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Ethno medicinal plants of India –An over view.

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Abstract
People began life on this planet as forest dwellers. India is a country with large ethnic society and immense wealth with its rich biodiversity. The indigenous people live in adverse environmental conditions. The life of ethnic people and their activities are centered on the hills and resources with which they lived in a symbiotic relationship for centuries. Ethnobotany is the field of study that deals with the direct interaction of human and plants. Harshberger (1895) brought up the term ethnobotany for the first time. He defined ethno botany as "the use of plants by aboriginal people". The present paper reviewed the important medicinal plants utilized by the various tribes in India for curing various elements.
Key words: Key words: Medicinal plants, ailments, tribes, India, conservation,

Introduction: Ethnobotanical investigation documents the knowledge on cultural interaction of people with plants. In many developing countries, people mostly rely on ethnomedicinal knowledge to treat diseases, because western-based health care system is inefficient due to poor staffing or because western drugs are expensive. Ethnomedicinal knowledge isgradually vanishing because of rapid socio-economic, environmental, and technological changes. Therefore, ethnomedicinal knowledge must be documented and conserved through systematic studies before it is lost forever (Mohammed et al., 2006). Harshberger (1895) brought up the term ethnobotany for the first time. He defined ethno botany as "the use of plants by aboriginal people

Material and methods: The materials used for reviewing this article is only published journal articles . Mainly some important selected plants were reviewed with their medicinal uses from different states of the country utilized by different tribes (Table.1). Harshberger (1895) brought up the term ethno botany for the first time. He defined ethno botany as "the use of plants by aboriginal people". Ethno botanical studies are very important in identifying locally important plant species especially for the discovery of drugs. *Argemone mexicana* is used to treat ring worm by *Bhil* tribe of Bibdod, Ratlam district, Madhya Pradesh, (Jadhav 2006); pneumonia by *Koruku, Gond, Bhils, Bhilalas, Naik, Mankar* and *Nihal* of East Nimar region, Madhya Pradesh (Ray *et al.* 2011); as an antidote to snake bite and to increase sperm count in Nanded district, Maharashtra (Ghorband and Biradar, 2011); for tetanus, antidote for scorpion sting, for malarial fever, to cure chest pain by *Andha* and *Bhils* in Hingoli district, Maharashtra (Patil and Biradar, 2011); to cure cracks on feet, applied between toes while working in paddy fields,leucoderma in sub-Himalayan tract, Uttarakhand (Sharma *et* al. 2013); sore in back in Tumkur district, Karnataka (Achar *et al.*2015); to kill

tooth worms and wound curing by *Malayali* tribes in Kolli hills, Tamil Nadu (Sekar *et al.* 2016).

Ficus benghalensis, Nelumbo nucifera, Rauvolfia serpentina and *Terminalia arjuna* are used for leucorrhoea by the tribals of Madhya Pradesh (Tripathi*et al.* 2010). *Acorus calamus* is used to improve speaking ability in present study by the *Apatani, Mongpa, Singho* and *Tangsa* tribes of Arunacahal Pradesh (Khongsai *et al.* 2011) whereas *Mullu kuruma* tribe of Wayanad district, Kerala used it for epilepsy and worm infection (Silja *et al.* 2008); cold and diarrhoea in children by *Paliyans, Doodies, Parayars, Asariars, Mannadiars, Skiliyars* and *Chettiyars*various communities of Pachaur and Periyur hamlets, Dindigul, district, Tamil Nadu (Samuel and Andrews, 2010). *Calotropis procea, Ocimum sanctum* are used for malarial fever used by the migrants and local people of Tarai region of Kumaun, Uttarakhand. *Elephantopus scaber* is used to treat fever in children by external application on body, whereas it is used to cure amoebic dysentery and stomach pain in children by oral administration in Wayanad district, Kerala (Silja *et al.* 2008).

