

A Survey of Native Medicinal Plants in the Kandaripadam, Thenhipalam Village, Malappuram District, Kerala

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Abstract

Ethnic medicines have frequently led to the development of new treatments or active ingredients for a number of serious illnesses. In this present investigation, we conducted periodic field survey of medicinal plants in Kandaripadam, Thenhipalam Village, Malappuram district, Kerala from the month of October 2021 to March 2022. The medicinal value of all the plant species were documented. We documented a total 51 plant species belonging to 32 families and 48 genera. Species under the family Asteraceae and Lamiaceae were found to be dominant with 5 species each. Among the 51 medicinal plants surveyed, 28 species were herbs, 12 were trees, 6 were Climbers and 5 were shrubs. The study reveals that the plants surveyed possess various medicinal properties. Hence, it is the local people's responsibility to conserve these plants and preserve for the future generation.

Keywords: Survey, Medicinal plants, Kandaripadam, Malappuram, Therapeutic Uses.

1. Introduction

India is one of the world's twelve mega-diversity countries. There are 17,000 flowering plants in India. The Eastern Himalayas and the Western Ghats are the two of India's hotspots among the world's top 25 hotspots (Ganesan *et al.*, 2008). Due to India's rich cultural variety, tribal wisdom is a precious legacy. Around 9,000 species out of 16,000 are recognized to be commercially valuable (Drishya *et al.*, 2021). Plants give food, shelter, fuel and medicine along with many other things. Medicinal plants have a wide range of properties that can be used to heal a number of ailments. The study of medicinal plants is considered incredibly significant in India. The supplementary or traditional medicinal system as well as the existence of diverse cultural and socio-religious traditions plays a vital role in healthcare across the Indian subcontinent. It includes a wide variety of diagnostic and therapeutic options (Tirant *et al.*, 2018). As a result, the World Health Organization has recognized the significance of the medicinal plants in the medical field (Acharya *et al.*, 2022). In order to perform a survey, it is

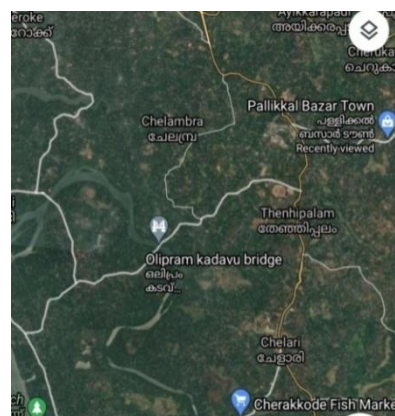
possible to identify the properties of medicinal plants. We can learn about the importance of plants in our lives by investigating their medical applications.

Malappuram is Kerala's third largest district. Malappuram literally translates to "terraced place atop the hills". Wayanad district surrounds Malappuram on the northeast and Kozhikode District on the northwest. Ayurvedic, ethnomedical, cultural, historical and political traditions are plenty in this district. The region is well-known for its therapeutic plants. The agricultural sector of the district encourages dense development of medicinal plants (Pius *et al.*, 2015).

2. Materials and methods

2.1. Study area

The research was carried out at Kandaripadam in Thenhipalam village. Thenhipalam ($11^{\circ}7'34''N$ $75^{\circ}53'25''E$) is a village in Kerala's Malappuram district. In the Tirurangadi taluk, Thenhipalam is a census town and panchayat. Kandaripadam (471m) is the field area in Thenhipalam panchayat ($11^{\circ}07'35''N$ $75^{\circ}52'55''E$). Medicinal plants flourish in this region. The purpose of this research is to look at the therapeutic plants found in Kandaripadam, Thenhipalam village, Kerala. The field visit was took place on a regular basis between October 2021 and March 2022, a field survey was undertaken.



