



Ethnobotanical significance of several seasonal medicinal plants associated with Amravati suburban habitats

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ARTICLE INFO	ABSTRACT
Received : 01 October 2023 Revised : 31 October 2023 Accepted : 07 November 2023 Available online: 12 January 2024 Key Words: Ethnobotanical Seasonal Medicinal plants Amravati Suburban Habitats	Medicinal plants are integral part of Indian tradition. This traditional practice helped people of India to sustain successfully in this pandemic situation. According to the WHO, approximately 80% of the world's population relies on plant-based preparations for their primary health care needs. The present work was carried to identify the medicinal plants and their ethno botanical use. The area under study is the Amravati region of state Maharashtra, India. The study was carried out for six months and Ethno botanical data was acquired by conducting interviews using specially designed techniques for collecting ethno pharmacological information. The study reveals the presence of 45 plant species belonging to 22 angiosperm families, which were commonly used for medicinal purposes. Most of time urban developmental activities cause damage to such flora. Whereas the community which is familiar with potential of such species try to utilize them on different alignments in over extend.

Introduction

The present work is focused on the potential value of the indigenous species found in Amravati and its preservation and utilization for bettering society and sustaining the species in nature in the long-term future. With the objective of identifying the species of medicinal importance and sharing it with the edges of society, the ability to improve its availability can be achieved. Amravati is one of the main districts of the state of Maharashtra, India. It is historically rich and the 8th most populated area in the state. It is the second largest growing industrial city in the Vidarbha region, situated 156 km west of Nagpur. New flyovers, roads, rail corridors, malls and other developments are being built to renovate the city. When the literacy ratio is good, life is healthier and more prosperous than it was in the previous era. Owing to this infrastructure, the city remains crowded throughout the year. With the passage of time and increased living standards, people's desirability also increased. To satisfy increasing demands, city occupancy in every

possible habitat has increased, and these expansions are interfering with the environment.

Urban habitats and the associated flora

The habitats in the Amravati region include open wastelands, wetlands, gardens, streams, open layouts, railway yards, old demolished house yards, institutional campuses, play grounds, etc. These areas provide habitat for the survival of several herbaceous as well as shrub species. According to Dhole (1986), the Flora of Amravati District consists of approximately 347 naturalized species associated with the urban environment.

Ethnobotanical significance of the local flora in Amravati

The term "ethno botany" refers to the study of the relationship between plants and humans, although it also encompasses the study of traditional knowledge about plants. In 2015, Bidak *et al.* (2015) reported that wild plants have a wide variety of ecological, social, and economic values that are important for human well being. Wild plants are the major source of significant non market goods (food,

medicinal plants, firewood, cork etc.) as well as indirect highvalue nonmarket services (biodiversity conservation, soil protection, water regulation, recreational opportunities) in most societies, especially in developing countries. Himalayas are the home of vast medicinal plants and traditional medical knowledge and local populations are entirely dependent on plants for their primary healthcare needs (Prakash, 2014). Similarly, in the investigated area, the local community also utilizes their associated plant species for general medicinal purposes. According to Abrew *et al.* (2015) settlements of national and transnational migrants who heavily rely on herbal medicine contribute to the consumption of natural products in modern society. Prakash (2014) claims that animals such as nonhuman primates, monarch butterflies and sheep also consume that medicinal plant whey is ill. Previous work by Bhogaokar and Devarkar (2012) on the ethano-medicinal significance of Melghat tribes also revealed that local species play important roles in maintaining good health in the associated community. The main thrust of documentation and record making is to acquaint the commons about the diverse nature and importance of local flora for its medicinal value. This approach will aid in curing some ailments with these local medicines, which are readily and freely available.

Materials and Methods

The study was undertaken in different urban habitats, including wastelands, wetlands, gardens, streams, open layouts, railway yards, old demolished house yards, and college campuses and play grounds. Continuous field trips were arranged with the purpose of gathering and identifying various plant species. Throughout August to December 2021, an inventory was meticulously prepared, and photographs of the naturally occurring plant species were captured with the help of a Nikon Coolpix camera. The identification process was conducted using local floras, online literature and verified botanical references, ensuring accuracy and

authenticity.

Ethnobotanical data were acquired by conducting interviews using specially designed techniques for collecting ethno-pharmacological field data. To ascertain the medicinal potential of each species, relevant studies and knowledgeable individuals and experts were consulted. Additionally, the ethno botanical

The findings were cross-verified with those of rural Vaidu (traditional healers) to validate their significance. All the data and evidence collected during this process were meticulously analyzed to draw conclusive conclusions.

