

Biodiversity of vulnerable and endangered plants from Jalgaon district of North Maharashtra

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Abstract

The present paper deals with vulnerable and endangered plants of Jalgaon district of North Maharashtra. The survey was carried out during 2006-11 in different seasons. The North Maharashtra region comprises Dhule, Jalgaon and Nandurbar districts. North Maharashtra region consist of dry deciduous forest and scrub forest containing ethnomedicinal plants. The vegetation is rich in Chopda, Yawal and Raver Taluka of Jalgaon district having 43 endangered plant species. These endangered plants have various medicinal uses and used by tribal to cure human diseases and disorders. In view of their medicinal importance a need to conserve species for the long term survival of plant species.

Keywords: endangered plants, Jalgaon, medicinal uses.

Introduction

The North Maharashtra region comprises Dhule, Jalgaon and Nandurbar districts. It is situated at North-East of Maharashtra bounded by Baroda districts of Gujrat from North and Nimar district of Madhya Pradesh form east , Jalgaon district from south and from west by Nashik distict of Maharashtra. The east region of Maharashtra has Satpuda which is rich in vegetation having humid and semi-evergreen species. The middle region of it north Maharashtra has many deciduous species whereas western region has only dry scrub in Madhya Pradesh, it breaks into a low woodland or scrub elsewhere.

Dry deciduous forest

These are the forest of Satpuda hills on the northern side of the Tapi River. It contribute Chopda, Yawal and Raver ranges. The rainfall in this region is about 70-101cm. the dominant species consist of *Tectona grandis*, *Acacia cathechar*, *Anogissus latifolia*, *Terminalia tomentosa*, *Boswellia serrata*, *Terminalia arjuna*, *Butea monosperma*.

Scrub forest- the forest on the Southern side of Tapi River and are mostly scrub type. The average rainfall varies form 38-63 cm, in summer temperature goes up to 48⁰C therefore the vegetation is poor. The main plant species are *Acacia cathew*, *Anogissus latifolia*, *Boswellia serrata*, *Hardwickia binata*, and *Zyzipus zuzuba* etc.

Materials and Method

Survey of the area was conducted during 2006-11. The ethnobotanical information was gathered form the various tribal communities to the Satpuda region of Jalgaon district. The valuable data was also collected from the adjoining communities to the Satpuda region. The plant specimen are collected and preserved in the form of herbarium. The herbarium specimens are deposited in the Botany department, Bhuswal Arts, Science and P.O.Nahata Commerce College, Bhusawal. The identification and authentication was made with the help of flora of Bombay Presidency edited by T. Cooke.

Result and Discussion

Satpuda of Jalgaon district has a wide range of variety of plants. The vegetation is dry deciduous or mixed type, some time scrub forest is also observed during the investigation. The vegetation is rich in Chopda, Yawal and Raver Taluka of Jalgaon district. The list of vulnerable and endangered plants from Jalgaon district of North Maharashtra is given in table 1.

Sr. No.	Botanical Name and Vernacular name	Part used	Medicinal uses
1	<i>Acacia catechu</i> (Khair)	Bark	Astringent, anti-inflammatory, anti-bacterial, anti-fungal and a large amount of antioxidant activities. It is used for treating high blood pressure, leucorrhoea, diarrhea, dysentery, leprosy, colitis, gastritis, bronchitis and cough, and also gargled for gingivitis, toothache, sore throat and mouth infections.
2	<i>Aegle marmelos</i> (Bel)	Fruit	astringent, digestive stomachic which improves appetite and antiscorbutic
3	<i>Ampelocissus latifolia</i> (Rundraksha)	Root	dental troubles, ulcers and dysentery
4	<i>Anogissus latifolia</i> (Dhavda)	Root, Bark, Leaves and Fruit	Plant root pacifies vitiated kapha, vata and abdominal disorders. The bark cures vitiated conditions of kapha and vata, wounds and ulcers, inflammations, diabetes, haemorrhages, haemoptysis, diarrhoea, dysentery, haemorrhoids, skin diseases, liver diseases, and general debility. The fruits pacify vitiated conditions of kapha and pitta, diarrhoea and dysentery.
5	<i>Anthocephalus cadamba</i> (Kadam)	Bark and fruits	Diabetes, cough, musculoskeletal disorder, fever, anaesthetic.
6	<i>Asparagus racemosus</i> and Shatavari	Roots and leaves	Nutritive tonic, rejuvenative, aphrodisiac, galactagogue, laxative, antispasmodic, Antacid, diuretic, antitumor and demulcent
7	<i>Bambusa bambos</i> and Bambu	Root, Bark, Leaves and Fruit	Medicinal uses; include as abortifacient, for kidney troubles, leaves used as sudorific and febrifuge agents, sap to treat fever and hematuria, tabasheer from culm internodes to treat infantile epilepsy, bark astringent and emmenagogue.
8	<i>Bassia latifolia</i> and Mahu	Flower, fruit, seeds, leaves and bark	Worms rheumatism, heart diseases, skin diseases and respiratory disorders
9	<i>Borassus flabelifera</i> and Tad	Nut	Treatment of headaches, fever and rheumatism. In China, betelnut is used to treat parasitic infection. Arecoline resembles pilocarpine in its effect; other alkaloids in betel nut are arecaine and guracine
10	<i>Boswellia serrata</i> and Salai	Gum resin, bark	Treating chronic laryngitis, fevers, urethrorrhea, jaundice, diaphoresis, convulsions and ringworm. It possesses diuretic, expectorant, anti-inflammatory and antiseptic.

