



## A survey of medicinally important plants from 32-Shiralra tehsil district Sangali, Maharashtra, India

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### Abstract

India is a vast country with a wide variety of medicinal plants. From the Himalayas to the sea, and from the desert to the rain forest habitat, medicinal plants can be found. Many diseases are treated with their roots, stems, bark, latex, leaves, fruits, and seeds. The anti-diabetic properties of ethno-medicinal plants in this region, as well as herbal anti-dotes and mental health, were investigated. Every plant has its own set of medical qualities, which can be utilized as an antiseptic, antibiotic, antifungal and antibacterial. The current study focuses on ethno-botanical core data collected during a large field survey in interior villages and forest areas of 32-Shiralra Tehsil of Sangali (Maharashtra). A total of 35 families, 58 genera, and 60 species were identified in this study. This study's findings indicate that medicinal plants will continue to play an important part in public health care systems. Conservation and cultivation are required for several key therapeutic plants.

**Keywords:** conservation, disease, ethnobotany and medicinal potential

### Introduction

India is a large area with a diverse range of medicinal plants. India is one of 17 countries with a high level of biodiversity. India is one of the world's top mega-biodiversity areas with 4 hotspots, with ten biogeographically regions and high endemism and genetic diversity (Ambasta *et al.*, 1992) <sup>[1]</sup>. India has an agro-climatic 20th century contributes approximately 7% of global biodiversity (Chopra *et al.*, 1956) <sup>[2]</sup>. India is the world's leading producer of medicinal plants. Medicinal plants can be found from the Himalayas to the sea and from the desert to the rain forest ecosystem. Among the 17000-18000 flowering plant species in India, more than 7000 have been identified as medicinal herbs. The Western Ghats are known for their mega-biodiversity and as a biodiversity hotspot (Deokar *et al.*, 2012) <sup>[3]</sup>. This area is home to some of the world's most endangered medicinal plants. Ethnobotany is the scientific study of indigenous peoples' traditional knowledge of plant resources for medicinal, religious, and other purposes. The humans' direct interaction with plants (Ford, 1978) has contributed much for ethnobotanical knowledge. Ethnobotany provides humans with food, shelter, fodder, and medicines. Traditional medicine and ethnobotanical knowledge play an important role in scientific research, particularly when the literature and fieldwork data have been thoroughly evaluated by Mujawar (2004) <sup>[11]</sup>. Traditional awareness of herbal remedies for human diseases is rapidly fading in many parts of the world, including India. India is well-known for its unique traditional structure. Ayurveda, Siddha, and Unani are three traditional Indian healing systems. Ayurveda is a well-known western ayurvedic philosophy. Ayurveda is a medical system that is stated even in ayurvedic concepts that appeared and evolved in India between 2500 and 500 BC. Many plant species are used in indigenous medicine in India. It incorporates diet and herbal remedies, with a focus

on the body, mind, and spirit in disease prevention and treatment (Kamble and Pradhan, 1980) <sup>[5]</sup>. Herbal healing is deeply rooted in Indian culture and traditions. Local and tribal peoples have their own traditional knowledge of plants' medicinal properties. Approximately 60% of rural residents depend on conventional herbal remedies. Every plant has unique medicinal properties that can be used as an antiseptic, antibiotic, antifungal and antibacterial. Plant-based drugs are thought to be much safer and more effective in the treatment of a variety of ailments (Kamble *et al.*, 2008) <sup>[6]</sup>. The folk medicinal tradition plays an important and reelecting function in human-environment interaction (Kamble *et al.*, 2009) <sup>[7]</sup>. The importance of medicinal plants to humanity has been well established. It is estimated that 70 to 80 percent of the world's population relies heavily on conventional health care systems, especially herbal medicines (Kapase *et al.*, 2003) <sup>[9]</sup>. Herbal medicines derived from plants are thought to be much safer, as shown by their use in the treatment of a variety of ailments by Kamble *et al.* (2010) <sup>[8]</sup>. Due to the rarity of side effects, the market for herbal medicine has increased rapidly in recent years, 2007 (World Bank). People are increasingly turning to Ayurveda medicine. Ethno-medicinal plants are a local treasure of global significance. Since, in this day and age of globalization, the use of plant-based drugs has gained international recognition. It is now important to educate people on the importance of preserving traditional medicinal knowledge as well as plant. The current study focuses on ethno-botanical core data collected during a large field survey in interior villages and forest areas of 32-Shiralra Tehsil of Sangali (Maharashtra)

### Study Area

32-Shiralra tehsil is situated between longitude 73:40 'E and 73:53 'E and latitude 17:03 N and 17:20N in Western Maharashtra, on the hilly and sub hilly edges of the

Sahyadri in Western Sangali district, near the Chandoli sanctuary. Shirala Tehsil encompasses 97 villages and a Chandoli forest near the Vasant-Sagar Dam on the Warana River, at the crossroads of Sangali, Satara, Kolhapur, and Ratnagiri districts. 32 -Shirala is a small village near the Chandoli Forest, which is part of the Western Ghats. Because of their high species biodiversity, the Western Ghats is one of the parts of mega-biodiversity with unique significance for biodiversity conservation. It is known for rare medicinal plants. Chandoli is an Indian national park that was developed in May 2004 after being declared a wild life sanctuary in 1985 (Deokar *et al.*, 2012) [3]. It is part of the world's top mega biodiversity known as the "Western Ghats" in the world and the "Sahyadri" in India. It is a part of Maharashtra's hotspot for biodiversity (gazetteer of India, 1969) [4].

