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Documentation Of Ethnobotanical Knowledge Among The People Of Cumbummedu, Theni District, Tamil Nadu, India.

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ABSTRACT
An ethnobotanical plant survey was conducted to explore medicinal plant knowledge and its use among the local people within the study area. The exploration of the ethnomedicinal survey includes 57 plant species belonging to 35 families practiced by the people of Cumbummedu, Theni district, Tamil Nadu, India. The traditional knowledge of individuals having reliable ethnomedicinal expertise within the drug's formulation using available plants and its dosage practiced were documented. Data were collected through questionnaires also as informal personal interviews during the sector trips within the study area. These data were documented from Jan 2023 to July 2023. The collected therapeutic plants were mostly to cure skin ailments, jaundice, diabetes, headache, stomachache, wounds, and sexual disorders. The curative plants employed by the local population are systematized sequentially, by their plant name, nearby name(s), part(s) utilized, method of treatment and their related illness were documented. The conservation of the ethnomedicinal practices is essential so as to deal with the predominant illness.

Keywords: Ethno-medicinal plants, Traditional healers, Cumbummedu, drug's formulation.

INTRODUCTION

Over the past decade, traditional medicine has gained significant traction on a global scale. The World Health Organization (WHO) defines traditional medicine as the collective knowledge, skills, and practices rooted in the theories, beliefs, and experiences of various cultures. (Rajadurai *et al*., 2006). These practices, whether scientifically proven or not, are utilized for maintaining health, as well as for preventing, diagnosing, improving, or treating physical and mental illnesses. Ethnobotany studies tells us how different cultures use plants for medicinal, religious, and practical purposes. This field of study combines the disciplines of anthropology and botany, seeking to understand the intricate relationship between humans and plants. (Lekha and Menakashree, 2018). Through research gained insight into how indigenous peoples have developed a deep understanding of the plants around them, using them for sustenance, healing, and spiritual practices (Ganie Aijaz Hassan *et al*., 2013, Uma *et al*., 2021, Rashida banu *et al.,* 2024)..

One of the main goals of ethnobotany is to preserve traditional knowledge about plant uses before it is lost. Many indigenous cultures have passed down knowledge of plant medicine and practices for generations, but with globalization and urbanization, this knowledge is at risk of disappearing. By documenting and studying these practices, ethnobotanists can help ensure that valuable information about the uses of plants is not lost forever.

Furthermore, it has practical applications in modern medicine and agriculture. Many pharmaceutical drugs have been derived from plant compounds that have been used for centuries by indigenous cultures. By studying how different cultures use plants for medicinal purposes, researchers can discover new sources of potential treatments for various ailments. Additionally, ethnobotanical knowledge can inform sustainable agricultural practices, helping to preserve biodiversity and ensure the continued availability of important plant resources.

In present study, the ethnobotanical study has been carried out in Cumbummedu of Theni district to explore the traditional usage of plant available in locals.

MATERIALS AND METHODS

Study area

Fig 1- Study area – Cumbummedu

Tamil Nadu is the eleventh largest states in India with a geographical area is 130058 Km^2 and lies between 11° 00' to 12° 00' north latitudes and 77° 09 to 78° 50 east longitudes. Cumbummedu, a small town (Fig-1) which lies on the south- east part of Theni district. The geographical location ranges between 9' 80' latitude and 77'32' longitude and at the height of 384 m above the sea level. The climate of the Cumbummedu is semi- arid and comprises of red, black and alluvial soil. The temperature ranges from a minimum of 13 °C to a maximum of 39.5 °C in plain area and the hills ranges as low as 4-5 °C to 25 °C. The annual rainfall is more in summer season than winter.

Data collection

Frequent field visits were made to the study area during Jan 2023 to July 2023. At the time of visits fresh plant specimens were collected and the collected plants were tagged and brought to laboratory for examining their binomial and indigenous uses. Plants were made into herbarium according to the field herbarium techniques. Identified and verified matched informants with voucher plant specimens are deposited in the S.T. Hindu College, Nagercoil. All the plants are identification and nomenclature of the listed plats were based on the relavent floras (Fabricant and Fransworth,2001, Andrade-Cetto ,2009; Lee *et al*., 2008; Gamble, 1915; Henry *et al*.,1978; Henry *et al*., 1989; Matthew,1983; Matthew, 1999; Nayar and Sastry, 1987; Hooker, 1872).