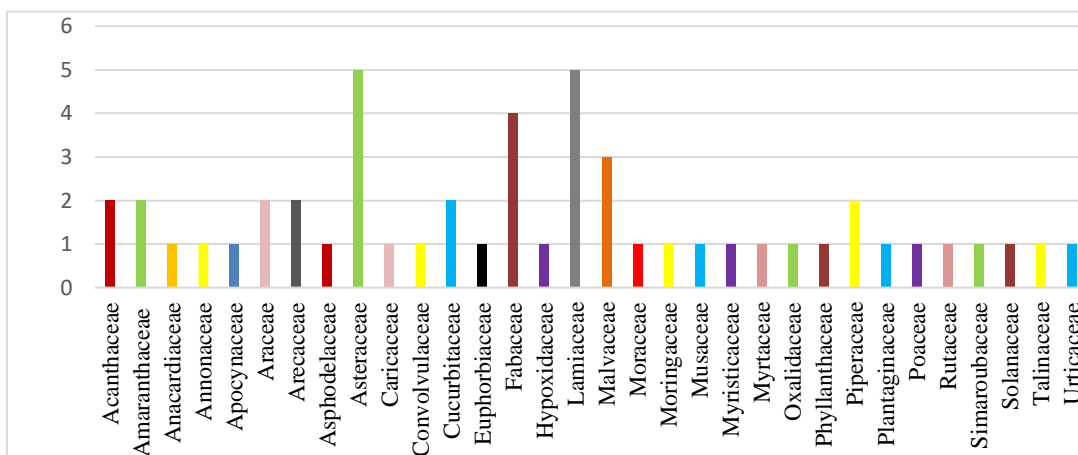
2.2 Plant collection:

Plants have been collected in the Kandaripadam region of Thenhipalam village that have medicinal characteristics and may be used to treat a variety of ailments. They were categorised according to their Family, Medicinal uses, Habits and plant parts used. The medicinal plants' Geotags were noted using the "GPS Map camera" software. Using Gamble volume, the scientific names of the plants were determined. The therapeutic characteristics of the plants were gathered from a variety of sources. The confirmation was carried out by the BSI's virtual herbarium in India.

3. Result

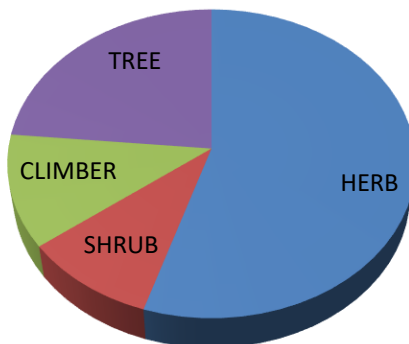
In this survey 51 medicinal plants belonging to 48 genera and 32 families were documented in the locality (Table I & Plate I). Family Asteraceae and Lamiaceae (5) is dominant (Graph 1), followed by Fabaceae (4).

Graph 1- Showing the number of species present in the families surveyed in the study area Kandaripadam



More plants were found to be herbs (28) followed by trees (12), climbers (6) and shrubs (5) (Chart I).

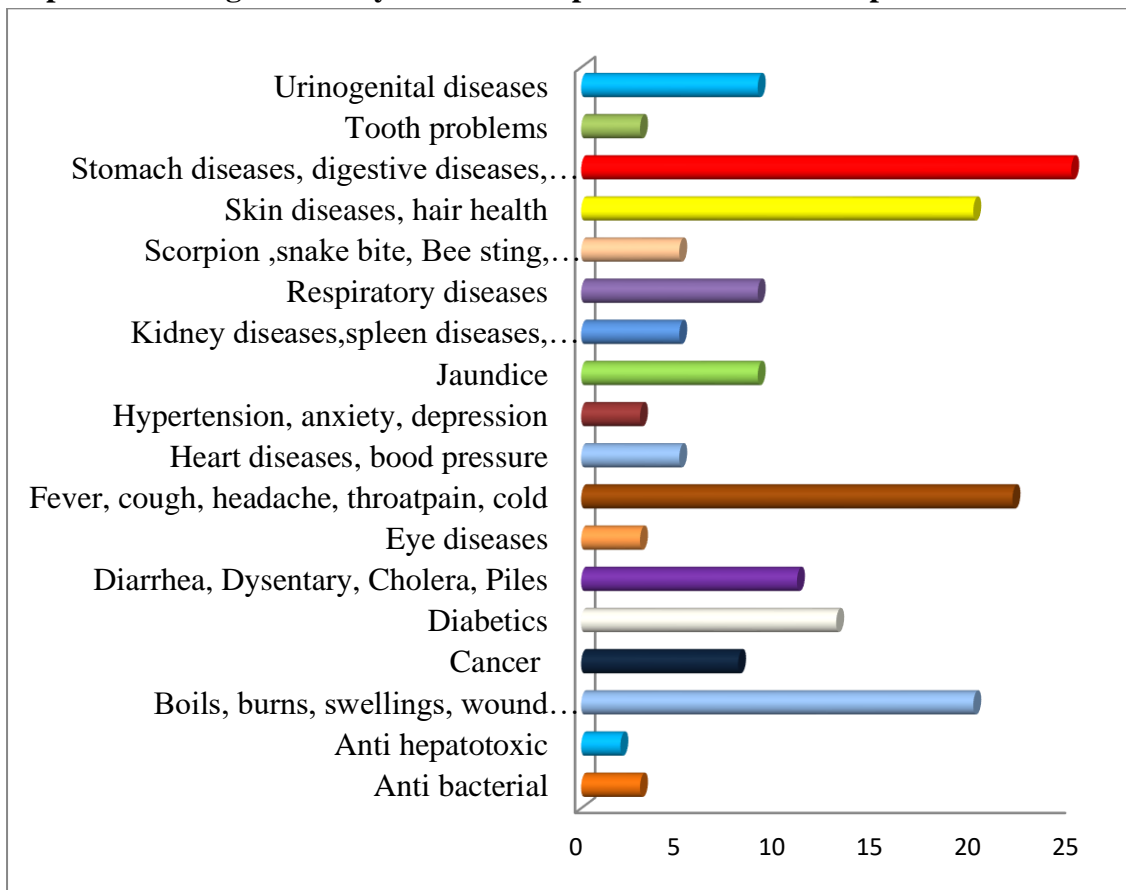
Chart I: Showing the various ratios of plant habits surveyed in the study area.



