

Ethnobotanical Study of some Tree Medicinal Plants in Marathwada, Maharashtra

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Article Info	Abstract
Article History Received : 04-04-2011 Revised : 20-04-2011 Accepted : 20-04-2011	Ethno botanical study was carried out along with the ethnic groups in the Marathwada region of Maharashtra. In the present study, 50 plant species belonging to 30 families were included. In this assertion, the information collected from the traditional healers was used to compare with the already accessible literature on the ethnobotany of India. The conventional ethno medicinal plants were mostly used for fever, diarrhea, dysentery, skin diseases, poison bites, wounds, piles and rheumatism. The medicinal plants used by traditional users of Marathwada region are arranged alphabetically followed by botanical name, family name, local name, distribution, locality, flowering & fruiting season and parts used, and medicinal uses.
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Introduction

Among the Angiospermic plants, 420,000 flowering plants were reported from the world (Govaerts, 2001) and many tropical species are not yet named. More than 50,000 plants have been used for medicinal purposes (Schippmann et al., 2002). India is represented by rich culture, traditions and natural biodiversity and offer unique opportunity for the drug discovery researchers. Utilization of plants for medicinal purposes in India has been documented in ancient literature (Charak, 1996). In India, there are over 17,500 species of higher plants, 64 gymnosperms, 1,200 Pteridophytes, 2,850 Bryophytes, 2,021 Lichens, 15,500 Fungi and 6,500 Algae are reported. India is rich in its own flora that is, endemic plant species (5,725 Angiosperms, 10 Gymnosperms, 193 Pteridophytes, 678 bryophytes, 260 Liverworts, 466 Lichens, 3,500 Fungi and 1,924 Algae) (Sanjappa, 2005). In India, the main traditional systems of medicine include Ayurveda, Unani and Siddha use over 7,500 plant species have been reported. Traditional healers provide considerable information about the use of many plants or plant parts as medicine. The World Health Organization (2003) has estimated that 80% population of the developing countries is unable to afford pharmaceutical drugs and rely on traditional herbal, medicines, to sustain their primary health care needs. India is one of diverse countries in the world, rich in medicinal tree plants. Over the last century, ethno botany has evolved into a specific discipline that looks at the people-plant relationship in a multidisciplinary manner, such as ecology, economic botany, pharmacology and public health (Balick, 1996). Herbal medicines are assumed to be of great importance in the primary healthcare of individuals (Sheldon et al., 1997) and communities in many developing countries as the herbal medicines are comparatively safer than synthetic drugs. Plant-based traditional knowledge has become a recognized tool in search for new sources of drugs and nutraceuticals (Sharma and Mujundar, 2003). In present research article, we report on the information

collected from traditional practitioners to cure various diseases in Marathwada region of Maharashtra, India.

Study Area

Marathwada region of the state of Maharashtra comprises eight districts viz., Aurangabad, Beed, Hingoli, Jalna, Latur, Nanded, Osmanabad and Parbhani. The region falls between 17°35' and 20°40' N latitude and 74°40' and 78°15' E longitude. Marathwada region forms the part of the vast Deccan plateau of India and is one of the geographical division of Maharashtra State. In a quest to understand the botanical wealth of the region, V.N. Naik and associates have published the Flora of Marathwada and some articles in 1998-2009 and recorded 1719 species of flowering plants.

Methodology

Survey

In order to assess the consumption of indigenous medicinal plants, survey was carried out during the year, 2008-09 in the forest areas of Marathwada. To get maximum information the survey was widened diagonally during the rainy season. The information on medicinal uses of the indigenous plants has been described after gathering it from local people, experienced aged rural folk, traditional medicine practitioners, local herbal drug sellers and And comparing it with the available literature. A total of 167 inhabitants were interviewed by random selection. In addition, direct plant observation and identification was done with the help of local healers. A structured feedback form was used to draw information from the resource persons using standard methods (Martin, 1995). Information on medicinal plants, local name, plant parts used and mode of administration for curing diseases has been recorded. Plants collected during the surveys were identified with the help of published regional flora (Naik et al., 1998; Almeida, 2003).

