

Ethnobotanical studies in the home gardens of Kunnamkulam, thrissur

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Abstract

To elucidate the floristic attributes of the shrub species and to record the associated ethnobotanical detail, a survey was conducted in the home gardens of Kunnamkulam in the Thrissur district of Kerala state. In the home gardens, plant diversity studies revealed 38 plant species spread across 23 families. These were found to be useful in the daily lives of the village residents as medicinal, nutritious, ornamental, fuel wood, and other purposes. The majority of the shrubs reported have multiple uses

Keywords: ethnobotany, home gardens, floristic attributes

Introduction

Ethnobotanical knowledge is based on observation, friendship, needs, and conventional ways of knowing and extends to both wild and domesticated species. When science grows over time, new discoveries, creativity, and techniques are constantly being added to the mix.

Ethnobotany is a multi-disciplinary, integrative area of study. Botany, mycology (fungi study), taxonomy (categorization), anthropology, ethnography, archaeology, comparative folklore, religious studies, medicine, chemistry, pharmacology (uses and effects of chemicals in plants), and more are among the methods used in ethnobotanical research. Some psychoactive animals and their mythologies transport us to worlds of ritual, mythology, and cosmology. In ethnobotanical research, we often refer to ancient history or colonial socioeconomic histories. Or even look at the origins of today's social movements. In the tropical and subtropical areas, tropical home gardens are an ancient tree-based mixed dense agro-ecosystem (Krishnankutty, 1990) [2]. A traditional home garden is a land area surrounding a house on which a mix of annual and perennial plants are grown together with or without animals and mostly managed by household members for their own use or for commercial purposes (Arunachalam, and Tanjang, 2009). Home gardens have a high plant diversity, with many multipurpose plants in different vegetation layers that are widely used to meet a variety of human needs, including food, medicine, building, fiber, animal fodder, as well as ornamental, religious, and ceremonial purposes.

Due to numerous socioeconomic pressures (Kumar and Nair, 2004) [3], Kerala's home gardens, which were once known for their multifunctionality, are gradually fragmenting, driving many species and their associated indigenous knowledge to extinction. As a result, there is a pressing need to preserve tropical home gardens.

As a result, it is a national priority to record the ethnobotanical knowledge associated with this diversity in the remaining home garden patches. In order to understand the floristic attributes of the resident species, as well as to record their uses and associated ethnobotanical detail, a study was conducted in the home gardens of Kunnamkulam in the Thrissur district of Kerala state.

Materials and Methods



Fig 1: Diversity Map.



Fig 2: Study area

Study Area

The current project was carried out in the Kunnamkulam thaluk. The coordinates of Kunnamkulam are 10.65°N 76.08°E. [5] It is 57 meters above sea level on average (187 feet). It's about 23 kilometers from Thrissur and 10 kilometers from Guruvayur. It's on the road that connects

Thrissur, Kochi, and North Kerala. As the name suggests, Kunnankulam is a land of hills and ponds. The field visit took place from January to March of 2021. Floral characters are used to distinguish between different types of plants. To describe the essence of the research field, photographs were taken. Data was primarily gathered from locals, with just a few exceptions. They were written down in the field notebook. The data was gathered from ethnobotany books and journals

Plant parts were collected based on ethnobotanical knowledge and medicinal properties. The investigation was carried out in a region with a large population of plant species. The plant species collected were described using the Flora of the Madras Presidency (Gamble and Fischer 1915-1936). The plants were Identified with the help of Dr. Manju madhavan Assistant Professor, PG & Research Department of Botany, vimala college, Thrissur Using flora of presidency of madras. The uses, vernacular names and other details collected from the local peoples.

Result and Discussion

There are 38 species divided into 23 families. Many were found by the local people in the study region (Table 1). The Amaranthaceae, Asteraceae, and Malvaceae families of plants were the most abundant in the study field. *Euphorbia hirta*, *Vernonia cinera*, *Mimosa pudica*, and other dominant species can be found. The investigation revealed that the locals use these plants for a variety of purposes, including medicinal, ornamental, constructional, and edible purposes. Local people in the study region still use many shrub species to treat a variety of health problems, and the latex of *Calotropis procera* is effective against wounds. Black pepper is made from the fruits of the *Piper nigrum*. This hot, pungent spice is one of the world's oldest and most

commonly used spices today. It's commonly used to flavour savoury foods, meat dishes, sauces, and snack foods. It's even used as a condiment on the table. *Bauhinia acuminata* and *Allamanda cathartica* are examples of ornamental plants. *Tecoma stans* is a decorative shrub whose flowers are used for religious purposes and whose grinding root is used as a scorpion bite remedy. Despite the fact that the younger generation in Kunnankulam prefers allopathic medicine, it is still widely used by the locals. Orthodox knowledge of medicinal plants and how to make medicine from them is, however, limited to the older generation. The abundance of conventional knowledge about ethnobotanical plants is in jeopardy.

