

Documentation of medicinal plants used by local people of Peruvannamuzhi Kozhikkode, Kerala.

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Abstract

The knowledge of medicinal plants is one of the greatest treasure that have been transferred from generation to generation through oral mode. The art of healing with medicinal plants is a part of Indian culture from time immemorial. A wide range of plant and plant products have been used effectively in treating various diseases. The present study undertaken documented forty five medicinal plants belonging to twenty seven families used by people of Peruvannamuzhi and adjacent villages of Kozhikkode, Kerala. The field surveys and questioners carried out revealed that both herbal knowledge and plant wealth are at the brink of extinction.

Key Words : medicinal plants, survey, Peruvannamuzhi, Kozhikkode

1 Introduction

For the functioning of biosphere plant are considered as an important factor. The importance of medicinal plants in curing various diseases dates, years back from civilization period (Ayyanar *et al.*, 2011). They are an integral source of easily available remedy used in rural health care system. Traditional wisdom of plants have always been a vibrant and a valuable aspect of ethnobotany, from time long past art of herbal healing became part of Indian culture (Kumar *et al.*, 2014). It is a good alternative for modern medicine. India cherish a rich diversity of plant species of which 7500 are known as medicinal plants (Shiva 1996). It was recognised officially that 2500 plant species have medicinal values at the same time 6000 plants are

explored in traditional, folk and herbal medicine. In order for the maximum utilisation of these raw materials surveys should be taken place to identify plants. We need to access full knowledge regarding their occurrence, frequency, abundance and all above distribution of plants (Choudhury *et al.*, 2008). Considerable progress have taken place during the last decades in the field of medicinal plants and their traditional uses. The traditional knowledge or local knowledges are always transferred verbally by the old man in the group

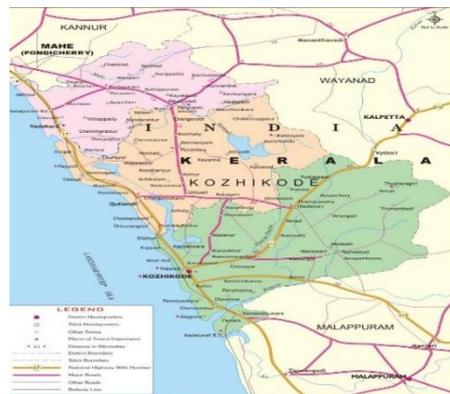
The knowledge of medicinal plants owned by the elder generation is an asset that have to be passed to the present and future generations, The major herbal medicinal systems in India include Ayurveda, Siddha and Unani. Parallel to this system of medicines evolved the folk medicines, the knowledge gained through years of practice and experience. Since the knowledge's are transferred orally a considerable amount of informations are brushed away. The gradual loss of these should be considered as a global concern in the present scenario. So proper documentation of these data's are essential, the plant wealth of each place have to be recorded (Kumar *et al.*, 2014). A single plant can be used to treat more than one diseases, so questionnaire with different people help to record each and every use of that plant. This knowledge have to be archived in databases and registers for any future reference.

2 Methodology

2.1 Study area

The present study was conducted in Peruvannamuzhi, and the villages that are adjacent (Poozhithode, Chemapanoda,) Kozhikkode, Kerala. The city of Kozhikode is 410 kilometers north of the state capital Thiruvananthapuram. It is located at approximately 11.25°N 75.77°E, in which the rainy season start during the South West Monsoon, which sets in the first week of June and they usually extend towards September. The NorthEast Monsoon begin from the second half of October and Continue till November. The average annual rainfall is 3266 mm and the best weather is found in towards the end of the year, in December. The major soils in this area are alluvial soil, laterite soil, and forest loam. The study area was rich in vegetation with variety of flora and fauna.

Location area of study area Kozhikkode, Kerala.



