

An Ethnopharmacological survey on medicinal plants from sacred grove of Sree Puthiya Bhagavathi Temple, Kalloori, Kannur (Dist), Kerala

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Abstract

Sree puthiya bhagavathi sacred grove, Kalloori at Kannur district was explored for ethno pharmacological survey on medicinal plants. Totally 60 plants belonging to 37 families and 57 genera were recorded from this grove. Most of the plants are used for curing fever, cold, skin diseases, jaundice, piles, headache etc. Asteraceae and Malvaceae are dominant families having 4 species each. Followed by Amaranthaceae, Apocynaceae and Mimosaceae having 3 species each.

Keywords: sacred grove, traditional uses, mode of administration

Introduction

Sacred places have long and diverse histories in human culture and keep ancient links between peoples and their environments (Anderson *et al.*, 2005). Sacred groves are patches of native vegetation traditionally protected by local communities, and are unique, and significant, examples of *in situ* biodiversity conservation (Sunitha & Rao 1999; Upadhaya *et al.*, 2003) [46]. Sacred grove are distributed across the globe have diverse cultures recognize them in different ways encoding various rules for their protection. The institution of sacred groves in very ancient and wide spread in most part of India. And in spite of increase in human population, sacred groves are survived under a variety of ecological situations (Ramakrishnan *et al.*, 1998) [5, 33, 35]. The nature of religiousness associated with sacred groves suggests that the practices of sacred groves dates back to nomadic hunter- gatherer age of human history (Gadgil & Vartak, 2004). Plant wealth and conservation potential were impressive enough to acknowledge them as “mini biosphere” (Gadgil & Vartak, 1975) [15]. Generally sacred groves are believed to be a treasure house of medicinal, rare and endemic plants, as refugia for relic flora of a region and as centers of seed dispersal. Thus sacred groves are segments of landscape containing vegetation and other forms of life and geographical features that are delimited and protected by human societies to keep them in a relatively undisturbed state. It is the expression of the relationship of man with the divine or with nature (Hughes & Chandran, 1998) [9]. In India types of sacred groves are; 1. Temple groves- a grove is created around the temple, 2. Traditional sacred grove-the place where the village deity resides, and represented by an elementary symbol, 3. Burial grove – a grove is created around the cremation ground (Deep, 1998 & Rao, 1996) [39].

Materials and methods

The present investigation was undertaken from the Sree Puthiya Bhgavathi Temple Kalloori, Kannur district Kerala. This sacred grove is located in Pappinisseri Panchayath, nearly 10km away from Kannur. Field surveys were conducted during period of November 2015 to January 2016. Sacred grove covers an area about 4.5 acre. Geographically, it is lying

between 11.98⁰ N latitude and 75.39⁰E longitude. Annual rainfall is 3364 mm. The field visit was conducted several times and photographs were also taken. More information was collected regarding the ethnobotanical information from the village head man, vaidyan, local people, educated persons and care takers of sacred groves. The plants were identified with the help of Flora of Presidency of Madras. Plants were identified in the sacred grove and categorized on the basis of IUCN Red data book.



Fig 1: Map Showing Study Area

Result and Discussion

Taxonomically, a total of 60 plant species belonging to 37 families and 57 genera were recorded from Sree Puthiyabhagvathi temple sacred grove, Kalloori, Kannur. There are 32 dicot families comprises 52 genera and 55 species while 5 monocot families having 5 genera and 5 species. Asteraceae and Malvaceae are dominant families with 4 plant species each, followed by Amaranthaceae, Apocynaceae and Mimosaceae (3 species each), Acanthaceae, Anonaceae, Asclepiadaceae, Combretaceae, Euphorbiaceae, Fabaceae, Menispermaceae, Moraceae, Rubiaceae, Verbenaceae and Lamiaceae (2 species

each) (table 5), Apiaceae, Araceae, Aracaceae, Boraginaceae, Capparidaceae, Ceasalpinaceae, Cesalstraceae, Commelinaceae, Connaraceae, Cyperaceae, Gentianaceae, Loganiaceae, Meliaceae, Poaceae, Rhamnaceae, Rutaceae, Santalaceae, Sapotaceae Scrophulariaceae, Vitaceae and Ulmaceae (1 species each) Based on their habit 60 plants were classified in to herb, shrub and trees. Among these, 22 (36.66%) were herbs, 21 (35%) trees, 10 (16.66%) shrubs, 5 (8.33%) climber and 2 (3.33%) climbing shrubs.

