

## TAPPING INDIGENOUS MEDICINAL PLANT RESOURCES FROM MAHADEOKOLI TRIBES IN WESTERN GHATS, MAHARASHTRA

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Rural population and the tribal communities residing in the hilly areas utilize the natural plant wealth to cure number of ailments in their traditional health care system since ancient times. However, the natural forest cover is getting depleted continuously due to various developmental programmes resulting into the depletion of natural plant wealth including the medicinal plants. Countryside population, especially the tribal communities, overcome these circumstances by establishing small kitchen gardens near their place of residence. These kitchen gardens embody number of medicinal plants brought from the surrounding forests and grown for ready utilization. The whole plant or different plants parts have been used to cure number of ailments. The present communication documents 256 medicinal plant species from forest resources as well as kitchen gardens or courtyards of tribal pockets in western Maharashtra.

**Key words :** Germplasm, medicinal plants, Mahadeokoli tribe, ethnobotany

Desertification is a global problem caused by human activities besides natural calamities. Nearly four billion hectares of dry land has been affected globally by these activities. The process of desertification causes degradation of vegetation, loss of biomass as well as biological productivity, soil impoverishment, increased runoff and silting of water bodies and deforestation of land (Ogallo, 1994). Botanists, environmentalists, ecologists, social scientists and politicians besides others, have taken a serious note of this alarming situation and are making earnest efforts to minimize if not prevent the effect of such human activities.

Documentation of the natural plant wealth resources from the native tribal and local inhabitants is the pilot work in this direction. Tribal folks are dependent on the forest produce for sustenance of life to get articles of food, fodder, fuel, medicine, agricultural implements, house construction and many others from the

forests since ancient time. This heritage still prevails in remote hilly area as the impact of modern civilization has still not reached there.

Ethnobotanists have been involved in collecting information on folk medicines plants and interaction between the people and the plants. The tribal doctors, *vaidyas*, *vaidus* or *bhagat's* are the key herbalists in documenting the ethnobotanical information. Edward (1983) has discussed the role of ethnobotanists in search for new medicines. Schult (1960) gives importance to tapping heritage of ethnobotanical knowledge. Such information on Indian Ethnobotany has been carried out in sufficient details by some scientific groups (Rao and Jamir, 1982).

The systematic germplasm collection of crop plants and their wild relatives has been initiated in India by National Bureau of Plant Genetic Resources (NBPGR), New Delhi. Arora and Mehra

(1977) emphasized the collection of wild relatives of crop plants grown by the tribal inhabitants. Recently, Hore and Sharma (1993) have observed remarkable diversity in crop plant resources from Nagaland. There are 35,000-70,000 plant species used for medicinal purpose throughout the world. In India, 1500-2000 medicinal plant species have been reported, of which 540 species are used in herbal drugs and only about 200 species are being commercially used (Arora and Engels, 1993).

India has a long heritage of using medicinal plants in its health care system through Ayurveda, Siddha, Unani and folk medicines since ancient times. There are over 300 tribal communities residing in remote hilly areas using this plant wealth in their traditional health care system. However, due attention has not been paid so far towards the systematic germplasm collection of medicinal plants. It is realised now that germplasm of medicinal plants is required for their cultivation and evaluation of chemical contents. Janaki Ammal and Nagendra Prasad (1984) have evaluated the germplasm of *Costus speciosus* Sm. for its diosgenin content. It is now recognized that good strains of medicinal plants are required for sustainable development in the tribal areas.

Maharashtra ranks fifth in tribal population in India. There are 47 tribal communities; major amongst them are Bhil, Mahadeokoli, Katkari, Thakar, Gamit and Pawara. Of these, Mahadeokoli is the largest community after Bhils. They collect forest produce for food, medicine, house construction, agriculture and other necessities. They maintain a small kitchen garden near their huts wherein they grow few medicinal plants for ready use in addition to the vegetables and ornamental plants. Present paper documents information on 256 ethno-medico-botanical plants used by Mahadeokoli tribes from forest resources and few of them grown in their kitchen gardens useful

in their health care system (Table 1). Botanical names have been enlisted as per the Bentham and Hooker's system of classification. Emphasis has also been given on collection and conservation of such indigenous germplasm.

