Ethnomedicinal plants used by tribals of East Nimar region, Madhya Pradesh

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Received: 27.11.2008; revised: 29.04.2010

Several ethnobotanical surveys were carried out in different region of East Nimar during 2004-2007. The paper deals with the 63 species of medicinal plants belonging to 55 genera and 43 families commonly used by the tribal people of East Nimar Region. These potential medicinal plants are used in 28 types of different diseases. The scientific, vernacular and family names of these plants, along with the parts used and the mode of administration are enumerated.

Keywords: Ethnomedicine, Korku tribe, Bhils tribe, Gond tribe, Bhilalas tribe, Naik tribe, Mankar tribe, Nihal tribe, Madhya Pradesh

IPC Int. Cl.: A61K36/00, A61P1/02, A61P1/08, A61P1/10, A61P9/14, A61P11/00, A61P17/00, A61P19/00, A61P21/00, A61P29/00, A61P39/02

India is the home to a great variety of ethnomedicinally important plant species and ranked seventh among 17 mega diversity countries of the world\textsuperscript{1}. Over 17,000 species of higher plants are reported to occur in India, of which 7,500 are reported to be used for healthcare by various ethnic communities\textsuperscript{2}. Only about 2,500 plant species of medicinal value have been well documented in Indian Systems of Medicine and ethnombotany\textsuperscript{3}. Tribals use locally available medicinal plants to meet their daily healthcare need. The knowledge of valuable heritage is orally handed over from one generation to generation years after year. East Nimar situated on Southern part of Madhya Pradesh lies approximately between the parallel of latitude 21°05' to 22°25' N and meridians of longitudes 75°57' to 77°13' E. East Nimar is bounded by on the East by Betul and Hoshangabad districts of Madhya Pradesh and Amravati of Maharashtra. On the South by the districts of Jalgaon and Amravati of Maharashtra, on the West by Khargone and Dewas district of Madhya Pradesh. The Satpura in the region is bifurcated into two parallel ridges on either side of Tapti Valley. Kalibith hill ranges and Asirgarh hill ranges are the main forest areas where rich population of tribals is found. Dominant tribals inhabiting the areas are Korku, Gond, Bhils, Bhilalas, Naik, Mankar, and Nihal; 78% of tribal population in East Nimar are Korkus. Small populations of 17% of the total population are Gonds. Nihal and Bhils rank third in numerical (3%) strength.

Methodology
Several ethnobotanical surveys were carried out during 2004-2007. The data regarding medicinal uses were collected by filling questionnaire\textsuperscript{4}, personal observation and interviews with heads of tribal groups, old and experience persons and local informants (Fig.1). Standard guideline was followed for ethnobotanical informations among different ethnic groups\textsuperscript{5,6}. Herberium of the dried and pressed plants were prepared following conventional methods\textsuperscript{7}. Different floras and monographs were consulted for identification of plants\textsuperscript{8-13}. Voucher specimens were finally confirmed and deposited in the Botanical Survey of India, Central circle (BSA) Allahabad. Different literature and publications have been consulted for verification of medicinal utility. Interpreters were employed for translating the tribal language\textsuperscript{14-18}.

Results and discussion
Information on 63 ethnomedicinal plant species belonging to 41 families is enumerated along with families, vernacular name and uses:
**Abelmoschus moschatus** Medic., Malvaceae, Jangli Bhindi

Uses: Root paste mixed with half a cup of water is given with wine to cure undesirable discharge of semen (locally called, dhat).

**Abelmoschus ficulneus** (L.) W.& A. ex Wt., Malvaceae, Jangli Bhindi / Ram Bhindi

Uses: Root juice is given to diabetic patients.

**Argemone mexicana** L., Papaveraceae, Kateli

Uses: Paste of roots and leaves with jaggery, ajwain (*Trachyspermum ammi*) and garlic is applied externally on chest of children suffering from double pneumonia (locally called, pasli ka dard).

**Abutilon indicum** L. Sweet, Malvaceae, Kanghi

Uses: Root extract mixed with water is given to ladies to cure leucorrhoea.

**Acacia nilotica** L. Del., Mimosaceae, Babul

Uses: Sun dried pods powder is given for the treatment of piles.

