



SURVEY OF MEDICINAL CLIMBERS OF YAVATMAL DISTRICT, MAHARASHTRA INDIA

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ABSTRACT

The Present study focuses on the documentation of medicinal climbers in the Yavatmal district and ethnobotanical and pharmacological significance, a region characterized by diverse ecosystems and rich traditional knowledge. Field surveys conducted from March 2022 to April 2023 documented 25 species of medicinal climbers from 15 families, highlighting their local uses, parts utilized, and ecological interactions. Notable species include *Tinospora cordifolia*, *Gloriosa superba*, and *Gymnema sylvestre*, renowned for their therapeutic properties, ranging from anti-inflammatory and antioxidant to immunomodulatory effects. The study also sheds light on the conservation challenges faced by these species, such as habitat destruction and unsustainable harvesting practices. The findings underscore the urgent need for sustainable conservation strategies, integration of traditional knowledge with modern pharmacological research, and community involvement to safeguard these valuable resources. By documenting and analyzing the medicinal climbers of Yavatmal, this research contributes to the preservation of cultural heritage and the advancement of global health through sustainable use of natural resources.

KEYWORDS: Ethnobotanical, Pharmacological, Medicinal Climbers, Yavatmal, Conservation

INTRODUCTION

Climbers, often characterized by their twining stems and ability to thrive in diverse habitats, have been used for centuries in various traditional healing practices, including Ayurveda, Siddha, and Unani. They are prized not only for their medicinal properties but also for their roles in sustainable ecosystems, contributing to soil health and providing habitat for wildlife.

Maharashtra, located on the western coast of India, boasts a unique climate and diverse ecosystems, ranging from coastal regions to hilly terrains. This rich biodiversity supports a variety of climbers with medicinal potential. The state's traditional knowledge systems often leverage these plants for health remedies, making them a focal point for ethno botanical studies. As we explore the rich diversity of medicinal climbers, it becomes evident that these plants are not only crucial for traditional healing practices but also hold promise for future pharmaceutical developments. Protecting and understanding these unique species is essential for preserving cultural heritage and enhancing global health.

Numerous studies highlight the traditional uses of climbers in various indigenous communities. Ahire (2022) investigated ethomedicinally important climber plants used by tribal peoples in Nashik district. Research has focused on the bioactive compounds present in these climbers and their pharmacological effects. Research on the pharmacological properties of these climbers has highlighted several bioactive compounds, including alkaloids, flavonoids, saponins, and glycosides. These compounds are responsible for their anti-inflammatory, antimicrobial, antioxidant, and anticancer properties. For instance, the alkaloids in *Cissampelos pareira* are noted for

their analgesic and anti-inflammatory effects (Kumar et al., 2017). Similarly, *Tinospora cordifolia* has been shown to enhance cellular immunity, making it a valuable component in immunotherapy (Soni et al., 2018).

Maharashtra's diverse ecosystems, from coastal regions to dry deciduous forests, support a variety of climber species. Climbers are important in maintaining ecological balance, contributing to forest structure by providing vertical complexity and supporting biodiversity (Patil & Deshmukh, 2015). Some climbers, like *Tinospora cordifolia* (Giloy), have been studied extensively for their therapeutic potential.

The literature also addresses the conservation of medicinal climbers in India. Traditional knowledge of medicinal climbers has been passed down through generations in Maharashtra's indigenous communities. However, much of this knowledge is at risk of being lost. Documenting these practices and integrating them with modern pharmacological research can help preserve valuable ethnobotanical knowledge. Collaborative efforts between ethnobotanists, herbalists, and local communities are needed to safeguard this heritage (Jadhav et al., 2019).

Despite the wealth of information, there are challenges in the field, such as habitat destruction and overexploitation. Additionally, there is a call for collaborative efforts between researchers, local communities, and policymakers to create awareness and promote conservation initiatives.

METHODOLOGY

In present survey we select diverse ecosystems within the target region (e.g., forests, agricultural land, and urban areas)

in Yavatmal district to maximize biodiversity sampling. During survey morphological observations, local names and traditional medicinal uses of climbers were noted in field notebook. Photographs of climbers in their natural habitat are taken by DSLR Camera. Ethno medicinal and Systematic survey was conducted from March 2022 to April 2023. During field visits habitat conditions including soil types, light exposure and moisture levels also recorded and also documented the ecological relationships of climbers with their surroundings. Ethno botanical surveys were conducted by engaging local communities and traditional healers to gather information on the uses of climbers. Sample specimens of climbers were collected for taxonomic identification dried and pressed for preparations of herbarium. Proper identifications of each specimen was done with the help of field guides, taxonomic keys, local flora (Flora of Yavatmal District) and with the help of experts for validation.