The developing countries are now paying much more attention to acquire the wealth of knowledge on medicinal plants known to the tribals and other local inhabitants. A very scanty vital information from the tribals and local inhabitants has been documented so far. It has been realized that information on folklore, therapeutic plants, their properties, methods of administration, dosages, toxicity and critical assessment for chemical constituents is a pre-requisite for a meaningful work on these plants used by the tribal communities.

There are number of difficulties in collecting genuine plant material growing in nature due to their sparse distribution, occurrence in inaccessible locations and transportation. Cultivation of genuine medicinal plants is the best solution to overcome these difficulties. In this situation, indiscriminate collections may lead to extermination and ignorance of the collector may become cause of the admixture of genuine samples.

## MATERIALS AND METHODS

Ethno-medico-botanical information from Mahadeokoli tribe residing in the hilly areas of Western Ghats of Maharashtra has been collected with the help of a questionnaire specially prepared for this purpose. Information on 40 different aspects like botanical name, local name, part used, distribution in the area, uses, etc. was gathered through these forms by way of interviews with the herbalists from the hilly areas. They utilize as many as 298 medicinal plants including trees, shrubs, climbers, parasites and others in their traditional health care system. Different plant organs like- roots, barks, stems, leaves, fruits,

Table 1. Germplasm of ethno-medico-botanical plants of Mahadeokoli tribe from Western Maharashtra

(Abbreviations used for plant Parts used: Wp: Whole plant, Rt: Root, Lv: Leaves, St:Stem, Fl:Flower, Ft:Fruits, Sd:Seed, Lt:Latex, Bk:Bark, P: Pollen, G: Gum, Rh:Rhizome, 1:Kitchen garden, 2: Commercial exploitation, 3: Germplasm collection)

