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TRADITIONAL PHYTOTHERAPY AMONG TRIBALS OF JABALPUR DISTRICT (M.P.)

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The wealth of medicinal plants in Jabalpur district is very rich. The tribal population of Jabalpur is near about 29%. The survey work had been conducted in and around the tribal area of Jabalpur district to identify the important medicinal plants. The tribal and native people live mostly in remote areas of forest and utilize these plants in various ailments. In present communication 33 plants of 21 families are of medicinal importance were collected, identified and reported with their local name, commonly used herbal preparation and procedure of application. Tribal of this area are not only exhausted these plants for their own use but also for local traders to fulfill their daily needs. This study also provides a clue that the increasing demand of medicinal plants in pharmaceutical industries, resulted in uncontrolled exploitation of these plants from natural forests. So, to conserve this valuable and important forest wealth the harvesting of these plants should be under control.

Keywords : Conserve; Exploitation; Forest wealth; Tribal; Valuable.

Introduction

The flowering plants are most successful plant group and play significant role in the survival of mankind. They directly and indirectly influence the life, as they are mainly dependent on plants to fulfill their major requirement either directly through agricultural crops or indirectly *via* their characteristic property to provide food, shelter and clothes for animal and men. In different civilizations the contribution of floral biodiversity to health care has been well documented[1]. Because of the accelerated local, national and international interest in recent years the demand for medicinal and aromatic plants has increased manifolds and pharmaceutical industry views plant wealth as a source of income. Due to easy availability, no side-effects, and sometimes only source of health care, the demand for medicinal plants is increasing in both developing and developed countries. The World Health Organization (WHO) estimated that 80% of the populations depend on traditional medicines, mainly on herbal drugs, to fulfill their basic health care needs in developing countries. Conservation and non judicious exploitation of medicinal plants are issues on which immediate monitoring is required in the context of conserving biodiversity. Due to degradation of habitats and unscientific mean of exploitation, the floristic diversity is threatened and it is estimated that nearly one tenth of the world's total floristic diversity is seriously threatened or is at the verge of extinction. Because of these reasons, the convention on biological diversity has emphasized on the inventorisation and monitoring of biodiversity before they are lost forever. Thus, an assessment of floristic diversity will help in monitoring as well as recording potential plant genetic resources, economic plants, status of rare and endemic plants in order to formulate strategies for their available conservation and sustainable utilization.

Material and Methods

Study site-Madhya Pradesh is endowed with rich and diverse forest resources, lying between alt. 21°04'N and long. 74°02' and 82°49' E, it is a reservoir of biodiversity. The geographical area of the state is 308,144 km² which constitutes 9.38% of the land area of the country. The forest area of the state is 95,221 km² constituting 31% of the geographical area of the state and 12.44% of the forest area of the country. Legally this area has been classified into "Reserved Forest, Protected Forest and Unclassified Forest", which constitute 61.7%, 37.4% and 0.9% of the forest area, respectively. Per capita forest area is 2,400 m² as against the national average of 700 m².

Jabalpur is one of the biggest district of Madhya Pradesh, is the head quarter of Revenue division, Tehsil and district of the same name. The area of the district is 10,160 sq km with of population 2,167,469 (2001 census). Jabalpur is the marble rock city of India. A city, which has no parallel in the country, is situated on National Highway No. 7 (N.H.7). The centre point of India, Karondi is situated 60 kms towards north east of Jabalpur. Geographically it is located by 23^0 -10^0 North & 79^0 -57^0 east and 402 meters above mean sea level. Sacred river Narmada is only 9.7 kms away, where as the world famous Bheraghat Marble rocks are 20.8 kms away from Jabalpur.

Climate, geology and soil-In winter season, December to February, the temperature become down day by day up to freezing point for one or two days in out side area of the district. In November to January due falls occurs causes damage to the crops. Temperature rises from March. May is the hottest month of the district. The highest degree of

Table 1. Enumeration of medicinal plants species.

