Survey And Documentation Of Medicinal Climbers In VTM NSS College Campus, Dhanuvachapuram, Thiruvananthapuram

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ABSTRACT

Climbing plants are a vital yet often overlooked group of flora that contribute significantly to traditional medicine and biodiversity. This study was undertaken to survey and document the medicinally important climbers present within the campus of VTM NSS College, Dhanuvachapuram, located in the southern part of Thiruvananthapuram district, Kerala. A field survey conducted between January to March 2022 resulted in the identification of 20 species of climbers belonging to 16 genera and 11 families. For each species, the botanical name, family, local name, parts used, and medicinal applications were recorded through field observations, literature review, and informal interviews with local resource persons. The most commonly used plant parts were leaves and roots, and many climbers were traditionally used to treat conditions such as skin diseases, respiratory ailments, digestive issues, fever, and wounds. The dominance of families like Fabaceae, Cucurbitaceae, and Apocynaceae reflects their widespread use in Kerala's folk medicine. The findings underline the importance of conserving medicinal plant resources in educational ecosystems and creating awareness about the medicinal wealth present in our immediate environment.

Key words : Medicinal climbers, Cucurbitaceae, digestive issues, inflammation, medicinal wealth

INTRODUCTION

Climbing plants, or climbers, are a distinctive group of flora characterized by their inability to stand erect without support. They rely on other plants, fences, or artificial structures to grow vertically and access sunlight. While often ignored in conventional floristic surveys due to their trailing or twining habits, climbers contribute significantly to ecosystem structure, diversity, and especially to traditional medicinal practices in tropical regions such as Kerala. For centuries, climbers have been used in Indian traditional medicine systems like Ayurveda, Siddha, and folk remedies for their therapeutic properties. They are known to possess bioactive compounds that are effective in treating ailments ranging from common infections to chronic conditions like diabetes and inflammation. Despite their proven significance, climbers remain under documented, particularly in microhabitats such as educational campuses, which often serve as unnoticed repositories of plant biodiversity.

The VTM NSS College, situated in Dhanuvachapuram, Thiruvananthapuram, is located near the foothills of the Western Ghats, one of the world's eight "hottest hotspots" of biodiversity. The college campus is rich in semi wild vegetation, boundary hedges, and unpaved areas that offer ideal conditions for the growth of a variety of climbing plants. This makes it a suitable site for an ethnobotanical survey aimed at documenting medicinally important climbers.

Objectives of the study:

1. To identify and document climbers with medicinal properties found within the VTM NSS College campus
2. To collect ethnobotanical information on the traditional uses of these plants
3. To promote awareness among students, staff, and local communities about the importance of preserving medicinal plant diversity
4. To contribute to the baseline data useful for future conservation and academic studies

MATERIALS AND METHODS

Study area

The study was conducted within the campus of VTM NSS College**,** situated in Dhanuvachapuram**,** in the southern part of Thiruvananthapuram District, Kerala (Latitude: 8.367°N, Longitude : 77.005°E). The campus spans a semi urban area with a mix of natural vegetation, cultivated gardens, hedgerows, and less disturbed green patches. The tropical humid climate and fertile lateritic soil support a diverse flora, including numerous climbers.

Survey period

The field survey was carried out from January to March 2022, covering both the pre-monsoon and early monsoon seasons, when most climbers are in active growth and easier to identify.

Methodology

- **Field walks and observations**: Regular field visits were conducted during morning hours to survey the entire campus, especially boundary walls, fence lines, garden edges, and semi wild patches.
- **Specimen collection and identification**: Medicinal climbers were photographed and collected following ethical and minimal impact practices. Specimens were identified using standard floras such as *Flora of the Presidency of Madras* and *flowering plants of Kerala*.
- **Medicinal data collection**: Local knowledge on the medicinal uses of the plants was gathered through informal interviews with college staff, nearby residents, and traditional healers.
- **Documentation**: Each species was documented with its botanical name, family, local (Malayalam) name, parts used, and traditional medicinal uses.

RESULTS

The present study led to the successful documentation of 20 species of medicinal climbers belonging to 11 botanical families from the VTM NSS College campus, Dhanuvachapuram. These climbers were recorded from various microhabitats such as hedges, fences, garden borders, and areas of semi wild vegetation within the campus.

Enumeration of Medicinal climbers

A total of 20 species of medicinally important climbers belonging to 11 families were identified from the VTM NSS College campus. Each climber is presented with its botanical name, family, local name, habit, parts used and medicinal uses.