Sr. No.	Botanical Name	Local Name	Parts used	Ailments	1	2	3
1	<i>Clematis gouriana</i> Roxb. ex DC	Morkhadi	Rt	Stomachache	-	-	-
2	<i>C. triloba</i> Heyne ex Roth	Morvel	Rt, Lv, Lt	Swelling, Toothache, Wound healing	-	-	-
3	<i>Dillenia pentagyna</i> Roxb.	Karambal, Karval	Bk	Wound healing	-	-	-
4	<i>Annona squamosa</i> L.	Sitaphal	Sd	Lice control	*	-	-
5	<i>Cissapelos paraeira</i> L.	Pahadvel	Rt, Lv	Stomachache, Cough	-	-	-
6	<i>Cocculus hirsutus</i> Cl.	Vasanvel, Talvel	Rt, Lv	Diarrhoea, Anaemic condition	-	-	-
7	<i>Cyclea peltata</i> Hook.f. & Thomas	Perval, Tanivasanvel	Rt, Lv	Dysentery, burn wound	-	-	-
8	<i>Tinospora cordifolia</i> Hook.f.& Thomas	Guduchi, Gulvel	St, Lv	Jaundice, fever	-	*	-
9	<i>T. sinensis</i> Merr.	Girnalkandi	St	Tuberculosis, fever	-	-	-
10	<i>Argemone mexicana</i> L.	Bilayat, Pivaladhotra	Rt, Lv, Lt	Jaundice, Scabies	-	*	-
11	<i>Capparis spinosa</i> L.	Ringani	Fr	Toothache	-	-	-
12	<i>C. zeylanica</i> L.	Vaghathi	Lv	Scorpion bite, throat pain	-	-	-
13	<i>Flacourtia latifolia</i> Cooke	Tambat, Galghugar	Bl	Swellings	-	-	*
14	<i>F. montana</i> Grah.	Attrun	Bk	Scorpion bite	-	-	*
15	<i>Tamarix ericoides</i> Rottl.	Shenore	Rt	Leucorrhoea	-	-	-
16	<i>Mesua ferrea</i> L.	Nagkesar	P	Impotency in male	-	-	-
17	<i>Hibiscus cannabinus</i> L.	Ambadi	Sd	Leucorrhoea	*	-	-
18	<i>H. ovalifolius</i> Vahl	Ran bhendi, Narali	Rt	Dysentery	-	-	-
19	<i>H. rosa-sinensis</i> L.	Jaswand, Gurhal	Lv, Fq	Dysentery, Leucorrhoea	-	-	-
20	<i>Kydia calycina</i> Roxb.	Varang	Bk	Snake bite, Burn wound	-	-	-
21	<i>Sida rhombifolia</i> L.	Chikankhada	Rt	Diarrhoea	-	*	-
22	<i>Thespesia lampas</i> Daltz. & Gibs.	Ran bhend	Rt	Stomachache	-	-	-
23	<i>Urena lobata</i> L.	Zingurti, Nachardi	Rt, Sd	Kidney stone, Dog bite	-	-	*
24	<i>Bombax ceiba</i> L.	Kate savar	Rt, Bk	Diarrhoea, Leucorrhoea	-	-	*
25	<i>Helicteres isora</i> L.	Kevan, Murudsheng	Fr	Diarrhoea, Stomachache	-	*	-
26	<i>Sterculia guttata</i> Roxb.	Korir, Davala	Rt, Fr	Gonorrhoea	-	-	*
27	<i>S. urens</i> Roxb.	Kandol	Bk, Sd, G	Jalwat, Snake bite, Diabetes	-	*	-
28	<i>Corhorus capsularis</i> L.	Phatakadi	Sd	Snake bite, vomitting	*	-	-
29	<i>Grewia asiatica</i> Mantiss.	Chikan Chopda	Rt, Fr	Bone fracture, stomachache	-	-	-
30	<i>Triumfetta rotundifolia</i> Lamk.	Chikana, Zanzurti	Rt, Lv	Scorpion bite, Wound healing	-	-	-
31	<i>Aspidopterys cordata</i> A. Juss.	Goyali, Chirphuli	Rt	Piles	-	-	-
32	<i>Biophytum sensitivum</i> DC.	Mali	Lv	Piles	-	-	-
33	<i>Aegle marmelos</i> Corr.	Bel	Lv	Diarrhoea	-	*	*
34	<i>Atlantia racemosa</i> Wt. & Arn.	Chingari	Lv	Arthritis	-	-	-
35	<i>Murraya paniculata</i> Jack.	Pandhri	Bk	Diarrhoea, vomiting control	-	-	-
36	<i>Garuga pinnata</i> Roxb.	Kakad	Bk	Lactation	-	-	-
37	<i>Aphanamixis polystachya</i> Parker	Rakta rohida	Bk	Blood purification	-	-	-
38	<i>Azadirachta indica</i> A. Juss.	Limb. Nimb	St	Teeth cleaning	-	*	*
39	<i>Melia dubia</i> Cav.	Bakana limb	Bk	Anthelmintic, dog bite	-	-	-
40	<i>Cassine glauca</i> O. Ktze.	Bhutkes, Bhuskut	Lv	Psychoactive, headache	-	-	-