More than one plant parts (66.66%) of 40 plants used for different medicinal purposes followed by bark (6.66%) of *Azadirachta indica*, *Alstonia scholaris*, *Plumeria alba* and *Terminalia arjuna*, leaf (6.66%) of *Acacia nilotica*, *Centella asiatica*, *Heliotropium indicum* and *Tridax procumbence*, root (6.66%) of *Bauhinia purpurea*, *Connarus wightii*, *Polyalthia korinti* and *Cyperus rotundus*, Whole plant (6.66%) of *Aerva lanata*, *Canscora diffusa*, *Euphorbia hirta* and *Hedyotis corymbosa*, fruit (5%) *Anamirta cocculus*, *Embllica offinalis* and *Telosma pallida* wood (1.66%) of *Santalum album*. Most of the plant parts were used to cure skin diseases, dysentery, piles, jundice, diabetics, diarrhoea, anemia, ulcer, obesity, stomach upset, rheumatism, wounds and snake bite. Seeds of *Celastrus paniculatus* and leaves of *Centella asiatica* used as memory enhancer. *Cyathula prostrata*, *Cyclea peltata*, *Leucas aspera*, *Strychnos nux-vomica* used for snake bite.

The sacred grove also comprises 12 red listed plants including 2 vulnerable & 10 least concern. The present findings are comparable with other studies in sacred groves of Kerala,

Tamil nadu and other regions of India. In Kerala and Tamilnadu, several studies with respect to floristic inventories were reported include 187 vascular plants falling under 154 genera and 81 families were documented from Niliarkottam sacred grove, Kannur (Subrahmnnya and Raveendran 2013) [45], 180 angiosperm belonged to 75 families and 158 genera from Muniandavar sacred grove, Thiruvayaru (Jayapal *et al.*, 2014) [20], 87 plants species in 42 families from Cuddalore (Ramesh *et al.*, 2013) [37], 98 species from 87 genera and 43 families from Agastheeshwaram (Sukumaran 2008), 329 plant species belonging to 251 genera and 100 families from Kanyakumari (Sukumaran 2008). 120 species in 106 genera and 57 families from Manipur (Devi *et al.*, 2005) [3]. 101 species belonging to 51 families and 91 genera Gandhi *et al.*, 2012). Coexistence of several species in the sacred grove indicates differences in flowering phonologies, pollination and dispersal agents of the species (Valencia *et al.*, 1994) [48]. The family Asteraceae recorded the highest (10) species contribution followed by Verbenaceae (8) Moraceae and Mimosaceae (7 species each. Anacardiaceae (6), Euphorbiaceae, Poaceae and Rubiaceae (5 species each), Acanthaceae, Meliaceae and Rosaceae (3 species each) in sacred groves of Manipur (Devi *et al.*, 2005) [3]. A majority of remedies are prepared in the form of juice from freshly collected plant parts of single species or mixing with other species according to need by crushing or squeezing. Most of the remedies taken orally, account for 61% of medicinal uses, followed by 30% external application (Devi *et al.*, 2005) [3].