S. No.	Botanical name and Family	Common name and field number	Origin / Native land	Introduction	Habit and Uses
1.	*Nigella sativa* L. (Ranunculaceae)	Kala-jira DD-109	Mediterranean region, Europe.	Before 1814, Plant was first time introduced in the Indian Botanic garden by Colonel Garstin.	Annual herb, one spoon seed boiled with pudina leaf and taken 2 spoons for 3 times in a day in fever due to sun stroke.
2.	*Ranunculus sceleratus* L. (Ranunculaceae)	----- DD-111	Europe	Near about 17th century introduced as weed with food grains	Annual herb, The leaves and the roots are used externally in the form of paste in joint pain. 10 gm seed grinded and mixed with 150 ml of water, filtered and is used in the treatment of colds.
3.	*Annona reticulata* L. (Annonaceae)	Sugar apple Ramphal DD 113	Tropical America (Benthall,1946 Bailey,1949)	Probably in last quarter of 17th century (Maheshwari & Paul, 1975). In India introduced before1794.	Tree, planted in houses for its edible fruits, seed oil is an insecticide. Leaf paste applied on wound and skin lesions.
4.	*Annona squamosa* L. (Annonaceae)	Custard Apple Sitaphal DD 112	Tropical America/ West Indies (Backer & Brink, 1963)	!6th century (Maheshwari & Paul, 1975)First American plants introduced by Portuguese into India for its edible fruits in I.B.G.	Perennial, under tree, fruits are edible, leaves used as bio-insecticide. A bark decoction is used to stop diarrhea, while the root is used in the treatment of dysentery. Leaves in the form of paste used to overcome hysteria and fainting spells.
5.	*Artabotrys hexapetalous* (L.F.) (Annonaceae)	Hari champa DD 115	Java & China	In India introduced by Dutch settlers for ornamental purpose.	Shrub, flowers boiled in water and this aqueous extract taken empty stomach to recover weakness from dehydration and motions.
6	*Cissampelos pareira* L. (Menispermaceae)	Paria bel DD 119	South America (Rajagopal & Panigrahi 1965) & Java (Backer and Brink, 1963)	In India introduced during 17th century first time by the Jesuit Missionaries into Goa as a medicinal plant.	Climber, root used to prevent a threatened miscarriage and to stop uterine hemorrhages after childbirth. Whole plant used for muscle

					inflammation, snakebite, rheumatism, diarrhoea and dysentery.
7.	*Fumaria indica* (Hassk.)Pugsley. (Fumariaceae)	Pit papra DD 118	North Temperate (Rajgopal & Panigrahi, 1965)	In India introduction period not clearly known but this plant was well known from long time.	Herb, whole plant used in diarrhoea, fever and influenza. Herb extract mixed with honey and used in vomiting.
8.	*Ruta graveolens* L. (Rutaceae)	Rue DD 114	Mediterranean region (Bailey, 1949), Persia and western Asia.	In India introduced as medicinal plant before 1832.	Perennial herb, the whole herb is abortificent. An infusion is used in the treatment of hysterical affections and coughs. Chewing a leaf quickly bring relief from headaches.
9.	*Azadirachta indica* A.Juss. (Meliaceae)	Margosa tree, Neem tree DD 121	Native of Persia and Asia minor (Maheshwari & Paul,1975)	In India this plant is known from ancient time.	Tree, extract of neem leaves used to decrease blood sugar level and mouth ulcers. Bark powder used to cure fever. Fruits used in piles, intestinal worms and urinary disorders.
10.	*Melia azedarach* L. (Meliaceae)	Bakain DD 129	Iran, Turkey, Baluchistan & Persia.	In India introduced by Mughals	Tree, leaf extract used to repels insects from clothing. The leaves can also serve as feed for goats. Leaf and flowers antiseptic for sores and ulcers, used in rheumatism and skin diseases.
11.	*Cardiospermum helicacabum* L. (Sapindaceae)	Sirmola DD 123	South America (Murthie, 1975)	In India introduced for the first time in I.B.G. before 1932.	Climber, it is used in the treatment of snakebite. Salted leaves are used as a poultice on swellings.
12.	*Sapindus mukorossi* Gaertn.Fruct. (Sapindaceae)	Ritha DD 125	China & Japan	In India available in literature from ancient time	Small tree, fruit used in treating a number of diseases like common cold, pimples, epilepsy and constipation. Fruits used in hair wash.
13.	*Abrus precatorius* L. (Fabaceae)	Gunchi Ratti DD 91	Africa & Pacific Island	In India introduced near about in 16th century.	Perennial climber. Seeds used as abortificent, in the form of paste used in headache. Root paste with Haldi used in