41	<i>Celastrus paniculata</i> Willd.	Kir, Karadkanguni	Sd	Brain tonic, arthritis	- * -
42	<i>Maytenus emarginata</i> Ding.	Hekal	Bk, Lv	Stomachache, cough, tonic	- - -
43	<i>M. rothiana</i> Lobreau-Callen.	Lokhandi, Bhalwad	Rt, Ft	Guinea worms, tonic	- - -
44	<i>Zizyphus mauritiana</i> Lamk.	Bor	lv	Scorpion bite, Wound healing	- - -
45	<i>Z. rugosa</i> Lamk.	Toran	Bk	Dysentery	- - -
46	<i>Ampelocissus latifolia</i> Planch.	nandena	Rt	Bone fracture	- - *
47	<i>Cayratia elongata</i> Suesseng.	Pachwel, Pachangli	Rt	Wound healing	- - -
48	<i>C. trifolia</i> Domin.	Chivan vel	Rt	Swelling	- - -
49	<i>Cissus pallida</i> Steud.	Nandana, Nandale	Rt	Dysentery, bone fracture	- - -
50	<i>C. repens</i> Lamk.	Ran	Lv	Diarrhoea	- - -
51	<i>C. woodrowii</i> Sant.	Dena, Gardhan	Rt	Scropula, burn wound, scorpion bite	- - -
52	<i>Leea edgeworthii</i> Sant.	Gar bhenda	Rt	Would healing	- - -
53	<i>L. indica</i> Merr.	Dinda, Handerphod	Rt	Swelling	- - -
54	<i>L. macrophylla</i> Roxb.	Dinda	Rt	Swelling	- - -
55	<i>Allophylus cobbe</i> Raeusch.	Tiphani	Lv	Bone fracture, wound healing	- * -
56	<i>Sapindus laurifolius</i> Vahl	Ritha	Rt, Ft	Snake bite, vomiting, fever	- * -
57	<i>Schleichera oleosa</i> Oken.	Koshimb	Bk, Ft	Female sterility, Dysentery	- * *
58	<i>Mangifera indica</i> L.	Amba, Aam	Lv, Fr	Otagia, scorpion bite	- - -
59	<i>Nothopegia racemosa</i> Ramamoorthy	Amboti	Lt	Swelling	* - -
60	<i>Semecarpus anacardium</i> L.	Bibba	Sd	Swelling, headache	- * -
61	<i>Spondias pinnata</i> Kurz.	Ambada	Bk	Blood purification	- - -
62	<i>Moringa concanensis</i> Nimmo ex Dalz.	Ransheva	Bk	Abortification, polio, arthritis	* - -
63	<i>Abrus precatorius</i> L.	Gunj	Rt, Lv	Leucorrhoea, cough, aphrodisiac	* - *
64	<i>Alysicarpus vaginalis</i> DC.		Rt	Asthma	- - -
65	<i>Atylosia lineata</i> Wt. & Arn.	Rantur, Turati	Lv	Toothache,eczema	- - -
66	<i>A. scarabaeoides</i> Benth.	Supalshed	Lv	Swelling	- - -
67	<i>Butea monosperma</i> Taub.	Palas	Bk,Fl,Sd	Wound healing, Scorpion bite, Urinary disorder	- * -
68	<i>Clitoria biflora</i> Dalz.	Vasala	Lv	Smoothing feet	* - -
69	<i>Crotalaria mysorensis</i> Roth.	Tagada	Sd	Antifertility	- - -
70	<i>D. volubilis</i> Roxb.	Niloshi, Valvat	Bk,Lv	Throat pain, burn wound	- * -
71	<i>Desmodium gangeticum</i> DC.	Ganja, Pithavan	Rt,Lv	Snake bite, urine disorder	- * *
72	<i>Lablab purpureus</i> L.	Ghewada, Wal	Lv	Burn wound	* - -
73	<i>Flemingia strobilifera</i> R.Br.	Assud, Satputla	Rt,Lv	Stomachache, fever	- - -
74	<i>Mucuna prurita</i> DC.	Khajkuri, Khajlee	Lv,Fr,Sd	Wound healing, ascariis, scorpion bite	* * *
75	<i>Paracalyx scariosa</i> Ali	Balivara, Borula	Rt	Jaundice, leucorrhoea, dysentery	- - -
76	<i>Pongamia pinnata</i> Pierre.	Karanj	St,Sd	Teeth cleaning, Scabies	- * -
77	<i>Pterocarpus marsupium</i> Roxb.	Bivala	Bk,Lt,G	Arthritis, cough, toothache, leucorrhoea	- * -
78	<i>Pueraria tuberosa</i> DC.	Pithana, Bhuikohla	Rt	Dysentery, tonic, lactogogue	- * -
79	<i>Tephrosia purpurea</i> Pers.	Unahali	Lv	Dog bite	- - -
80	<i>Teramnus labialis</i> Spreng.	Ranhulga, Hilindi	Lv	Wound healing, child fever	- - -
81	<i>Vigna vexillata</i> A. Rich.	Halunda	Rt	Tonic, snake bite, leucorrhoea	- - -
82	<i>Bauhinia foveolata</i> Dalz.	Chambeli	Bk	Tonsils	- - -
83	<i>B. racemosa</i> Lamk.	Apta, Shid		Cough, stomachache	- * -