Leaves (56.8%) possess medicinal properties in majority of the plants. Some of the medicinal plants are utilized as Whole Plant (23.5%), Root (29.4%), Fruits (21.5%), Seeds (15.6%), Stem (11.7%), Flowers (7.8%) and Tuber (3.9%). Nuts (3.9%) Petiole(1.9%), Rhizome(1.9%), and Bark (1.9%), are used only in few plants.

The plants surveyed are used to treat fever, cough, head ache, throat pain, cold, treat ulcer, stomach, digestive disorders, gastro-intestinal diseases, boils, burns, anti-inflammatory, swellings treatments wound healing, allergy, anti-bacterial, anti-hepatotoxic, cancer, diabetics, cholera, piles, diarrhea, dysentery, Eye diseases , heart diseases, hypertension, anxiety, depression, Jaundice, Kidney diseases, spleen diseases, liver diseases, respiratory diseases, scorpion, snake bite, Bee sting, bug bite, skin diseases, tooth problems, and urino-genital diseases (Graph 2).

Graph 2: Showing the surveyed medicinal plants and their therapeutic uses.



4. Discussion

Similar studies were observed in ethnobotanical survey based on indigenous knowledge of the Kattunaikka and Paniya tribes of Nilambur forest, Malappuram District, conducted by Chithra and Geetha, (2021). They provided information about 79 medicinal plant species which is used to treat various diseases by tribes. Survey on the medicinal plants of Malappuram district, Kerala carried out by Pius *et al.*, (2015) resulted in the documentation of the 869 taxa, 772 species belonging to 144 families which used in folk system. Investigation on medicinal plants used by the tribes of Vythiri taluk, Wayanad district, Kerala was conducted by Devi and Shyma,(2013) and observed 67 medicinal plant species belonging to 44 families, for the treatment of human and domestic animal ailment by the Kurichia, Kuruma, Adiyar, Kattunaikka and Paniya tribes. Medicinal plants’ documentation which is used by the traditional healers in Mayannur forest, Thrissur district, Kerala, India was carried out by Soja and Saradha, (2021) and found that 107 plant species belonging to 46 families includes herbs, shrub, trees and climbers were used for the treatment of wound healing, skin diseases fever, and menstrual problems by traditional healers.