1. *Cissus quadrangularis* L.
Family: Vitaceae
Local name: Changalamparanda
Habit: Fleshy, angular stemmed climber
Parts used: Stem
Medicinal Use: Used for bone fracture healing, anti-inflammatory, and as a general tonic.
2. *Tinospora cordifolia* (Willd.) Miers
Family: Menispermaceae
Local name: Amruthu / Chittamruthu
Habit: Woody climber
Parts used: Stem
Medicinal use: Immunomodulator, antipyretic, antidiabetic; used in fevers and general debility
3. *Clitoria ternatea* L.
Family: Fabaceae
Local name: Shankupushpam
Habit: Twining climber
Parts used: Flowers, roots
Medicinal use: Brain tonic, anti-stress agent, used in Ayurvedic formulations.
4. *Abrus precatorius* L.
Family: Fabaceae
Local name: Kunni
Habit: Twining herbaceous climber
Parts used: Seeds (processed), roots
Medicinal use: Cough, asthma, joint pain (highly toxic if improperly used).
5. *Hemidesmus indicus* (L.) R.Br.
Family: Apocynaceae
Local name: Nannari
Habit: Slender twining climber
Parts used: Roots
Medicinal use: Used as a blood purifier, cooling agent, and for treating skin diseases.
6. *Cardiospermum halicacabum* L.
Family: Sapindaceae
Local name: Uzhinja
Habit: Delicate climber
Parts used: Leaves, seeds
Medicinal use: Used for rheumatism, joint pain, skin disorders.
7. *Trichosanthes cucumerina* L.
Family: Cucurbitaceae
Local name: Kaippayaru
Habit: Herbaceous climber
Parts used: Fruit, leaves

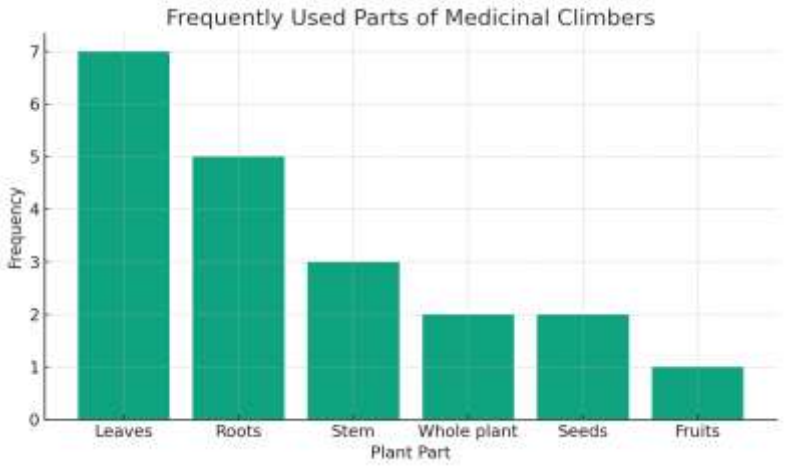
Medicinal use: Antidiabetic, digestive stimulant.
8. *Ipomoea quamoclit* L.
Family: Convolvulaceae
Local name: Kozhippovu
Habit: Slender ornamental climber
Parts used: Whole plant
Medicinal use: Used in traditional medicine for parasitic infections (anthelmintic).
9. *Cyclea peltata* (Lam.) Hook.f. & Thomson
Family: Menispermaceae
Local name: Vattuvalli
Habit: Climber with peltate leaves
Parts used: Leaves, roots
Medicinal use: Fever, wound healing, digestive issues.
10. *Merremia tridentata* (L.) Hallier f.
Family: Convolvulaceae
Local name: Elikkolli
Habit: Low twining herb
Parts used: Whole plant
Medicinal use: Anti-inflammatory, used for sprains and wounds.
11. *Operculina turpethum* (L.) Silva Manso
Family: Convolvulaceae
Local name: Cherula
Habit: Woody climber
Parts used: Roots
Medicinal use: Used as a purgative, for liver ailments.
12. *Pergularia daemia* (Forssk.) Chiov.
Family: Apocynaceae
Local name: Uzhinja valari
Habit: Twining climber
Parts used: Leaves, latex
Medicinal use: Used in cough, asthma, and skin conditions.
13. *Marsdenia volubilis* (L.f.) Cooke
Family: Apocynaceae
Local name: Kakkatta
Habit: Strong woody climber
Parts used: Root, leaves
Medicinal use: Ulcers, wounds, and anti-inflammatory uses.
14. *Dioscorea bulbifera* L.
Family: Dioscoreaceae
Local name: Cheriakizhangu
Habit: Tuberous climber
Parts used: Tubers
Medicinal use: Piles, abdominal disorders (after processing to reduce toxicity).
15. *Entada rheedii* Spreng.
Family: Fabaceae
Local name: Churavukottam
Habit: Large woody climber
Parts used: Seeds, bark
Medicinal use: Used in traditional medicine for nervous disorders.
16. *Momordica cymbalaria* Fenzl ex Naudin
Family: Cucurbitaceae
Local name: Kaattupavakka
Habit: Herbaceous creeper
Parts used: Fruits, leaves
Medicinal use: Diabetes, ulcers.
17. *Bauhinia vahlii* Wight & Arn.
Family: Fabaceae
Local Name: Vellila
Habit: Woody climber
Parts Used: Bark, leaves
Medicinal Use: Diarrhoea, dysentery, wound healing.
18. *Passiflora edulis.* Sims.