Present work is an outcome of the field tours conducted particularly in Aurangabad and Nanded district. The plants

were collected and identified with the help of pertinent literature. Confirmation of identification of plants has been done in consultation with Botanical Survey of India (BSI), Western Circle, Pune. Plant specimens are deposited in herbarium, Dept. of Botany, Dr. Babasaheb Ambedkar Marathwada University, (BAMU Herbarium), Aurangabad. During this exercise, few species were reported to be new records to the Flora of Marathwada (Survase & Sardesai 2008). Voucher specimen numbers along with other details are given in and the collected data contains the list of plants of different families with their traditional uses, flower & fruits Season, locality, distribution, local name and their mode of administration which are listed in alphabetical order.

Results and Discussion

The present study revealed that the local people of Marathwada region were using 50 species of medicinally important plants belonging to 30 families. These medicinally important plants were categorized in to tree species. These are commonly occurring medicinally important plants used to treat various diseases like cold, fever, cough, diarrhea, dysentery, skin diseases, toothache, indigestion, leprosy, and as an antidote for poisons and in wound healing. This is constant with the other general observation which has been reported earlier in relation to medicinal plant studies by the Indian Traditional System of Medicine like Siddha and Ayurvedha (Kirtikar and Basu, 2001; Gogte, 2000; Anonymous, 1992; Asolkar et al., 1992). Different types of preparation made from medicinally important plants included decoction, juice, powder, paste, oil and plant part extract. Some plants were even used in more than one form of preparations. The leaves and roots are the two major plant parts which are frequently used for the treatment of diseases by traditional healers. Preparations from medicinal plants are applied externally to cure the disease like, skin disease, wound, rheumatism and poisons bites oral consumption was recommended against the disease like fever, cold, cough, diarrhea, indigestion etc. Drugs are prescribed either as a single or in a combination of more than one plant / parts of same or different plants to the people suffering from various diseases. Combination of various plants / parts are preferred than the single plants / part, as the combination are more effective to cure the disease and to enhance the immunity of patient suffering from various disorders. Medicinal plants play an important role in providing knowledge to the researchers in the field of ethno botany and ethno pharmacology. The observation of present study shows that traditional medicine plays a significant role in the life of local people.

There is always a hunt for rich ethno botanical knowledge for ethno botanical studies of medicinal plants. Further, this research has placed the local uses of medicinally important plants on record by interviewing the local people adapting the prescription from the traditional healers, which are the rich sources of the traditional knowledge of the medicinal plants. In Marathwada region, local people are going for agriculture and sustainable harvesting of medicinal plants, which not only helps in conservation of these medicinally important plants but also helps them economically. Finally, to conclude, this research article will attract the attention of ethno botanists, phytochemists and pharmacologists for further critical investigation of medicinal plants present in the region of Maharashtra, India.

