

Studies on Some Threatened and Endemic Ethnomedicinal Plants of Nashik District (North Sahyadri), Maharashtra

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Nat. Env. Poll. Tech.
ISSN: 0972-6268
Website: neptjournal.com

Key Words:

Ethnomedicinal plants
Threatened plants
Endemic plants
Tribals

ABSTRACT

The paper deals with the study of ethnomedicinal threatened and endemic importance of 56 plant species under 50 genera of Nashik district. Various plants available in the locality used by the tribals with local names like kokna, bhil, mahadeo koli, warali thakur and katkari are summarised. The valid scientific names, vernacular names, plant part used and their medicinal uses are given in the paper.

INTRODUCTION

This work deals with the study of ethnomedicinal importance of some plants of Nashik district, Maharashtra. Ethnomedicinal work in this district is previously done by Khairnar (2006) and Sharma & Lakashminarsimhan (1986). The objective of this study is to investigate and record the medicinal uses of plants for different ailments by the tribal people inhabiting the area. Ethnomedicinal threatened and endemic flora was recorded. Details of vernacular names and method of application of plant parts in the treatment of certain diseases have also been studied.

STUDY AREA

Topography: Nashik is the northern district of Maharashtra. The Nashik district is located between latitudes 19°35' to 20°50' and longitudes 73°30' to 74°55' and extends over an area of 15,582 sq. km. It is bound on the north-west by the Dangs and Surat districts of Gujarat, on the north by the Dhulia district, on the east by Jalgaon and Aurangabad districts.

The western part of the district includes the north Sahyadri, a part of peaks like Kalsubai (1846m), Timmbak (1294m) and Salher (1400m) are well known. The district is open and presents the appearance of a series of rolling downs with many hills and valleys. The western part (north Sahyadri) is rich in varied vegetation. It includes Surgana, Peint, Kalwan, Baglan, Igatpuri and Trambak talukas with thick vegetation.

Vegetation: Region the forests of this district are of semi moist to dry deciduous type. Biotic factors disturb forest life to a great extent at many places, and indiscriminate felling of trees is seen throughout the area.

Tribes: Some of the main tribes of this district are Kokna, Bhil, Mahadev koli, Warali, Thakur and Kartkari. They are living in different taluka areas like Srugana, Pent, Kalvan, Baglan, Igatpuri,

Table 1: Ethnomedicinal plants of north Sahyadri (Nashik district).

Sr. No.	Botanical name with family	Vernacular name	Habit	Part used	Threatened species			Endemic
					Rare	Vulner-able	Endan-gered	
1	<i>Abrus precatorius</i> Fabaceae	Gunj	Climber	Root, leaves seeds	-	*	-	-
2	<i>Acacia catechu</i> Mimosaceae	Khair	Tree	Bark, hart wood	-	*	-	-
3	<i>Aegle marmelos</i> Rutaceae	Bel	Tree	Root, leaves fruits	-	*	-	-
4	<i>Ampelopsis latifolia</i> Vitaceae	Janglidarksh	Climber	Fruits	-	-	*	-
5	<i>Annona squamosa</i> Annonaceae	Sitaphal	Shurb	Root, leaves fruits	-	*	-	-
6	<i>Arisaema amurense</i> Araceae	Nagphani	Herb	Tuber	-	*	-	-
7	<i>Asparagus racemosus</i> Liliaceae	Satavari	Climber	Tuberous roots	-	-	*	-
8	<i>Asparagus africanus</i> Liliaceae	Satavari	Climber	Tuberous roots	-	-	*	*
9	<i>Azadiracta indica</i> Meliaceae	Neem	Tree	Bark, leaves	-	*	-	-
10	<i>Bauhiahia varigata</i> Caesalpinaceae	Knachan	Tree	leaves	*	-	-	-
11	<i>B. racomosa</i> Caesalpinaceae	Apta	Tree	Root, bark	-	*	-	-
12	<i>Bambusa stuecta</i> Poaceae	Velu	Shrub	Root, bark, leaves	-	*	-	-
13	<i>Bixa orellana</i> Bixaceae	Bixa	Shrub	Stem, leaves	*	-	-	-
14	<i>Boerhavia diffusa</i> Nyctaginaceae	Punarnava	Herb	Seeds, Root, leaf	-	*	-	-
15	<i>Bombax ceiba</i> Bombacaceae	Semal/Kat esabar	Tree	Root, gum, bark, leaves	-	*	-	-
16	<i>Boswellia serrata</i> Burseraceae	Salai	Tree	Bark, gum	-	*	-	-
17	<i>Butea monosperma</i> Fabaceae	Palas	Tree	Bark, leaves, flowers	-	-	*	-
18	<i>Caesalpinia bonducella</i> Caesalpinaceae	Chilar	Thomy shrub	Root, gum, leaves	-	*	-	-
19	<i>Capparis aphylla</i> Caparidaceae	Habad	Shrub	Root, fruits	*	-	-	-
20	<i>Cardiospermum halcacabium</i> Sapindaceae	Kapalphodi	Climber	Root, Seeds	-	*	-	-
21	<i>Cassia auriculata</i> Caesalpinaceae	Avli	Shrub	Root, bark, leaves	-	*	-	-
22	<i>Cassia fistula</i> Caesalpinaceae	Sonbahava	Tree	All parts	-	-	*	-
23	<i>Celosia cristata</i> Amranthaceae	Kombada	Herb	Inflorescence	-	*	-	-
24	<i>Ceropegia sahyadrica</i> Asclepiadaceae	Nagphana	Climber	Leaves	-	-	-	-