Table 1: Ethnobotanical inventory of plant species

SN	Name of family	No. of Genera	No. of Species
1	Papilionaceae	4	8
2	Asteraceae	6	7
3	Euphorbiaceae	3	6
4	Amaranthaceae	3	4

Results and Discussion

With thorough knowledge of its indigenous species and its utilization, India is blessed. The Ayurvedic System & Medicine holds a firm belief in its Indian population. The studies and investigations carried out in the populous city of Amravati behold prove its command over indigenous culture. According to studies of various ecosystems prevailing in different regions of a city, a wide variety of species (weeds and herbs) are used to treat disparities and illnesses. A total of 40 people with medical backgrounds and knowledge of local medicinal plants from different localities in Amravati were interviewed. The survey data revealed that approximately 45 plant species belonging to 22 angiosperm families were commonly used for medicinal purposes. The largest percentage of medicinal plants obtained belonged to the family Papilionaceae (8 species), followed by Asteraceae (7), Euphorbiaceae (6), Amaranthaceae (4), Nyctaginaceae and Malvaceae, with 2 species. Among the 46 medicinal plants identified, herbs are the most frequently used because they are abundant in fragmented habitats and can be harvested throughout the year. Since leaves are readily available throughout the year and are traditionally thought to have greater medicinal value than other plant parts, they are preferred over other plant parts. Due to their ease of acquisition in large quantities

compared to those of other plant parts, stems and roots are also heavily utilized. Additionally, the majority of traditional healers favor using leaves because they are thought to accumulate active ingredients such as alkaloids and tannins from photosynthetic pigments. While working on the same project, Jain *et al.* (2010) and Soman (2014) both reported comparable results.

Table 2: Details of the plant species and their medicinal uses

SN	Scientific Name of Plant	Family	Common Name	Medicinal Uses
1	<i>Acalypha indica</i>	Euphorbiaceae	Khokli	Leaves are used in Jaundice remedy
2	<i>Acacia arabica</i>	Mimosaceae	Babhul	Gum and leaves are used to treat diabetes and skin conditions.
3	<i>Achyranthes aspera</i>	Amaranthaceae	Aghada	used to treat asthma, bronchitis, dysentery, ear complications and headache,
4	<i>Aerva lanata</i>	Amaranthaceae	Kapuri Madhura	Used in the treatment of cough, asthma, and headache and as an antidote for rat poisoning.
5	<i>Ageratum conyzoides</i>	Asteraceae	Ghanera	Against dysentery, diarrhea, nematocidal and insecticide .
6	<i>Alternanthera sessilis</i>	Acanthaceae	Bechkusal	stomach disorders, diarrhea, dysentery and fever
7	<i>Alysicarpus procumbens</i>	Papilionaceae	Alyce clover	leaves decoction is given over cough
8	<i>Amaranthus spinosus</i>	Amaranthaceae	Kantemath	Fruit ash of is used for Jaundice; root and leaf extract used as a diuretic
9	<i>Amaranthus viridis</i>	Amaranthaceae	Math	It is good source of vitamin A, B6, and C. It is diuretic, analgesic, antipyretic, antiulcer antidiabetic and laxative.
10	<i>Boerhaaviadiffusa</i>	Nyctaginaceae	Punnarva	Used to cure intestinal colic, kidney disorders, cough, asthma, skin diseases, jaundice& alcoholism,
11	<i>Calotropis procera</i>	Asclepiadaceae	Rui	Bark and root bark is used over joint pains, stomach ulcers, constipation and diarrhea
12	<i>Capsicum annum</i>	Solanaceae	Mirchi	Used orally for stomach upset, toothache, poor circulation, fever, and heart disease prevention
13	<i>Cassia tora</i>	Caesalpiniaceae	Tarota	Leprosy, ringworm, flatulence, colic dyspepsia, constipation, cough, bronchitis, and cardiac disorders can all be treated with the leaves and seeds.
14	<i>Cleome viscosa</i>	Capparaceae	PiwaliTilwan	useful in the treatment of malarial fevers, skin diseases, leprosy, blood diseases, and uterine complaints
15	<i>Commelinabenghalensis</i>	Cannaceae	Kena	It is used to treat diarrhea, enteritis, hemorrhoids, urinary tract infections, and respiratory tract infections.
16	<i>Corchorus trilocularis</i>	Tiliaceae	Kaduchunchu	The leaves are used as a plaster to reduce swellings. The seeds are used to treat gripe and nausea
17	<i>Datura indica</i>	Solanaceae	Dhotra	It is useful for ulcers, wounds, inflammation, rheumatism, swellings, fever, asthma, bronchitis and toothache.
18	<i>Eclipta alba</i>	Asteraceae	Maka	Asthma is treated with plant ash, and burns, diarrhea, and dysentery are treated with plant extract.
19	<i>Euphorbia geniculata</i>	Euphorbiaceae	Dudhi	The plant used in ethno medicine for the treatment of constipation, bronchitis and asthma.
20	<i>Euphorbia hirta,</i>	Euphorbiaceae	Mothi Dudhi	It is widely used in skin ailments, hypertension and for fevers dengue and malaria.
21	<i>Euphorbia prostrata</i>	Euphorbiaceae	Dugdika	Extract is effective for treatment of bleeding hemorrhoids
22	<i>Goniogynahirta,</i>	Papilionaceae	PivliGodhadi	Useful in Diarrhea, Fever, Stomach disorders, Piles, Asthma, Jaundice, Liver disorders Skin diseases, Rheumatism, Diabetes
23	<i>Indigofera cordifolia</i>	Papilionaceae	Godhadi, Bechka	Leaves juice is use in toothache, fruits use as a Tonic and treatment of skin diseases
24	<i>Indigofera linifolia,</i>	Papilionaceae	Lal Godhadi	The plant is used to treat amenorrhea when combined with Euphorbia thymifolia, which is also used to treat febrile eruptions.
25	<i>Indigofera trifoliata</i>	Papilionaceae	Barbada	The mucilaginous seeds are used as a nutritive tonic and restorative. They are used to treat rheumatism and leucorrhoea.
26	<i>Meremiaganetica</i>	Convolvulaceae	Undirkani	Useful for fever caused by liver enlargement, inflammation, cough, headache, neuralgia, rheumatism, diuretic, and kidney diseases.