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Sr. No.	Botanical Name	Family	Common Name	Distribution	Locality	Fls. & Frt. Season	Ethnomedicinal Uses
1.	<i>Acacia catechu</i> Arn.	Mimosaceae	Khair	Rare	Kinwat Nanded	June-Nov.	Katha is known for its antileprotic activity and is used as an astringent and in cases of cough and diarrhoea. It is extensively used in pan preparations. Katha is a highly efficient anti-oxidant.
2.	<i>Adansonia digitata</i> L.	Bombacaceae	Gorkha Chin	Accasionally w	Aurangabad Town	May-July	The bark skin, fruits and the leaves of goraksi are used for medicinal purpose. Externally, the paste of its leaves is applied on the swelling. Internally, the pulp of fruit is useful to alleviate the burning sensation in fevers. The skin of its fruit, by itself, reduces the fever in 1-2 gm. Dose. The excessive thirst is alleviated effectively with the pulp of fruit. It is also salutary in controlling hyperhidrosis in tuberculosis.
3.	<i>Aegle marmelos</i> Corr. ex. Roxb.	Rutaceae	Bel	Occasional	Aurangabad Town	Sept.-March	Leaf paste is applied topically to heal wounds. Fruit Aromatic, cooling, alterative, nutritive. Used in habitual constipation, chronic dysentery, dyspepsia. Unripe fruit digestiv, stomachic, demulcent, Pulp stimulant, antipyretic, antiscorbutic. Root and Stembark antipyretic Aegelin is used in the treatment of bronchial spasms.
4.	<i>Ailanthus excelsa</i> Roxb.	Bersuraceae	Maharukh	Common	Aurangabad Town	Dec. - July	The root bark is used in asthma, bronchitis, dysentery, dyspepsia and earache. All the quassinoids of root bark are found to possess substantial anti-tumour and cytotoxic activities against the P-388 lymphocytic leukemia and KB test system respectively.
5.	<i>Alangium salvifolium</i> (L.f.) Wang.	Alangiaceae	Ankol	Rare	Kinwat Nanded	March-June	Toothache, cough Bark is soaked in water By drinking and bathing with water. Uses Root juice of 10 ml given orally for cattle in case of snake bite.
6.	<i>Semecarpus anacrdium</i> L.	Anacardiaceae	Bibba	Common	Mhaismal Aurangabad	Oct.-Nov.	Fruit of this plant, fruit of <i>Ananus comosus</i> and rhizome of <i>Withania somnifera</i> are ground with water and the juice thus obtained is taken orally to heal wounds. Dosage 50 ml of juice is taken thrice a day after food for 2-5 days.
7.	<i>Balanites aegyptiaca</i> (L.) Del	Balanitaceae	Hingan bet	Very Common	Aurangabad University Campus	Nov.-March	Stembark, Unripe fruit & Leaf: pungent, bitter, purgative & anthelmintic. Used in Seed cough, colic. Fruit snake bite. Seed burns, excoriations & freckles.
8.	<i>Barringtonia acutangula</i> Gaetm.	Lecythidaceae	Tiwar	Rare	Kinwat Road Nanded	Aug.-Oct.	Decoction of bark is used as mouthwash in gum probable's fruit is used in anthelmintic and astrigenic. Bark in decoction is stomachic. Bark also applied to wounds. Juice of leaves used for diarrhea. Fruit is used for coughs, colds, and asthma. Seeds are used as aromatic in colic and parturition, also for ophthalmic. Kernels are powdered, mixed with butte and sago, for diarrhea. Grains are emetic. Powdered seeds are used as snuff for headache.
9.	<i>Bombax celba</i> L.	Bombacaceae	Kate sawar	Frequent	Aurangabad University Campus	March-June	Menorrhizia, bark powder mixed in a cup of water administered twice a day for 7 days. Tap root demulcer tonic, slightly diuretic, aphrodisiac, and emetic. Stembark demulcent, diuretic, tonic. Used in prolapse of uterus/vagina, aprodisiac given in impotency, Prickle pimples.
10.	<i>Boswellia serata</i> Roxb. ex. Coleb.	Bersuraceae	Salai	Common hill slopes	Mhaismal Aurangabad	Feb.-April	Frankincense is very effective in osteoarthritis, juvenile rheumatoid arthritis and spondylitis and is used as astringent, stimulant, expectorant, diuretic diaphoretic, emmenagogue and ecbolic and exhibit antiseptic properties. It is also used in ulcers, tumours, rheumatism and skin diseases.
11.	<i>Buchanania lanzan</i> Spreng.	Anacardiaceae	Charoli	Rare	Kinwat Nanded	Dec.-Jan.	The roots are acrid, astringent, cooling, depurative and constipating, and are useful in treatment of diarrhoea. Leaves are used in the treatment of skin diseases. Fruit are used in treating cough and asthma.
12.	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	Palas	Common	Mhaismal Aurangabad	March-April	Bark is an alternative, aphrodisiac, anthelmintic and use for tumours, bleeding piles and ulcers. Decoction of bar is useful in menstrual disorders, cold and coughs and a tonic. Root are used in elephantiasis, night blindness and other problems of vision. Seeds are used as vermifuge in veterinary medicine.
13.	<i>Cadaba fruticosa</i> (L.) Druce.	Capparidaceae	Takala	Common	Aurangabad University Campus	Dec.-Feb.	The leaf juice is internally used in the case of general weakness and energetic during dysentery and diarrhoe and also to relieve general body pain, antidote against poisoning, stimulant, and antiscorbutic.
14.	<i>Calophyllum inophyllum</i> Linn	Clusiaceae	Undi	Garden plant	Aurangabad University Campus	Sept.- Nov.	The oil of the seeds and roots are beneficial in the treatment of wounds and scabies. The plant is also recommended in leprous nephritis.
15.	<i>Chloroxylon swietenia</i> DC.	Meliaceae	Behru Halda	Garden plant	Nanded	March-May	Stem bark is used as external application on wounds. It yoke gall, paste of stem bark ash mixed with <i>Pongamia pinnata</i> oil is applied over the affected area
16.	<i>Commiphora wightii</i> Arnott.	Bursaceae	Guggul	Rare	Aurangabad University Campus	March-April	Guggul is used in treating rheumatism, obesity and neurological and urinary disorders. Guggulsterols are found to be anti-inflammatory and hypocholesteremic.
17.	<i>Cordia dichotoma</i> Forst. f.	Boraginaceae	Bhokar	Common	Aurangabad University Campus	April-June	Flower astringent, demulcent, anthelmintic, diuretic, expectorant. Bark tonic. Used in dyspepsia, fever. Kernels ring worms. Leaf ulcers, prolapse of rus / vagin and headache. Fruit affection of Urinary passages, diseases of lungs and spleen. Plant snake-bite.