Traditional knowledge and the use of local plants for basic needs are still essential in urban and semi-urban areas, not only in rural or tribal areas. The knowledge gathered on the useful plants in and around Kunnankulam, Kerala, India, includes medicinal, culinary, ornamental, and socio-cultural plants. The use of the root and bark of *Abutilon indicum* as a nerve tonic, and the leaves of *Paderia foetida* against diarrhoea, are examples of previously unknown claims from local people. *Nerium* contains a number of toxic compounds, and it has long been thought to be a poisonous plant. However, since its bitterness makes it unpalatable to humans and most animals, poisoning cases are uncommon, and the likelihood of human death is low in general. Larger doses can result in nausea, vomiting, excessive salivation, abdominal pain, bloody diarrhoea, and an erratic heartbeat. Most of the remedies used for disease healing were prepared from single plant. Sometimes combination of other parts of the same plant has been reported. In the present study majority of the plant species belonged to the Asteraceae and Lamiaceae families, revealing a diverse range of useful wild and cultivated species with potential ethno medicinal value.

Table 1: List of plants and their families, local name, Habit, and medicinal uses.

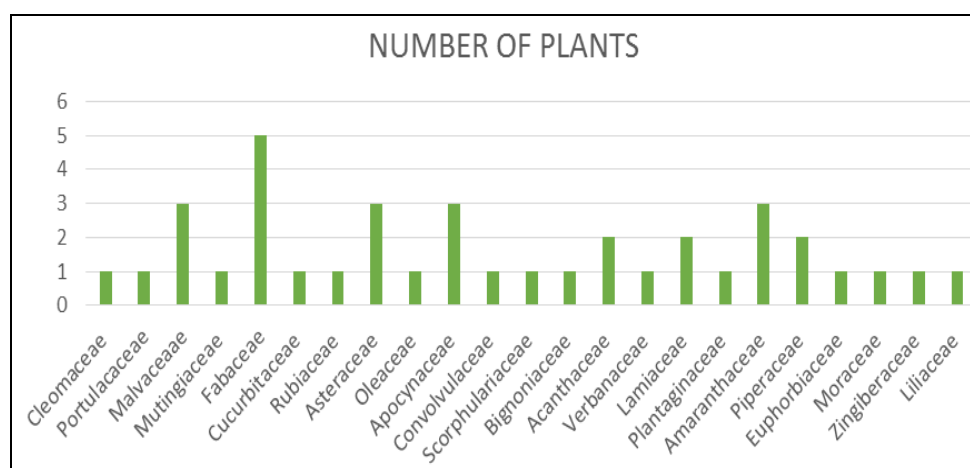
Sl. No	Binomial name	Family	Vernacular name	Habit	
1	<i>Cleome rutidosperma</i> DC.	Cleomaceae	Neelavela	Herb	anti-convulsant, anti-inflammatory, anti-stimulant, anti-scorbutic, anti-diarrheal, vesicant, and carminative, among other diseases. Certain extracts of the plant have been shown to have anti-oxidant, anti-plasmodial, analgesic, locomotory, anti-microbial, diuretic, laxative, anthelmintic, and anti-diabetic activity
2	<i>Portulaca oleraceae</i> L.	Portulacaceae	Cheriyagolicheera, Karicheera, Kozhuppa, Kozhuppacheera, Manalcheera, Suvandacheera, Uppucheera.	Herb	febrifuge, antiseptic, vermifuge, and other things, Antibacterial, antiulcerogenic, anti-inflammatory, antioxidant and wound-healing
3	<i>Abutilon indicum</i> (L.)	Malvaceae	Kaluram, Kattooram, Oorpam, Ooram, Thuthi	Herb	anti-inflammatory, and anthelmintic; the fixed oil is diuretic and for leprosy; and the bark is astringent and diuretic
4	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Chemparuthi	Shrub	wounds, inflammation, fever and coughs, diabetes, infections caused by bacteria and fungi, hair loss, and gastric ulcer
5	<i>Hibiscus vitifolius</i> L.	Malvaceae	Kattuvelluram	Shrub	Jaundice, inflammation, and diabetes.
6	<i>Muntingia calabura</i> L.	Muntingiaceae	Pancharappazham	Tree	Antioxidant activity, increased endothelial function, artery function, and insulin sensitivity, as well as a decrease in blood pressure and platelet reactivity.
7	<i>Mimosa pudica</i> L.	Fabaceae	Thottavadi	Herb	Dysentery, small pox, fever, ulcer, jaundice, leucoderma, inflammations, asthma, hemorrhoids, and fistula
8	<i>Bauhinia acuminata</i> L.	Fabaceae	Veluthamandaram, Mantharam	Shrub	bladder stones, venereal disorders, leprosy, asthma, and intestinal diseases
9	<i>Clitoria ternatea</i>	Fabaceae	sangu pushpam	Climber	Memory enhancing, nootropic, antistress, anxiolytic,