Table cont...

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25	<i>Clematis gouriana</i> Ranunculaceae	Ranjai	Climber	Bark, stem	-	-	-	-
26	<i>Clitoria ternata</i> Fabaceae	Gokarn	Climber	Root, leaves, seeds	-	*	-	-
27	<i>Clitoria biflora</i> Fabaceae	-	Climber	Leaves	-	-	-	-
28	<i>Cordia dichotoma</i> Boraginaceae	Bokhar	Tree	Bark, leaves, Fruits	*	-	-	-
29	<i>Leucas deadikrii</i> Labiatae	-	Herb	Whole plant	-	-	-	*
30	<i>Chlorophyton glaucooides</i> Liliaceae	-	Herb	Roots	-	-	-	*
31	<i>Cynotis concangensis</i>	Kenpat	Herb	Whole plant	-	-	-	*
32	<i>Cympogon citratus</i> Poaceae	Lemon	Herb	Whole plant	-	*	-	-
33	<i>Diospyros malbarica</i> Ebnaceae	Temburni	Tree	Bark, leaves, flower, fruits	-	*	-	-
34	<i>Dioscorea bulbifera</i> Dioscoreaceae	Ranbatata	Climber	Tuber	-	-	*	-
35	<i>Feronia limonia</i> Rutaceae	Kavat	Tree	Leaves, fruits	-	-	*	-
36	<i>Gloriosa superba</i> Liliaceae	Kal lavi	Climber	Tuber, seeds	-	-	*	-
37	<i>Holarrhena antidysenterica</i> Apocynaceae	Dahikuda	Shurb	Bark, lates, seeds	-	*	-	-
38	<i>Impatiens balsaminema</i> Balsaminaceae	Terda	Herb	Seeds	-	*	-	-
39	<i>Lannea coromandelica</i> Anacardiaceae	Mohadal	Tree	Bark, leaves	-	*	-	-
40	<i>Madhuca indica</i> Sapotaceae	Moha	Tree	Bark, wood, flower, fruit	-	-	*	-
41	<i>Mallotus philippensis</i> Euphorbiaceae	Shendri	Tree	Fruits	-	-	*	-
42	<i>Mitragyna parvifolia</i> Rubiaceae	Kalam	Tree	Root, bark, leaves	*	-	-	-
43	<i>Phyllanthus emblica</i> Euphorbiaceae	Amla	Tree	Root, bark, fruits	-	*	-	-
44	<i>Pongamia pinnata</i> Fabaceae	Karanj	Tree	Root, bark, leaves, flower	*	-	-	-
45	<i>Semecarpus anacardium</i> Anacardiaceae	Bibba	Tree	Fruits	-	-	*	-
46	<i>Strobilanthes sp.</i> Acanthaceae	Karvi	Shrub	Root, bark, leaves	-	*	-	-
47	<i>Syzygium cumini</i> Myrtaceae	Jambul	tree	Bark, leaves, fruits	-	*	-	-
48	<i>Tectona grandis</i> Verbenaceae	Sag/Teak	Tree	Whole plan	-	-	*	-

Table cont...