18.	<i>Crateva adansonii</i> DC.	Capparidaceae	Waiwana	Rare	Parbhani Town	March – June	Bark demulcent, tonic, stomachic, laxative, diuretic, antipyretic, alterative, rubefacient. Root & Bark lithotropic laxative, alterative. Flowers laxative, cholagogue. Used dyspepsia, heart diseases such as hypotrophy, heart depression. Bark urinary complaints, fevers, vomiting, and gastric irritation. Plant (infusion or decoction) to remove stones from ureter and urinary bladder, obstructive uropathy.
19.	<i>Crescentia cujete</i> L.	Bignoniaceae	Calabash	Garden plant	Aurangabad University Campus	Throughout	Fruit pulp aperient, cooling, febrifuge, and diuretic. Use in cleaning wounds and in headache. Poisonous to bird
20.	<i>Dolichandron falcate</i> (Wall. e DC.) Seem.	Bignoniaceae	Medh-shingi	Common	Aurangabad District	March-June	Leaves are used in steam-bath to relieve muscular pain back-ache etc. Leaves juice with cup of cured used in Piles.
21.	<i>Drypetes roxburghii</i> Hurus.	Euphorbiaceae	Putranjiva	Garden plant	Aurangabad University Campus	March-June	Leaves and stones of fruits are used in rheumatism. Leaves are used externally to swollen joints and areas. All parts of plants are used for colds and fever.
22.	<i>Ehretia aspera</i> Willd.	Ehretiaceae	Ajan Vruksha	Rare	Paithan; Aurangabad	Feb.-June	A decoction of fresh root is used in venereal disease. Used to make magical medicine for keeping unwanted persons or unpleasant events from entering a village Swahili, mkirika.
23.	<i>Euphorbia tirucalli</i> L.	Euphorbiaceae	Sher	Common	Aurangabad	Mar-April	The rubefacient, vesicant latex is used as an application for asthma, cough, earache, neuralgia, rheumatism, toothache, and warts in India. In small doses it is purgative, but in large doses it is an acrid irritant, and emetic. A decoction of the tender branches as also that of the root is administered in colic and gastralgia.
24.	<i>Ficus hispida</i> L.f	Moraceae	Bhui Umbar	Common	Verul; Aurangabad	Feb.-July	Latex and receptacles are used in Ayurved medicine. During diabetes, ripe fruits are consumed daily for ulcer burns and wounds tender leaf juice is used as lotion.
25.	<i>Ficus racemosa</i> L.	Moraceae	Umbar	Common	Aurangabad Town	Feb.-June	Stem bark of this plant, stem barks of <i>Syzygium cumini</i> and <i>Punica granatum</i> are boiled in water and the decoction thus obtained is used to wash wounds twice a day to heal soon.
26.	<i>Flacourtia indica</i> (Burm.) Mer	Flacourtiaceae	Hekal	Rare	Khultabad; Aurangabad District	Feb.-May	The tree has many uses in local medicine. The fruits are used for jaundice and enlarged spleens. The leaves and roots are taken for schistosomiasis, malaria, and diarrhea. The roots are Used for hoarseness, pneumonia, intestinal worms and as an astringent, diuretic, and pain reliever.
27.	<i>Gardenia resinifera</i> Roth.	Rubiaceae	Dekamali	Rare	Aurangabad University Campus	May-July	Gum exudate, called Dikemali, is used in medicine Chilled toothache. Leaf, buds, Young shoots Cumbi gun antispasmodic, expectorant, diaphoretic, carminative, antihelminthic. relieves constipation, pain, treats worms.
28.	<i>Gliciridia sepium</i> L.	Fabaceae	Giripushpa	Common	Aurangabad University Campus	Feb-June	Fever, colds, pain, gonorrhoea. Crushed fresh leaves are applied as a poultice. In Mexico, the plant is used as an antihistaminic, antipyretic, expectorant, and diuretic. Extracts of <i>gliciridia</i> have been shown to have high anti fungal activity.