84	<i>Caesalpinia decapetala</i> Alst.	Chillar	Sd	Dysentery, stomachache	- - -
85	<i>Cassia fistula</i> L.	Bhava	Bk, Lv, Fl, Ft, Sd	Gonorrhoea, eczema, night blindness, purgative	- - -
86	<i>C. tora</i> L.	Takala	Lv	Wasp bite	- - -
87	<i>Tamarindus indicus</i> L.	Chinch	Lv, Sd	Swelling, scorpion bite	- - -
88	<i>A. nilotica</i> Willd	Babhul	Bk, Sd	Toothache, scorpion bite	- - -
89	<i>Albizia procera</i> Benth.	Belati, K hinei	Lv	Cough, cold	- * *
90	<i>Entada pursaetha</i> DC.	Garbi	Sd	Snake bite, piles	- - -
91	<i>Kalanchoe pinnata</i> Pers.	Panphuti	Lv	Cough, wound healing, bone fracture	- - -
92	<i>Anogeissus latifolia</i> Wall. ex Bedd.	Dhawda	Bl, Lv, Sd, G	Snake bite, Scabies, tronic, diarrhoea	- - -
93	<i>Calycopetris floribunda</i> Lamk.	Ukshi	St	Teeth cleaning	- - -
94	<i>Terminalia arjuna</i> Wt. & Arn.	Arjun sadada	St	Wound healing	- - -
95	<i>T. bellirica</i> Roxb.	Yela	Bk, Ft	Cough, asthma	- - *
96	<i>T. chebula</i> Retz.	Hirda	Ft	Cough	- - *
97	<i>T. crenulata</i> Roth.	Ain, Sadada	Bk	Wound healing	- - -
98	<i>Syzygium cumini</i> skeels.	Jambul	Bk, Lv	Wound healing, dysentery, diarrhoea	- - -
99	<i>Careya arborea</i> Roxb.	Kumbha	Bk, Lv	Diarrhoea, burn wound, leucorrhoea, piles	- - -
100	<i>Ammannia baccifera</i> L.	Bhujambul	Lv	Abscess	- - -
101	<i>Woodfordia fruticosa</i> Kurz.	Dhayati	Rt, B, Lv, Fl	Dysentery, wound healing, leucorrhoea, stomachache	- - -
102	<i>Carica papaya</i> L.	Papaya	Ft, It	Female sterility, teeth decay	* - -
103	<i>Citrullus colocynthis</i> Schard.	Kadu vrindavan	lv, Ft	Anthelmintic, alopecia	- - -
104	<i>Cucumis callosus</i> Cogn.	Karit, Chibud, chirat	Ft	Alopecia, scabies, snake bite	- - -
105	<i>Diplocyclos palmatus</i> Jeffery.	Shivalingi	Lv, Sd	Leg pain, fertility drug	- - -
106	<i>Lagenaria siceraria</i> Standley.	Dhudi	Bk, Sd	Earache	* * *
107	<i>Luffaacutangula</i> Roxb. var. <i>amara</i>	Kadu dodaka	Lv, Ft, Sd	Swellings, jaundice, snake bite	* -
108	<i>M. dioica</i> Roxb.	Kartoli	Rt	Snake bite, antifertility	- - -
109	<i>Mukia maderaspatana</i> Roem.	Ghodpake	Wp	Bone fracture	- - -
110	<i>Solena heterophylla</i> Lour.	Gomerti	Rt, Lv, Sd	Stomachache, burn wound, earache	- - -
111	<i>Trichosanthes tricuspidata</i> Kour.	Kaundal, Kokeri	Rt, Lv, Ft, Sd, G	Snake bite, jaundice, headache, throat pain, earache	- - -
112	<i>Pimpenella adscendens</i> Dalz.	Gajari	Rt	Galactogogue	- - -
113	<i>Haldina cordifolia</i> Ridsd.	Hedu	Lv	Spleen disease, antidote against poisoning	- - -
114	<i>Meyna laxiflora</i> Robyns	Alu	Lv, Sd	Abscess, vomiting, diarrhoea	- - -
115	<i>Pavetta indica</i> L.	Nadgudi, Asavala	Fl	Anaemic condition	- - -
116	<i>Xeromphis uliginosa</i> Mahesh.	Pendhrun, Pendhar	Bk, Ft	Dysentery	- - -
117	<i>X. spinosa</i> Keay.	Gale, Gala	Ft	Swelling, abscess	- - -
118	<i>Aegeratum conyzoides</i> L.	Pudani, Ghaneri	Lv, Fl	Fever, swelling, cough	- - -
119	<i>Artemisia parviflora</i> Buch-Ham.	Tirmak, Davana	Lv	Itching, Swelling	- - -
120	<i>Blumea malcolmii</i> Hook.	Buradi	Wp, Lv	Fever, wound healing, stomachache	- - -
121	<i>Centratherum anthelminticum</i> O. Ktze.	Kadujira	Lv, Sd	Fever, skin disease	- - -
122	<i>Cosmos bipinnatus</i> Cav.	Sonaki	Lv	Neckache	* * *

