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Article : STUDIES ON BIODIVERSITY OF CERTAIN MEDICINAL PLANTS OF AHMEDNAGAR REGION, M.S., INDIA

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ABSTRACT :

Ahmednagar region is a part of Deccan plateau, is situated in the western part of Maharashtra. In the course of survey conducted on the medicinal plants of Ahmednagar region it has been observed that large number of plant species are in traditional use to treat various minor/major diseases by rural people and tribal such as Bhils, Pardhi, Thakur, Mahadeo Koli, Vadar, Wanjari, Kaikadi, Laman etc. The area is rich in vegetation shows more biodiversity of medicinal plant species. Akole taluka is very rich with botanical and ethno medicinal wealth. The present paper provides information regarding 110 medicinal plants belonging to 37 families identified from Ahmednagar region.

Brief information about the plant part/s used, botanical names, English name, Marathi name, Hindi names have been presented. As the traditional herbal remedies are based on ancestral knowledge and empiric experiences. This type of ethno-medicinal biodiversity survey appeared to be useful for the research on medicinal plants for betterment of mankind.

Key words: Medicinal plants, Ethno botany, Biodiversity, Ahmednagar, Uses

INTRODUCTION

India is one of the 12 mega biodiversity countries in the world and has 17000 flowering plants, of these designed 25 hotspots in the world, the eastern Himalaya and the western Ghats are the two hotspots in India. Maharashtra is situated on the western side of Indian Peninsula. The state has 35 districts and includes 26 tribal communities. The tribal and rural population is dependent on natural use. This attracted the attention of several researchers, recently considerable attention has been paid to utilize ecofriendly and biofriendly plant based products for the prevention and cure of different human diseases.

The cultivation of medicinal plants has assumed greater importance in recent years due to their tremendous potential in modern and traditional medicine. They are also used as raw materials for pharmaceutical, cosmetics and fragrance industries. Maharashtra the *'Land of Jew*els' has various district regions, the hills and the plains. There are 33 districts of which some are entirely hilly areas, some are plains and some are hilly as well as plains. The Ahmednagar district has an area of 17, 345 Sq. Km. abundant in natural resources including immense potential for medicinal plants. The Ahmednagar region has hilly as well as plain area with its distinct flora.

The Ahmednagar region witnesses the distinct character of rainy, winter and summer. The period from June to September is rainy, November to February is quite cold and March to may are hot. The temperature gradually rises from March to May and it goes up to 40^0C. The regular S.-W. monsoon reaches in June and extends to September with peak during July-August. The relative humidity is generally optimum throughout the year. The tribal population inhabits in these forests. The present study is therefore, the first attempt to make an inventory and analysis of the entire flora of medicinal plants of Ahmednagar areas based on copious field observations, available literature and herbarium data, with a view to contribute to the overall knowledge.

MATERIAL AND METHODS

The survey of medicinal plants was done by frequently arranged collection tours. The sample specimens wherever available or otherwise also have been preserved in the herbarium. The present study was carried out during 2009-2010. Data on taxon distribution within the Ahmednagar region were collected mainly from two sources: field observations and collection of specimens, literature, while only in a few cases data were assembled from the Herbarium of Regional Research Laboratory . The majority of field observations were carried out from 2008 to 2010 during multiple field trips throughout each growth season. Accordingly, information on habit, habitat, flowering, fruiting period, medicinal value, plant part used etc. was recorded. Collection of plant specimens was carried out in both dry and wet seasons to know more information on habitat. The information was collected from different ethic groups, villagers, traditional healers/vaidyas who use the plants for medicinal purpose. From time to time various reports have been published by the author on plants used for different purposes (Aher, et al., 2004) present paper deals with biodiversity of medicinal plants useful for various

purpose. A literature survey was also carried out for cross checking/compilation of existing information on the medicinal value of plants. The specimens were identified with the help of local flora (Cooke, 1901).The specimens collected were deposited in herbarium.

Authors while they were on exploration of medicinal plant survey tours to Ahmednagar region old knowledgeable people were interviewed for information's of their medicinal values. Data are presented in Table-1. Further studies in this line are in progress by the authors.

RESULTS AND DISCUSSION

110 medicinal plants belonging to 37 families recorded in this paper with their botanical name, family, Sanskrit name, local name and use in the Ayurvedic Formulary of India (A.F.I.)/Folk medicines (F.M.) etc. Among the families most of the species were belonging to Fabaceae and Cucurbitaceae (11 spp. each), followed by Apiaceae (7 spp.), Amaranthaceae (6 spp.), Acanthaceae, Caesalpiniaceae, Euphorbiaceae and Apocynaceae (5 spp. each), Moraceae, Labiatae and Asteraceae (4 spp. each). Remaining 26 families were represented by one to three species each (Table-1). The mode of utilization of these plants is either in the form of gargle of the decoction of the plant part(s), powder of dried material.