**Achyranthes aspera** L., Amaranthaceae, Latjeera / Hathijhara

Uses: It is used in the recovery of wounds caused by babool (*Acacia nilotica*) spines. Plant decoction is used in rheumatism.

**Aegle marmelos** L. Corr., Rutaceae, Bel

Uses: Fruit pulp is eaten during dysentery.

**Argyreia nervosa** (Burn.f.) Boj, Convolvulaceae, Samundra Soka

Uses: Root and seed paste is applied externally on eczema, ringworm and other skin diseases and wounds.

**Abrus precatorius** L., Fabaceae, Jarum

Uses: Roots are used for cough.

**Anogeissus pendula** Edgw., Combretaceae, Kala Dhawda

Uses: Bark decoction is used in cough. Bark paste is also used externally in wounds and skin diseases. Fruits are eaten in diarrhoea and dysentery.

**Amorphophallus paeonilifolius** Nicol., Araceae, Jangli Suran

Uses: Plant decoction is useful in throat inflammation and respiratory troubles.

**Aristolochia indica** L., Aristolochiaceae, Ishwurmul / Ishwari

Uses: Root paste is applied externally to cure stomachache and as an antidote to snakebite.

**Barleria montana** Nees, Acanthaceae, Haldibel

Uses: Root paste is used externally in rheumatism and joints pain.

**Bacopa monnieri** (L.) Wett., Scrophulariaceae, Jalnavari / Jalneem

Uses: Leaf extract is given to increase memories and also used for relieving cough.

**Balanites aegyptiaca** (L.) Dell., Balanitaceae, Hingola

Uses: Seed powders mixed with haldi (*Curcuma longa*) in warm water is taken for the treatment of asthma.

**Biophytum sensitivum** (L.) DC., Oxalidaceae, Rajal / Lajalu

Uses: Plant juice is given to cure diarrhoea. Roots are also used for the recovery in jaundice. Plant ash mixed with lemon juice is given in stomachache.

**Boerhavia diffusa** (L.), Nyctaginaceae, Gadahpurana

Uses: Root decoction is taken in kidney trouble.

**Butea parviflora** Roxb., Fabaceae, Palasbel

Uses: Flowers are eaten in diabetes.

**Canscora diffusa** (vahl.) R.Br.ex Roem & Schult, Gentianaceae, Shakhaphuli

Uses: Plant decoction is taken in nervous debility. Leaf paste is used externally in inflammation.

**Cocculus hirsutus** (L.) Diels., Menispermaceae, Jabamini / Vevdi

Uses: Stem extract is given to cure leucorrhoea. Root paste is used externally in poisonous insects bite.

**Convolvulus arvensis** L., Convolvulaceae, Shankpushpi

Uses: Flower paste in honey is given to increase memory; also controls blood pressure.

**Costus speciosus** (Koen.) Smith, Zingiberaceae, Keokand / Jangli Adrak

Uses: Rhizome extract is taken in rheumatism and pain in bones. Crushed leaves are inhaled in bronchial asthma.

**Crateva magna** (Lour.) DC., Capparaceae, Barna

Uses: Bark decoction is given in urinary organ disorders.

**Capparis zeylanica** L., Capparaceae, Hurhur

Uses: Root paste is applied on boils, swelling and arthritis.

**Clerodendrum multiforum** (Burm.f.) O. Kuntz, Verbenaceae, Arni

Uses: Root decoction is useful in fever. Flowers juice is given to patients suffering from nervous disorder.

**Carissa congesta** Wights., Apocynaceae, Karandas

Uses: Root decoction is given orally in stomach disorder.