### Materials and Methods

The current research is focused on an extensive field survey conducted in interior villages and forest areas to collect

ethno-botanical core data. An ethno-botanical survey was conducted in the study area from November 2020 to December 2021, with regular field trips. First-hand information collected from interactions with rural residents, including members of the forest conservation committee, elderly citizens, traditional medical practitioners, and local vaidues. Photographs were taken during field survey (Figure-1). Data about the name of plants, the parts used, and the methods of preparation and administration of various remedies were also recorded. The herbal plants referred by these individuals were authentically described with the help of local flora, the flora of the presidency of Bombay, and the Botanical Survey of India (Theodore Cooke, 1967) [12]. The information collected was organized alphabetically by plant with botanical name, family, local or vernacular name, and habit. The information collected was recorded for its common applications, medicinal properties, and purposes.



Fig 1: Selective photographs of reported species

**Table 1:** List of reported medicinally important plants reported in present study

Sr. No.	Botanical Name	Family	Common Name
1.	<i>Abrus precatorius</i> , L.	Papilionaceae	Rosary Pea
2.	<i>Acalypha indica</i> , Linn.	Euphorbiaceae	Indian Acalypha
3.	<i>Achyranthes aspera</i> , L.	Amaranthaceae	Chaff Flower
4.	<i>Aconitum carmichaelii</i>	Ranunculaceae	Monkshood
5.	<i>Adhatoda zeylanica</i>	Acanthaceae	Adulasa
6.	<i>Aegle marmelos</i> , Correa	Rutaceae	Bel Tree
7.	<i>Allium cepa</i> , L.	Liliaceae	Onion
8.	<i>Allium sativum</i> , L.	Liliaceae	Garlic
9.	<i>Aloe barbadensis</i> , miller.	Liliaceae	Aloe
10.	<i>Annona reticulata</i> , L.	Annonaceae	Soursop
11.	<i>Annona squamosa</i> , L.	Annonaceae	Custard Apple
12.	<i>Azadirachta indica</i> A. Juss	Meliaceae	Margosa
13.	<i>Bacopa monnieri</i> , L.	Scrophulariaceae	Brahmi
14.	<i>Basella alba</i> , L.	Basellaceae	Malabar
15.	<i>Boerhaavia diffusa</i> , L.	Nyctaginaceae	Punarnava
16.	<i>Brassica oleracea</i> var.	Brassicaceae	Cabbage
17.	<i>Butea monosperma</i> (Lank).	Fabaceae	Flame
18.	<i>Calotropis procera</i> , Linn.	Asclepiadaceae	Calotropis
19.	<i>Capsicum annuum</i> , Prain.	Solanaceae	Chilli
20.	<i>Catharanthus roseus</i> .	Apocynaceae	Periwinkle
21.	<i>Curcuma longa</i> , L.	Zingiberaceae	Turmeric
22.	<i>Cuscuta reflexa</i> L.	Convolvulaceae	Giant Dodder
23.	<i>Datura metel</i> , Linn.	Solanaceae	Datura
24.	<i>Eclipta alba</i> (L.) Hassk.	Asteraceae	False Daisy
25.	<i>Erythrina suberosa</i> (Roxb)	Papilionaceae	Coral tree
26.	<i>Evolvulus alsinoides</i> , L.	Convolvulaceae	Morning Glory
27.	<i>Ficus benghalensis</i> , L.	Moraceae	Banyan Tree
28.	<i>Hemidesmus indicus</i> , Linn.	Apocynaceae	Indian Sarsaparilla
29.	<i>Hibiscus rosa-sinensis</i> , L.	Malvaceae	Hibisceae
30.	<i>Mangifera indica</i> , L.	Anacardiaceae	Mango
31.	<i>Melia azedarach</i> , L.	Meliaceae	Meliadubia
32.	<i>Mimosa pudica</i> , L.	Mimosaceae	Sensitive Plant
33.	<i>Momordica charantia</i> , Linn.	Cucurbits	Bitter Gourd.
34.	<i>Mucuna pruriens</i> HK.	Papilionaceae	Velvet Bean
35.	<i>Murraya koenigii</i> .	Rutaceae	Curry Patta
36.	<i>Musa paradica</i>	Musaceae	Banana
37.	<i>Myristica fragrans</i> Houtt	Myristicaceae	Nutmeg
38.	<i>Nerium oleander</i> . Mill.	Apocynaceae	kaneher
39.	<i>Nyctanthes arbor-tristis</i> , L.	Oleaceae	Harsinghar,
40.	<i>Ocimum sanctum</i> , Linn.	Lamiaceae	Ocimum
41.	<i>Officinale zingiber</i> .	Zingiberaceae	Ginger
42.	<i>Origanum majorana</i> , L.	Lamiaceae	Marva
43.	<i>Phoenix sylvestris</i> , L.	Arecaceae	Wild Date Plum
44.	<i>Phyllanthus emblic</i> , L.	Euphorbiaceae	Indian gooseberry,
45.	<i>Plumbago zeylanica</i> , L.	Plumbaginaceae	Leadworts
46.	<i>Pongamia pinnata</i> , L.	Fabaceae	Pongam oil tree
47.	<i>Portulaca oleracea</i> , L.	Portulacaceae	Ghol
48.	<i>Rauwolfia tetraphylla</i> , L.	Apocynaceae	Chanda
49.	<i>Rostellularia diffusa</i>	Acanthaceae	Justiciadiffusa
50.	<i>Santalum album</i> , Linn.	Santalaceae	Sandalwood
51.	<i>Sesbania grandiflora</i>	Papilionaceae	Kasruray
52.	<i>Sida cordifolia</i> , L.	Malvaceae	Bala
53.	<i>Tabernaemontana divaricata</i>	Apocynaceae	Indian valerian
54.	<i>Terminalia belliricar</i>	Combretaceae	Bibhitaki
55.	<i>Tinospora cordifolia</i>	Menispermaceae	Guduchi
56.	<i>Trichosanthes anguina</i> , L.	Cucurbitaceae	Snake gourd
57.	<i>Trigonella foenumgraecum</i>	Fabaceae	Fenugreek
58.	<i>Vitex negundo</i> , L.	Verbenaceae	Nirgudi
59.	<i>Withania somnifera</i> , L.	Solanaceae	Ashvagandhha
60.	<i>Xanthium strumarium</i> , Linn.	Asteraceae	Cocklebur