The indigenous uses of the collected plant specimens were gathered from traditional healers, elderly people and medicinal plant collectors from the Cumbummedu area.

RESULTS AND DISCUSSION

The exploration of ethnomedicinal survey of medicinal utilization of Cumbummedu village, elder persons suggest that 57 plant species belongs to 35 families (Table 1.).

The recorded medicinal plants were used mainly for fever, cold, menstruation problems, scabies, various types of pain and inflammations. Medicines are used to fight against disease, fuel wood for burning, food and fodder for our cattle, flowers for celebration and valuable wood for making agricultural tools. Traditional medicine is the most important approach to study natural resource management if indigenous people.

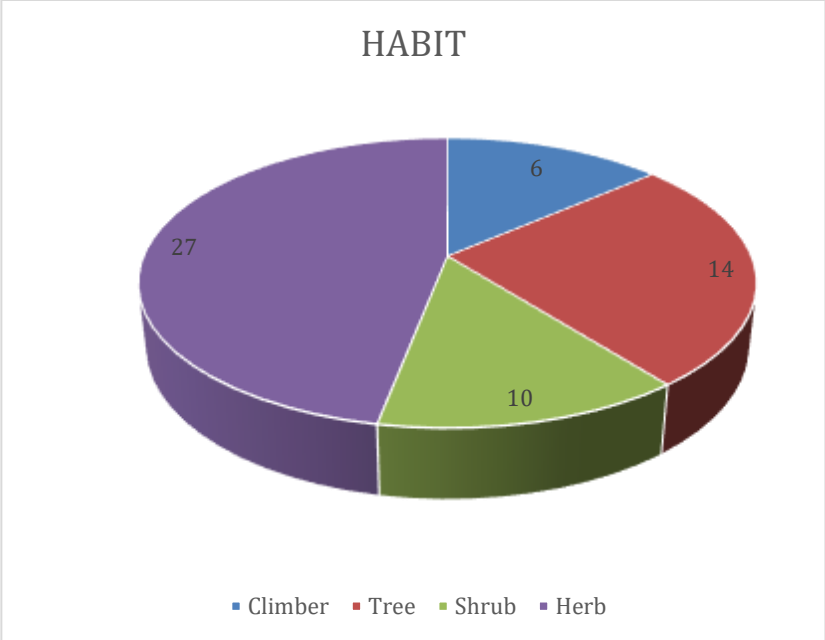

Fig 2– Distribution of medicinal plant species according to their life form.

They include herbs, shrubs, trees and climbers. They are mostly found growing either in waste lands as weeds or in forest slopes and sometimes widely distributed in all plants. Some of them are cultivated near the houses particularly of medicine men. Herbs form the major source of medicine consisting of about 27 plants following to shrub 10, tree 14 and climber 6 respectively (Fig-2). Different plant parts like leaves, root, stem, bark, flower, fruit, seeds, galls, latex and sometimes the whole plant are used by the local people of study area for various purposes. Mainly they used the plants for medicine

Table - 1. List of medicinal plant collected from Cumbummedu, Theni District.