**Cuscuta reflexa** Roxb., Cuscutaceae, Amarbel

Uses: Garlands of stem are tied around neck for recovery from jaundice. Plant decoction is used as a contraceptive for female.
Curcuma augustifolia Roxb., Zingiberaceae, Tikhur
Uses: Dried rhizome powder mixed with goat milk and sugar is administered for the treatment of dysentery and fever.
Cryptostegia grandiflora R. Br., Periplocaceae, Dudhi Bel/Kala Rela/Bhuulbhulaya Bel
Uses: Root paste is applied externally on chest to cure asthma.
Curculigo orchioides Gaertn., Hypoxidaceae, Kali Musli
Uses: Rhizome powder is sprinkled on cuts to stop bleeding and the recovery of wounds.
Datura metel L., Solanaceae, Dhatura
Uses: Fresh leaves soaked in coconut oil are used externally in burnt skin.
Diospyros melanoxylon Roxb., Ebenaceae, Temru
Uses: Juice from small pieces of roots mixed with black pepper (Piper nigrum) is given orally to patients as an antidote in snakebite.
Dioscorea bulbifera L., Dioscoreaceae, Morus bel
Uses: Root paste mixed with cow milk is taken orally for the treatment of cough and asthma.
Delonix regia (L.) Gamble, Caesalpinaceae, Vekrend
Uses: Leaves are used as poultice on bruises and wounds; leaf paste in milk is applied on piles.
Echinops echninatus Roxb., Asteraceae, Omkata
Uses: Root extract in useful in cough and cold; also taken orally for easy delivery of child.
Evolvulus alsinoides (L.) Wall., Convolvulaceae, Shankpushpi
Uses: Leaf extract is given orally in cough and cold.
Euphorbia nerifolia L., Euphorbiaceae, Thuar / Thor
Uses: Latex is used externally in snakebite and recovery of wounds.
Enicostema axillare (Lam.) A. Raynal, Gentianaceae, Nai
Uses: Leaf juice is given orally in the treatment of fever. Crushed plant is applied externally as an antidote in snakebite.

Grewia pilosa Lamk., Tiliaceae, Goldhaman / Ghordhaman
Uses: Root paste is given orally for the treatment of excess discharge of semen with urine.
Gymnema sylvestre R. Br., Asclepiadaceae, Gurmar
Uses: Leaf juice is taken orally in diabetes, piles and asthma. Leaf paste is applied externally on cuts and wounds.
Helicteres isora L., Sterculiaceae, Marorphali
Uses: Sun dried fruit powder mixed with milk is given orally to newborn child to increase the sucking of milk.
Hedyctium Coronarium J. Koenig, Zingiberaceae, Banhaldi (Fig.2)
Uses: Rhizome paste is applied externally in snakebite; rhizome decoction is given in liver troubles.
Holarrhena Pubescens (Buch. Ham) Wallich ex G. Don, Apocynaceae, Kurchi
Uses: Bark decoction is given in dysentery.
Leea aspera Edgew., Leeaceae, Kumala (Fig. 3)
Uses: Root paste is applied externally in skin diseases and ring worm.
Leucus cephalotes (Koth.) Spreng., Lamiaceae, Goma
Uses: Plant decoction is given orally against intestinal worms.
Mucuna pruriens (L.) DC., Fabaceae, Kivach / Kavach
Uses: Dried pod powder is given to remove intestinal worms.
Oxalis corniculata L., Oxalidaceae, Khatt Booti
Uses: Root paste is taken orally in stomach disorder.
Plumbago zeylanica L., Plumbaginaceae, Chitrak
Uses: Root powder mixed with milk is given orally in piles and stomach disorder.
Psoralea corylifolia L., Fabaceae, Bawchi
Uses: Leaf paste is applied externally on boils; seed powder is applied externally for the treatment of psoriasis and leucoderma.
**Sarcostemma acidum** (Roxb.) Voigt, Asclepiadaceae, *Samarbel*
Uses: Stem juice mixed with water is given in rheumatism, arthritis and joints pain. Dry powder with mustard oil is applied externally for treating earache.

**Solanum nigrum** L., Solanaceae, *Makai*
Uses: Decoction of plant is used to regulate blood pressure. Leaf paste is used externally in skin diseases.

**Solanum virginianum** L., Solanaceae, *Nilikateli*
Uses: Seed powder is rubbed on the teeth gum during toothache.

**Tephrosia purpurea** (L.) Pers., Fabaceae, *Sarapunkhah*
Uses: Decoction of plant is given against intestinal worms.

**Tinospora cordifolia** (Willd.) Miers ex Hook. f. & Thoms, Menispermaceae, *Giloy*
Uses: Stem juice is given orally in malarial fever.