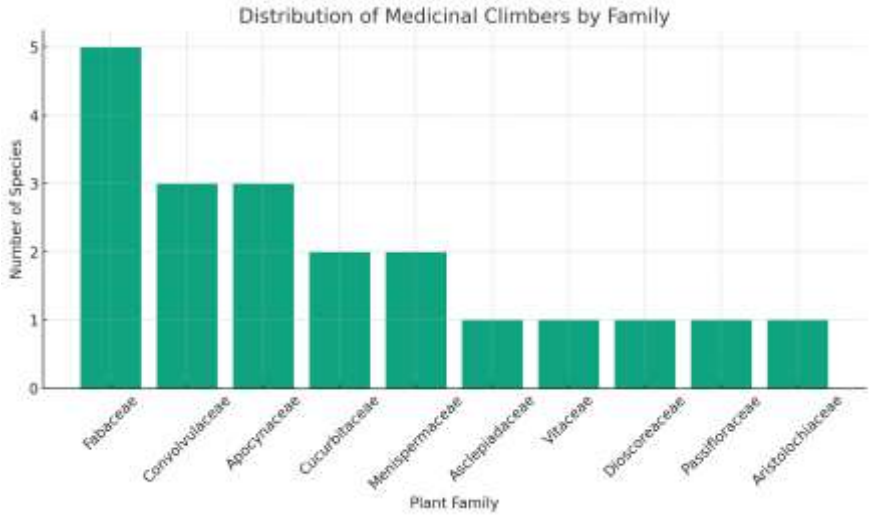
Family: Passifloraceae
Local Name: Passion fruit
Habit: Vigorous woody climber
Parts used: Fruit, leaves
Medicinal use: Sedative, anxiety relief, insomnia.
19. *Derris scandens* (Roxb.) Benth.
Family: Fabaceae
Local name: Kattupoovamkurunnila
Habit: Woody liana
Parts used: Stems
Medicinal use: Treating arthritis and muscle pain.

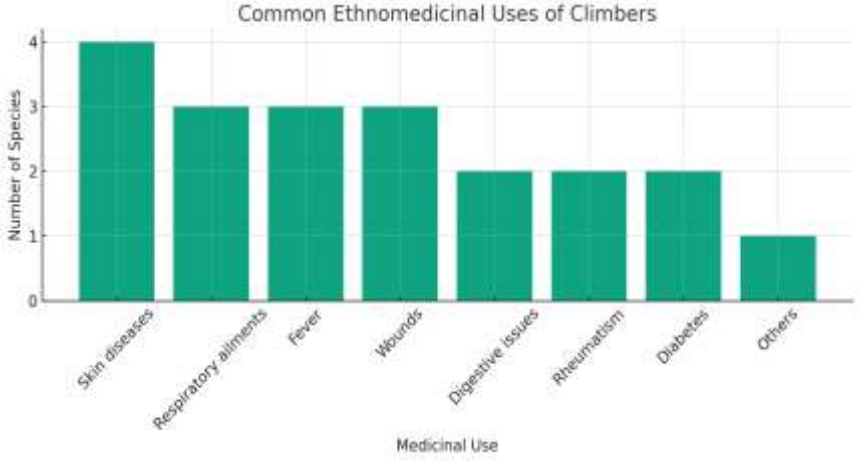
20. *Tylophora indica* (Burm.f.) Merr.
Family: Apocynaceae
Local Name: Vallippala
Habit: Slender twiner
Parts Used: Leaves
Medicinal Use: Asthma, cough, immune booster.