Aegle marmelos is used to treat constipation, chronic dysentery, dyspepsia and intermittent fever by *Mullu kuruma* tribe of Kerala (Silja *et al.* 2008); for diarrhoea by *Gond* tribe of Bhandara district in Maharashtra (Gupta *et al.* 2010); for dysentery in East Nimar region, Madhya Pradesh (Ray *et al.* 2011); and by *Andha* and *Bhils* in Hingoli district, Maharashtra (Patil and Biradar. 2011); by *Dimasa* tribe in north Cachar district of Assam (Rout *et al.* 2012). *Justicia adathoda* leaf extract with honey is used to treat cough andalso used for the same purpose by *Mullu kuruma* tribe of Wayanad district, Kerala (Silja *et al.* 2008) and *Padam, Ngishi* and *I-Idu tribes* of Arunachal Pradesh (Khongsai *et al.* 2011).

Tinospora cordifolia is used to treat leprosy and leucorrhoea by *Bhil* tribe in Bibdod, Madhya Pradesh (Jadhav. 2006); for chickenguniya, jaundice, enteric fever and general weakness by *Andha* and *Bhils* in Hingoli district, Maharashtra (Patil and Biradar, 2011) and to treat malarial fever by *Koruku, Gond, Bhils, Bhilalas, Naik, Mankar* and *Nihal* tribes in East Nirmar region in Madhya Pradesh (Ray *et al.* 2011).

Andrographis paniculata leaf juice given internally to treat cobra venom by *Thottianaickans* in Tiruchurapalli district, Tamil Nadu (Ganesan *et al.* 2006); to treat liver disease by *Mullu kuruma* tribe of Wayanad district, Kerala (Silja *et al.* 2008); to treat diarrhoea, cough and fever; leaf juice for malarial fever by *Gond* tribe of Bhandara district, Maharashtra (Gupta *et al.* 2010); for malaria, jaundice, diabetes, stomach ailment and as liver tonic by *Padam, Ngishi and I-Idu tribes* of Arunachal Pradesh; throat inflammation, respiratory troubles by *Koruku, Gond, Bhils, Bhilalas, Naik, Mankar* and *Nihal*tribes of East Nimar region, Madhya Pradesh (Ray *et al.* 2011).

Plants used to treat diabetes are *Syzgium cumini* in Nakkal district of Tamil Nadu (Udayan *et al.* 2005); for same cure in Wayand district, Kerala, (Silja *et al.* 2008); *Andrgraphis paniculata* in Arunachal Pradesh (Khongsai *et al.* 2011) and *Syzygium cumini* by *Dimasa* tribe in Cachar Hills district of Assam (Rout *et al.* 2012). *Aloe vera* is used as antidandruff and hair oil in Wayanad district, Kerala (Silja *et al.* 2008).

To treat jaundice *viz.*, ;*Phyllanthus amarus* in Namakkal district;

Tiruchirapalli district of Tamil Nadu; (Udayan *et al.* 2005; Ganesan *et al.* 2006); *Ailanthus excelsa*, and *Ficus benghalensis* in Bhandara district, Maharashtra (Gupta *et al.*2010); *Andrographis paniculata* of Arunachal Pradesh (Khongsai *et al.* 2011).

To treat stomach pain in different parts of India are *Hygrophila schulii* in Jalgon district Maharashtra (Pawar and Patil, 2004); *Pergularia daemia*, *Aclypha fruticosa*; *Punica granatum* in Tiruchiraplli district, Tamil Nadu (Ganesan *et.al.*2006); *Asparagus racemosus, Moringa olifera*, *Murraya koenigii, Vernonia anthelmintica* in Wayanad district, Kerala (Silja *et al.* 2008); *Ruta chalepensis*, *Trigonella foenum-graecum* in Dindigul district, Tamil Nadu (Samuel and Andrews. 2010); *Mentha arvensis* in Arunachal Pradesh (Khongsai *et al.* 2011); *Helicteres isora* in Bhandara district, Maharashtra (Gupta *et al.* 2010); *Biophytum sensitivum* in East Nirmar region , Madhya Pradesh (Ray *et al.* 2011).