S.No.	Botanical Name	Family	Tamil Name	Habit	Part used	Administration	Medicinal Uses
1.	***Abrus precatorius* L.**	Leguminosae	Kundumani	Climber	Leaf and seed	Oral	cough; ovarian functions
2.	***Abutilon indicum* (L.) Sweet.**	Malvaceae	Thuthi	Shrub	Root and leaf	Oral	Fever
3.	***Acalypha indica* L.**	Euphorbiaceae	Kuppaimeni	Herb	Leaf and root	Oral	Ulcer; Respiratory illness
4.	***Achyranthes aspera* L.**	Amaranthaceae	Naayuruvi	Herb	Leaf and root	Oral and applied on skin	skin infection; boils; diarrhoea
5.	***Aegle marmelos* (L.) Correa.**	Rutaceae	Vilvam	Tree	Leaf and fruit	Oral and paste applied on skin	Diarrhoea; snakebite
6.	***Aerva lanata* (L.) Juss. exSchult.**	Amaranthaceae	KoolaChedi	Herb	Whole plant	Oral	Urinary tract infection
7.	***Aloe vera* (L.) Burm.f.**	Xanthorrhoeaceae	Sothukatthalai	Herb	Leaf	Applied on skin	skin burn; skin infections
8.	***Alternanthera pungens* Kunth.**	Amaranthaceae	Kuppaikeerai	Herb	Stem	Applied on skin	wounds
9.	***Andrographis paniculatea* (Burm.f.) Nees.**	Acanthaceae	Nilaveembu	Herb	Whole plant	Oral	Fever; jaundice; skin disease; blood purifier
10.	***Annona squamosa* Delile.**	Annonaceae	Sithapalam	Tree	Bark, root and leaves	Oral	Diarrhoea; cold and clarify urine
11.	***Argemone mexicana* var. aculeatissimaMoric. exPrain.**	Papaveraceae	Prammathandu	Herb	Root and seed	Applied on skin	Skin diseases; skin infection; snake bite
12.	***Bambusa arundinacea* Willd.**	Poaceae	Moongil	Tree	Stem	Oral	Abortion stimulation
13.	***Boerhaavia diffusa* L.**	Nyctaginaceae	Mukkirattai	Herb	Root,leaf and seed	Oral	Cough; nausea; jaundice
14.	***Calotropis gigantea* (L.) Dryand.**	Apocynaceae	Erukkalai	Shrub	Root, leaf and stem latex	Oral	Fever; indigestion; snake bite
15.	***Cardiospermum halicacabum* L.**	Sapindaceae	Mudakkathan	Climber	Root and leaf	Oral and applied on skin	Diuretic; itchy skin
16.	***Catharanthus roseus* (L.) G.Don.**	Apocynaceae	Kasarali	Herb	Leaf	Oral	High blood pressure and cancer
17.	***Centella asiatica* (L.) Urb.**	Apiaceae	Vallarai	Herb	Whole plant	Oral	Leprosy
18.	***Cissus quadrangularis* L.**	Vitaceae	Pirandai	Climber	Stem and leaf	Applied on wound	Bone fracture
19.	***Coccinia grandis* (L.) Voigt**	Cucurbitaceae	Kovai	Climber	Leaf and root	Oral	Diabetes
20.	***Coriandrum sativum* L.**	Apiaceae	Kothamalli	Herb	Leaf	Oral	Stomatitis
21.	***Curcuma longa* L.**	Zingiberaceae	Manjal	Herb	Rhizome	Applied on skin and oral	Sprains; wounds; skin diseases
22.	***Cynodon dactylon* (L.) Pers.**	Poaceae	Arugampullu	Herb	Root	Oral	Blood sugar; cystitis