**Tribulus terrestris** L., Zygophyllaceae, *Chotagokhru*
Uses: Leaf decoction is given to control enlarged spleen.

**Terminalia tomentosa** Wt. & Arn., Combretaceae, *Sadad*
Uses: Bark is used against burnt skin.

**Tridax procumbens** L., Asteraceae, *Baramasi / Patharchatta*
Uses: Plant juice mixed with *mishri* (sugar candy) in half a cup of water is given to relieve from urinary disease in male.

**Trichosanthes cucumerima** L., Cucurbitaceae, *Gavlan*
Uses: Seed powder mixed with jaggery and alcohol (*dobar*) is given for the treatment of asthma.

**Urginea indica** Kunth, Liliaceae, *Jungli Piaz*
Uses: Bulb paste is externally applied in paralysis.

**Vitis negundo** L., Verbenaceae, *Nirgundi*
Uses: Flowers and bark juice is taken in diarrhoea. Roasted leaves are tied on knee joints to relieve from joints pain.

**Vetiveria zizanoides** (L.) Nash, Poaceae, *Khus*
Uses: Root paste is applied externally in rheumatism.

**Woodfordia fruticosa** (L.) Kuntze, Lythraceae, *Ban Mahendi*
Uses: Flower paste is applied externally in leprosy and skin diseases.

**Withania somnifera** (L.) Dunal, Solanaceae, *Aswgandha/Asgandh*
Uses: Stem juice mixed with warm water is given for treating joints pain.

The study reports 63 ethnomedicinal plants, commonly used by tribals in the East Nimar region for their healthcare. Uses, preparation and mode of application varied from region to region. Same plant is used for different purpose by different tribes. These plants are believed to cure various diseases, viz stomach disorder, toothache, inflammation, headache, fever, joints pain, diabetes, wounds, jaundice, cold & cough, skin disease, bronchitis and asthma. Most of the plants are used in the form of decoction, while others are used as paste, powder, juice and latex. Further, root (of 19 species), leaf (10), whole plant, stem bulb or rhizome (9), fruits, bark, flower or inflorescence (4), seed (3), and latex of 1 species are used for the treatment of different diseases. Ethnomedicinal plants used by tribals of East Nimar have been compared with Bhil tribe of Bibdod, Madhya Pradesh	extsuperscript{19}. Comparison shows that Bhils of the regions commonly use *Acacia nilotica* for piles and *Enecostemma axillare* for fever. Some potential medicinal plants like *Sarcostemma acidum*, *Trichosanthes cucumerima*, *Chlorophytum tuberosum*, *Enecostemma axillare*, *Gymnema sylvestre*, *Hedychium coronarium*, and *Vitex negundo* are collected by local people on large scale to fulfill the needs of local traders, industrial unit preparing Ayurvedic and herbal medicine in the country. These plants are recommended for cultivation which may improve and uplift the economy of tribals of East Nimar region.

**Acknowledgement**
Authors feel honoured to extend grateful thanks to Dr OP Joshi Principal, and Prof S Nagar, Head Botany Dept, PMB Gujarati Science College, Indore, for their support, encouragement and providing library and laboratory facilities. Authors are highly thankful to the deputy director and Sr scientist Dr BK Shukla for helping in identifying plants. Authors are also thankful to Mr RK Trivedi, SDO Khandwa forest division for his kind help during field visit. Authors are gratefully indebted to Dr SK Tambalkar and Dr Piyush Lad, Herbalist for their consultation in medicinal uses of plants. Authors also extend sincere thanks to Dr Sanjay Jadhav for translating the local tribal language in Hindi. Sincere thanks are due to Shri Ramlal Vike, Shri Mukesh Kaluram, Shri Radhu Bhilala, Shri Natu Ram Kalam and Shri Sukha Ram
Nahal for sharing information during field visits. Authors are grateful to Dr CM Solanki for useful suggestions, guidance and help in identifying some plant species. Senior author is also thankful to UGC Western Circle, Bhopal for financial assistance.

References
1 Anonymous, Convention on Biological Diversity, Mexico, 1993.
10 Hooker JD, Flora of British India, Vols 1-7, (BSI Publication, Calcutta), 1892-1897.
16 Dastur JF, Useful Medicinal Plants of India and Pakistan, (DB Taraporewala Son's and Co Pvt Ltd, Bombay), 1951.