	L.				antidepressant, anticonvulsant, tranquillizing, and sedative
10	<i>Cassia fistula</i> L.	Fabaceae	Kanikkonna	Tree	Inflammatory swellings and as a cleaning agent for ulcers and wounds.
11	<i>Crotalaria pallida</i> Var. <i>Obovata</i> .	Fabaceae	Kilukkam petti	Shrub	Used to treat joint swelling and an extract made from the leaves is used to remove intestinal worms.
12	<i>Momordica charantia</i> L.	Cucurbitaceae	Kaypa	Climber	Cough, respiratory diseases, skin diseases, wounds, ulcer, gout, and rheumatism.
13	<i>Ixora coccinea</i> L.	Rubiaceae	Chethi	Shrub	Antiseptic
14	<i>Tridax procumbens</i> L.	Asteraceae	Muriyampachila, Odiyanchera	Herb	Wound healer, anticoagulant, antifungal, and insect repellent.
15	<i>Vernonia cinera</i> (L.)	Asteraceae	Puvankurunal	Herb	common cold
16	<i>Emilia sonchifolia</i> (L.)DC.	Asteraceae	Muyalchevian	Herb	Fever, sore throat, diarrhoea, eczema, and as an antidote for snake bites.
17	<i>Jasminum sambac</i> (L.)	Oleaceae	Cherupichakam, Mulla, Kudamulla.	Shrub	Antiseptic, cicatrisant, aphrodisiac, expectorant, anti-spasmodic, galactagogue, sedative, parturient, uterine, and so on. The flower of <i>Jasminum sambac</i> is used to treat intestinal worms, as well as jaundice and venereal diseases.
18	<i>Calotropis procera</i> (Aiton) W. T.	Apocynaceae	Eruk	Shrub	Diarrhoea, constipation, and stomach ulcers; painful conditions such as toothache, cramps, and joint pain; and parasitic infections such as elephantiasis and worms, despite severe safety concerns.
19	<i>Nerium olendar</i> L.	Apocynaceae	Arali	Shrub	Cardiac failure, asthma, epilepsy, cancer, painful menstrual cycles, leprosy, malaria, ringworm, indigestion, and venereal disease, as well as to induce abortions.
20	<i>Allamanda cathartica</i> L.	Apocynaceae	kolambi	Shrub	Liver tumours, jaundice, splenomegaly, and malaria. Some species have been shown to have activity against carcinoma cells, pathogenic fungi, and HIV in tests.
21	<i>Ipomoea triloba</i> L.	Convolvulaceae	thiruthaali	Climber	Headache, rheumatism, leprosy, epilepsy, ulcers, and fever treatment
22	<i>Bacopa monnieri</i> (L.)	Scrophulariaceae	Brahmi	Herb	Alzheimer's disease, improve memory, anxiety, attention deficit hyperactivity disorder (ADHD), allergies, irritable bowel syndrome, and as a stress tonic. Backache, hoarseness, mental illness, epilepsy, joint pain, and sexual performance disorders in both men and women
23	<i>Tecoma stans</i> (L.)	Bignoniaceae	Manjamoopan	Shrub	Diuretic, tonic, antisyphilitic, and vermifuge.
24	<i>Dipteracanthus propstratus</i> (Poir.)	Acanthaceae	Velipadakkam, Thuppalampotti	Herb	cardiotonic, antiulcer, antioxidant, venereal infections, rheumatic complaints, skin disorders, mosquito bites, and wound healing
25	<i>Thunbergia grandiflora</i> (Roxb.ex Rottl.) Roxb.	Acanthaceae		Climber	Menorrhagia, ear infections, and deafness, as well as cuts and boils.
26	<i>Clerodendrum infortunatum</i> L.	Verbenaceae	Peringalam or Perikilam	Herb	Antipyretic, ascaricide, laxative, vermifuge, anticonvulsant, antidiabetic, and for gravel, malaria, scabies, skin diseases, sores, spasms, scorpion stings, snake bites, and tumours.
27	<i>Ocimum sanctum</i> L.	Lamiaceae	Trittavu	Herb	Bronchitis, bronchial asthma, malaria, diarrhoea, dysentery, skin diseases, arthritis, painful eye diseases, chronic fever, insect bites, and other illnesses
28	<i>Leucas aspera</i> (Willd.)	Lamiaceae	Thumba	Herb	antifungal antioxidant, antimicrobial, antinociceptive and cytotoxic activity
29	<i>Scoparia dulis</i> L.	Plantaginaceae	Kallurukki	Herb	Diabetes, dysentery, earache, fever, gonorrhoea, headaches, jaundice, snake bite, stomach problems, toothache, and warts
30	<i>Amaranthus viridis</i> L.	Amaranthaceae	Cheera	Herb	Fever, pain, asthma, diabetes, dysentery, urinary disorders, liver disorders, eye disorders, and venereal diseases
31	<i>Gomphorea globosa</i> L.	Amaranthaceae	Chendumalli, Vadamalli	Herb	baby gripe, oliguria, cough, and diabetes
32	<i>Aerva lanata</i> (L.) Juss. Ex Schult.	Amaranthaceae	Cheera	Herb	jaundice
33	<i>Piper nigrum</i> L.	Piperaceae	Kurumulak	Climber	Constipation, insomnia, oral abscesses, sunburn, and toothache
34	<i>Peperonia</i>	Piperaceae	Mashipatcha, Mashithandu	Herb	Abdominal pain, abscesses, inflammation, boils, colic,