Plate I: Medicinal Plants Surveyed in Kandaripadam, Thenhipalam Village, Mallapuram District, Kerala



Catharanthus roseus



Eclipta prostrata



Phyllanthus



Leucas aspera



Annona muricata



Piper nigrum



Aloe vera



Ocimum sanctum



Hibiscus rosa-



Strobilanthes alternata



Murraya koenigii



Myristica fragrans

Table I: The Plants Surveyed in Kandaripadam, Thenhipalam Village, Mallapuram District, Kerala

| S. No | Scientific name | Family | Habit | Common Name | Plant Parts Used | Medicinal uses |
|-------|---|---------------|-------|------------------|------------------|---|
| 1 | <i>Acmella calva</i> (Wall. ex DC.) R. K.Jansen | Asteraceae | Herb | Tooth Ache Plant | Flower | Treat Inflammation & Toothache. |
| 2 | <i>Aerva lanata</i> (L.)Juss.exSchult | Amaranthaceae | Herb | Buikallan & Boor | Whole Plant | Cure Jaundice, Diuresis & Inflammation. |

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|----|---|------------------------------|------------|--------------------|---------------------------|---|
| 3 | <i>Aloe vera</i> (L.) Burm.f. | Asphodelaceae (Liliaceae) | Herb | Aloe | Leaf | Treat Boils, Burns, Swellings, Wound, Cancer & Diabetes. |
| 4 | <i>Amorphophallus paeoniifolius</i> (Dennst.) Nicolson, | Araceae | Herb | Elephant Foot Yam | Tuber | Cure Toothaches, Gastrointestinal Issues, Hemorrhoids/Piles, Anorexia & Constipation. |
| 5 | <i>Annona muricata</i> L. | Annonaceae | Tree | Sour sop | Leaves, Fruits & Seed | Treat Depression, Urethritis, Colon, Breast Cancer & stress. |
| 6 | <i>Areca catechu</i> L. | Areaceae | Tree | Areca Nut | Leaves & Nuts | Cure Tooth Decay & Tinea Infection. |
| 7 | <i>Artocarpus heterophyllus</i> Lam. | Moraceae | Tree | Jack Fruit | Leaf, Fruits, Seed & Root | Treat Stomachaches, Fever, Skin Problem & Cancer. |
| 8 | <i>Biophytum sensitivum</i> (L.) DC. | Oxalidaceae | Herb | Little Tree Plant | Whole Plant | Cure Diabetics, Bacterial diseases & Inflammation. |
| 9 | <i>Capsicum frutescens</i> L. | Solanaceae | Herb | Wild Chilli Pepper | Fruit | Treat Cancer, Colds, Coughs, & Headaches, bacterial diseases Cancer. |
| 10 | <i>Carica papaya</i> L. | Caricaceae | Small Tree | Papaya | Fruit & Leaf | Cure Constipation, Jaundice, Cancer, Diabetes & Immune System diseases. |
| 11 | <i>Cassia fistula</i> L. | Fabaceae | Tree | Golden Shower Tree | Leaves & Root | Treat Ulcers, Constipation, Heart Problems, Skin Problems, Fever & Heart Problems. |
| 12 | <i>Catharanthus roseus</i> (L.) G. Don | Apocynaceae | Herb | Periwinkle | Leaf, Root & Stem | Cure Diabetes, Cancer, Bee Stings & Skin Infections. |
| 13 | <i>Centrosema pubescens</i> Benth. | Fabaceae | Climber | Soft Butterfly Pea | Seeds & Leaf | Treat Diabetics, Cancer, Bee Stings & Skin Infections. |