Table 1: List of the Plants Present In the Sacred Grove

S.No	Scientific Name	Family	Common Name	Habit	Dicot/ Monocot
1	<i>Abrus precatorius</i> L.	Mimosaceae	Crab's eye/ kunnikuru	Tree	Dicot
2	<i>Acacia nilotica</i> (Linn.)Wild	Fabaceae	Gum Arabic tree/ karivelam	Tree	Dicot
3	<i>Achyranthus aspera</i> L.	Amarantaceae	Chaff-flower/ kadaladi	Herb	Dicot
4	<i>Adenantha pavonina</i> L	Mimosaceae	Red Sandalwood/ Manchadi	Tree	Dicot
5	<i>Aerva lanata</i> Juss	Amarantaceae	Mountain knot grass/ cherula	Herb	Dicot
6	<i>Alstonia scholaris</i> R.Br.	Apocynaceae	Blackboard tree/ ezhilampala	Tree	Dicot
7	<i>Anamirta cocculus</i> Wight&Arn.	Menispermaceae	Fish berries/ pala	Climber	Dicot
8	<i>Areca catechu</i> L.	Araceae	Betel palm/ adakka	Tree	Monocot
9	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Neem / Aryaveppu	Tree	Dicot
10	<i>Bauhinia purpurea</i> L.	Ceasalpiniaceae	Purple orchid tree/ Chukana mandaram	Tree	Dicot
11	<i>Canscora diffusa</i> R.Br.	Gentianaceae	Kilwar /Jeerakapullu	Herb	Dicot
12	<i>Celastrus paniculata</i> Willd.	Celastraceae	Black oil plant / Polulavam	Climbing shrub	Dicot
13	<i>Centella asiatica</i> Urb.	Apiaceae	Centella/ muthil	Herb	Dicot
14	<i>Cleome ruidosperma</i> DC.	Capparidaceae	Fringed spider flower/ Neelavela	Herb	Dicot
15	<i>Clerodendron infortunatum</i> L.	Verbenaceae	Hill glory blower/ Periyalam	Shrub	Dicot
16	<i>Commelina benghalensis</i> L.	Commelinaceae	Bengal day flower/ Kanankoli	Herb	Monocot
17	<i>Connarus wightii</i> Hook.f.	Connaraceae	Kurkuti	Shrub	Dicot
18	<i>Cyathula prostrata</i> Blume.	Amarantaceae	Prickly chaff flower/ cherukataladi	Herb	Dicot
19	<i>Cyclea peltata</i> Hook.f.Thoms.	Menispermaceae	Raj patha/ pada-kelenga	Climber	Dicot
20	<i>Cyperus rotundus</i> L.	Cyperaceae	Nut grass / Muthanga	Herb	Monocot
21	<i>Elephantopus scaber</i> L.	Asteraceae	Elephant's foot/ Anachuvadi	Herb	Dicot
22	<i>Embllica offinalis</i> Geartn.	Euphorbiaceae	Indian goose Gerry/ nalli	Tree	Dicot
23	<i>Eragrostis amabilis</i> Wight&Arn.	Poaceae	Bug's egg grass/ Karayampullu	Herb	Monocot
24	<i>Eranthemum pulchellum</i> Andr.	Acanthaceae	Blue sage	Shrub	Dicot
25	<i>Eupatorium perfoliatum</i> L.	Asteraceae	Boneset	Shrub	Dicot
26	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Asthma weed/ Nilappala	Herb	Dicot
27	<i>Ficus hispida</i> L.f.	Moraceae	Hairy fly/ Erumanaakk	Tree	Dicot
28	<i>Ficus religiosa</i> L.	Moraceae	Peepal / Arayal	Tree	Dicot
29	<i>Glycosmis pentaphylla</i> Corr.	Rutaceae	Ash Sheora/ Pannal	Shrub	Dicot
30	<i>Hedyotis corymbosa</i> Lam.	Rubiaceae	Diamond Flower/ Parppatakappullu	Herb	Dicot
31	<i>Heliotropium indicum</i> L.	Boraginaceae	Indian heliotrope /Thekkada	Herb	Dicot
32	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	China rose/ chemparuthi	Shrub	Dicot