23.	***Datura metel*** L.	Solanaceae	Ummatham	Herb	Leaf and seed	Oral	Asthma; tranquilizer
24.	***Eclipta prostrata*** (L.) L.	Asteraceae	Karisilanganni	Herb	Whole plant	Applied on hair and oral	Jaundice; hepatic and spleen enlargement
25.	***Enicostema axillare*** (Poir. ex Lam.) A. Raynal.	Gentianaceae	Vellarugu	Herb	Whole plant	Oral	Stomach ache; blood purifier
26.	***Euphorbia hirta*** L.	Euphorbiaceae	Amman Pacharisi	Herb	Whole plant	Oral	Cough; asthma; colic, dysentery and diseases of genito-urinary tract.
27.	***Ficus benghalensis*** L.	Moraceae	Allamaram	Tree	Bark and latex	Oral and applied on skin	Rheumatism and lumbago; diarrhoea; dysentery; diabetes
28.	***Hybanthusennea spermus*** (L.) F.Muell.	Violaceae	Orithalthamarai	Herb	Whole plant	Oral	Sex inducer
29.	***Hygrophila auriculate*** **(Schumach.) Heine.**	Acanthaceae	NeerMulli	Herb	Whole plant	Oral	Urinary stone
30.	***Jasminum angustifolium*** (L.) Willd.	Oleaceae	Kattumalli	Climber	Leaf	Oral	Diarrhoea
31.	***Justicia adhatoda*** **L.**	Acanthaceae	Adadodai	Shrub	Leaf	Oral	Cold; cough
32.	***Lantana camara*** L.	Verbenaceae	Unni	Shrub	Whole plant	Oral	Wound healing; stomach ache; tetanus
33.	***Lawsonia inermis*** **L.**	Lythraceae	Azhavanam	Tree	Leaf	Applied on skin	Skin troubles
34.	***Mangifera indica*** **L.**	Anacardiaceae	Maa	Tree	Fruit and bark	Oral	Diuretic; uterine haemorrhage
35.	***Mimosa pudica*** L.	Leguminosae	MudanguThamarai	Herb	Leaf	Oral	Sexual potency
36.	***Mimusops elengi*** L.	Sapotaceae	Magudam	Tree	Bark, fruit and flower	Oral	Diarrhoea; dysentery; constipation
37.	***Murraya koenigii*** **(L.) Spreng.**	Rutaceae	Kariveppilai	Tree	Leaf	Oral	Hair growth; reducing bile
38.	***Musa Paradisiaca*** L.	Musaceae	Vazhai	Herb	Pseudo stem	Oral	Snake bite; urinary infection
39.	***Passiflora foetida*** L.	Passifloraceae	Poonaippalam	Climber	Fruit	Oral	Intestinal worms
40.	***Phyllanthus amarus*** Schumach. andThonn.	Phyllanthaceae	Keelanelli	Herb	Whole plant	Oral	Jaundice
41.	***Phyllanthus emblica*****L.**	Phyllanthaceae	Nelli	Tree	Fruit	Oral	Stomach ulcers; diuretic
42.	***Physalis minima*** **L.**	Solanaceae	Sudakkuthakkali	Herb	Fruit	Oral	Stomach disorders
43.	***Plumbago zeylanica*** L.	Plumbaginaceae	Chithiraimoolam	Herb	Root	Applied on skin	Piles
44.	***Pongamia pinnata*** (L.) Pierre.	Leguminosae	Pungan	Tree	Root and bark	Oral	Ulcers; fistulous sores; tooth and strengthening gums; piles
45.	***Ricinus communis*** L.	Euphorbiaceae	Amanakku	Shrub	Bark and seed	Oral and applied on skin	Hasten delivery; stomach ache

46.	***Senna alata* (L.) Roxb.**	Leguminosae	SeemaiAgathi	Shrub	Flower	Oral	Asthma
47.	***Senna auriculata* (L.) Roxb.**	Leguminosae	Avaram	Shrub	Flower	Oral	Stomach ulcer
48.	***Senna siamea* (Lam.) H.S.Irwin and Barneby.**	Leguminosae	PonAvaram	Tree	Leaves	Applied on skin	Bone fracture
49.	***Sesamum indicum* L.**	Pedaliaceae	Yellu	Herb	Seed and leaf	Oral and applied on skin	Piles; chicken pox
50.	***Sesbania grandiflora*** (L.) Pers**.**	Leguminosae	Aagathi	Tree	Root	Oral	Cough; diarrhoea and dysentery
51.	***Sida acuta*** Burm.f.	Malvaceae	ArivalmanaiPoondu	Herb	Whole plant	Oral	Indigestion; stomach ache; urinary disorders; toothache; fever
52.	***Solanum nigrum* L.**	Solanaceae	Manathakkali	Shrub	Whole plant	Oral	Appetite stimulant; ulcer
53.	***Solanum torvum* Sw.**	Solanaceae	Sundakkai	Shrub	Fruit, root and leaves	Oral and applied on skin	Heal crack feet; antiseptic
54.	***Solanum trilobatum* L.**	Solanaceae	Thuthuvalai	Shrub	Fruit	Oral	Constipation; cough
55.	***Syzygium cumini*** (L.) Skeels.	Myrtaceae	Naval	Tree	Bark and seed	Oral	diabetes
56.	***Tamarindus indica* L.**	Leguminosae	Puli	Tree	Fruit, leaf and bark	Oral and applied on wounds	Wounds; swelling; dysentery; abdominal pain
57.	***Zingiber officinale* Roscoe.**	Zingiberaceae	Ingi	Herb	Rhizome	Oral	Indigestion

Different plant parts like leaves, root, stem, bark, flower, fruit, seeds, galls, latex and sometimes the whole plant are used by the people of study area for various purposes. Mainly they used the plants for medicine. The Fig 3 represent the plant parts used for the formulation of medicine for various diseases.