			<p>The bark is used for diarrhea, jaundice, Pita diseases, and considered as a tonic, sweet and cooling.</p> <p>In Indian Ayurvedic systems, it is known among herbalists as a treatment for arthritis, very beneficial in helping inflammation and joint health.</p> <p>Extracts of boswellia serrata have natural anti-inflammatory activity at sites where chronic inflammation is present by switching off pro-inflammatory cytokines and mediators, which initiate the process.</p>
11	<i>Buchanania lanzan</i> and Charoli	Roots, leaves and fruits	<p>The roots are acrid, astringent, cooling, depurative and constipating, and are useful in treatment of diarrhea. Leaves are used in the treatment of skin diseases. Fruits are used in treating cough and asthma.</p>
12	<i>Butea monosperma</i> and Palas	Gum, seeds, flowers and leaves	<p>The gum is used in treatment of diarrhea and dysentery. Infusion or decoction of the gum is used for enema, and or juice of the leaves for the same.</p> <p>The seeds are ground and mixed with lemon juice and then applied for itchiness in the treatment of eczema and ringworms.</p> <p>A hot poultice of the leaves can be applied on boils, pimples, skin ulcers, swellings and bleeding piles. The crushed seeds can be used for killing maggots in wounds and sores.</p>
13	<i>Cassia fistula</i> and Bahava	Seeds and leaves	<p>In Ayurvedic medicine systems, the seeds are attributed with antibilious, aperitif, carminative, and laxative properties while the the root is used for adenopathy, burning sensations, leprosy, skin diseases, syphilis, and tubercular glands. The leaves are employed there for erysipelas, malaria, rheumatism, and ulcers. In Brazilian herbal medicine, the seeds are used as a laxative and the leaves and/or bark is used for pain and inflammation</p>
14	<i>Crataeva nurvula</i> and Yvarna	Leaves, root, bark	<p>Roots, leaves and the skin of the bark are a made of a poultice which is applied for edema, cervical adenitis, rheumatism and spleen enlargement.</p> <p>The bark acts as an appetizer, cholegogue, laxative, vermicide, tonic, anti-inflammatory and its decoction is taken internally for the same diseases above, plus tumors, liver disorders, anorexia, fever and also mixed with ghee for flatulence.</p> <p>Nurvala bark combined with Bauhinia variegata bark, honey, and applied externally in treating inflammations and abscesses.</p> <p>The decoction of the bark and roots are used in treating calculi, dysuria, urethritis, and as a diuretic, anti-lithic, anti-inflammatory, antiseptic, and for its flavonoids glucosinolates, sterols, saponins and tannins.</p>