33	<i>Hibiscus surattensis</i> Linn	Malvaceae	Bush sorre/ pulichai	Climber	Dicot
34	<i>Ichnocarpus frutescens</i> R.Br.	Apocynaceae	Black creeper/ Palvalli	Climber	Dicot
35	<i>Ixora coccinea</i> L	Rubiaceae	Ixora red/ Chethi	Shrub	Dicot
36	<i>Justicia adhatoda</i> L.	Acanthaceae	Malabar nut/ Adalodakam	Shrub	Dicot
37	<i>Leea indica</i> (Burm.f.)Merr	Vitaceae	Bandicoot Berry/ Nakku/ Maniperandi	shrub	Dicot
38	<i>Leucas aspera</i> Spr.	Lamiaceae	Common Leucas /Tumba	Herb	Dicot
39	<i>Mimosa pudica</i> L.	Mimosaceae	Touch-me-not/ thottavadi	Herb	Dicot
40	<i>Mimusops elengi</i> L.	Sapotaceae	Spanish cherry/ Elanji	Tree	Dicot
41	<i>Ocimum sanctum</i> L.	Lamiaceae	Holy basil/tulsi	Herb	Dicot
42	<i>Plumeria alba</i> Linn.	Apocynaceae	white frangipani /Chempakam vallutatu	Tree	Dicot
43	<i>Polyalthia korinti</i> Hk.f. &T.	Anonaceae	Karuvalli	Tree	Dicot
44	<i>Pothos scandens</i> L.	Araceae	Climbing Aroid/ Anaparua	Climber	Monocot
45	<i>Pterocarpus marsupium</i> Roxb.	Fabaceae	Malabar kino/venga	Tree	Dicot
46	<i>Santalum album</i> L.	Santalaceae	Sandalwood/ Chandanam	Tree	Dicot
47	<i>Scoparia dulcis</i> L.	Scrophulariaceae	Sweet broom weed/kallurukki	Herb	Dicot
48	<i>Sida acuta</i> Burm.	Malvaceae	common wireweed /Kurunthotti	Herb	Dicot
49	<i>Strychnos nux-vomica</i> L.	Loganiaceae	Poison Nut/ Kanjiram	Tree	Dicot
50	<i>Tectona grandis</i> L.f.	Verbenaceae	Teak /Thekku	Tree	Dicot
51	<i>Telosma pallida</i> Craib.	Asclepiadaceae	Telome vein	Climbing Shrub	Dicot
52	<i>Terminalia arjuna</i> Wight&Arn.	Combretaceae	arjun tree/ Nirmarutu	Tree	Dicot
53	<i>Terminalia catappa</i> L.	Combretaceae	Indian almond/ Badam	Tree	Dicot
54	<i>Trema orientalis</i> Bl.	Ulmaceae	Indian Charcoal Tree /Aamathali	Tree	Dicot
55	<i>Tridax procumbens</i> L.	Asteraceae	Coat Buttons/ Thelkuthi	Herb	Dicot
56	<i>Tylophora indica</i> (Burm.f.)Merr.	Asclepiadaceae	Indian Ipecac/ Vallippala	Herb	Dicot
57	<i>Urena lobata</i> L.	Malvaceae	Uthiram/ caesar weed	Herb	Dicot
58	<i>Uvaria narum</i> Wall.	Annonaceae	South Indian uvaria /Narumpanal	Shrub	Dicot
59	<i>Vernonia cinerea</i> Less.	Asteraceae	Ash coloured Fleabane/ poovan kuruntala	Herb	Dicot
60	<i>Zizyphus rugosa</i> Lam.	Rhamnaceae	Wild Jujube/ Thodali	Tree	Dicot

Table 2: Medicinal Uses and Mode of Administration of Plant Parts

S. NO	Scientific Name	Useful Plant Parts	Traditional Uses	Mode Of Administration
1	<i>Abrus precatorius</i> L.	Whole plant Dried root,seed	Swelling, Asthma,	Swelling- Mix seed powder in coconut oil & apply affected area, Asthma – Chew small piece of root.
2	<i>Acacia nilotica</i> (Linn.)Wild.	Leaves	Dysentery	Dysentery - Few tender leaves and little bark are boiled. This decoction is taken twice a day
3	<i>Achyranthus aspera</i> L.	Leaves, Root, Seeds	Cholera, Piles, Skin disease.	Skin allergy-The paste of leaves powder is applied externally on affected area. Cholera-1 tsp powder of root mix with warm water. Drink it. Piles – Add crushed seeds in daily meals.
4	<i>Adenanthera pavonina</i> L.	Wood, Seeds, Leaves	Boils, Inflammations, Gout and Rheumatism	A red powder made from the wood used as an antiseptic paste. The ground seeds are used to treat boils and inflammations. The bark was used to wash hair.
5	<i>Aerva lanata</i> Juss.	Whole plant	Kidney Stone, Urinary tract infection	Kidney stone – Take 2 tsp leaf juice twice a day. Urinary tract infection – Drink 50ml decoction of plant twice a day.
6	<i>Alstonia scholaris</i> R. Br.	Stem Bark	Fever, headache, Asthma Skin diseases	Bark paste is externally applied for skin diseases.
7	<i>Anamirta cocculus</i> Wight & Arn.	Fruits	Skin disease, Ulcers,	Ulcers and Scabies - Fresh fruit applied externally
8	<i>Areca catechu</i> L.	Nuts, Leaves and Roots	Leucoderma, Leprosy, Anemia, Skin ulcers, Obesity	Constipation-Boil two pinches of tender areca nut in one cup water. Cool and drink. Gum disease – Boil 2tsp powder of areca nut root in 3 glasses of water till it is reduced to half. Wash mouth with this thrice daily. Diarrhoea – Take 2 pinches of powdered areca nut with 1 tsp suger in one cup water.
9	<i>Azadirachta indica</i> A. Juss.	Bark	Jaundice	Jundice - Half cup of stem bark decoction is mixed with one spoon of honey and administered daily in the morning on empty stomach.
10	<i>Bauhinia purpurea</i> L.	Root	Piles	Piles - One spoon of root paste mixed with a glass of butter milk is given orally.
11	<i>Canscora diffusa</i> R.Br.	Whole plant	Diarrhoea	Diarrhoea - Whole plant is pounded with water. It is then strained through cloth to obtain decoction. Half cup of this decoction is taken twice daily up to three days
12	<i>Celastrus paniculata</i> Willd.	Seed, Leaf, bark	Brain tonic	Mental capabilities and Cognitive function - Chew 10-12 seeds of them at a time, or steep 1 tsp of seeds in 4 cups of boiling hot water for 3 hours. Then, sweeten to taste, and drink throughout the day to enhance
13	<i>Centella asiatica</i> Urb.	Leaf	Anaemia, Asthma, Bronchitis, Cholera, Measles, Blurred	Memory enhancer- takes powder of the dried leaves. Have 1 tsp with milk twice a day. Blurred vision- Add 1 tsp of honey with half tsp of