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27	<i>Mirabilis jalapa</i>	Nyctaginaceae	Gulbaxi	Leaf juice may be used to treat wounds, the bulbous roots are laxative and increases sexual stamina in men, best for treating animal bites
28	<i>Oxalis corniculata</i>	Oxalidaceae	Amboti	This herb, which is the richest source of vitamin C, vitamin B, potassium, and oxalic acid, is used to treat liver and stomach issues.
29	<i>Parthenium histerophorus</i>	Asteraceae	Ganjargawat	A decoction of the plant is frequently consumed internally as a treatment for a wide range of ailments and parthenium is applied externally to treat skin conditions.
30	<i>Pergulariadaemia</i>	Asclepiadaceae	Utaran	Snake bite, delayed labor, amenorrhea, asthma, and rheumatic swellings are treated with aerial parts of the plant.
31	<i>Phyllanthus niruri</i>	Euphorbiaceae	Bhuiwala	The plant is used over urinary tract stones, dysentery, ulcers and swellings
32	<i>Physalis minima</i>	Solanaceae	Phataka	In the traditional system of medicine leaf juice used over snakebite, fruits used treatment of spleen disorders
33	<i>Rhynchosia minima</i>	Papilionaceae	Kulthi	It is used for abortion, eccholics, hemorrhoids, diarrhea and dysentery
34	<i>Ricinus communis</i>	Euphorbiaceae	Yerandi	Traditionally plant used in abdominal disorders, arthritis, backache, muscle aches, chronic headache, constipation, gallbladder pain, menstrual cramps, rheumatism,
35	<i>Sida acuta</i>	Malvaceae	Bala	It is also used as stomachic, diaphoretic antipyretic, astringent, tonic, and in urinary diseases
36	<i>Sida cordifolia</i>	Malvaceae	Kharaiti	Bronchial asthma, colds and the flu, chills, lack of sweating, headaches, nasal congestion, aching joints and bones, coughing and wheezing, and edema are all treated with this ayurvedic medicine.
37	<i>Solanum xanthocarpum</i> ,	Solanaceae	BhuiRingani	It is used in traditional medicine to treat a variety of infectious and degenerative diseases as an antioxidant, anticancer, and anti-HIV agent.
38	<i>Sonchus asper</i>	Asteraceae	Mhatara	The plant is quite high in vitamins and minerals, The sap is effective in removing warts, wounds, boils, asthma, bronchitis, gastrointestinal infections and malaria.
39	<i>Tephrosia purpurea</i>	Papilionaceae	Sharpunkha	It is used to treat leprosy, ulcers, asthma, tumors, as well as diseases of the liver, spleen, heart, and blood.
40	<i>Tribulus terrestris</i>	Menispermaceae	Sarata	In folk medicine, it is used to treat kidney stones, high blood pressure, and urinary infections as well as for male virility and general vitality. The root & fruits are also used as diuretic pain reliever, and appetite stimulant.
41	<i>Tridax procumbens</i>	Asteraceae	Kambarmodi	High blood pressure, bronchial catarrh, malaria, dysentery, diarrhea, stomach discomfort, headaches, and wound healing are all conditions for which it is used to treat.
42	<i>Vernonia cinerea</i>	Asteraceae	Sahdei	The plant is extensively used in stomach aches and for cold, asthma, bronchitis and vaginal discharges.
43	<i>Vicoa indica</i> ,	Asteraceae	Sonkadi	Whole plant used in abortion; roots are treatment for jaundice, cough, infertility in women, and renal problems.
44	<i>Vinca rosea</i>	Apocynaceae	Sadafuli	Alkaloids are helpful in treating cancer, and the plant is used to treat diabetes, high blood pressure, and even as a disinfectant.
45	<i>Withania somnifera</i>	Solanaceae	Ashwagandha	It is stress-relieving, lowers blood sugar increases muscle strength, improves sexual function in women, and boosts fertility and testosterone in men.
46	<i>Zizyphus jujuba</i>	Rhamnaceae	Bor	Used to treat conditions affecting the digestive, cardiovascular, genitourinary, and liver systems as well as illnesses of the respiratory, coughing, and laryngitis systems.