2.2 Materials and Methods

Extensive and continuous Field trips were organised during the month of July and December in order to collect and identify plants around and adjacent to the region of Peruvannamuzhi, including villages like Chempanoda, and Poozhithode. The collection was based on personal monitoring and meetings that were conducted within the people’s. All the information collected was double checked by confirming with one or two. The collected plants are enumerated with their vernacular names binomial name along with author citation, family, habit, and the parts used. The plants that can be effectively used against Various ailments were collected using standard protocols, and these plants were preserved through herbarium techniques for later studies. Specimens collected from the field were tagged and taken to lab.

Flora of presidency of Madras (Gamble 1936) was used for the identification of collected plants. Herbarium collected was numbered and deposited in the herbarium of Nirmala College For Women

A standard procedure was carried out for the preparation of data, the collected plants were mounted, dried and preserved. A total of 45 plants were collected from the interviews of local people. The people who were interviewed was between the age of 35-80.

The medicinal plants in the study are usually seen in the hills. Some of them are cultivated and some grown as weeds among crops. The collected plants were grouped into different categories based on their habit like as herbs, shrubs, small trees, and trees. They are again classified according to the parts used, like flower, leaf, fruit, root ,whole plant etc. These plants are used in different forms like paste, decoction, powder, extract, infusion, crushed forms and juice. The local names of the plants was identified, noted with the help of the people of particular area.

2.3 Result

Medicinal plants that are effective in treatment of several diseases are listed in the table 1 . The plants are arranged in alphabetical order of their binomial name, family, vernacular name, habit, parts used and small description of their medicinal values. This documentation consist of 45 plant species that belong to 27 families. Out of the total plants 18 plants were herbs followed by 11 shrubs, 7 climber, 7 tree and 2 plants belonging to the category shrub- tree. Whole plant as well as different parts were used by the people to treat diseases. Analysis of percentage wise use of parts showed that leaf was the most preferred plant part (42%) , whole plant (19%), fruit (12%), root (12%), bark (8%), seed (5%), stem (2%), flower (2%). Family wise distribution of medicinal plants showed that plants were distributed across 27 families, the variability in family shows the diversity and richness of medicinal property possessed by each plant, habit wise distribution show that most plants were herbs that are commonly seen in the backyards of our homes and places. Many plants grow as weed amon cultivated crops, during the course of time many plants get reduced in number, some of the collected plants in the study are endemic, *Cassia fistula*, *Biophytum sensitivum*, *Vitex negundo*. The present work revels the importance of conserving these plants and their medicinal values. These plants are either used as single or in combination with other plants. For the treatment of a single disease they can be used in combination with different plants.

TABLE 1: List of medicinal plants

SI NO YMER	BINOMIAL NAME	FAMILY	VERNACULAR NAME	HABI T	PART USED	USES http://ymerdigital.com
1.	<i>Abrus precatorius (L.)</i>	Fabaceae	Kunni	Climber	Leaf	Leaf cut into pieces and boiled in coconut oil. Head massage with this oil reduce hair loss.
2.	<i>Aerva lanata (L.) juss</i>	Amaranthaceae	Cherula	Herb	Whole plant	The juice of root is used for jaundice treatment.
3.	<i>Allamanda cathartica (L.)</i>	Apocynaceae	Manjakolambi	Climber	Whole plant	Used to treat liver disease, jaundice, malaria Small dose of leaf decoction used as antidote for poisoning.
4.	<i>Alstonia scolaris (L.) R.Br</i>	Apocynaceae	Ezhilamppala	Tree	Bark	Milky juice is used to treat ulcer. Tumor are treated by the application of root and leaf externally. Bark for asthma. Latex is used for taking thorn. Bark used for vericose vein
5.	<i>Alternanthera brasiliiana (L.) Kuntze</i>	Amaranthaceae	Poo cheera	Herb	Leaves	Help to treat indigestion hazy vision, night blindness, dysentery can be treated.
6.	<i>Anacardium occidentale (L.)</i>	Anacardiaceae	Kasu mavu	Tree	Leaves Bark Fruit	The bark is used to reduce blood sugar level. Bark help to detoxify snake bites.
7.	<i>Ayapana triplinervius (Vahl) R.M. King</i>	Asteraceae	Ayyappana	Herb	Leaf	Leaf paste can cure various stomach diseases. Used in cancer treatment. Wound healing.
8.	<i>Azadirachta indica A. Juss.</i>	Meliaceae	Ariyaveppu	Tree	Leaves Bark Seeds	Leaf used for eye diseases. The seed and seed oil is effective against intestinal worms. The bark is used for malaria.
9.	<i>Biophytum sensitivum (L.) DC</i>	Oxalidaceae	Nilamthengu	Herb	Whole plant	Used to treat piles, tonsillitis. Extracts have antioxidant, anti-inflammatory property Flower is used to prevent nasal polyps.