			vision, Varicose vein.	powdered dry leaves. Have it with milk. Varicose vein – Take 2 tsp leaves extract once a day
14	<i>Cleome rutidosperma</i> DC.	Leaves, Root.	Malaria, Skin diseases	Earache, Inflammation and Deafness - The leaf-sap is used in ear-instillations. A leaf extract is made into a lotion that is applied to irritable skin conditions, prickly heat.
15	<i>Clerodendron infortunatum</i> L.	Leaves, Root	Asthma, Cough, Rheumatism, scabies	Fever, Cough, Bronchial asthma - The roots and bark of stem of this plant prepared as decoction and given in the dose of 60-80 ml twice daily. Ulcers and Swellings - The leaves are ground well and applied externally.
16	<i>Commelina benghalensis</i> L.	Leaves, Rhizome & Root Whole plant	Wounds, leprosy. skin diseases, fever, asthma,	Wounds - The paste of plant is applied externally. Leprosy - The juice of leaves (one teaspoonful) is taken internally twice a day for 1-2 weeks. Dried or fresh material decoction may be used as external application for nettle rash
17	<i>Connarus wightii</i> Hook. f.	Root	Nerve swelling	Swelling - Root ground with <i>Citrus reticulata</i> in to paste and applied externally around swelling.
18	<i>Cyathula prostrata</i> Blume.	Leaf, Root, Whole plant	Cough, Headache, Dropsy	Cough - A decoction of the aerial parts of the plant are drunk. Otitis and Head ache - The sap of the plant is used as ear drops Scabies - The ash of the burnt plant, mixed with water, is rubbed on the body. A decoction of the leaves is applied to snake bites.
19	<i>Cyclea peltata</i> Hook. f. Thoms.	Leaves, Root	Snakebite, Abdominal pain, Diarrhoea,	Snake bite - Make a paste of the root. Apply to the affected area. Wounds - Apply paste of root & leaves to the affected area.
20	<i>Cyperus rotundus</i> L.	Rhizome, Root tuber	Indigestion, Cholesterol	Indigestion – Take 3g of powdered tuber in a glass of milk, boil. Drink once a day. Hypocholesterolemic – Consume grass tuber either in powder or decoction form.
21	<i>Elephantopus scaber</i> L.	Leaf, Root, Whole plant	Gall stone, Heart disease, Hair fall	Hair fall- Apply leaf juice on scalp, then wash after 6 hours Gall stone- Crush whole plant, make an infusion of it. Take 30 ml of it once a day. Menstrual disorder- Boil fresh leaves & stem of plant with water. Drink 2 tsp twice a day. Heart disease - Cut the root in small pieces. Make a decoction of it. Take a 2 tsp twice a day.
22	<i>Emblica officinalis</i> Geartn.	Fruit	Liver tonic, Stomachic, Ulcer	Diabetes - Quarter cup of fruit juice is given orally with a pinch of turmeric paste and honey daily once.
23	<i>Eragrostis amabilis</i> Wight&Arn	Leaf and Root	Menstrual disorder	Menstrual disorder - Decoction of the leaf and root is given orally
24	<i>Eranthemum pulchellum</i> Andr.	Root, Stem Leaves	Wounds Ulcers	The plant paste is applied on boils. The leaves are fried in Brassica campestris oil (sarsoon) and applied externally on cracked feet's.
25	<i>Eupatorium perfoliatum</i> L.	Flower, leaf	Yellow fever, Fracture	Take once cup of decoction of leaf twice a day for fracture and yellow fever.
26	<i>Euphorbia hirta</i> L.	Whole plant	Bronchitis, Jaundice, Gonorrhoea, Tumor	Cuts and Wounds -The plant paste is applied externally. Infusion or tea of the plant, 4 glasses daily, for bronchitis and labored breathing, asthma, chronic dysentery. Decoction of fresh plant used as gargle for the treatment of thrush.
27	<i>Ficus hispida</i> L.f.	Bark, fruit Root	Psoriasis, Anaemia, fever	Fruit juice is orally administrated for fever.
28	<i>Ficus religiosa</i> L.	Bark, seeds, fruits, latex and leaves.	Stomach upset, Wound, eczema, Rheumatism.	Wounds and bruises - A paste of the leaves can be directly applied on boils, bruises and wounds Stomach upset - The powdered form of the fruit can be consumed along with a glass of milk. Oil made from the root bark can be applied externally to relieve skin diseases like leprosy, eczema and also useful in relieving rheumatism
29	<i>Glycosmis pentaphylla</i> Corr.	Stems, Roots, Bark and Leaves	Coughs, Rheumatism, Anaemia	Paste of leaves, with a bit of ginger, applied to eczema Infusion of leaves given to women after delivery to induce appetite.
30	<i>Hedyotis corymbosa</i> Lam.	Whole plant	Jaundice, skin diseases, eczema	Plant juice mixed with sugar and milk for stomach burning. The decoction of whole plant can be administered in the conditions like fever, jaundice etc. Fresh Manjal along with extract of this plant can be ground well and prepared as oil for skin diseases like eczema, scabies etc.
31	<i>Heliotropium indicum</i> L.	Leaves	Dermatitis, Eczema, Ulcer	Decoction of leaves used for washing cuts and sores. Decoction of leaves and flowers used as gargle for sore throats and tonsillitis
32	<i>Hibiscus rosa-sinensis</i> L.	Leaf, Flower, Root	Leucorrhoea Hyperthermia Urinary problem	Leucorrhoea- Add 2 tsp leaf juice in a cup of water. Drink it twice a day. Hyperthermia - Take 200g flower petal. Add 1L water & 400g Jaggery in it. Boil until it gets half/thick. Take 5g of it once a day. Urinary problem- Drink 30 ml flower decoction once a day.
33	<i>Hibiscus</i>	Leaf, stem,	Eye diseases and Dysentery	Externally, the ash from the plant is applied to cuts, and an infusion is