Present report is a result of exhaustive survey of biodiversity of plants used for medicinal purpose by village people/ethic group of Ahmednagar region. The aim behind this work is to motivate the agriculturist / farmers to come forward for the cultivation and preservation of medicinal and aromatic plants, which are being depleted from nature due to overexploitation of fulfill large scale demand of phytopharmaceutical products. Authors wish to indicate that there is a scope for collection of medicinal plants from Ahmednagar areas which have other economic value also.

Scientific studies may elaborate the prospects of growing more and more medicinal plants successively. By proper management of medicinal plants remarkable improvement may be made on the earning of foreign exchange for the country. Certain industries based on the medicinal plants may be developed which will not only be economically viable but also help in the economic upliftment of the nation. On the basis of distribution of some medicinal plants it is observed that,

there is a good scope for commercial exploitation of some pharmaceutically important medicinal plants (Anonymous, 1978). The authors are very optimistic about the reclamation of waste and uncultivated land in the region for turning them into innumerable medicinal plant gardens.

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Table -1. List of biodiversity of medicinal plants

Family	Latin name	English Name	Sanskrit Name	Marathi Name	Hind
Acanthaceae	*Acanthus ilicifolius* L.	Holy leaved acanthus	-	Marandi	Harku
	Adhatoda zeylanica Medic	Malabar nut	Vasa	Adulsa	Adul
	*Barleria cristata*L.	-	Sahachar	Nili koranti	Piyav
	*Barleria prionitis*L.	-	Saireyak	Kate koranti	Katsa
	Crossandra infundibuiformis(L.) Nees	-	Saireyak	Aboli	Salka
Liliaceae	*Allium cepa* L.	Onion	Palandu	Kanda	Piyaj
	Allium sativum L.	Garlic	Rason	Lasun	Lahsu
Amaranthaceae	*Achyranthes aspera* L.	Prickly chaff flower	Apamarg	Aaghada	Latira
	Amaranthus paniculatus L.	Grain amaranth	-	Rajgira	Bagi
	*Amaranthus roxburghianus*Nevsaki	-	Marsha, Bashpaka	Math, Tandulja	Marsa
	Amaranthus spinosus L.	Prickly Amranth	Tandulia	Kante Math	Katai chola
	Amaranthus tricolor L.	Amranth	Tandulia	Math	Lal M
	*Celosia argentea*L.	Cocks comb	Shitawar	Kardu	Sirim
Anacardiaceae	*Mangifera indica*L.	Mango	Aamra	Aamba	Aam
Annonaceae	*Annona reticulata*L.	Bullock's heart	Ramphal	Ramphal	Ramp
	Annona squamosa L.	Custard apple	Gandhagatra	Sitaphal	Sitap
	Polyalthia longifolia L.	-	-	Ashok	Asho
Apiaceae (Umbelliferae)	*Anethum graveolens* L.	Dill.	Shatapushpa,	Balantashepu	Sova, Bans

	Carum carvi L.	Black caraway	Kirshnajirak	Shahjire, Kale jire	Kalji
	Coriandrum sativum L.	Coriander	Dhanyak	Kothimbir,	Dhan
	Cuminum cyminum L.	Cumin	Jirak	Jire	Jira
	Daucus carota L. .	Carrot	Grunjnak	Gajar	Gajar
	Foeniculum vulgare Mill.	Fennel	Mishreya	Badishep	Souff Badis
	Trachyspermum ammi L.	Bishop's weed	Yamanika,	Ova	Ajwa
Apocynaceae	*Alstonia scholaris*L.	Dita bark	Saptaparna	Satvin, Satvan	Chitv
	*Carissa congesta*Wight	Bengal currants	Karmardak	Karvand	Karro
	Catharanthus roseus L.	-	-	Sadaphuli	Sadab
	*Nerium indicum*Mill.	Sweet scented oleander	Karvir	Kaner	Kane Kanie
	Tabernaemontana divaricata (L.) R. Br.	Wax flower	Tagar	Tagar	Tagar
Araceae	*Amorphophallus bulbifer* Bl.	-	Suran	Suran	Suran
	Colocasia esculenta L.	Vegetable Arum	Kachvi	Alu	Arui,
Arecaceae	*Cocous nucifera*L.	Coconut	Narikel	Naral, Mad	Naria
	*Phoenix sylvestris*L. Roxb.	Toddy plam of India	Vit Kharjur	Shindi	Sindi Sendl
Asclepiadaceae	*Calotropis gigantea* (L.) R. Br.	Gigantic swallow wort	Shwetark	Mandar, Pandhari rui	Aak, Mand
	Calotropis procera (Ait.) R. Br.	Mandar	Raktark	Rui	Aak
Asteraceae (Compositae)	*Carthamus tinctorius* L.	Safflower	Kusumbha, Vastraranjak	Kardai	Kusu
	Dendrathema indica (L.) Des.	Chrysanthemum	Shatpatri	Shevanti	Gulda

