit are used for side effects of hay fever and common cold.
14	<i>Carica papaya</i> L.	Caricaceae	Pappali	Tree	Leaf, fruit	Leaf decoction cure fever, fruit juice cure cancer, diabetes, heart disease.
15	<i>Cassia auriculata</i> L.	Caesalpiniaceae	Aavarai	Climber	Fruit	Fruit used for fibre nutrition, less cholesterol and weight loss. Juice used avoid mental stress.
16	<i>Cassia fistula</i> L.	Caesalpiniaceae	Konrai	Tree	Young leaves	Foetid smell of mouth.
17	<i>Cassia sophera</i> L.	Caesalpiniaceae	Pannavarai	Shrub	Leaf flower	The dried flower and flower buds are used as substitute for tea in for diabetic patients.
18	<i>Cassia tora</i> L.	Caesalpiniaceae	Ustithagarai	Herb	Seed	Seed is mixed with water

						and ground into paste and applied to cure skin disease.
19	<i>Centella asiatica</i> (L.) Schrader	Apiaceae	Vallarai	Herb	whole plant	The leaf powder used for increasing the haemoglobin count. The whole plant boiled with water is used for memory power increase.
20	<i>Cissampelos pareria</i> L.	Menispermaceae	Ponmusuttai	Herb	Root, leaves	Juice is used for fistula, antidote, blood purification.
21	<i>Cissus quadrangularis</i> L.	Vitaceae	Pirantai	Climber	Leaf	Leaves are grinded with pepper and garlic for stomach disorders. Decoction used for fever.
22	<i>Citrullus colocynthis</i> (L.) Schrader	Cucurbitaceae	Varikurumathai	Shrub	Root	Root is ground with water and the decoction used to cure cough.
23	<i>Citrus limon</i> (L.) Burm.	Rutaceae	Lemon	Tree	Fruit	Fruit juice used for not having enough vitamins C.
24	<i>Clausena dentata</i> (Wild.) Roem.	Rutaceae	Aana	Small tree	Fruit	Rarely edible, used to cure wounds and burns
25	<i>Coccinia grandis</i> (L.) Voight	Cucurbitaceae	Kovai	Climbing	Whole plant	Leaves juice taken internally for ulcer.
26	<i>Coffea arabica</i> L.	Rubiaceae	Coffee	Shrub	Seed	Dried seeds are used as a stimulant, acting on central nervous system.
27	<i>Colacassia esculenta</i> (L.) Schott in Schott & Endl.	Araceae	Saembu	Herb	Leaf	Used for headaches, control blood pressure, treats cold, cough, asthma.
28	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Mudakaruthan	Climber	Leaves Roots, Seeds.	Leaves, roots & seeds are boiled with water and this water is used for both to cure arthritis.
29	<i>Coriandrum sativum</i> L.	Apiaceae	Kothumalli	Herb	Leaf	The leaf juice used for digestion problem and gas problem as well as infection caused by bacterial.
30	<i>Cyanodaon dactylon</i> (L.) Pers.	Poaceae	Arugam pull	Herb	Leaf	Leaf juice used as drink empty stomach in the morning is good in normalizing the sugar level.
31	<i>Cyphomandra betacea</i> (Cav.) sendt.	Solanaceae	Marathakkali	Tree	Fruit	Fruit is boiled with water and drink it removed the poisonous.
32	<i>Dendrocalamus strictus</i> (Roxb.) Nees	Poaceae	Kalmungil	Tree	Fruit	Roasted fruits are given once day to treat dysentery and cough until cure.
33	<i>Dodonaea viscosa</i> (L.) jacq.	Sapindaceae	Virali	Shrub	Leaves	Leaf paste cure the swelling.
34	<i>Durio zibethinus murray</i>	Malavaceae	Durian	Tree	Leaf, fruit	Leaf decoction used reduce swelling. Fruit