29.	<i>Grewia tilifolia</i> Vahl.	Tiliaceae	Dhaman	Common	Aurangabad	May-Sept.	Ripe fruits eaten and said to improve digestion for Dyspepsia. Root bark paste is applied externally thrice a day for one week over swellings.
30.	<i>Guazuma ulmifolia</i> Lamk.	Sterculiaceae	Bhadraksh	Rare	Kinwat; Nanded	March-Aug.	Bark Infusion of old bark; sudorific, tonic and demulcent Used in as substitute to Calumba and Gentian. Dry Rudraksh beads (Seed) are soaked in water over night; these water is taken to control high blood pressure
31.	<i>Holoptelea integrifolia</i> (Roxb.) Planch.	Ulmaceae	Avali	Garden plant	Aurangabad University Campus	March-May	Used in Boiled bark applied on rheumatic swellings. Powdered bark applied on sticky juice to cover the boiled bark liquid.
32.	<i>Kigelia africana</i> (Lam.) Benth.	Bignoniaceae	Lundphal	Common	Aurangabad University Campus	Feb.-April	Reduction of high blood pressure, stomach ache, yellow fever. Roots, bark and fruit are peeled and cooked to make a concoction
33.	<i>Limonia acidissima</i> Linn.	Rutaceae	Kawat	Common	Aurangabad University Campus	March-Sept.	Antiscorbutic, antibilious, demulcent. Root purgative, sudorific. Fruit antifermentive. Used in Root colic. Fruit diminished intestinal fermentation. Leaf epilepsy.
34.	<i>Madhuca longifolia</i> (J.) Macb	Sapotaceae	Mahawa	Rare	Pital Khora; Aurangabad	Feb.-April	Stem bark of this plant, rhizomes of <i>Asparagus racemosus</i> , <i>Aristolochia indica</i> , leaves of <i>Ocimum basilicum</i> and <i>Elephantopus scaber</i> are mixed and boiled with water and the decoction thus obtained is taken orally to heal wounds. Dosage 50 ml of decoction is taken twice a day after food for 2-3 days.
35.	<i>Oroxylum indicum</i> (L.) Vent	Bignoniaceae	Tentu	Garden plant	Aurangabad University Campus	May-July	Its seeds decoction have been used as an analgesic, antitussive and anti-inflammatory agent for the treatment of cough and bronchitis.
36.	<i>Phyllanthus acidus</i> (L.) Skeel	Euphorbiaceae	Rai Awla	Rare	Aurangabad	Oct.-Mar.	Leaf paste is applied on skin in case of smallpox. Leaves are also scattered on patient's bed suffering from smallpox.
37.	<i>Prosopis cineraria</i> (L.) Druce	Mimosaceae	Shami	Rare	Tigoan; Beed	March – May	Root bark decoction taken in 2 spoonfuls twice a day for about 10 days for Leucorrhoea
38.	<i>Salvaora persica</i> L.	Salvadoraceae	Pilu	Rare	Aurangabad University Campus	Dec. – May	To strengthen gums and for foul smell, Applied externally on gums till cure. Occasional, inhabits dry sandy areas Purgative, Cough and Regulate the menstruation periods.
39.	<i>Sapindus emarginatus</i> Vahl.	Sapindaceae	Ritha	Common	Aurangabad University Campus	Oct.-Nov.	Tonic, emetic, purgative, expectorant. Used in salivation epilepsy, chlorosis. In Assamin fever, as emetic. Fruit a good shampoo, fumigation is useful in hysteria, melancholia.
40.	<i>Schleichera oleosa</i> (Lour) Oken.	Sapindaceae	Kusumb	Garden plant	Aurangabad Town	March-June	Bark paste supported by bamboo sticks is applied to fractured bones. For early relief, this treatment should also be accompanied by oral use of bark juice twice a day. Bark also used for skin diseases, ulcers
41.	<i>Sesbania grandiflora</i> (Linn.) Poiret.	Fabaceae	Hadga	Rare	Tigoan; Beed	Sept.-Dec.	Astringent, anticephalgic. The leaves prepared in the form of a soup are taken as a vermifuge and also to cure peptic ulcer.
42.	<i>Shorea robusta</i> Garten.	Dipterocarpaceae	Sal/Sakhu	Garden plant	Aurangabad University Campus		Bark and wood are used in diabetes, asthma and wound healing. Resin is used in skin diseases.