	Elephantopus scaber L.	-	Gojihva	Gojibh, Pathari	Gobh
	Tagetes erecta L.	Big Marigold	Zendu	Zendu	Gend
Bambusaceae	*Bambusa arundinacea*(Retz.) Willd.	Thorny Bamboo	Wansh	Bambu	Bans
Bombacaceae	*Adansonia digitata* L.	Baobad, Monkey bread	Gorakshi, Ravanamlika	Gorakhchinch	Goral
	Bombax ceiba L	Silk cotton tree	Shalmali	Katesavar	Sema
	*Ceiba pentandra*L.	White silk cotton tree	Kutshalmali	Pandhari savar	Safed
Brassicaceae (Cruciferae)	*Brassica juncea* L.	Mustard	Rajika	Mohari	Rai, I
	*Raphanus sativus*L.	Radish	Mulak	Mula	Muli
Cactaceae	*Opuntia elatior*Mill.	Prickly pear	Kanthari	Phadya nivdung	Nagp
Caesalpiniaceae	*Caesalpinia bonduc* L.	Bonduc nut	Puti karanj, karanj	Sagargota, Gajaga	Kang Kanta
	*Caesalpinia decapetala (*Roth) Alston	-	-	Chillar	-
	Caesalpinia pulcherrima (L.) Sw.	-	Krishanachuda	Sankarshawar	Gul-e
	Saraca ashoka de Willd.	Asoka	Ashoka, Hemapushpa	Ashok (Sitecha)	Asho
	Tamarindus indica L.	Tamarind	Amlika	Chincha	Imli,
Caricaceae	*Carica papaya* L.	Papaw, Papaya	Erand – kaarkati	Popai	Papit
Celastraceae	*Celastrus paniculata* Willd.	Staff tree	Jyotishmati	Malkangoni	Malk
Chenopodiaceae	*Beta vulgaris* L.	Beet Root	Raktagrunjnak	Beet	Beet
	*Spinacia oleracea*L.	Spinach	Palakya	Palak	Palak
Combretaceae	*Terminalia arjuna*(Roxb.) Wt & Arn.	Arjuna, Myrob-alans	Arjun	Arjun Sadada, Arjun	Arjun Kahu

	Terminalia bellirica (Gaertn.) Roxb	Myrob-alans, Chebulic	Bibhitak	Behada	Bahe
	Terminalia chebula Retz.	Myrobalans,	Haritaki	Hirda, Harda	Hara
Cucurbitaceae	*Benincasa hispida*Thunb. [B.cerifera Savil].	Ash pumpkin, Ashguard	Kushmandh	Kohala	Petha Ehura Khun
	Citrullus lanatus(Thunb) Mustet. Nakai	Watermelon	Kalingad	Kalingad, Tarbuj	Tarbu
	*Coccinia grandis*L.	Ivyguard	Raktaphala, Tundikeri	Tondali, Tondale	Kand Kuna
	Cucumis melo L.	Melon	Kharbuja, Dashangul	Kharbuj	Kharb
	Cucumis melo var. utilissimus(Roxb.)	Snake cucumber	Karkati, Erwaru	Kakdi	Kakri
	Cucurbita moschata (Duch. Ex Lamk)	Pumpkin	-	Bhopala, Kashiphal	Kuml
	Cucurbita pepo L.	Field pumpkin	Kushmandi, Karkaru	Dangar	Safed
	Lagenaria siceraria (Molina) Standley	Bottle gourd	Kututumbi	Kadu bhopala, Dudhya bhopala	Kada
	Luffa acutangula(L.) Roxb	Ridged gourd	Koshataki	Dodaka, Shirale	Torai
	*Luffa cylindrical*L.	Sponge gourd	Mahakoshataki	Ghosale	Bodit
	Trichosanthes anguina L.	Snakegourd	Chichinda	Padval	Chac
Euphorbiaceae	*Euphorbia neriifolia* L.	Common milk hedge	Snuhi	Nivadung	Sehu Thoh
	Euphorbia tirucalli L.	-	-	Sher	Thoh
	*Jatropha curcas*L.	-	-	Mogali erand	Mogl Eranc