15	<i>Diopyros embryopteris</i> and Temrun	Bark, fruit	Tonic and astringent. The bark has been used in <i>intermittents</i> , and both it and the unripe fruit have been beneficial in various forms of <i>disease of the bowels, chronic dysentery, and uterine hemorrhage</i> ; used in infusion, syrup, or vinous tincture, in the proportion of 1 ounce of the bruised fruit to 2 fluid ounces of the vehicle, and 1/2 fluid ounce or more given to adults, and a fluid drachm or more to infants. The infusion may be used as a gargle in <i>ulcerated sore throat</i> .
16	<i>Dioscoria bulbifera</i> and Dukkarkand	Tuber	Used against madness, tuber in jaundice, dysentery, piles, abdominal pain and bone fracture.
17	<i>Dolichandron falcata</i> and Medhasingi	Leaves	The leaf extract are applied on swelling
18	<i>Leptadenia reticulata</i> and Bakkardori	Whole plants is used	The whole plant is used, The plant is restorative, and general tonic. The plant contains a triterpenoid, leptadenol
19	<i>Ethretia laevis</i> and Lokhandi	Leaves	Leaves are chewed orally to cure mouth blisters. Leaf powder is mixed with sugar is divided into 10 equal parts. Each does is taken daily orally along with goat milk curd to cure dysuria. During the course of administration salt, chilly, tea, acidic food, oil etc are strictly prohibited.
20	<i>Eugenia jambolana</i> and Jambhul	Fruits, Seeds and Bark	It is useful in ailments caused by kapha and pitta. it is also used as skin related ailments and suppresses burning sensation occurring in body. It helps in proper digestion in the body. It stimulated liver. It is also used as anti-diuretic in nature and reduces the sugar levels in blood in urine.
21	<i>Feronia elephantum</i> and Kavath	Fruit and leaves	The leaf juice is used to kill worm and fruits are used to improve appetite.
22	<i>Helictus isora</i> and Murudsing	Fruit	Fruits are rubbed and paste is applied in sore of ear and also for stomach complaints in children.
23	<i>Holarrhena antidysentrica</i> and Kuda	Bark and latex	Bark paste is applied in headache
24	<i>Launia coromandelica</i> and Mohin/Moya	Bark	Paste of bark powder is applied in swelling
25	<i>Manilkara hexandra</i> and Khirni	Fruit	Fruits are used to relieve digestive disorder.
26	<i>Mimusop elengi</i> and Bakul	Bark, Flower and leaves	Bark powder is used in toothache
27	<i>Morinda citrifolia</i> and Bartondi	Fruit, Bark and leaves	Leaf juice is applied externally to relive pain

28	<i>Pterocarpus marsupium</i> and Bijasal	Whole plant	The bare decoction is used to cure heart diseases and also used in skin diseases
29	<i>Pteriospermum suberifolium</i> and Kad	Bark, Gum and Root	The gum is used to make laddu and given in weakness
30	<i>Salvodora persica</i> and Piloni	Root, Bark and fruit	The fruits are fried and given in stomach complaints
31	<i>Semecarpus anacardium</i> and Bhilava	Fruits	The fruits are used for filling the heal crack
32	<i>Soymida febrifuga</i> and Rohin/Mohin	Bark and root	The decoction of bark is given in fever
33	<i>Sterculia urens</i> and Gular	Root, Gum and Bark	
34	<i>Strychnos potatorum</i> and Nivali	Seed, Bark and leaves	The seeds are used for purification water
35	<i>Tectona grandis</i> and Sag	Stem and Flower	The ash of the wood is applied to swollen eyelids
36	<i>Terminalia arjuna</i> and Arjuna	Bark, Fruits and leaves	Bark powder is used in heat diseases
37	<i>Terminalia belerica</i> and Behada	Fruits	Unripe fruits is given in to cure piles and fistula
38	<i>Tinospora cordifolia</i> and Gulvel	Whole plant	Decoction of the plant is given in fever and viral infection
39	<i>Woodfordia fruticosa</i> and Dhayati	Whole plant	Plant extract is used for blood purification
40	<i>Wrightia tinctoria</i> and Kalakuda	Whole plant	Bark juice is used as tonic
41	<i>Zyzyphus jujuba</i> and Bor	Fruit	Fruits are Edible
42	<i>Zyzyphus rugosa</i> and Ghatbor	Fruit, Bark and leaves	Leaves are applied on swelling

In addition to that *Aristolochia bracteata*, *Costus speciosa*, *Carcuma pseudomontana*, *Euloplia herbacea*, *Fueraria tuberosa*, *Curculigo crchiodes* and *Strychnos potatorum* are vulnerable and endangered. According to RRTHL database, the *Aristolochia bacteata* is least concern in Maharashtra, *Costas speciosa* is vulnerable in Andhra Pradesh, *Carcuma pseudomontana* is vulnerable in Kerala, *Euloplia herbacea* is endangered in Maharashtra, *Puerasis tuberosa* is near threatened species in Andra Pradesh and Maharashtra and vunerable in Keralla and Tamilnadu and the important trade plants are *Curculigo orchiodes* and *Strychnos potatorum*. In view of this there is

a need to conserve the plant species for the long term survival and evolution of plant species, in association with other plants.

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