The findings show that the Papilionaceae family had the highest percentage of species that are effective at treating various diseases. The Solanaceae and Amaranthaceae families came next. Similar findings have been previously reported by Croitoru (2007), while medicinal plants and their customary applications have been researched in communities near the Cherangani hills in western Kenya. Approximately 60 health conditions were categorized into 14 distinct ailment groups based on their usage reports to create a precise ICF (Index of Cultural

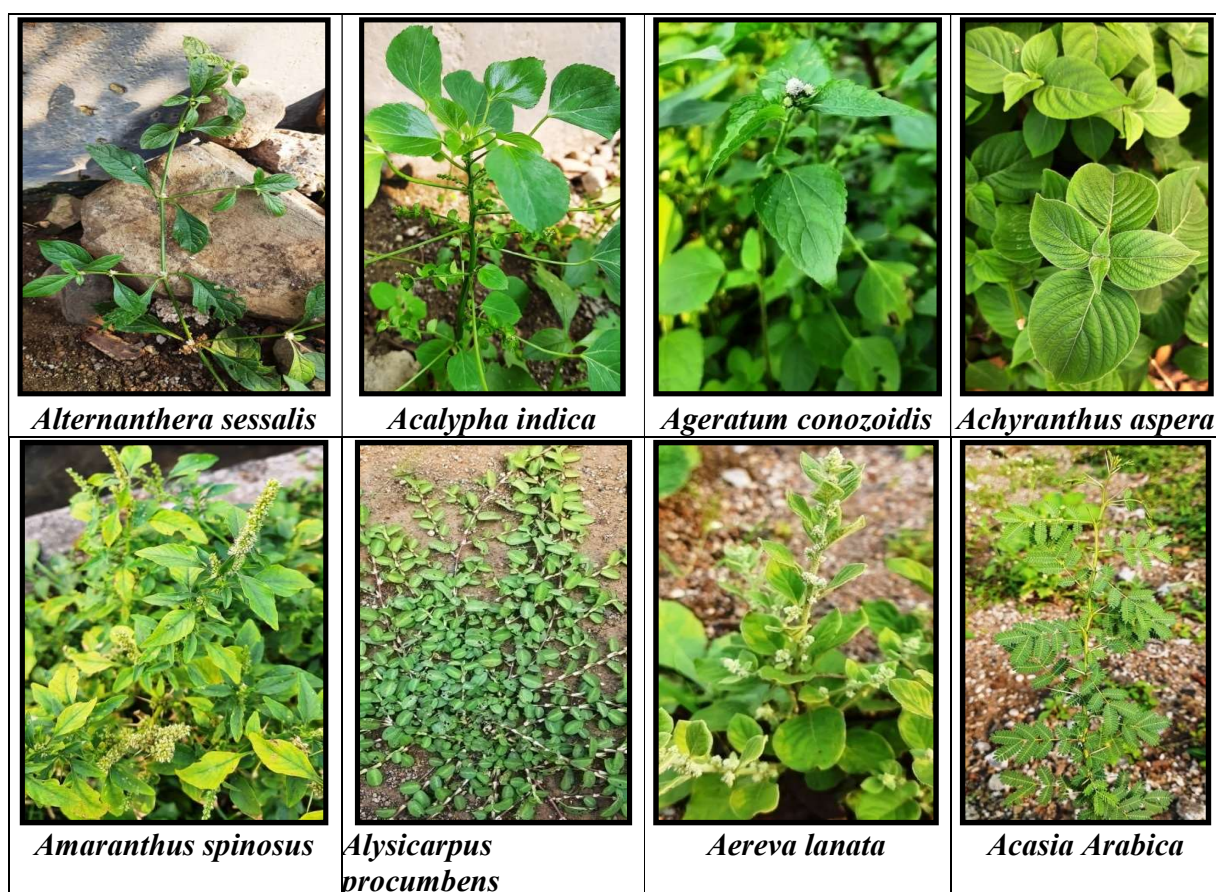
Significance). The identified species can be grouped according to their utility into the following categories: digestive system disorders (15 species), respiratory tract infections (18 species), skin diseases (9 species), fever (8 species), excretory system disorders (7 species), cough and cold remedies (10 species), jaundice treatments (5 species), snake bite antidotes (3 species), Tonic herbs (5 species), and cardiac treatments (4 species). The plant parts used for the treatment of various diseases and disorders include roots, leaves, stems, tubers, rhizomes, whole plants, etc. The most widely used parts are (in descending order) leaves (27%) > roots (16%) > fruits (10%) > Seed (10.5%) > bark (8.6%)