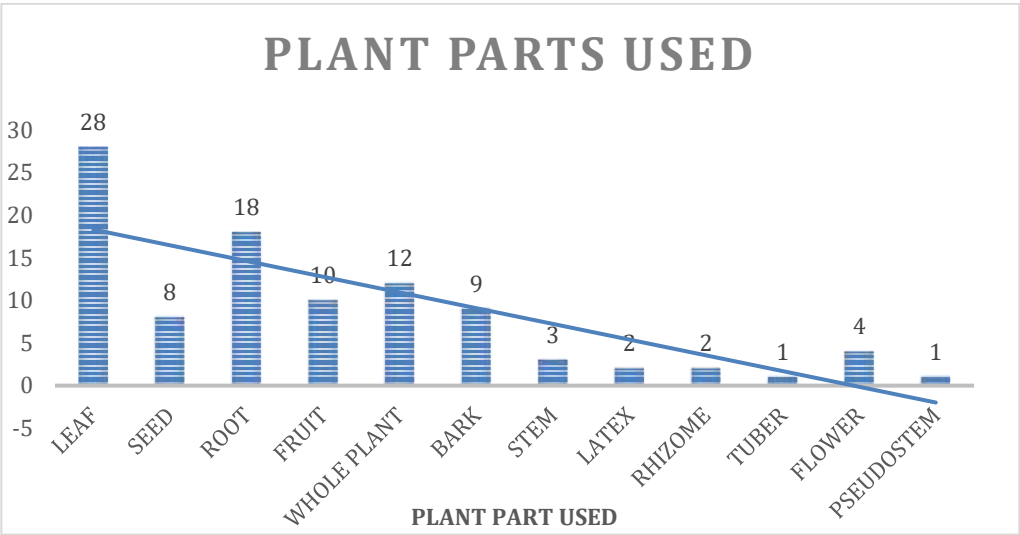

Fig 3 –Graphical presentation of plant parts used in the formulation of medicine.

Leguminosae is the most common family with 7 species, followed by Solanaceae with 5. Other families have 1-3 species each. Plants are often used directly for medicinal purposes, with leaves being a common remedy for various ailments such as ulcers, cancer, and skin diseases. Examples include using *Euphorbia hirta* leaves for ulcers and *Andrographis paniculata* juice for skin diseases. *Aloe vera* leaves are used for pimples, headaches, and reducing cholesterol. (Table 1).

The study found that plants in the area have many traditional uses for medicine, food, and other purposes. Different plant forms like decoctions, juices, and pastes are used by traditional healers to treat various diseases. This research highlights the importance of traditional medicine in the community and records local knowledge about medicinal plants. The survey showed that the area has a rich diversity of plants used to treat a wide range of illnesses, with 57 medicinal plants identified in the study.

Local people in a study area use 57 plants to treat various diseases, such as ulcers, diabetes, skin issues, headaches, malaria, and asthma. These plants can be used individually or in combination with other materials and are prepared using special methods like heating, boiling, extraction, or fermentation. A single herbal recipe can be effective for treating multiple ailments, demonstrating the versatility of plants in traditional medicine.

Most remedies are made from a single plant part and multiple preparation methods, but some use different parts of the same plant. (Fabricant and Fransworth *et al*., 2001 Ethnobotany now focuses on the cultural significance of the relationship between humans and plants, rather than solely seeking new pharmaceutical sources. The goals have shifted towards understanding human populations and their connections with plants in various cultures, aiming to benefit these populations and their ecosystems. Modern ethnobotanical research focuses on exploring the meaning behind these connections, moving away from the colonial-era style of bioprospecting.

CONCLUSION

A traditional use of medicinal plants employed by the people of Cumbummedu, Theni district uncovered traditional medicinal plant uses, with 25% new uses reported. It emphasizes the importance of preserving medicinal flora for primary healthcare. Older generations must pass on their knowledge to prevent its loss. Deforestation, urbanization, and changing land use threaten these plants, highlighting the need for conservation efforts. Cultivating these plants should be promoted to safeguard their medicinal value.

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CONFLICT OF INTEREST

The authors of this manuscript have no conflicts of interest to declare.

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