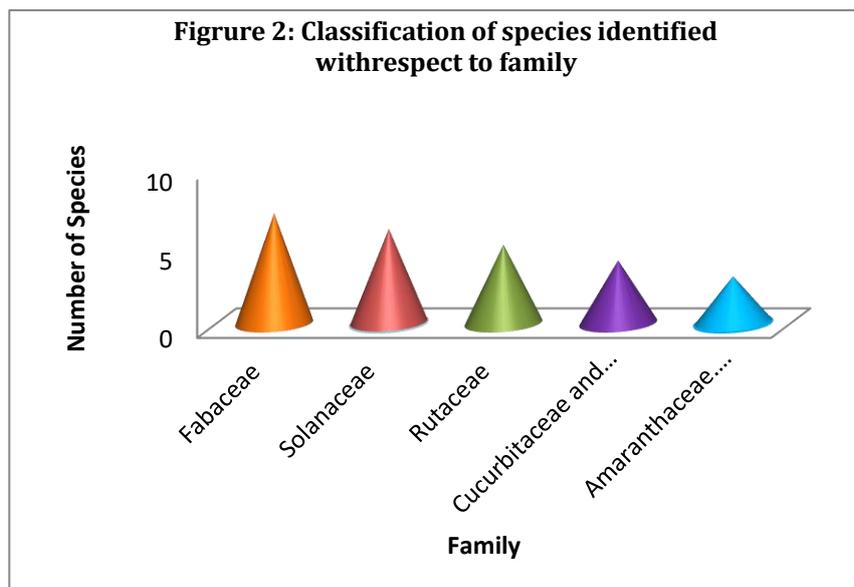
						juice used in high blood pressure.
35	<i>Elephantopus scaber</i> L.	Asteraceae	Aanaichuvadi	Herb	Leaf, root	Juice used for cough, fever, stomach pain. Root juice prescribed to prevent vomiting.
36	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Ammanpacharsi	Herb	Flower	It can used as a first aid fox insect bite. The leaf juice used for wart removal.
37	<i>Hibiscus cannabinus</i> L.	Malvaceae	Pulichakeerai	Shrub	Leaf, Flower Seed.	Leaf, flower and seed paste used for warmth balance. Flower juice and seed are consumed for biliousness and bruises.
38	<i>Indigofera tinctoria</i> L.	Fabaceae	Neeli	Shrub	Leaves	Used in bronchitis, dry cough, tuberculosis.
39	<i>Ixora brachiata</i> Roxb. ex DC.	Rubiaceae	Thetti	Shrub	Root bark	Root bark paste with coconut pulp applied for inflammation.
40	<i>Adathoda vasica</i> L.	Acanthaceae	Adathoda	Shrub	Leaf	Leaf juice is used for asthma and fever, bleeding piles, the boiled leaves was used rheumatic pain.
41	<i>Justicia glauca</i> Rottl.	Acanthaceae	Thavasimurungai	Shrub	Leaf	Leaf mixed with salt and honey and consumed it will cure cold and stomach disorder.
42	<i>Lawsonia inermis</i> L.	Lythraceae	Maruthani	Shrub	Leaf	The juice prepared from the heated leaves of the plant is applied to knee, this paste used for hairy dyes and hair care products.
43	<i>Limonia acidissima</i> L.	Rutaceae	Vila	Shrub	Bark	Insect bites, dysentery, snake bite.
44	<i>Leucas aspera</i> (Wild.)Link.	Lamiaceae	Thumbai	Herb	Leaf	The juice of leaves and the plant are used to reduce fever and also used as insecticide.
45	<i>Melothria maderaspatana</i> L.	Cucurbitaceae	Musummusukai	Climber	Leaves	Used for asthma.
46	<i>Mentha arvensis</i> L.	Lamiaceae	Pudhina	Herb	Leaf	Speed and easy digestion and which may also support healthy cholesterol levels.
47	<i>Mimosa pudica</i> L.	Mimosaceae	Thottal surungi	Herb	Leaf	The paste of mimosa pudica leaves alone is applied on injuries and snake bite.
48	<i>Momordica charantia</i> L.	Cucurbitaceae	Pavakkai	Climber	Fruit	Juice obtained from fruit used for immune system, improves respiratory health.
49	<i>Mucuna puriens</i> L.	Fabaceae	Poonaicali	Shrub	Seed	Seed juice are used nervous diseases.