> whole plant (8%) > flowers (3.8%), other parts of the plant, such as the stem, tuber, latex, gum, bulb, rhizome, pod, and inflorescence.

According to the reports of response, a variety of factors have contributed to the danger of medicinal plants in the study area face.

The main threats to important medicinal species are habitat destruction, habitat fragmentation and urbanization, which are followed by overharvesting, ignorance of the value of local wild flora, and expansion of the road system. Most of the population in Amravati, along with the various ecosystems that have been studied, uses a wide variety of plants to treat a variety of illnesses, and locals have fair traditional knowledge of the medicinal properties of these plants.

Figure 1: Photographs of several wild medicinal plants



			
<i>Amaranthus viridis</i>	<i>Boerhavia diffusa</i>	<i>Calatropis procera</i>	<i>Capsicum anum</i>
			
<i>Cassia tora</i>	<i>Cleome viscose</i>	<i>Corchorus trilocularis</i>	<i>Eclipta alba</i>
			
<i>Euphorbia hirta</i>	<i>Euphorbia prostata</i>	<i>Goniogyna hirta</i>	<i>Indigofera linifolia</i>
			
<i>Meremia gangetica</i>	<i>Mirabilis jalapa</i>	<i>Oxalis corniculata</i>	<i>Phyllanthus niruri</i>

Due to the high cost of Western medicine, a greater proportion of individuals may rely on medicinal herbs. There was little difference in the knowledge of medicinal plants between men and women. In contrast to the findings of a study in Kenya by Bidak *et al.* (2013), there was no preference for one gender over another in terms of the transmission of medicinal plant knowledge from parents to children across Amravati local communities. The informants in the research area looked to be more knowledgeable about medicinal plants, possibly as a result of their increased exposure. The fact that the majority of the species discovered (40) were indigenous and only 5 were foreign illustrates the regional focus of indigenous knowledge about these plant species used for therapeutic purposes.

Local tribes, particularly in the patches of Melghat some vaidus moving through different parts of the city, are blessed and behold command over the medicinal properties of local and indigenous species. Despite the high cost and major side effects of Western/allopathic medicines, much of the population relies on traditional herbs and shrubs for disease ailments. The medicinal properties of these species are poorly understood, and some people mistakenly encounter them as allergic weeds.

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Conclusion

The present study revealed that, from the local fauna of Amravati, approximately 45 plant species belonging to 22 angiosperm families were commonly used for medicinal purposes. The plant parts used for the treatment of various diseases and disorders include the roots, leaves, stems, tubers, rhizomes, and whole plants. In the present era, it is highly important to investigate and gather traditional knowledge about the indigenous species in our areas. The second need is to acquaint the commons and young people about the importance of these species for enhancing conservation and formulating strategies for their preservation. This approach will help to control the spread of offensive or alien species. This approach will help them regain the status of indigenous species and help them retain their status for medicinal purposes. The main threats to important medicinal species are habitat destruction, habitat fragmentation and urbanization, which are followed by overharvesting, the ignorance of the value of the local wild flora and the expansion of the road system.

Conflict of interest

The authors declare that they have no conflicts of interest.

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