123	<i>Eclipta alba</i> Hassk.	Maka	Wp	Stomachache	- - -
124	<i>Elephantopus scaber</i> L.	Ranganja, Kapkodi	Rt, Lv	Stranguri, fever, wound healing	- - -
125	<i>Sphaeranthus indicus</i> L.	Buradi, Borthala	Lv	Wound healing	- - -
126	<i>Tridax procumbens</i> L.	Ekdandi, Ghavati	Wp	Wound healing	- - -
127	<i>Vernonia indica</i> Clarke		Rt	Stomachache	- - -
128	<i>Vicoa indica</i> DC.	Sonkadi	Rt	Gonorrhoea	- - -
129	<i>Xanthium strumarium</i> L.	Zarmani	Ft	Strangury	- - -
130	<i>Lobelia nicotianifolia</i> Heyne	Dhota	Rt, Lv, Lt	Connctivitis, throat pain, scabies, purgative	- - -
131	<i>Plumbago zeylanica</i> L.	Chitrak	Rt, Lt	Abscess, swelling, toothache, muscular pains	- * -
132	<i>Embelia tsjeriam-cottam</i> A.DC.	Idingi, Ambat Girni	Rt, Ft	Vomiting, cough, stomachache	- - -
133	<i>Maesa indica</i> DC.	Idingi, Ambarbundukli	Rt, Ft	Snake bite, gonorrhoea, arthritis, stomachache	- - -
134	<i>Madhuca longifolia</i> Macb.	Moha	Oil	Fever	- * -
135	<i>Diospyros melanoxylon</i> Roxb.	Tembrun	Ft	Asta, cough	- - -
136	<i>Symplocos racemosa</i> Roxb.	Ghansur	Rt	Throat pain, swelling	- - -
137	<i>Jasminum malabaricum</i> Wt.	Kusar	Rt, Lv	Galactagogue, arthritis	- - -
138	<i>Nectanthes arbortristis</i> L.	Parijatak	Lv	Malia	- - -
139	<i>Carissa congesta</i> Wt.	Karvand	Rt, Sd	Skin diseases, stomachache	- * *
140	<i>Holarrhena antidysenterica</i> A.DC.	Pandhra Kuda	Rt, Bk, Sd	Stomachache, wound healing, dysentery, anthelmintic	- * *
141	<i>Plumeria alba</i> L.	Chafa	Bk, Fl, Lt	Snake bite, sterility, scrofula	* - -
142	<i>Rauvolfia serpentina</i> Benth. ex Kurz.	Sarpangandha	Rt	Stomachache	* * -
143	<i>Vallisneria spiralis</i> L. (Note: original text has 'Vallisneria solanacea')	Ekhamogara	Lv	Eczema, dog bite, snake bite	* - -
144	<i>Wrightia arborea</i> Mabblerly	Dudhkuda	Bk	Dysentery	- - -
145	<i>W. tinctoria</i> R.Br.	Kalakuda	Rt, Bk	Ascaris, stomachache, Dysentery	- - -