	<i>surattensis</i> Linn	Root		used to treat itch caused by chickenpox.
34	<i>Ichinocarpus frutescens</i> R.Br	Leaves, Root	Asthma Dysentery, Urinary disorders	Root bark extract mixed with the root bark of <i>Zizyphus rogosa</i> (<i>Banbadai</i>) with 1-2 spoonful sugar is given twice a day in case of urinary disorders.
35	<i>Ixora coccinea</i> L.	Flower, Leaves, Root	Ulcer, Wounds Colic, Fever, Skin diseases	Skin disease - Chop flower. Boil them in coconut oil. Use it over infected or damaged skin. Leucorrhoea – crush flower. Make it paste. Add 1 tsp of it in one glass of butter milk. Have it twice a day. Fever – make a decoction with leaves. Have 20ml of it once a day.
36	<i>Justicia adhatoda</i> L.	Leaves, Root, Flower, Stem bark	Haematuria, Bronchitis. Cancer, Dysentery, Juaundice, Piles	Haematuria – Mix 1tsp leaf paste in half glass of water. Drink once a day. Dysentery – drink 3 tsp leaf juice once a day. Jaundice – Mix well 15 drops leaf juice with 1tsp honey. Take twice a day. Piles – consume 5 ml leaf juice twice a day.
37	<i>Leea indica</i> (Burm.f.) Merr.	Roots, leaves	Dizziness, Skin diseases	Leaf juice applied on the head for dizziness. Paste of roots applied to relieve skin complaints with rashes and allergic reactions.
38	<i>Leucas aspera</i> Spr.	Leaf, Flower, Whole plant	Fever, Headache, Scorpion bite, Snake bite.	For unconsciousness due to the toxicity of snake bite, the juice of leaves is used as nasal drops. Also the leaves are given internally. For scorpion bite, the constant rubbing of leaves over effected area can provide relief.
39	<i>Mimosa pudica</i> L.	Roots, Leaves, Flower head	Urogenital disorder, piles, Sinus, Dysentery	Wound healing - The leaf extract made by grinding the leaves with little water and extracting the juice is used for treating wounds. Piles - Crush the leaves into a fine paste and apply as a poultice, it will greatly ease the burning and bleeding
40	<i>Mimusops elengi</i> L.	Bark, Flower, Fruits, Seed	Leucoderma, Fever, Headache, cephalgia	The powder of dried flowers is used as a brain tonic. Decoction of bark is used to wash the wounds. Boiled leaves applied the as cold compress for headaches.
41	<i>Ocimum sanctum</i> L.	Leaves, Root, Seed	Fever, Cough, Headache, Mouth ulcer	The leaves are boiled with tea and taken for the treatment of common cold and fever. In case of headache, Grind basil leaves and mix it with sandalwood paste and apply this concoction on forehead. Chewing Basil leaves relieves mouth ulcers. Crushed basil leaves and mixed with honey and taking this concoction killing intestinal germs and bacteria and reliving stomach related disorders
42	<i>Plumeria alba</i> Linn.	Bark	Stomachache	Stomachache - One spoon of stem bark paste is administered with water.
43	<i>Polyalthia korinti</i> Hk.f.& T.	Root	Antidote	Oral administration of root powder decoction is an antidote for russel viper bite.
44	<i>Pothos scandens</i> L.	Root, Leaves,	Wound & burn, small pox healing, Asthma	Infusion of the leaves of this plant as a bath for curing convulsions and epilepsy. Plant leaves mixed with the fruits of <i>Capsicum annum</i> and rhizome of <i>Allium sativum</i> and ground into a paste with coconut oil has been applied topically on affected part for healing the wounds created during deliver.
45	<i>Pterocarpus marsupium</i> Roxb.	Stem Bark, Leaves	Diabetes	Diabetic - Stem bark is dried and powdered. Two spoons of powder with water are taken twice a day for one month. Scabies – Paste of wood can be applied externally.
46	<i>Santalum album</i> L.	wood	Colds, Bronchitis, Skin disease, Fever, infection of the urinary tract	Genital-Urinary disorder- consume pills made with wood poder and milk Prickly heat- Apply wood oil mixed with rose water to various part of body.
47	<i>Scoparia dulcis</i> L.	Leaves, Root, Stem, Whole plant	Diabetes Hypertension Headaches. Fever, Cough, Bronchitis	For headaches associated with fevers, leaf or whole plant macerated in water is drunk when cooled. A cold decoction of the plant is taken as a remedy for gravel and kidney complaints. The fresh or dried plants are used externally to treat pimples, ulcers, eczema, bruises and contusions An infusion of the herb is used as a mouthwash for infected gums.
48	<i>Sida acuta</i> Burm.	Leaves, Root, Whole plant.	Eczema, Rheumatism, heart disease, Piles	Fresh juice of roots applied to wounds and ulcers to promote healing. Paste of leaves mixed with coconut oil used for dandruff and hair strengthening
49	<i>Strychnos nux-vomica</i> L.	Stem bark, seed	Blood pressure, Dyspepsia. Snake bite.	Snake bite - One spoon of stem bark juice mixed with half cup of water is administered just after bite.
50	<i>Tectona grandis</i> L.f.	Leaves, Bark, Fruit, Root	Soar thrat, Leucoderma, Bronchitis	Decoction of leaves, fresh or dried, used as a gargle for sore throat. Paste of powdered wood applied for acute dermatitis.
51	<i>Telosma pallida</i> Carib.	Fruit	Leucoderma	Apply externally the latex of fruit paste on the localized white patches during the initial stage of leucoderma.
52	<i>Terminalia arjuna</i>	Bark	Heart disease, Diarrhoea, Fracture, Earache, Wound	Heart disease: Take 1tsp of bark powder with one glass milk twice a day. Diarrhoea -Take half cup of decoction of bark once a day. Fracture:

