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Ethnomedicinal Plants Used By The Local People of Maharashtra, India

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A B S T R A C T

The aim of present Paper compiles the traditional medicinal uses of 13 botanicals plants from Maharashtra *viz. Achyranthes aspera, Aloe vera, Gloriosa superba, Justicia adhatoda, Martynia annua, Ruellia tuberosa, Solanum xanthocarpum, Terminalia arjuna, Tinospora cordifolia, Trichodesma indicum, Tridax procumbens, Tribulus terrestris*, and *Withania somnifera*. A interview of rural through questionnaire was administered in the region, and extensive field surveys were conducted from July 2021 to July 2024 to gather ethnobotanical information which was preserved by local communities and supported by ethnomedicinal literature. It explores preparation methods, dosage, administration routes, and perceived efficacy. The study aims to conserve ethnobotanical knowledge and identify promising leads for future drug discovery. The study reports detailed data on each plant's taxonomy, medicinal parts, preparation methods, and administration modes.

Introduction

Indigenous herbal knowledge forms a pivotal component of primary healthcare in rural India, particularly within the diverse ecosystems of Maharashtra. Local communities utilize a rich and longstanding flora, many of which are integrated into Ayurvedic, Unani, and folk medicine systems for treating respiratory, inflammatory, gastrointestinal, cardiovascular, reproductive, and dermatological ailments. Ethnobotanical research dates to the earliest phases of human civilization. Today, it plays a critical role in applied conservation, that integrates both ecological and sociocultural perspectives, recognizing that biodiversity and human communities are deeply intertwined. It explores how indigenous and rural communities utilize plants across a variety of dimensions ranging from food and medicine to ritual practices; while also acknowledging the broader spiritual and cultural traditions these societies hold (Manju and Ahad, 2021). Ethnobotany interrelated research domains: basic ethnobotany, which involves the direct compilation and categorization of knowledge from indigenous and rural communities documenting their use of plants.

Ethnobotany, which structures these observations into standardized datasets and applies statistical tools—such as frequency counts, informant consensus factors, cultural importance indices, regression, cluster, and principal component analyses—to rigorously evaluate patterns of plant use and management; and experimental

ethnobotany, which investigates the bioactivity and practical utility of traditionally used species through laboratory assays, phytochemical screening, and bio-prospecting, aiming to validate traditional claims and uncover compounds with pharmaceutical or industrial potential Pandey and Tripathi (2017). Ethnobiology is a multidisciplinary science dedicated to exploring the dynamic relationships between human cultures and the living world—from plants and animals to fungi and entire ecosystems. It includes focused subfields such as ethnobotany (the study of human–plant interactions), ethnozoology, ethnomycology, and ethnoecology, which collectively investigate how communities perceive, classify, utilize, and manage biological resources, incorporating traditional knowledge, practical applications, and vernacular taxonomies. Although early ethnobiological efforts concentrated on cataloging indigenous knowledge, the field has since matured into a theoretically grounded discipline, applicable to any societal context and essential to fields like biodiversity conservation, sustainable resource management, public health, and indigenous rights—with ethical considerations such as informed consent and benefit-sharing now integral to research design (Albuquerque, 2017).

Materials and Methods

A comprehensive ethno-veterinary survey was carried out across forests and villages of Marathwada, Khandesh and Vidharba, with seasonal field visits to various communities during July 2021 to July 2024. Experienced tribal informants were identified, and their knowledge on medicinal plants was systematically documented.

This information was cross-verified during different seasons with local herbalists and traditional practitioners. Plant specimens were taxonomically identified following the methodology of Naik (1998).

Results and Discussion

The present study engages with rural to document and preserve traditional medicinal knowledge for treating ailments. Through interviews and field surveys conducted from July 2021 to July 2024, community-recommended plant species were identified and thoroughly recorded. Detailed data were gathered on which plant parts (leaves, roots, bark, etc.) are utilized, how remedies are prepared (e.g., pastes, decoctions), the methods of administration (oral, topical), and the conditions treated in livestock. This comprehensive compilation supports the safeguarding of indigenous knowledge and highlights valuable botanical candidates for future research.