43.	<i>Sterculia urens</i> Roxb.	Sterculiaceae	Kandol	Common	Aurangabad	March-May	Stem bark ground with turmeric Powder and the warme poultice administered in 2 spoonfuls twice a day for abc 7 days for Rheumatic pains
44.	<i>Streblus asper</i> Lour.	Moraceae	Khoi tree	Garden plant	Aurangabad Town	Jan.-March	Old bark paste is applied by tribal women in case of hai loss and to maintain black colour of hair. Sometimes large scales of stem are soaked in the pond to prevent bacterial and fungal diseases and to feed the fishes during winter season.
45.	<i>Strychnos potatorum</i> L. f.	Loganiaceae	Nivii	Rare	Kinwat: Nanded	Sept.-Oct.	The seeds are used to clear turbid water astringent to tl bowels, diuretic the root cures all kinds of leucoderma.
46.	<i>Swietenia mahogoni</i> DC.	Meliaceae	Mahogany	Garden plant	Aurangabad University Campus	April-may	Traditionally, various parts of this plant have been used in the treatment of fever, diabetes, malaria, hypertensio and tuberculosis, and as an abortifacient, antiseptic, astringent, depurative, purgative and tonic ²⁻⁴ . The antifeedant activity of the limonoids from this plant has been reported recently ⁵ . The extract of this plant show ameliorative effects on diabetic mice ⁶ , antimicrobial properties ^{7, 8} , platelet aggregation inhibitory ⁹ and anti-HIV activities ¹⁰ . Chlorogenic acid from the methanol extract of this plant displayed human immunodeficiency virus protease inhibitory activity.
47.	<i>Terminalia arjuna</i> W.& A.	Combretaceae	Arjun Sadad	Occasional	Aurangabad University Campus	March-April	Fruit paste is applied topically on wounds. Bark powder boiled with water and inhaled to cure headache to kill worms in teeth.
48.	<i>Terminalia catappa</i> Linn.	Combretaceae	Deshi badam	Common	Aurangabad University Campus	Feb.-March	Stembark astringent, mild diuretic, potent cardio tonic. Used in Young leaf juice to prepare ointment, for scabic leprosy & other skin diseases. Internally in colic.
49.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combretaceae	Behada	Garden plant	Aurangabad University Campus	Feb.-March	Fruit of this plant, stem barks of <i>Pongamia pinnata</i> , <i>Toddalia asiatica</i> and <i>Pterocarpus marsupium</i> are boile with water and the decoction thus obtained is used to wash the affected places to heal wounds soon. Dosage about 25 ml of juice is used to wash thrice a day for 2 days.
50.	<i>Thespesia populanea</i> Cav.	Malvaceae	Parasa - Pimpal	Common	Aurangabad University Campus	Sept.-Dec.	The decoction of the bark is commonly used for the treatment of skin and liver diseases. Oil of the bark mix with vegetable oil is useful in urethritis and gonorrhea, the bark and root, decoction used in dysentery, cholera and haemorrhoids.