50	<i>Murraya koenigii</i> (L.) Spreng.	Rutaceae	Kariverpilai	Tree	Leaves	Curry leaves are used for antimicrobial capability to protect the liver from damage.
51	<i>Ocimum sanctum</i> L.	Lamiaceae	Thulasi	Herb	Leaf	Leaf decoction used in fever, cold, cough.
52	<i>Ormocarpum cochinchinense</i> (Lour.) Merr.	Fabaceae	Elumbotti	Shrub	Leaf	Leaf decoction used for anti-oxidant
53	<i>Passiflora edulis</i> Sims	Passifloraceae	Koodithodai	Climber	Fruit, seed	The juice obtained from fruit are used prevent blood sugar. The seed raw eat regulating cure thyroid activity.
54	<i>Pergularia daemia</i> (Forssk.) Chiov	Asclepiadaceae	Uthamani	Herb	Leaves	Leaves juice used for urinary problems, fever, asthma and gas trouble.
55	<i>Phyllanthus amarus</i> Schum. & Thonn	Phyllanthaceae	Kizhanelli	Herb	Leaf	The leaf juice is used for jaundice.
56	<i>Physalis angulate</i> L.	Solanaceae	Sodakkuthakkali	Shrub	Seed, Leaf	Seed juice is mixed with leaf juice used in locally eye disease.
57	<i>Piper betle</i> L.	Piperaceae	Vettilai	Climber	Leaves	It is used for digestive.
58	<i>Piper nigrum</i> L.	Piperaceae	Milagu	Climber	Fruit, Leaf	Leaves are boiled with water and this water is used for bath to cure arthritis. Fruit juice improves digestive.
59	<i>Pouteria campechiana</i> (Kunth) Baehni	Sapotaceae	[Egg fruit] Muttapazham	Tree	Fruit	Fruit used for heart disease to helping with blood sugar control and weight loss.
60	<i>Ricinus communis</i> L.	Euphorbiaceae	Amanukku	Herb	Leaf	Antioxidant activity, antitumour activity, bone regeneration activity.
61	<i>Rosa banksiae</i> R. Br. ex Aiton	Rosaceae	Rosa	Tree	Petals	Petals are boiled with water and it is used to prevent blockage of arteries.
62	<i>Ruta graveolens</i> L.	Rutaceae	Aruvatham pachai	Herb	Leaf	Crushed leaves and oil boiled and used for sinus problem.
63	<i>Sida cardifolia</i> L.	Malvaceae	Sitramuti	Climber	Leaves	Leaves juice are used for stomatitis, nervous disorder.
64	<i>Solanum nigrum</i> L.	Solanaceae	Manathakkali	Shrub	Leaf, root	Leaf juice of the plant is used on ulcers and other skin disease. Root juice from it is roots used against asthma.
65	<i>Solanum torvum</i> Sw.	Solanaceae	Chundai	Shrub	Leaf, fruit	Fruit was used for control the fever; leaf juice controls the microbial activities.
66	<i>Solanum virginianum</i> L.	Solanaceae	Kandankathiri	Shrub	Leaf, fruit	Fruit used for fever cough cold, leaves boiled with water van cure arthritic

						pain.
67	<i>Spinacia oleracea</i> L.	Amaranthaceae	Pasalai keerai	Shrub	Stem, leaves	The juice obtains from the stem that drinks cure the anaemia.
68	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Naval	Tree	Bark, seed, leaf	All are used for dysentery, diabetics, fever.
69	<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	Kolinchi	Shrub	Whole plant	Decoction are used for kidney, liver disease.
70	<i>Vitex negundo</i> L.	Verbenaceae	Notchi	Tree	Leaf	Leaf paste is used as anti-dote for joint pain. Leaf juice is used for treatment of sinus problem.

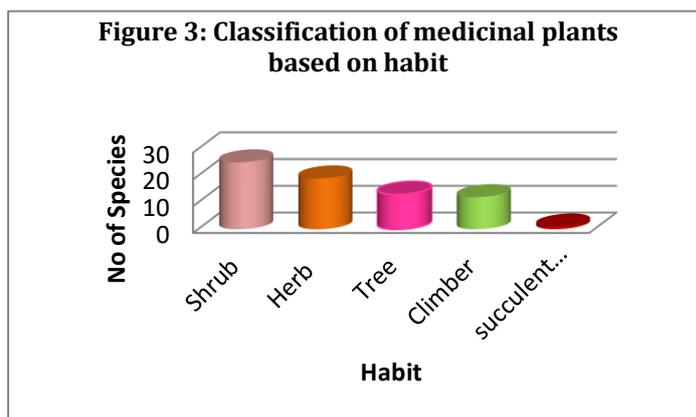
**Table: 2 Classification of species identified with respect to family**

S. No	Family	Number of Species
1	Fabaceae	7
2	Solanaceae	6
3	Rutaceae	5
4	Cucurbitaceae and Malvaceae	4
5	Amaranthaceae, Lamiaceae and Rubiaceae	3