Table.1 : Enumeration of the medicinal climbers

Sl.No	Botanical name	Family	Local name	Part used	Medicinal uses
1	*Cissus quadrangularis* L.	Vitaceae	Changalamparanda	Stem	Bone healing, anti-inflammatory
2	*Tinospora cordifolia* (Willd.) Miers	Menispermaceae	Amruthu / Chittamruthu	Stem	Fever, diabetes, immunity booster
3	*Clitoria ternatea* L.	Fabaceae	Shankupushpam	Flowers, Root	Memory enhancer, stress relief
4	*Abrus precatorius* L.	Fabaceae	Kunni	Seeds, Root	Cough, joint pain (toxic if not processed)
5	*Hemidesmus indicus* (L.) R.Br.	Apocynaceae	Nannari	Roots	Blood purifier, cooling agent, skin diseases.
6	*Cardiospermum halicacabum* L.	Sapindaceae	Uzhinja	Leaves	Joint pain, rheumatism
7	*Trichosanthes cucumerina* L.	Cucurbitaceae	Kaippayaru	Fruit, Leaves	Diabetes, skin infections
8	*Ipomoea quamoclit* L.	Convolvulaceae	Kozhippovu	Whole plant	Anthelmintic
9	*Cyclea peltata* (Lam.) Hook.f. & Thomson	Menispermaceae	Vattuvalli	Leaves, Root	Fever, digestive aid
10	*Merremia tridentata* (L.) Hallier f.	Convolvulaceae	Elikkolli	Whole plant	Fever, wounds
11	*Operculina turpethum* (L.) Silva Manso	Convolvulaceae	Cherula	Root	Purgative, liver disorders
12	*Pergularia daemia* (Forssk.) Chiov.	Apocynaceae	Uzhinja valari	Leaves, latex	Cough, skin diseases
13	*Marsdenia volubilis* (L.f.) Cooke	Apocynaceae	Kakkatta	Root, leaves	Antiseptic, ulcers
14	*Dioscorea bulbifera* L.	Dioscoreaceae	Cheriakizhangu	Tuber	Piles, inflammation
15	*Entada rheedii.* Spreng.	Fabaceae	Churavukottam	Seeds, bark	Nervous disorders, aphrodisiac
16	*Momordica cymbalaria* Fenzl ex Naudin	Cucurbitaceae	Kaattupavakka	Fruit, leaf	Diabetes, ulcers
17	*Bauhinia vahlii* Wight & Arn.	Fabaceae	Vellila	Bark, leaves	Diarrhea, wounds
18	*Passiflora edulis* Sims	Passifloraceae	Passion fruit	Fruit, leaves	Anxiety, insomnia
19	*Derris scandens* (Roxb.) Benth.	Fabaceae	Kattupoovamkurunnila	Stem	Arthritis, muscular pain
20	*Tylophora indica* (Burm.f.) Merr.	Apocynaceae	Thaluthama	Leaves	Asthma, cough







SUMMARY

The present study titled "Survey and documentation of medicinal climbers in VTM NSS College campus, Dhanuvachapuram, Thiruvananthapuram" aimed to explore, identify, and document the diversity of climbers with medicinal value within the college campus. A total of 20 climber species belonging to 11 families were recorded and analyzed based on their medicinal properties.

Data collection involved field surveys, identification using standard floras, and information gathering from local traditional healers and Ayurvedic literature. The dominant plant families included Fabaceae, Convolvulaceae, and Apocynaceae. The leaves and roots were the most commonly used plant parts for treating various ailments such as skin infections, respiratory disorders, digestive issues, fever, and rheumatism.

The results highlight the rich presence of medicinal plant diversity in a semi-urban academic environment, showing that the college campus serves not only as an educational center but also as a small scale biodiversity hotspot for climbers with therapeutic relevance.

CONCLUSION

The survey and documentation of medicinal climbers in the VTM NSS College Campus, Dhanuvachapuram, have revealed a significant diversity of medicinally important species within the limited area of an academic institution. A total of 20 climber species belonging to 11 different families were identified, with notable dominance of Fabaceae, Convolvulaceae, and Apocynaceae. These species are used traditionally to treat a range of ailments, including skin diseases, respiratory conditions, digestive issues, and fever.

The documentation emphasizes the ecological and medicinal importance of climbers, which are often neglected in urban green spaces. The study suggests that academic campuses like VTM NSS College not only contribute to education but also harbor rich repositories of plant biodiversity that can be used for awareness, conservation, and future research**.**

To preserve this traditional knowledge, integration of ethnobotany into academic curricula, awareness campaigns, and cultivation of medicinal plants in botanical gardens are recommended. Further pharmacological validation of these species could also lead to the development of plant based therapeutic agents.

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