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|----|---|---------------|---------|-----------------------------|-------------------------------|--|
| 14 | <i>Chromolaena odorata</i> (L.)R.M.King &H.Rob. | Asteraceae | Shrub | Saim Weed | Leaves | Treat Wound, Burn & Skin Infection. |
| 15 | <i>Coccinia grandis</i> (L.) Voigt | Cucurbitaceae | Climber | Ivy Gourd | Roots, Leaves & Fruit | Cure Jaundice, Asthma & Constipation. |
| 16 | <i>Cocos nucifera</i> L. | Arecaceae | Tree | Coconut | Endocarp & Tender Coconut | Treat Diuresis, fungal & bacterial diseases. |
| 17 | <i>Colocasia esculenta</i> (L.) Schott | Araceae | Herb | Taro, Yam, | Leaf, Petiole & Tuber Of Root | Cure Swelling, Pain, Infected Sores, Heart Failure, Cough, Asthma, Piles, Skin Diseases, Vomiting & Burning. |
| 18 | <i>Curculigo orchoides</i> Gaertn. | Hypoxidaceae | Herb | Golden Eye Grass | Whole Plant | Cure Diarrhea, cancer, Hepatic diseases & Immune system diseases. |
| 19 | <i>Cyathula prostrata</i> (L.) Blume. | Amaranthaceae | Herb | Little Ironweed | Whole Plant | Cure Dysentery, Cough, Asthma, Piles & Cholera |
| 20 | <i>Cynodon dactylon</i> (L.) Pers. | Poaceae | Herb | Bermuda Grass | Whole Plant | Treat Wounds, Eye Disorders, Nasal Haemorrhage Skin Illness, Diabetes, Urinary Tract Infections & Blood Abnormalities. |
| 21 | <i>Desmodium triflorum</i> (L.) DC | Fabaceae | Herb | Creeping Tick Trefoil | Whole Plant | Cure Diarrhea, Dysentery, Wounds & Skin Problems. |
| 22 | <i>Eclipta prostrata</i> L. | Asteraceae | Herb | False Daisy | Whole Plant | Cure Dandruff. |
| 23 | <i>Elephantopus scaber</i> L. | Asteraceae | Herb | Elephant's Foot & Iron Weed | Root, Stem & Leaves | Treat Cough, Asthma, Fevers & Wounds. |

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|----|---|----------------|---------------------|--------------------|---|---|
| 24 | <i>Hibiscus hispidissimus</i> Griff. | Malvaceae | Shrub | Bush Sorrel | Leaf, Stem & Root | Treat Liver & Digestion Problems. |
| 25 | <i>Hibiscus rosa-sinensis</i> L. | Malvaceae | Shrub | Hibiscus | Leaf, Flower & Root | Cure Liver Problems, Hair Problems, Diuresis & Cough. |
| 26 | <i>Ipomoea mauritiana</i> Jacq. | Convolvulaceae | Climber | Morning Glory | Rhizome & Root | Treat Breast Infections, Tuberculosis & Diuresis. |
| 27 | <i>Laportea interrupta</i> (L.) Chew | Urticaceae | Herb | Stinging Nettle | Leaves & Stem | Cure Asthma, Cough, Boils & Diuresis. |
| 28 | <i>Leucas aspera</i> (Wild.) Link. | Lamiaceae | Herb | Thumba | Whole Plant | Treat Snake Bites, Skin Outbreaks, Asthma & Fever. |
| 29 | <i>Mangifera indica</i> L. | Anacardiaceae | Tree | Mango | Fruit & Leaves | Treat Respiratory Diseases, Colds, Asthma, Cough & Kidney Stones. |
| 30 | <i>Mimosa pudica</i> L. | Fabaceae | Herb | Touch Me Not Plant | Roots, Leaves & Flower | Cure Toothaches, Menstruation Issues, Urinary Infection, Haemorrhoids, Piles & Wound Healing. |
| 31 | <i>Moringa pterygosperma</i> Gaertn. nom.illeg. | Moringaceae | Tree | Drumstick Tree | Leaves, Roots, Seed, Bark, Fruit & Flowers. | Treat Eye Problems, Constipation & Blood Pressure. |
| 32 | <i>Murraya koenigii</i> (L.) Sprengel | Rutaceae | Shrub to small tree | Curry Leaf Tree | Leaf | Treat Skin Eruptions, Burns, Diarrhoea, Constipation, & Wounds. |
| 33 | <i>Musa paradisiacal</i> L. | Musaceae | Herb | Banana | Tender Inner Stem & Fruit | Cure Diabetics, Skin Infections & Digestive Diseases. |