## Results and Discussion

In a survey of medicinal plants, 61 species from 32 families were identified. Twenty-one of the only twenty-one plant species from 15 families was briefly examined. Their roots,

stems, bark, latex, leaves, fruits, and seeds are all useful. Infusions, decoctions, pastes, and powders are taken internally or added externally to cure various diseases. The majority of medicinal plants are either single or combined

with other ingredients. Medicinal plants are used to treat many diseases, including thorax infection, piles, fever, cough, and cold, blood dysentery, diarrhea, leucorrhoea, preventing hair loss, removing wrinkles and burns, skin diseases, intestinal worm infestation, diabetes, blood purifier, general weakness, hypertension, jaundice, Malaria, vomiting, and strong appetite. Before that, Deokar *et al.*, (2012) [3], surveyed the ethno medicinal plants in this region on the anti-diabetic potential, herbal antidotes and mental health. In the present investigation, 35 families with 58 genera and 60 species are reported. In this, 60 species of herb, shrub and trees are included. The predominant family is Fabaceae involving sub families Papilionaceae and Mimosaceae, Caesalpiniceae respectively 5, 1 and 2 species (total 8 species) followed by Apocynaceae with 5 species. After that, species from family Liliaceae and Solanaceae with 3 species of each were recorded. There are 11 families representing each of 2 species (Acanthaceae, Annonaceae, Asteraceae, Convolvulaceae, Cucurbitaceae, Euphorbiaceae, Lamiaceae, Malvaceae, Meliaceae, Rutaceae and Zingiberaceae) and last 19 families reported only one species of each (Amaranthaceae, Anacardiaceae, Arecaceae, Asclepiadaceae, Basellaceae, Brassicaceae, Combretaceae, Menispermaceae, Moraceae, Musaceae, Myristicaceae, Nyctaginaceae, Oleaceae, Plumbaginaceae, Portulacaceae, Ranunculaceae, Ranunculaceae, Scrophulariaceae and Verbenaceae). The data obtained from the survey is represented in table-1.

### Conclusion

The findings of this study show that medicinal plants continue to play an important role in people's health care systems. Some essential medicinal plants need urgent conservation and cultivation, so that their extinction can be avoided and local village people can receive low-cost treatment for their disease. The findings of the study will be helpful to further scientific research and conservation about reported medicinal flora.

### Acknowledgements

Authors are sincerely thankful to Dr. Chandrashekhar Murumkar, Principal, Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati, Dist. Pune. Sincerely thankful to Dr. S. J. Chavan Head, P. G. Research Center, Department of Botany, Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati, Pune.

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