	Wight&An			Bark powder mixed with honey applies on the affected parts. Earache - juice of fresh leaves use as ear drop. Wounds: Wash wounds with thick decoction of bark twice a day.
53	<i>Terminalia cattapa</i> L.	Leaf bark fruit	Coughs, Asthma Leprosy, Headaches,	The juice of the leaves is ingested for coughs. The sap of young leaves mixed with the kernel oil has been used for the treatment of leprosy.
54	<i>Trema orientalis</i> Bl.	Leaves, Fruits, Bark, Stem & Seed	Hamatoria, Toothache.	A bark infusion is drunk or a tea made from small pieces of the roasted wood is used to treat dysentery.
55	<i>Tridax procumbens</i> L.	Leaves	Wounds.	The paste of leaves is applied on cuts and wound to stop bleeding.
56	<i>Tylophora indica</i> (Berm.f.)Merr.	Root, leaf, bark.	Leucorrhoea, Antidote.	Leucorrhoea- Prepares a decoction with leaves & root. Drink 2ml it once a day. Antidote- Apply the decoction prepared leaves & root on the toxic site.
57	<i>Urena lobata</i> L.	Roots, Leaves	Antioxidant, Antidiarrheal, Wound healing	Decoction of 30-60 gms of dried roots used for enteritis and dysentery, rheumatic pains, tonsillitis. Decoction of seeds taken internally a vermifuge. The paste of whole plant is applied externally on boils and eczema
58	<i>Uvaria narum</i> Wall.	Bark, Root, Leaves	Ascaris, epilepsy, jaundice	A decoction of the root bark is given to women to control fits at the time of delivery
59	<i>Vernonia cinerea</i> Less.	Seed, Root, Leaves, Whole plant	Fever, Swelling	Fever – Make decoction of whole plant. Drink 20ml of it twice a day. Swelling- Drink 10ml root decoction once a day.
60	<i>Zizyphus rugosa</i> Lam.	Bark, Flower, stem, Fruits	Dysentery, Astringent, Hypotensive	A bark paste of this plant applied in swelling of gums and toothaches.