					tumors and wound externally.
14.	*Clitoria ternata* L. (Fabaceae)	Aprajita DD 95	Tropical region of the world . (Hajra *et al.*1998)	In India during 1814 introduced in I.B.G. for the first time.	Perennial climber, whole plant decoction used with milk in fever and nervous disorders.Leaf infusion used in cough and bronchial asthma. Root used to cure fever in childrens especially.
15.	*Bauhinia variegeta* L. (Caesalpiniaceae)	Kachnar DD 135	Native to China.	Introduced in ancient time.	The juice of the bark is used in the treatment of amoebic dysentery, diarrhoea and stomach disorders. The dried buds are used in the treatment of piles and paste of the bark is used in the treatment of cuts and wounds.
16.	*Cassia occidentalis* L. (Caesalpiniaceae)	Chirotha DD 127	South America	In India introduced in ancient time as weed.	Decoction of the root is used in fever.Fresh leaves crushed and taken internally to expel intestinal worms and externally in skin infection.
17.	*Cassia tora* L. (Caesalpiniaceae)	Chakora DD 86	South & North America (Backer & Brink, 1963)	In India introduced in early 17th century.	Herb, fresh leaves used externally in fungal infection on skin. Leaf and seeds used internally in the form of decoction to relief from fever.
18.	*Acacia auriculiforomis* A. cunn.ex.Benth. (Mimosaceae)	Australian acacia DD 122	Native of Australia and Mexico	Introduced in between 1903 to 1929 (Duthie, 1903-1929)	Tree, bark decoction used internally to relieve joint pain.
19.	*Mimosa pudica* L. (Mimosaceae)	Lajwanti DD 129	South America (Ridley,1930)	16th century as medicinal plant.	Herb, decoction of root with water to gargle in toothache, seed in the form of dry powder and paste used in skin diseases, leprosy and ring worm.
20.	*Bryophyllum pinnatum* (Linn.) Oken (Crassulaceae)	Patthar chata DD 94	Africa (Backer& Brink, 1763)	In India first time planted in Indian Botanic Garden during 1799 by lady Clive (Voight, 1845)	Fleshy herb, leaves are antitumorous, leaf extract used internally in uterine tumor.
21.	*Eucalyptus globulus* Labile. (Myrtaceae)	Neelgiri DD 97	Australia	In India introduced in 17th century for production of oil .	Tree, leaf extract used as mosquito repellent, orally leaf decoction

					used in mouth ulcer, leaf paste used in wound and external bleeding.
22.	*Lawsonia inermis* L. (Lythraceae)	Mehndi DD 96	Egypt(Backer& Brink, 1763)	In India probably introduced from Persia during the 17th century.	Large shrub, grow as hedge plant; leaf paste used in skin diseases. Flower and leaf decoction used in hair diseases. Root used to increase fertility in women. Leaf paste is used in disease of finger nails.
23.	*Eclipta prostrata* (L.)L. (Asteraceae)	Bhringraj DD 25	South America (Backer& Brink, 1763)	According to Ridley, (1930) introduced before 1824 by attaching to plumage of birds and also by human beings since the achenes are viscid.	Annual herb, leaf juice boiled with coconut oil is used for head to render the hair black and luxuriant. Whole plant is used for the treatment of bleeding.Used as cooling herb.
24.	*Plumbago zeylanica* L. (Plumbaginaceae)	Chirchita, Chitrak DD 107	Africa (Ridley) Tropics of asia and Africa (Bailey, 1929)	Plants were already known to India before 1832 (Roxb.Fl.Ind.).	Herb, seed and bark used internally in the form of powder to improve digestion capacity. Whole plant is used in menstrual disorders.
25.	*Asclepias curassavica* L. (Asclepiadaceae)	Blood flower DD 120	Tropical America (Bailey, 1949)	Introduced before 1814 from west Indies as medicinal plant.	Perennial herb, due to toxicity tribe not suggested this plant for home based remedies. Only used externally in skin disorders by herbal practitioners.
26.	*Heliotropium indicum* L. (Boraginaceae)	------ DD 145	America (Shrivastava, 1964)	Introduced near 1500. Some of the Botanist treated as an Indian plant.	Annual succulent herb, used to treat inflammations and tumors. A poultice made from the leaves is applied to wounds and insect bites. Leaf infusion is taken against kidney infections.
27.	*Datura innoxia* Mill. (Solanaceae)	Dhatura DD 43	Mexico (Anonymous, 1962)	Introduced before 1832.	Perennial shrub, used in bronchitis in asthma as infusion of seeds. After roasting leaves are useful to relieve pain.
28.	*D. metel* L.	Dhatura	Tropical America	Probably introduced	Perennial shrub, the