Achyranthes aspera L. is a well-known plant in traditional medicine systems like Ayurveda, Unani, and folk medicine. It is valued for its anti-inflammatory, diuretic, laxative, and wound-healing properties. Roots and leaves are applied to inflamed areas by preparing paste. Decoction of leaves and root is given to treat asthma, cough, bronchitis, and chest congestion. The paste of leaf is applied to cuts, boils, wounds, and insect bites. Decoction of the root is used for toothache and gum infections (Gor *et al.,* 2007).

Aloe barbadensis Mill Aloe vera is one of the most widely used and studied medicinal plants. It is used in modern herbal medicine and cosmetics for its wide range of healing, soothing, and anti-inflammatory properties. Gel is used Minor burns and sunburn, Wound healing, Cuts and abrasions, Radiation-induced skin damage. Gel Hydrates skin without greasiness. Contains vitamins C and E, and antioxidants that reduce signs of aging, dryness, and wrinkle (Ushashee Mandal, 2023).

Gloriosa superba L. also known as climbing lily, is a medicinal plant widely used in traditional medicine, particularly in parts of Asia and Africa. It is used in anti-inflammatory and Pain Relief. Uses: Treats arthritis, joint pain, and inflammation. Parts used: Tuber (root). In Skin Conditions it is used externally for treating wounds, ulcers, scabies, and skin infections. Often made into pastes or ointments for local application (Vijay Chaudhary, 2017).

Ruellia tuberosa L. is an herb belonging to the family Acanthaceae. Due to the presence of active chemical compounds such as alkaloids, flavonoids, triterpenoids, etc., it cures different ailments such as gonorrhea, eye diseases, diabetes, and bronchitis. Traditional use to relieve toothaches, headaches, and muscle pain. Leaf pastes or decoction are used to promote skin regeneration and healing. It is also used in bladder stones and decoction of leaves used in the treatment of Bronchitis (Bharathajothi, 2025).

Justicia adhatoda L. is commonly known as Adulsa. Plant is used in Cough, bronchitis, asthma, tuberculosis by giving the decoct*ion* of leaf twice a day. Leaf paste is applied to cuts and wounds to promote healing and

reduce infection. Reduces inflammation in lungs, joints, and wounds. Used in treating arthritis and bronchitis (Singh and Huidrom, 2013).

Martynia annuna L. is a roadside weed commonly known as Tiger's claw. The plant is used in boils, eczema, epilepsy, hair fall, itch, neck pain, scabies, sore throat, tonsillitis, vet wounds. The fruit is used as anti-inflammatory and in scorpion sting. Root extract is used in the treatment of sedation, rheumatism, infertility and cancer. For asthmatic irritation, seed powder is used. Its seed oil is reported to have good iodine value, which is applied to treat itching and skin infections (Ritoo, 2023).

Solanum xanthocarpum L. also called Indian nightshade is a spiny herb native to India. *Solanum xanthocarpum*, a staple in traditional Ayurvedic practice, has substantial scientific backing for its diverse therapeutic properties. Its antitussive and expectorant actions—credited to alkaloids and steroidal saponins—have demonstrated the ability to alleviate cough, bronchitis, and asthma by aiding mucus clearance and enhancing ciliary function. Gastroprotective profile supports use in indigestion and constipation, alongside hepatoprotective and antimicrobial benefits for urinary tract and liver disorders (Singh *et al.,* 2022).

Terminalia arjuna Roxb is commonly known as Arjuna, is a well-known medicinal tree in Ayurvedic medicine, especially valued for its cardioprotective properties. The bark is the most widely used part of the tree. Bark paste is used externally for ulcers, acne, and skin wounds. Cardioprotective, used to treat angina, hypertension, heart failure, and cholesterol imbalance (Amalraj and Gopi, 2017).