Table 3: Relative Proportion of Dicot and Monocot, Families, Genera And Species

Division	Family	Percentage%	Genera	Percentage	Species	Percentage%
Dicot	32	86.48	52	91.23	55	91.66
Monocot	5	13.51	5	8.77	5	8.33
Total	37		57		60	

Table 4: Red Lis Ted Plants In Study Area

S.NO	SPECIES	STATUS
1	<i>Acacia nilotica</i> (Linn.)Wild	Least concern
2	<i>Alstonia scholaris</i> (Linn.) R. Br	Least concern
3	<i>Bauhinia purpurea</i> L.	Least concern
4	<i>Centella asiatica</i> (L.)	Least concern
5	<i>Commelina beghalensis</i> L	Least concern
6	<i>Cyperus rotundus</i> L.	Least concern
7	<i>Elephantopus scaber</i> L.	Least concern
8	<i>Hedyotis corymbosa</i> (L)	Least concern
9	<i>Heliotropium indicum</i> L.	Least concern
10	<i>Mimosa pudica</i> (L.)	Least concern
11	<i>Pterocarpus marsupium</i> Roxb	Vulnerable
12	<i>Santalum album</i> L	Vulnerable

Plants Present in the Sacred Grove Plate 4



Abrus precatorius



Acacia nilotica



Achyranthus aspera



Adenanthera pavonina



Aerva lanata



Alstonia scholaris



Anamirta cocculus



Azadirachta indica



Canscora diffusa

PLATE 5



Celastrus paniculata



Centalla asiatica



Cleome rutidosperma



Clerodendrum infortunatum



Commelina benghalensis



Connarus wightii



Cyathula prostrata



Cyclea peltata



Cyperus rotundus.

PLATE 6



Elephantopus scaber



Eragrostis amabilis



Eranthemum pulchellum



Eupatorium perfoliatum



Ficus hispida



Ficus religiosa



Heliotropium indicum



Hibiscus sarrattensis



Glycosmis pentaphylla

PLATE 7



Ichinocarpus frutescence



Leea indica



Leucas aspera



Mimusops elengi



Ocimum sanctum



Plumeria alba



Polyalthia korinti



Pothos scandens



Pterocarpus marsupium

PLATE 8



Scoparia dulcis



Sida acuta



Strychnos nux-vomica



Telosma pallida



Terminalia arjuna



Trema orientalis



Urena loba



Uvaria narum



Zizyphus rugosa

Conclusion

Sacred groves are the site of several medicinal plants including rare and endangered species of plants. Now a day's people are susceptible to many diseases because of changes in food habits and increasing environmental pollutions. The best remedy to cure these diseases using medicinal plants is better than Allopathy because they have no side effect. 60 plants identified from study area have medicinal uses and used for various ailments, like that every sacred groves are reservoir of medicinal plants and also maintaining good biodiversity. Therefore need to conserve sacred grove are important maintaining good health, good environment and sustainable utilization of resources for present and future generation.

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