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|----|---|----------------|---------|----------------------|---------------------|--|
| 34 | <i>Myristica fragrans</i> Houtt. | Myristicaceae | Tree | Nutmeg | Seed | Treat Stomach Ulcers, Indigestion & Liver Problems. |
| 35 | <i>Ocimum sanctum</i> Linn. | Lamiaceae | Herb | Holy Basil | Leaves, Root & Seed | Treat Fever, Cough, Headache, Mouth Ulcer & Common Cold. |
| 36 | <i>Ocimum tenuiflorum</i> Linn. | Lamiaceae | Herb | Holy Basil | Leaves, Root & Seed | Cure Skin Disorders, Stomach Troubles, Eye Problems, Fever, Cough & Headache. |
| 37 | <i>Phyllanthus amarus</i> L. | Phyllanthaceae | Herb | Gale Of Wind | Whole Plant | Treat Diarrhoea, Dysentery, Jaundice, Intermittent Fevers, Urinogenital Issues, Wounds, Liver, Kidney & Spleen Diseases. |
| 38 | <i>Piper nigrum</i> L. | Piperaceae | Climber | Black Pepper | Fruit | Cure Colds, Coughs, Diarrhoea & Fever. |
| 39 | <i>Piper retrofractum</i> Vahl | Piperaceae | Climber | Javanese Long Pepper | Fruit | Treat Colds, Coughs, Diarrhoea & Fever. |
| 40 | <i>Plectranthus amboinicus</i> (Lour.) Spreng | Lamiaceae | Herb | Indian Borage | Leaf | Treat Cough, Asthma, Digestive, Genitourinary, Respiratory & Skin Diseases. |
| 41 | <i>Psidium guajava</i> L. | Myrtaceae | Tree | Guava | Leaf & Fruit | Treat Ulcers, Vomiting, Diabetes & Wound Healing. |
| 42 | <i>Scoparia dulcis</i> L. | Plantaginaceae | Herb | Licorice Weed | Whole Plant | Treat Kidney Stones, Hypertension, Diabetes, Wounds & Stomach Disorders. |
| 43 | <i>Sida acuta</i> Burm.f | Malvaceae | Shrub | Broom Grass | Whole Plant | Cure Kidney Stones, |

| | | | | | | |
|----|--|----------------|---------|-----------------------------|-------------------|---|
| | | | | | | Hypertension, Diabetes, Wounds & Stomach Problems. |
| 44 | <i>Simarouba glauca</i> DC. | Simarouba ceae | Tree | Paradise Tree | Leaves & Bark | Cure Diarrhoea, Cancer Fever & Ulcers. |
| 45 | <i>Strobilanthes alternata</i> (Burm.f) Moylan ex J.R.I Wood | Acanthaceae | Herb | Red Ivy & Red Flame Ivy | Leaf | Cure Wound Healing, Stomach Ache, Diabetes & Skin Issues. |
| 46 | <i>Talinum portulacifolium</i> (Forssk.) Asch.exSchwein. | Talinaceae | Herb | Water Leaf & Ceylon Spinach | Leaves | Treat Strokes, Cancer & Diabetes. |
| 47 | <i>Thunbergia erecta</i> (Benth.) T.Anderson | Acanthaceae | Shrub | Bush Clock Vine | Leaf, Stem & Root | Cure Anxiety Problems. |
| 48 | <i>Tragia involucrate</i> L. | Euphorbiaceae | Herb | Indian Stinging Nettle | Root & Leaf | Treat Skin Infections, Scorpion Stings & Diabetese. |
| 49 | <i>Trichosanthes cucumerina</i> L. | Cucurbitaceae | Climber | Snake Gourd | Fruit | Treat Inflammation, Swellings & Diabetes. |
| 50 | <i>Vernonia cinerea</i> (L.) Less. | Asteraceae | Herb | Little Ironweed | Whole Plant | Cure Skin Disorders, Dysentery Cough, Diarrhoea & Stomach Discomfort. |
| 51 | <i>Vitex negundo</i> L. | Lamiaceae | Herb | Chinese Chaste Tree | Seed & Leaf | Treat Cough, Fever, Gas Problems, Stomachaches, Asthma, Wound & Mouth Ulcers. |

5. Conclusion

It was discovered that medicinal plants belonging to the families Asteraceae and Lamiaceae were found in greater amounts than the other families. Each of the two families, Asteraceae and Lamiaceae has five species followed by Fabaceae with 4 species. Medicinal plants are routinely harvested by various pharma companies due to their medical properties. It is also overgrazed by the domestic animals which results in the depletion of these medicinally valuable plants. So all we can do is to educate the local community about the necessity of plant protection. People must be aware of the critical role of medicinal plants in our environment like supporting human lives and treating health ailments. As a result, it is our social responsibility to protect and preserve them just for the sake of biodiversity. This initiative promotes the protection of native plants in the local biodiversity.

6. Acknowledgments

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