Costus specious is used to treat ear pain and urinary disorders, especially stone case by *Padam, Nyishi* and *I-Idu* tribes of Arunachal Pradesh (Khongsai *et al.* 2011). *Tinospora cordifolia* is used to treat leucorrhoea, snake bite and leprosy by *Bhil* tribe of Bibdod, Madhya Pradesh (Jadav,2006) , whereas *Artemesia vulgaris, Cassia fistula, Coccinia grandis, Hydnocarpus pentandra, Luffa cylindrica* and *Momordica charantia, Lawsonia inermis* and *Syzyzium cumini* are used to treat leprosy by *Mullu kuruma* tribe of Wayanad district, Kerala (Silja *et al.* 2008), *Pongamia pinnata* in Nanded district, Maharashtra (Ghorband and Biradar. 2011); *Bidens pilosa* for leprosy by *Zeliang* tribe of Nagaland (Premkumar *et al.* 2015). *Achyranthus aspera* is used to treat pyorrhea, tooth ache by *Malayali* tribals from Kolli Hills, Tamil Nadu (Sekar *et al.* 2016).

Above review highlighted the important medicinal plants with their uses by different tribes in India. With this, we can conclude that there is an urgent need to conserve these plants and also ethnic communities those having vast unpreserved knowledge for further documentation. The present status of urbanization is good for the development of ethnic communities, but at the same time if documentation of ethnic knowledge is ignored from elderly people, we may lose more valuable information. It will be very useful for the isolation of bioactive compounds and pharmacological studies. If any rare endangered plants are identified with very valuable uses, we can standardize in-vitro regeneration methods for their conservation.

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Table 1: Ethnomedicinaplants –An over view

S.No	Name of the Author	Name of the plant	Ailment cured	Tribe	State
1.	Jadhav 2006	Argemone mexicana	ring worm	Bhil	Madhya Pradesh
2.	Ray et al. 2011		pneumonia	Koruku, Gond, Bhils, Bhilalas, Naik, Mankar and Nihal	Madhya Pradesh
3.	Ghorband and Biradar, 2011		antidote to snake bite and to increase sperm count	----------	Maharashtra
4.	Patil and Biradar, 2011		tetanus, antidote for scorpion sting, for malarial fever, to cure chest pain	Andha and Bhils	Maharashtra
5.	Sharma et al. 2013		cure cracks on feet	Gujjar	Uttarakhand
6.	Achar et al.2015		sore in back	-------	
7.	Sekar et al. 2016		kill tooth worms and wound curing	Malayali	Tamil Nadu
8.	Tripathiet al. 2010	Ficus benghalensis, Nelumbo nucifera, Rauvolfia serpentina and Terminalia arjuna	leucorrhoea	Tribals	Madhya Pradesh
9.	Khongsai et al. 2011	Acorus calamus	to improve speaking ability	Apatani, Mongpa, Singho and Tangsa	Arunacahal Pradesh
10.	Silja et al. 2008		epilepsy and worm infection	Mullu kuruma	Kerala
11.	Samuel and Andrews, 2010		cold and diarrhoea in children	Paliyans, Doodies, Parayars, Asariars, Mannadiars, Skiliyars and Chettiyarsvarious	
12.	Silja et al. 2008	Elephantopus scaber	amoebic dysentery and stomach pain in children	Mullu Kuruma	Kerala
13.	Silja et al. 2008	Aegle marmelos	constipation, chronic dysentery, dyspepsia and intermittent fever	Mullu kuruma	Kerala
14.	Gupta et al. 2010		diarrhoea	Gond	Maharashtra
15.	Ray et al. 2011		dysentery		Madhya Pradesh
16.	Patil and Biradar.		dysentery	Andha and Bhils	Maharashtra