10.	<i>Calotropis gigantea</i> (L.) R.Br.	Asclepiadaceae	Erikku	Shrub	Root Leaf	Root and leaf are used for bacterial infections. The milky juice of calotropis are used in arthritis and antidote for snake bite. Leaf is used for ear pains. Leaf paste with salt have pain relieving property
11.	<i>Cassia fistula</i> L.	Fabaceae	Kanikkonna	Tree	Leaves Bark	Root decoction is applied to purify wounds and ulcers. Pods are a good remedy for malaria. Bark used for skin problem.
12.	<i>Centella asiatica</i> (L.)Urban	Apiaceae	Kudakan	Trailing herb	Leaf	Leaf boiled in water used for treating infection and urinary tract obstruction. Intake of 8 leaves a day increase intelligence. Leaf paste used for tooth whitening. Used for skin disease and minor wounds.
13.	<i>Chromolaena odorata</i> (L.)R.M.King & H.Rob	Asteraceae	Communist pacha	Shrub	Leaf	Leaf paste Used to treat wounds and burns. Have anticancer properties.
14.	<i>Clitoria ternatea</i> L.	Fabaceae	Sankhupuspham	Climber	Whole plant	The flowers are mixed with preparations to treat eye disease. The roots are diuretic used in treatment of snake bites.
15.	<i>Coccinia grandis</i> (L.)Voigt	Cucurbitaceae	Kovakka	Climber	Leaf	Leaf with turmeric applied on cheek get relief from tooth ache.
16.	<i>Coleus amboinicus</i> Lour.	Lamiaceae	Panikkorkka	Herb	Leaf	Leaves with honey is helpful in cold and cough Con. decoction consumed while warm is effective in respiratory infection. Plant juice mixed with sugar act as strong carminative. leaf is applied on skin for itching insect bite .