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49	<i>Terminalia arjuna</i> Combretaceae	Arjun sadada	Tree	Bark	-	*	-	-
50	<i>T. bellirica</i> Combretaceae	Behada	Tree	Bark, fruits	-	*	-	-
51	<i>T. chebula</i> Combretaceae	Hirda	Tree	Fruits	-	-	*	-
52	<i>Tinospora cardifolia</i> Menispermaceae	Gulvel	Climber	Stem, leaves	-	*	-	-
53	<i>Vanda roxburghii</i> Orchidaceae	Orchid	Epiphyte herb	Whole plant	-	*	-	-
54	<i>Tridax procumbens</i> Asteraceae	Tantani	Herb	Whole plant	-	*	-	-
55	<i>Woodfordia fruticosa</i> Lythraceae	Lokhandi	Shrub	Flowers	-	*	-	-
56	<i>Ziziphus rugosa</i> Rhamanaceae	Toran/Ranbor	Tree	Fruits	-	*	-	-

(-) = Absent; (*) = Present

Trambak, Dindori, etc. The tribals still follow their traditional way of life. They are mainly dependent upon the major and minor forest produce for their livelihood. A large variety of plants are used for food, fodder, fibre, fuel, medicine, poison, dye, tannins, witchcraft, religious ceremonies, insecticides, etc. Information on 56 medicinal plant species have been collected with the help of tribals which is either new to literature or vary from the known ones. Similar type of work has earlier been done by Sharma & Lakashminarsimhan (1986).

MATERIALS AND METHODS

Field trips were undertaken covering different pockets in the remote areas of western part of the district like Saptashringi, Mulher-Salher, Bahrhe-Surgana, Kalsubai, Trambak, Igatpuri, Satmala range, etc. Important plants of ethnomedicinal value were recorded from knowledgeable sources such as vaidyas, hakims, priests, local practitioners, etc. The plant herbarium was prepared and plants were identified with the help of well known floras.

RESULTS AND DISCUSSION

The various plants of ethnomedicinal threatened and endemic flora available in the locality being medicinally used by tribals are summarised in alphabetical orders of genera, valid scientific names with family, vernacular name and plant parts used are given in Table 1.

In present investigation 56 plant species for different ailments have been studied. The species identified include threatened (rare, vulnerable and endangered) and endemic. More than 20% of the medicinal plants are found in high altitudes and remaining is in hills and on plain regions. The medicinal flora in the region is herb, climber, shrub and trees. Threatened medicinal flora studied in the region, has 12 rare plants, 31 vulnerable, 13 endangered and 6 endemic species. Most of the medicinal plants are exploited in the region for their medicinal use and they are also fast disappearing due to deforestation by heavy felling and grazing as well as destruction of natural habitats for agriculture and other purposes. Medicinal plants are nature's gift to mankind and also a rich heritage of India, which have to be protected and conserved to their natural state.

Conservation of the country's medicinal flora will not only serve national interest but also the global needs. The medicinal flora can be conserved by following way.

1. Prevent the forests from deforestation and forest fires.
2. Imposing ban on exploitation or destruction of medicinal plants from the wild state, and also protect their natural habitats.
3. Plantation of native medicinal plants on degraded land and motivate the tribals to protect and cultivate the same.
4. Developing awareness in the society regarding the importance and how they are useful for maintaining the balance of the nature.
5. Encouraging the tribals by providing them some incentives for conserving the medicinal plants.

ACKNOWLEDGEMENT

Author is thankful to BCUD, University of Pune for providing financial assistance for this work and also thankful to the Principal of the College for providing necessary facilities and encouragement for this work.

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ENVIRONMENTAL NEWS

Acidification Damage to Oceans

Oceans have been considered as big carbon dioxide absorbers and have contributors to lowering CO₂ in atmosphere to reduce global climate warming. However, the absorption of atmospheric CO₂ has resulted in changes to the chemical balance of the oceans, causing them to become more acidic. It is predicted that by 2050, ocean acidity could increase by 150%. This dramatic increase is 100 times faster than any change in acidity experienced in the marine environment over the last 20 million years, giving little time for evolutionary adaptation within biological systems.

Ocean acidification is irreversible on timescales of at least tens of thousands of years, and substantial damage to ocean ecosystems can only be avoided by urgent and rapid reductions in global emissions of CO₂. An emerging body of research suggests that many of the effects of ocean acidification on marine organisms and ecosystems will be variable and complex and will affect different species in different ways.

European Water News, December 17, 2009

Water Management and Crop Yield

The Intergovernmental Panel on Climate Change predicts a scenario that if the global population increases to 10 billion by 2050, then an additional 5000 km³ of water per year will be required to produce enough food.

The study supported by the EU ENSERBLES project 2, is the first to quantify the potential of water management strategies to increase crop production. It indicates that a combination of harvesting run-off water and reducing evaporation from soil could increase global crop production by 20 percent.

Lastly, the study estimated the number of those living without enough water to produce a healthy diet to increase from the current 2.3 billion to 6 billion in 2050. This highlights the need to explore other options, such as more efficient irrigation and plant breeding for such future conditions in addition to water management.

Environmental Expert, November 27, 2009