Tinospora cordifolia Hook is a very popular shrub of India. Its whole parts like root, stem and leaves are used in Ayurvedic medicine. The stem, leaves, roots and fruits of Gilroy are used medicinally. This decoction mixed with Pippali fruit and honey is used in fever associated with cough. The juice of its stem is given in fever and mixed with honey in jaundice. The decoction of the stem is used in rheumatic fever and vomiting due to excessive bile secretion. In India from people consuming *Tinospora cordifolia* as a supposed "Immunity booster" during the Covid-19 pandemic (Ramdayal Jatav, 2023)

Tribulus terrestris L. is a widely known plant due to its adaptability and use in traditional medicine, but it also has a reputation as a troublesome weed. The tribals utilize fruit for preparing medicine for backache, asthma and cough. The whole plant is used for treating impotency. The leaves are used as a vegetable and fruit is eaten by locals. The fruit for treatment of cough and leucorrhea and fruit is also eaten raw. The plant extract is applied on wounds and are used as diuretic. Fruit is used in liver and urinary complaints and general debility. The fruit and root boiled with rice is taken in large quantities for urinary troubles (Ritu Gupta, 2017).

Trichodesma indicum L. is a herbaceous plant widely found across India. Traditionally, its leaves are used to prepare a decoction that is administered to relieve stomachaches. For wound healing, a paste made from the leaves is applied directly to cuts. In case of toothache, the leaf paste is applied to the gums for two to three days to alleviate pain. For snakebite treatment, a paste made from the root of *Trichodesma indicum* is applied externally as an antidote (Chidambaram & Aruna, 2013).

Tridax procumbens L., commonly known as "coat buttons" is a creeping medicinal herb It is widely distributed across tropical and subtropical regions, particularly in India, where it plays a significant role in traditional medicine.

Antidiabetic: Aqueous or ethanol extracts of the whole plant are administered orally to manage diabetes, commonly practiced in Ayurveda and traditional folk medicine. Anti-inflammatory: A paste made from the leaves is applied topically to reduce swelling and inflammation. Diarrhea and Dysentery: A decoction prepared from the leaves is taken orally to treat diarrhea and dysentery in traditional healing systems (Sheikh and Dixit, 2018).

Withania somnifera (L.) commonly known as Ashwagandha, holds significant ethnomedicinal value across various traditional and tribal healthcare systems in India. The powdered root is traditionally administered orally, mixed with warm milk, as a rejuvenating tonic to enhance physical strength and vitality.

A decoction prepared from dried roots is consumed to alleviate fatigue, improve endurance, and mitigate stress-related symptoms. For reproductive health, especially in cases of male infertility and impotence, a root paste mixed with cow's milk or ghee is taken orally. Additionally, a paste prepared from the leaves is applied topically to inflamed joints, while root decoctions are ingested to manage the pain (Saiyed, 2016).

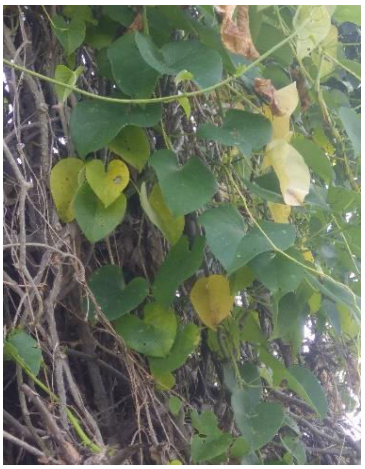
Figure.1	Figure.2	Figure.3
		
Figure.4	**Figure.5**	**Figure.6**
		
Figure.7	**Figure.8**	**Figure.9**
		

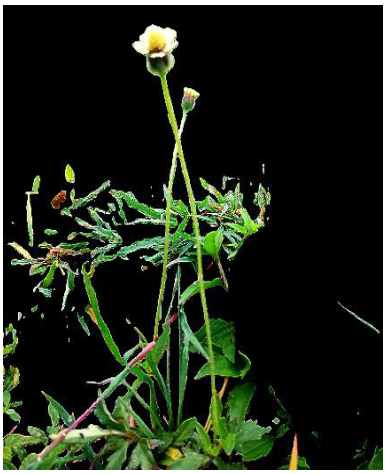
Figure.10	Figure.11	Figure.12
		

Figure.13

Author Contributions

Navalsingh J. Todawat: Investigation, formal analysis, writing—original draft.

Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethical Approval Not applicable.

Consent to Participate Not applicable.

Consent to Publish Not applicable.

Conflict of Interest The authors declare no competing interests.

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