	(Solanaceae)	DD 52	(Shrivastava, 1964)	before 1832 .	dry violet flower rolled and used like cigar, to relieve the asthma and whooping cough.
29.	*Jatropha curcas* L. (Euphorbiaceae)	Safed Arand DD 55	Tropical America (Bailey,1928)	It was first introduced in India by the Portuguese (Maheshwari & Paul, 1975)	Shrub, plants get medicinal values in scabies, eczema and in ring worms. Latex applied in toothache. Root decoction used in eczema, gum ulcers.
30.	*Ricinus communis* L. (Euphorbiaceae)	Castor-Bean, Arand DD 163	Africa (Bailey, 1949,Backer & Brink,1963).	Introduced for the first time in 1794 for its valuable oil extracted from the seeds.	Plant shows a healthy growth in loamy soil. Stem juice and leaf extract externally apply on wound to clot blood. Leaf extract used to wash skin lesions having ring worm infection. Leaf coated at lower surface with castor oil, roasted and applied on joints to relieve pain.
31.	*Aloe vera* (L.) Burm.f. (Liliaceae)	Aloe, True Aloe DD 121	Mediterranean region of the world especially canary Island (Bailey, 1949).	First introduced in the Indian Botanic Garden before 1845(Voight, 1845)	Perennial herb, flesh used as effective pain killer, in hair disorders, mainly used as cooling agent at the site of burn. Fresh flesh used internally to kill intestinal worms.
32.	*Asparagus officinalis* L. (Liliaceae)	Garden Asparagus DD 170	Europe, North Africa & western Asia (Backer & Brink,1963).	Introduced before 1794, mainly for its medicinal tuberous roots.	Perennial creeper, tuberous root powder used to increase lactation in women after child birth .Root infusion used in treatment of Jaundice especially early in the morning on Wednesday and Friday without gargle.
33.	*Cymbopogon citrates* (DC.)Stap. (Poaceae)	Lemon grass DD19	Only in cultivation (Bor,1960)probably Malaysia or Ceylon (Purseglove,1972)	Introduced before 1872 as an aromatic and medicinal plant.	Perennial herb, used in tea and preparations like 'kadha', traditional herbal 'drink only used in winter and rainy season against cough and colds. Fresh leaf juice used internally in stomachaches, fever and constipation.

Table 2. Conservation status of plants.

S.No.	Botanical Name	Habit	Conservation status
1	*Abrus precatorius* L.	Climber	Rare and wild
2.	*Acacia auriculiforomis A. cunn.*ex.Benth.	Tree	Common and wild
3	*Aloe vera* (L.) Burm.f.	Herb	Common, cultivated and wild
4	*Annona reticulata* L.	Tree	Rare and wild
5	*Annona squamosa* L	Tree / Under Tree	Common , wild and cultivated
6	*Artabotrys hexapetalous* (L.F.)	shrub	Rare , wild and cultivated
7	*Asclepias curassavica* L.	Herb	Rare, wild
8	*Asparagus officinalis* L.	Climber	Rare, wild
9	*Azadirachta indica* A.Juss.	Tree	Rare and wild
10	*Bauhinia variegeta* L.	Tree	Common, cultivated and wild
11	*Bryophyllum pinnatum* (Linn.) Oken	Herb	Common, wild and cultivated
12	*Cardiospermum helicacabum* L.	climber	Rare and wild.
13	*Cassia occidentalis* L	shrub	Rare and wild
14	*Cassia tora* L.	Herb	Common and wild
15	*Cissampelos pareira* L.	sClimber	Rare and wild
16	*Clitoria ternata* L.	Climber	Common, wild as well as cultivated
17	*Cymbopogon citrates* (DC.)Stap.	Herb	Rare and cultivated.
18	*Datura innoxia* Mill.	Herb	Rare, wild as well as cultivated
19	*D. metel* L.	Herb	Common, wild and cultivated
20	*Eclipta prostrata* (L.)L.	Herb	Common, wild
21	*Eucalyptus globulus* Labile.	Tree	Common, wild and cultivated
22	*Fumaria indica* (Hassk.)Pugsley.	Herb	Rare and wild
23	*Heliotropium indicum* L	Herb	Common, wild
24	*Jatropha curcas* L.	Shrub	Common, cultivated and wild
25	*Lawsonia inermis* L.	Shrub	Rare and wild
26	*Melia azedarach* L.	Tree	Rare and wild
27	*Mimosa pudica* L.	Herb	Common, wild and cultivated
28	*Nigella sativa* L.	Herb	Common and wild
29	*Plumbago zeylanica* L.	Herb	Rare, wild and cultivated
30	*Ranunculus sceleratus* L.	Herb	Common and wild
31	*Ricinus communis* L.	Shrub	Common and wild
32	*Ruta graveolens* L.	Herb	Rare and wild
33	*Sapindus mukorossi Gaertn.*Fruct.	Tree	Rare and wild

temperature for 1 -7 days range between 40°C to 47°C. Hot winds`Loo' blow in the month of May and early June.