RESULTS AND DISCUSSION

Many plants were surveyed throughout the current investigation, which is based on ethnobotanical beneficial climbers, creepers, and twiners. The 25 species of medicinal climbing plants from 15 families that were gathered from the Yavatmal district are listed in this study together with information on their local applications, particularly in medicines and medical components. The most beneficial portions of climbing medicinal plants are the leaves, which are used by roughly 15 species. These are followed by the roots (9 species), stem and fruits (4 species), seeds, and flowers (4 species). *Abrus precatorius*, *Asparagus racemosus*, *Cissus quadrangularis*, *Clitoria ternatea*, *Pergularia daemia*, *Passiflora foetida*, *Tinospora cordifolia* and many other medicinal plants are widely found in this region. While *Gloriosa superba* and *Gymnema sylvestre*, two medicinal species that are commonly found in this region, fall under threatened groups, their documented use value is extensive. Medicinal root uses pose a hazard to the species as well. Approximately nine plant species rely on their roots for beneficial purposes, but their natural variety is rapidly diminishing as a result of the ongoing uprooting of plant species for medical purposes.

Sr. No.	Botanical Name	Family	Local Name	Parts used
1	<i>Abrus precatorius L.</i>	Fabaceae	Gunja	Leaves
2	<i>Asparagus racemosus Gaertn</i>	Asparagaceae	Shatavari	Roots
3	<i>Bauhinia vahlii Benth.</i>	Fabaceae	Chambuli	Seeds, Leaves
4	<i>Cardiospermum halicacabum L.</i>	Sapindaceae	Kanphuti	Roots
5	<i>Celastrus paniculatus Willd.</i>	Celastraceae	Kanguni	Seeds, leaves
6	<i>Cissus quadrangularis L.</i>	Vitaceae	Kandavel	Stem
7	<i>Cissus trifolia (L.) Mabb. & J. Wen.</i>	Vitaceae	Ambatvel	Roots
8	<i>Clitoria ternatea L.</i>	Fabaceae	Gokurna	Flowers
9	<i>Coccinea grandis L.</i>	Rubiaceae	Tondali	Leaves, Roots
10	<i>Combretum albidum Gae</i>	Combretaceae	Piluki	Stem

11	<i>Dioscorea bulbifera L.</i>	Dioscoreaceae	Varahikand	Fruits, Leaves
12	<i>Gloriosa superba L.</i>	Colchicaceae	Kalalavi	Leaves, Tuber
13	<i>Gymnema sylvestre (Retz.) R.Br. ex sm.</i>	Apocynaceae	Gurmar	Leaves
14	<i>Ipomoea obscura (L.) Ker Gw</i>	Convolvulaceae	Pivali Bhonvari	Leaves
15	<i>Ipomoea pes-tigridis L.</i>	Convolvulaceae	Vaghpadi	Leaves, Roots
16	<i>Ipomoea sepiaria</i>	Convolvulaceae	Lakshmana	Roots, Leaves
17	<i>Luffa cylindrica (L.) Roem.</i>	Cucurbitaceae	Ghosale	Whole Plant
18	<i>Merremia dissecta Jacq.</i>	Convolvulaceae	Alamo Vine	Leaves
19	<i>Momordica dioica Roxb.</i>	Cucurbitaceae	Kartoli	Fruits, Leaves
20	<i>Mukia maderaspatana (L.) M. Roemer.</i>	Cucurbitaceae	Chirati	Leaves, Roots
21	<i>Passiflora foetida L.</i>	Passifloraceae	Vel Ghani	Leaves, Fruits
22	<i>Pergularia daemia (Forsk.) Chiov.</i>	Asclepidaceae	Mendha dudhi	Leaves, Roots
23	<i>Telosma pallida (Roxb.) Craib</i>	Apocynaceae	Jiwati	Leaves, Flower
24	<i>Tinospora cordifolia Willd.) Hook.f. & Thomson</i>	Menispermaceae	Gulvel	Stem
25	<i>Vincetoxicum indicum (Burm.f.) Mabb.</i>	Apocynaceae	Anantmul	Leaves, Roots

Table 1: Observation table depicting medicinal climbers with their botanical name, local names and medicinal uses.

CONCLUSION

The current survey documents medicinal angiospermic climbers in Maharashtra state's Yavatmal region of Western Vidarbha. All 25 species of medicinal climbers have high resource values and are very beneficial in medicine and ethnomedicine. The botanical name, popular name, and medicinal portion of the medicinal climbers described were shown in Table 1. Due to overuse and urbanisation, certain species, such as *Gloriosa superba* and *Gymnema sylvestre*, are in danger of extinction. It is imperative that this species be preserved for use in the pharmaceutical industry in the future. Despite their medicinal importance, many climbers are facing habitat destruction due to deforestation, urbanization, and unsustainable harvesting practices. Conservation efforts are crucial to preserve these plants. Sustainable harvesting and cultivation, along with awareness programs, are necessary to ensure that these valuable resources are not lost (Patil & Deshmukh, 2015). The medicinal climbers of Yavatmal represent an invaluable resource for traditional and modern medicine. Their therapeutic potential is backed by centuries of use in indigenous healthcare systems and recent pharmacological research. However, conservation of these plants and documentation of their traditional uses are essential to ensure their continued availability and application in the future. Further studies on their pharmacological activities, as well as sustainable conservation practices, will play a key role in realizing the full potential of these climbers

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