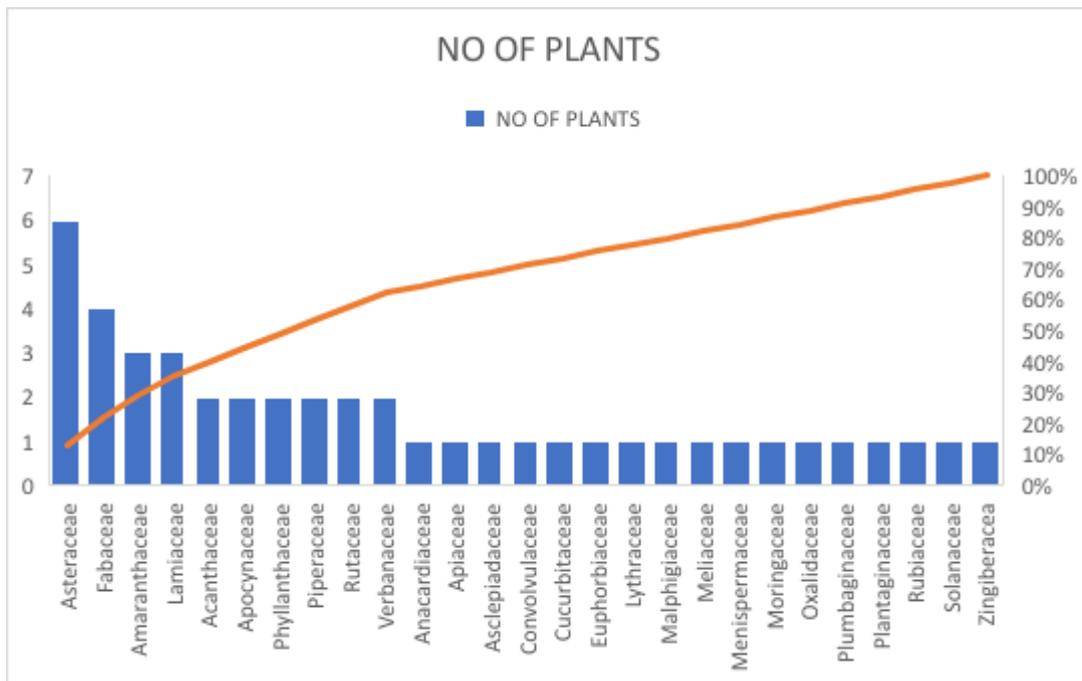
17.	<i>Crassocephalum crepidioides</i> (Benth.) S.Moore	Asteraceae	Appuppanthadi	Herb	Leaves	The leaves are used for treat indigestion and stomach upset. Leaf decoction used to treat headache. Leaf sap is used for fresh wounds.
18.	<i>Cuscuta pentagona</i> Englem	Convolvulaceae	Akshavalli	Climbing herb	Stem	Used for skin disease, hair problems and diarrhoea
19.	<i>Cyanthillium cinereum</i> (L.) H.Rob	Asteraceae	Poovakurunthal	Herb	Leaf Root Fruit	Help to reduce body temperature. Used in blood purification. Good for eye disease with breast milk. Used in treatment of Marek disease.
20.	<i>Cyathula prostrata</i> (L.) Blume	Amaranthaceae	Cherukadaladi	Herb	Leaf	Leaf paste is applied for bruises. Used for treating dislocation by mixing leaves in rice water.
21.	<i>Cyclea peltata</i> Hook.Fil & Thomas	Menispermaceae	Paadathali	Climber	Leaf	Used in oil preparation to promote hair growth. Prevent skin diseases.
22.	<i>Eclipta prostrata</i> (L.)	Asteraceae	Kayyonni	Herb	Whole plant	Whole plant used for making medicinal oil. Good for hair problems. Leaf juice good for headache, liver problems.
23.	<i>Elephantopus scaber</i> (L.)	Asteraceae	Aanachuvadi	herb	Leaf	Used for bladder stones and fever. Bruised leaf boiled in coconut oil applied for ulcer. Used to eliminate bladder stone. Used for tinea viscolor, dandruff and skin disease.
24.	<i>Glycosmis pentaphylla</i> (Retz.) Dc	Rutaceae	Paanal	shrubs	Root Leaf	Wood paste is applied over pimples and arthritis. Leaf boiled in water used for bath. Used to make oils. Honey bees are repellent to root smell.