	2011				
17.	Rout et al. 2012		dysentery	Dimasa	Assam
18.	Silja et al. 2008		cough	Mullu kuruma	Kerala
19.	Khongsai et al. 2011	Justicia adathoda		Padam, Ngishi and I-Idu	Arunachla Pradesh
20.	Jadhav. 2006		leprosy and leucorrhoea	Bhil	Madhya Pradesh
21.	Patil and Biradar, 2011		chickenguniya, jaundice, enteric fever and general weakness	Andha and Bhils	Maharashtra
22.	Ray et al. 2011	Tinospora cordifolia	malarial fever	Koruku, Gond, Bhils, Bhilalas, Naik, Mankar and Nihal	Madhya Pradesh
23.	Ganesan et al. 2006		cobra venom	Thottianaickans	Tamil Nadu
24.	Silja et al. 2008		liver disease	Mullu kuruma	Kerala
25.	Gupta et al. 2010		treat diarrhoea, cough and fever; leaf juice for malarial fever	Gond	Maharashtra
26.	Khongsai et al. 2011	Andrographis paniculata	malaria, jaundice, diabetes, stomach ailment and as liver tonic	Padam, Ngishi and I-Idu	Arunachla Pradesh
27.	Ray et al. 2011		throat inflammation, respiratory troubles	Koruku, Gond, Bhils, Bhilalas, Naik, Mankar and Nihaltribes	Madhya Pradesh
28.	Udayan et al. 2005 Silja et al. 2008	Syzgium cumini	diabetes	Mullu Kuruma	Nakkal district of Tamil Nadu (Udayan et al. 2005 Wayand district, Kerala
29.	Rout et al. 2012				Dimasa tribe in Cachar Hills district of Assam
30.	Silja et al. 2008	Aloe vera	antidandruff	Mullu Kuruma	Wayanad district, Kerala
31.	Udayan et al. 2005; Ganesan et al. 2006	Phyllanthus amarus	jaundice	Chellipale community Thottianaickanns	Namakkal district; of Tamil Nadu
32.	Gupta et al.2010	Ailanthus excelsa, and Ficus benghalensis		Gond	Bhandara district, Maharashtra
33.	Khongsai et al. 2011	Andrographis paniculata		Padam, Nyishi and I-Idu	Arunachal Pradesh

34.	Pawar and Patil, 2004	Hygrophila schulii			Jalgon district Maharashtra
35.	Ganesan et al.2006	Pergularia daemia, Aclypha fruticosa; Punica granatum			Tiruchirapli district, Tamil Nadu
36.	Silja et al. 2008	Asparagus racemosus, Moringa olifera, Murraya koenigii, Vernonia anthelmintica		Mullu Kuruma	Wayanad district, Kerala
37.	Samuel and Andrews. 2010	Ruta chalepensis, Trigonella foenum-graecum	stomach pain	Paliyans, Pulayans,Doobies, Parayars, Asariars, Mannadiyars, Sakiliyars, Chettiyars	Dindigul district, Tamil Nadu
38.	Khongsai et al. 2011	Mentha arvensis		Padam, Nyishi and I-Idu	Arunachal Pradesh
39.	Gupta et al. 2010	Helicteres isora		Gond	Maharashtra
40.	Ray et al. 2011	Biophytum sensitivum		Koruku, Gond, Bhils, Bilalas, Naik, Mankar, Nihal	East Nirmar region , Madhya Pradesh
41.	Khongsai et al. 2011	Costus speciosus	ear pain and urinary disorders, especially stone case	Padam, Nyishi and I-Idu	Arunachal Pradesh
42.	Jadav, 2006	Tinospora cordifolia	leucorrhoea, snake bite and leprosy	Bhil	Madhya Pradesh
43.	Silja et al. 2008	Artemesia vulgaris, Cassia fistula, Coccinia grandis, Hydnocarpus pentandra, Luffa cylindrica and Momordica charantia, Lawsonia inermis and Syzyzium cuminii	leprosy	Mullu kuruma	Wayanad district, Kerala
44.	Ghorband and Biradar. 2011	Pongamia pinnata in		--------	Nanded district, Maharashtra
45.	Premkumar et al. 2015	Bidens pilosa		Zeliang	Nagaland
46.	Sekar et al. 2016	Achyranthus aspera	pyorrhea, tooth ache	Malayali tribals	Kolli Hills, Tamil Nadu