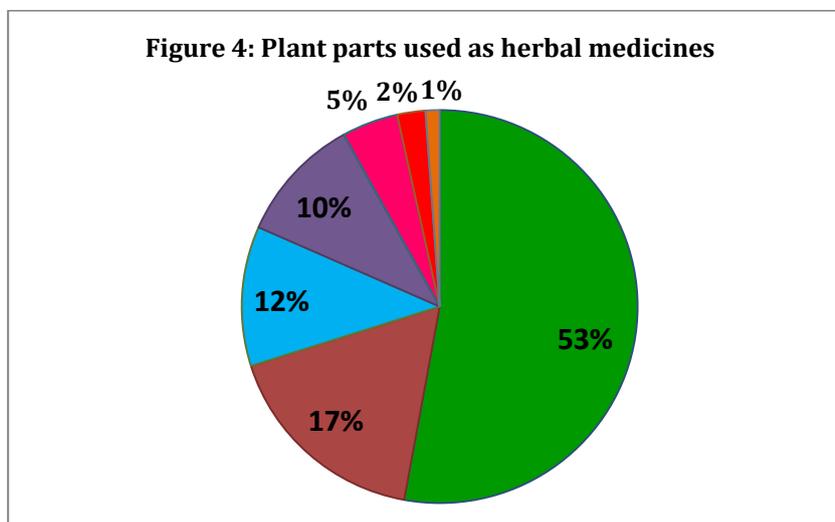
**Table: 3 Classification of medicinal plants based on habit**

S. No	Habit	Number of Species
1	Shrub	25
2	Herb	19
3	Tree	13
4	Climber	12
5	succulent herb	1



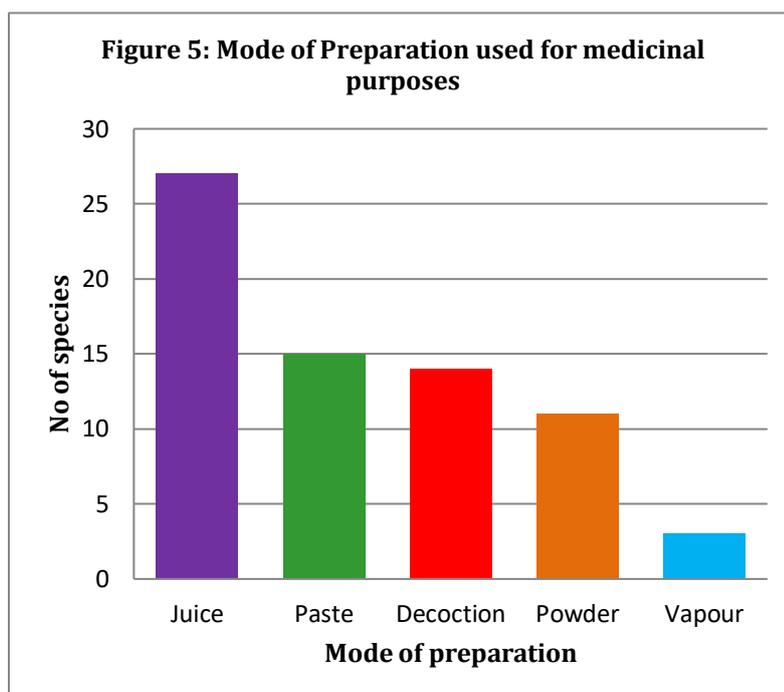
**Table: 4 Plant parts used as herbal medicines**

S. No	Parts used	Number of Species
1	Leaves	46
2	Fruit	15
3	Root	10
4	Seed	9
5	Flower and Bark	4
6	Stem	2
7	Tuber	1



**Table: 5 Mode of Preparation used for medicinal purposes**

S. No	Mode of preparation	No of Species
1	Juice	27
2	Paste	15
3	Decoction	14
4	Powder	11
5	Vapour	3



#### 4. CONCLUSION

Medicinal plants in Gurusimalai hills play an important role in the health care of the tribal people. Herbal medicines are comparably secure to synthetic drugs. The tribal people are more knowledgeable and experienced in conventional medicinal practices because it comes from thousands of years of trial and error. In the present study, 70 plants were documented, and among these 19 plants were herbs, 25 were shrubs, 12 were climbers and 13 were trees. They are using the plants for diuretics, snakebites, skin diseases, diabetics, cough & cold, body pain, and diarrhea as anti-inflammatory and anti-cancerous diseases. Besides, the plants need to be evaluated through phytochemical analysis to discover the possibility of drugs.

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