25.	<i>Hemigraphis colorata</i> W.Bull	Acanthaceae	Murikootti	Herb	Leaf Fruit	Used to treat wounds and stop bleeding. Plant in powdered form is given to children for growth. Have good protein content. Leaf paste is good for skin disease.
26.	<i>Hiptage benghalensis</i> (L.)Kurz	Malphiaceae	Njarambodal	Climber	Leaf	Leaves are used in skin disease. Plant decoction given to women after child birth. The seed kernel is given with honey to reduce belly fat. Used for varicose vein.
27.	<i>Justicia adhatoda</i> (L.)	Acanthaceae	Aadalodakam	Shrub	Whole plant	Leaf juice with honey used for phlegm. Dried leaf is good for cough. Root is used against jaundice.
28.	<i>Kaempferia galanga</i> (L.)	Zingiberaceae	Kacholam	Herb	Whole plant	Chewing of kacholam rhizome along with betel leaf cure cough and also breathing problems. worm infection in children, stomach pain.
29.	<i>Lantana camara</i> (L.)	Verbenaceae	Kongini	Shrub	Fruit and leaves	Wound healing
30.	<i>Lawsonia inermis</i> (L.)	Lythraceae	Mylanchi	Shrub	Leaf Bark	The bark is used in the treatment of jaundice. Helps in wound healing and skin diseases. Leaf boiled in water cure liver diseases. leaves with turmeric cure skin and nail problems. Powdered leaf is good for hair. Used as hair dye.
31.	<i>Leucas aspera</i> (L.) (Willd). Link	Lamiaceae	Tumba	Herb	Leaf Flower	Leaves are mosquito repellent. Remedy for Indigestion, stomach ache. Leaf juice is used to kill worms in stomach. External application of leaf is good for piles.

32.	<i>Mimosa pudica (L.)</i>	Fabaceae	Tottavadi	Herb	Whole plant	Plant boiled in water is good for diabetics, toothache. Entire plant paste helps in Piles treatment. Helps in asthma , tooth and body strengthening. Ulcer in mouth.
33.	<i>Moringa pterygosperma Gaertn</i>	Moringaceae	Moringa	Tree	Whole plant	Have good vitamin c content. Flower posses pottasium and calcium. Have diuretic effect. Root is used to kill intestinal worms. Induce menstruation.
34.	<i>Murraya koenigii (L.)Spreng</i>	Rutaceae	Curry veppilla	Small tree or shrub	Leaf	Leaf boiled in water help to cure liver ,kidney problems, gas problems and ulcer. Leaf as flavour to increase taste. Used with turmeric to solve skin problems.
35.	<i>Mussaenda glabrata (Hook.F)Hutch.</i>	Rubiaceae	Vellila	Shrub	Leaf Root	Shoot extract used for cough in children and for eye disease. Leaf is used to make herbal shampoo. White leaf have vitamin A. Reduce ulcers. Have diuretic properties.
36.	<i>Ocimum tenuiflorum (L.)</i>	Lamiaceae	Tulsi	Shrub	Whole plant	Dried leaf is used as tea powder. Leaf juice is used for phlegm infection and cold. Leaf juice is snuffed to relieve head pain. Dried seed is used to prepare cuscus. Used for treating eye disease ,skin disease, pimples, ear disease, Used against kidney stone.
37.	<i>Phyllanthus emblica(L.)</i>	Phyllanthaceae	Nellikka	Tree	Fruit	Fruit is Good for teeth and gums. Good source of vitamin c and iron. Good for hair and eyes. Siberia can be cured . Dried form is also good.

38.	<i>Phyllanthus amarus</i> Schum. & Thonn.	Phyllanthaceae	Keezharnelli	Herb	Whole plant	Used for treating jaundice, liver disease . Intake of plant with milk reduce hair fall 2 types are found of which white is more medicinal. Plant powder is used for reducing blood sugar level. Root oil is used for migraine and jaundice
39.	<i>Piper longum (L.)</i>	Piperaceae	Tippali	Shrub	Root Fruit	Dried fruit is good for respiratory problems. Helps to reduce obesity.
40.	<i>Piper nigrum (L.)</i>	Piperaceae	Kurumulak	Climber	Leaf Fruit	Pepper cause sneezing. Leaf paste stops bleeding immediately.
41.	<i>Plumbago indica (L.)</i>	Plumbaginaceae	Koduveli	Shrub	Root	Remedy for leprosy and skin disease. Purified root pulp externally for swelling and filariasis.
42.	<i>Ricinus communis (L.)</i>	Euphorbiaceae	Aavanakk	Small tree	Leaf Seed	Oil is used for pain and swelling. Paste with salt reduce pain. Used for hair growth. Give cooling effect. Oil of seed induce diarrhoea.
43.	<i>Scoparia dulcis (L.)</i>	Plantaginaceae	Kallurukki	Herb	Whole plant	Used for treating kidney stone used for 7 days in milk and it helps to clean the kidney. They are mixed with other herbs to treat wounds, fever, and skin diseases.
44.	<i>Solanum torvum Sw.,</i>	Solanaceae	Putharichunda	Shrub	Root and fruit	Snake bite
45.	<i>Vitex negundo (L.)</i>	Verbenaceae	Karunochi	Shrub or small tree	Leaf Root	To treat arthritis. To prepare oil. To induce diarrhoea. They have anti-fungal and anti-pyretic property. Used for skin diseases