Texture of the soil, moisture content and chemical composition of the soil influence the biotic factor of ecosystem. The Deccan tracs produces black clay to loam soil support the dense growth of teak forest. The Gondwana rocks produces a sandy and porous acidic soil best for sal forest but soil of Vindhyan region is very poor, resulted in the poor growth of forest, and as we start to go towards hills from the plains mixed forest type growth is very peculiar in this area. The mental of black soil is deep in and around the Bargi ranges but very poor in hilly slopes.

Method : To study the medicinal plants of the tribal and local area, regular seasonal survey were made from 1/07/ 2007 to 30/06/2009. During survey informations were collected from the tribal, local people and vaidyas as much as possible. Plant specimens were collected in flowering and fruiting stage, field number was given individually to each plant specimen after identification[2-11]. Plant specimens deposited in the Herbarium of Biological Science Department, R.D. University, Jabalpur, M.P. for future reference. Bennet[12], Gamble and Fischer[13] referred for Native place and change in nomenclature of plant species.

Result and Discussion

These findings on ethno medicinal use of 33 exotic plants of 21 families (Table 1) are based on the local interviews with the tribals, local hillers, vaidyas and medicine men. All these plants are exotic and introduced intentionally or unintentionally. With respect to their habit 15 species were grown as herb, 7 species were tree, shrubs with 5 species, where as climber with 5 and single species were grown as under tree. Further, in relation to their distribution and conservation status 13 species were rare and wild in distribution, 3 species were rare and often found as wild as well as cultivated. Single species *Cymbopogon citrates* (DC.) Stap. only found in cultivated area showing its rareness. Nine species were common due to their occurrence in wild and cultivated land. Three species were common and wild in distribution ,where as single species grow as cultivated and common for this area (Table 2). Further, these findings give information that some of the

Table 3. Showing plant and plant parts used in various diseases.

S. No.	Plant (Botanical Name)	Disease and plant part used				
		Fever , cold and cough	Wound, cut & Skin infection	Gynic problems	Diarraoea, dysentry & liver disorder	Asthma & respiratory disorder
1	*Azadirachta indica* A.Juss.	Leaf and bark				
2	*Cassia occidentalis* L	Root				
3	*Cassia tora* L.	Leaf and seed				
4	*Clitoria ternata* L.	Whole plant				
5	*Cymbopogon citrates* (DC.)Stap.	Leaf				
6	Nigella sativa L.	Leaf				
7	*Ranunculus sceleratus* L	Leaf				
8	*Sapindus mukorossi* Gaertn.Fruct.	Seed				
9	*Abrus precatorius* L.		Root			
10	*Annona reticulata* L.		Leaf			
11	*Bauhinia variegeta* L.		Bark			
12	*Eucalyptus globulus* Labile.		Leaf			
13	*Ricinus communis* L.		Leaf			
14	*Asparagus officinalis* L.			Whole Plant		
15	*Cissampelos pareira* L.			Whole Plant		
16	*Lawsonia inermis* L.			Root		
17	*Plumbago zeylanica* L			Whole Plant		
18	*Aloe vera* (L.) Burm.f.				Leaf	
19	*Annona squamosa* L				Flower	
20	*Artabotrys hexapetalous* (L.F.)				Flower	
21	*Azadirachta indica* A.Juss.				Fruit	
22	*Bauhinia variegeta* L.				Bark	
23	*Cassia occidentalis* L				Root	
24	*Fumaria indica* (Hassk.)Pugsley.				Whole Plant	
25	*Plumbago zeylanica* L				Leaf	
26	*Clitoria ternata* L.					Whole plant
27	*Datura innoxia* Mill.					Seed
28	*D. metel* L.					Flower

plants are too peculiar in medicinal properties such as *Ruta graveolens* L. and *Abrus precatorius* L. used as abortificent.

In this respect Table 3 provide the following facts about these medicinal plants :

-same plant is used in different ways for the treatment of various diseases.

-different part of various plants are used for treating the same disease.

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