	Jatropha gossipifolia L.*var. elegans* DC.	-	-	Vilayati erand	-
	Phyllanthus emblica L.	Emblic myrobalans	Amalaki	Awla	Amla
Fabaceae [Papilionaceae]	*Abrus precatorius*L.	Wild liquorice	Gunja, Raktika	Gunj	Gunc
	Aarachis hypogaea L.	Groundnut	Bhushimbii	Bhuimug	Mung
	Butea monosperma L	Flame of the forest	Palash, Brahma vruksha	Palas	Palas Dhak
	Canavalia gladiata (Jacq.) DC.	Sword bean	Kolshimbi	Abai, Fatadi	Bada
	*Clitoria ternatea*L.	Winged leaved	Girikarnika, Aparajita	Gokarna, Kajali	Araji
	Erythrina suberosa Roxb.	Coral tree	Paribhadra	Pangara	Farha
	*Glycirrhiza glabra*L.	Liqourice	Yashtimadhu	Jyeshthimadh	Mulh Mule
	*Pongamia pinnata*L.	Indian beech	Kaaranj, Naktamal	Karanj	Karan Kinna
	Sesbania grandiflora (L.) Poir	-	Agastya, Agasti	Hadaga, Agasta	Agast Hathi
	*Sesbania sesban*L.	-	Jayanti, Jaya	Shewri	Jait
	Trigonella foenum graecum L.	Fenugreek	Methika	Methi	Meth
Labiatae	*Mentha arvensis*L.	Menthol	Putinash, Pudina	Pudina	Pudin
	Mentha spicata L.	Menthol	Putinash	Pudina	Pudin
	Ocimum basilicum L.	Sweet basil	Berber	Subja, Rantulas	Subja
	*Ocimum sanctum*L.	Sacred basil	Tulasi	Tulas Tulasi	Kala
Liliacceae	*Aloe vera* (L.) Burm f.	Aloe Plant	Kumari	Korfad	Garpa
	Asparagus racemosus Willd.	Wild Asparagus	Shatawari Narayani	Shatawari	Sataw

Malvaceae	*Hibiscus rosa-sinensis* L.	Shoe-flower	Japa	Jaswandi	Jasun
	*Hibiscus syriacus*L.	Sharon	Japa	Nili jaswand	Jabak
Meliaceae	*Azadirachta indica* A. Juss.	Neem tree	Nimb	Kadulimb, Nimb	Neem
	*Melia azedarach*L.	Persian lilac	Mahanimb	Limbara, Bakana nimb	Baka
Menispermaceae	*Tinospora cordifolia* (Willd.)	-	Guduchi	Gulvel	Giloy
Mimosaceae	*Acacia catechu*(Roxb. Ex Rottl.) Willd.	Black catechu	Khadir	Khair, Kath	Khair Katth
	Acacia nilotica L.	Babool	Babhool	Babhool	Babo
	Albizia lebbeck(L.) Willd	Parrot tree	Shirish	Shirish	Siras
Moraceae	*Ficus amplissima J*. E. Sm.	-	Plaksha	Pimpri, Pimparni	-
	*Ficus bengalensis*L.	Banyan tree	Byagrodh, War	Wad	Bur
	Ficus racemosa L.	-	Udumber	Umbar	Gular
	Ficus religiosa L.	Peepal	Ashwattha, Pippal	Pimpal	Peepa
Moringaceae	*Moringa oleifera*Lamk.	Horse radish, Drum stick	Shigru	Shwga	Sahij
Myrtaceae	*Eucalyptus citriodora* Hook.	Lemon scented eucalypt	Tailaparni	Nilgiri	Neelg
	*Syzygium cumini (*L.) Skeels	Black plum	Jambu	Jambhul	Jamu
Rhamnaceae	*Zizyiphus jujuba*Mill.	Common Jujube	Sauvir	Bor	Unna
Rutaceae	*Aegle marmelos*(L.) Corr.	-	Bilwa	Bel	Bel
Santalaceae	*Santalum album*L.	Sandal wood	Shrikhand Chandan	Chandan	Safed Chan
Solanaceae	*Datura metel* L.	Thorn apple	Krushna Dhattur	Kala Dhotra	Kala Dhatt

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Verbenaceae	*Vitex negundo* L.	Three leaved chaste tree	Nirgundi	Nirgundi	Samh