FIGURE 1 : Family wise distribution of medicinal plants



The above graph shows Asteraceae (6) is the dominant family followed by fabaceae (4), Amaranthaceae, lamiaceae (3) Piperaceae, phyllanthaceae, Verbenaceae, Acanthaceae, Rutaceae, Apocynaceae (2).The remaining families Solanaceae, Plantaginaceae, Euphorbiaceae, Plumbaginaceae, Rubiaceae, Moringaceae, Lythraceae, Zingiberaceae, Malphigiaceae, Menispermaceae, Convolvulaceae, Cucurbitaceae, Apiaceae, Asclepiadaceae, Oxalidaceae, Meliaceae, and Anacardiaceae have only one species each.

Plate 1



Ayapana triplinervius (Vahl)



Alternanthera brasiliana (L.)



Chromolaena odorata (L.) R.M. King & H. Rob



Coleus ambonicus (Lour)

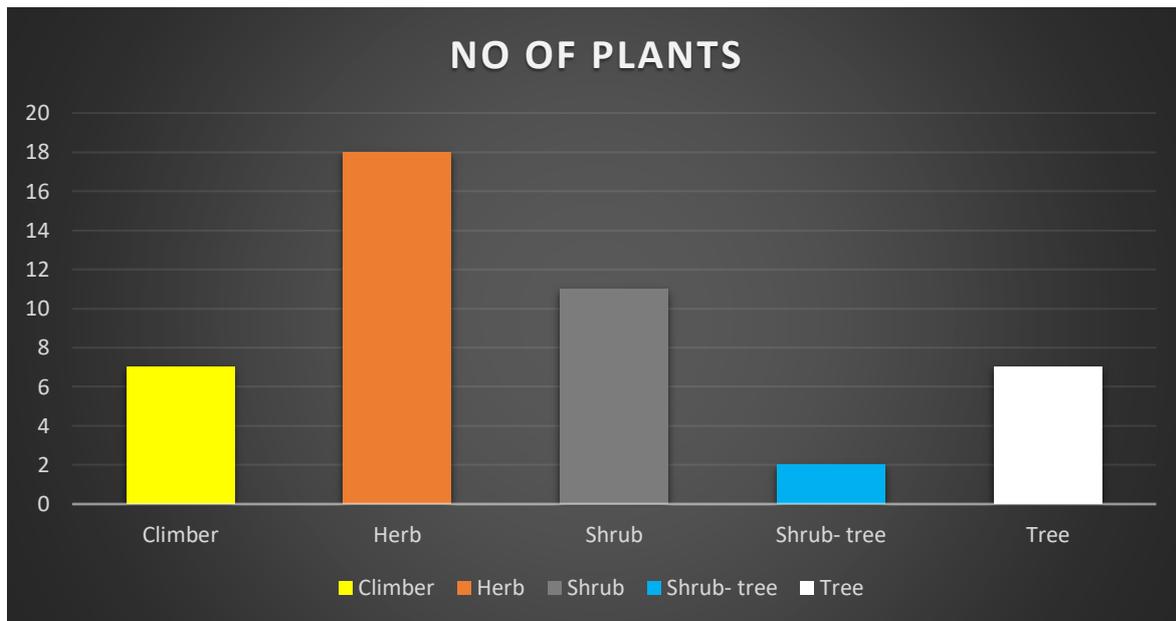


Biophytum sensitivum (L.) DC



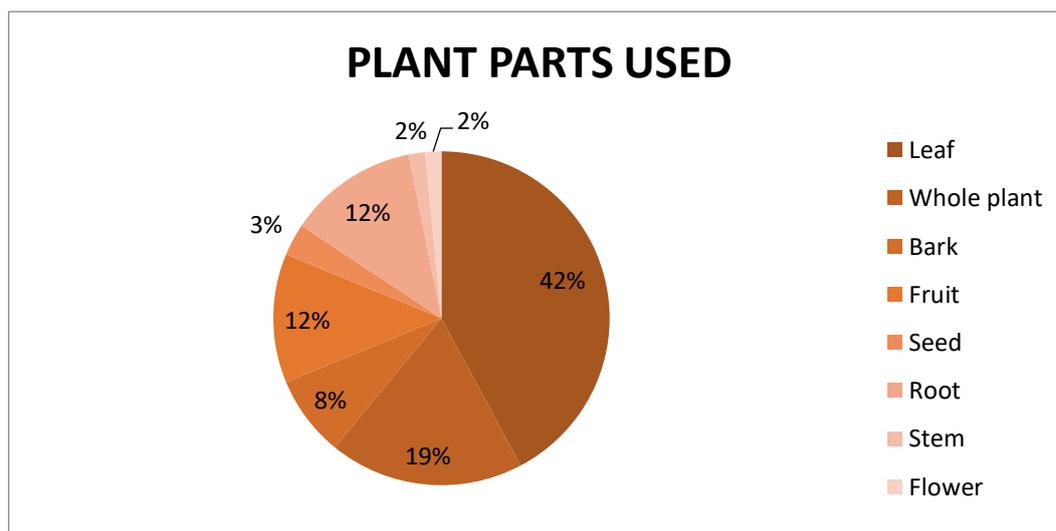
Clitoria ternatea (L.)

Figure 2 : Habit wise distribution of plants



The table shows maximum number of plant habit used as medicines are herbs (18) than shrub (11) trees (7) climber (7) shrub – tree (2) also concluded that minimum plant habit consist of shrub tree.

Figure 3 :- Plant parts used



The graph shows the maximum percentage of plant parts used for medicines are leaves (42%) than the other parts of fruit (8%) whole plant (12%) root (8%) seed (2%) flower (1%) stem (1%), also reveals that minimum used plant part is flower and stem.

Table 4 : Plants used for various diseases

SI NO	REPRESENTATION OF DISEASES	NO OF PLANTS USED
1	Arthritis	4
2	Bleeding, wounds	10
3	Blood pressure, blood sugar, heart diseases	4
4	Cancer	2
5	Eye diseases	7
6	Fever, cough, cold, headache, throat pain	7
7	Gastro intestinal diseases	13
8	Head and hair problems	13
9	Infections	1
10	Intestinal worms	5
11	Jaundice, dysentery, malaria, diarrhoea	11
12	Leprosy, asthma	4
13	Poison, insect sting	
14	Respiratory diseases	3
15	Skin diseases	14
16	Tooth problem	4
17	Tumour	1
18	Urinary, kidney problems	9

Conclusion

The present study reveals information of medicinal plants which possess secondary metabolites that can be effectively used to treat various diseases in Peruvannamuzhi and adjacent villages of Kozhikode, Kerala. From the above documentation it is clear that plants if used effectively can be used to cure diseases, and they possess no side effects while compared to western medicines, and without cost, it is one of the most effective treatments with least chance of recurrence of disease. A detailed study on these plants and their chemical constituents help to access dosage and quality control.

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