	<i>pellucida</i> (L.)Kunth.				nausea, gout, headache, kidney problems, and rheumatic joint pain
35	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Murikooti	Herb	Antidiarrheal,Snake bite
36	<i>Ficus religiosa</i> L.	Moraceae	Arayal, Arasu, Ashvatham, Bodhivriksham	Tree	asthma, diabetes, diarrhoea, epilepsy, gastric issues, inflammatory disorders, infectious diseases, and sexual disorders
37	<i>Curcuma longa</i> L.	Zingiberaceae	Manjal	Herb	antioxidant, anti-inflammatory, antimicrobial, antitumor, and hepatoprotective i
38	<i>Gloriosa superba</i> L.	Liliaceae	Kithonni, Mendoni	Climber	Gout, infertility, open wounds, snakebite, ulcers, arthritis, cholera, colic, kidney disorders, typhus, itching, leprosy, bruising, sprains, haemorrhoids, tumours, impotence, nocturnal discharge, smallpox, sexually transmitted diseases,

Table 2: Representation of families of plants

Sl. No	Family	Number of Plants
1	Cleomaceae	1
2	Portulacaceae	1
3	Malvaceae	3
4	Mutingiaceae	1
5	Fabaceae	5
6	Cucurbitaceae	1
7	Rubiaceae	1
8	Asteraceae	3
9	Oleaceae	1
10	Apocynaceae	3
11	Convolvulaceae	1
12	Scrophulariaceae	1
13	Bignoniaceae	1
14	Acanthaceae	2
15	Verbanaceae	1
16	Lamiaceae	2
17	Plantaginaceae	1
18	Amaranthaceae	3
19	Piperaceae	2
20	Euphorbiaceae	1
21	Moraceae	1
22	Zingiberaceae	1
23	Liliaceae	1

**Fig 3:** Representation of families of plants**Table 3:** Representation of plant habit and their percentage distribution

SL. No	Habit	Total Number	Percentage
1	HERBS	19	50%
2	SHRUBS	10	26%
3	CLIMBERS	6	16%
4	TREE	3	8%

Statistics of Plant Habit

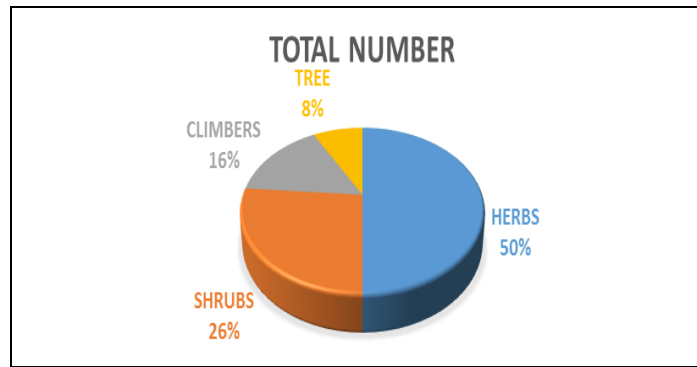


Fig 4



Fig 4: Pictures of some plant species collected

Summary and Conclusion

The state of Kerala is undergoing a rapid urbanization trend as a result of globalization. The geography of the transitional villages and towns in the state. However, my research shows that, despite being rapidly urbanised, the home gardens of Kunnamkulam are still rich in ethnobotanical diversity. The cataloguing of numerous ethnobotanical data often applies to the ecological function that home gardens will offer as a "green health care system" and as a subsistence dietary supplement.

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