146	<i>Cryptolepis buchananii</i> Roem. & Schult.	Kavali	Rt, Lv, Lt	Gonorrhoea, snake bite, scabies, wound healing	- - -
147	<i>Hemidesmus indicus</i> Schult.	Anatmul, Kavali	Rt, Lv, Lt	Snake bite, kidney stone, arthritis, rat bite, chest pain, abscess	- - -
148	<i>Calotropis gigantea</i> R.Br.	Rui	Rt, Lt	Facilitating delivery, stomachache	- - -
149	<i>C. procera</i> R.Br.	White rui, Mandar	Fl	Asta	- - -
150	<i>Gymnema sylvestre</i> R.Br. ex Schult.	Bedkichapala	Lv	Tuberculosis	- * *
151	<i>Holostemma annulare</i> K. Schum.	Chirphuli, shiri	Fl	Galactagogue	- - -
152	<i>Goya wightii</i> Hook.f.	Ghamoli, Yavaran	Wp, Lv	Jaundice, conjunctivitis	- - -
153	<i>Tylophora indica</i> Merr.	Kavali, Laveli	Rt, Lv, Lt	Arthritis, Asthma, conjunctivitis	- - -
154	<i>Wattakaka volubilis</i> Stapf	Dodi, Kandodi, yekuta	Rt, Lv	Indigestion, stomachache	- - -
155	<i>Argyreia elliptica choisy</i>	Bondvel	Lv	Cutwounds	- - -
156	<i>A. sericea</i> Dalz.	Mothabarvel, Mhasvel	Rt, Lt	Dysentery, jaundice, cracked feet	- - -
157	<i>Ipomoea mauritiana</i> Jacq.	Dhudkand, Dhudhali	Rt	Lactagogue	- - -
158	<i>I. muricata</i> L.	Bhovari	Sd	Jaundice	- - -
159	<i>Cuscuta reflexa</i> Roxb.	Amarvel, Jathali	Wp	Snake bite	- - -

160	<i>Datura metal</i> L.	Dhotra	Lv, Sd	Body pains, scrofula, menstruation	- * *
161	<i>Nicotiana tabacum</i> L.	Tambaku	Rt	Facilitating delivery	* - -
162	<i>Solanum indicum</i> L.	Chichurdi	Rt, Fl, Ft	Tooth decay, scorpion bite	- - -
163	<i>S. surattense</i> Burm.f	Ringani	Sd, Ft	Tooth decay, scabies	- - -
164	<i>Withania somnifera</i> Dunal.	Ashwagandha	Lv	Cobra snake bite	- - -
165	<i>Aeginetia indica</i> L.	Vahda	Wp	Piles	- - -
166	<i>Dolichandrone falcata</i> Seem.	Medhshingi	Lv	Stomachache	- - -
167	<i>Heterophragma quadrilocularis</i> K. Schum.	Varas	Lv	Sorfinger	- - -
168	<i>Oroxylum indicum</i> Vent.	Tetu	Bk, Lv, Fl	Jaundice, cat bite, female sterility	- * *
169	<i>Radermachera xylocarpa</i> K. Schum.	Kharshing	St	Skin disease	- - -
170	<i>Stereospermum personatum</i> Chatterjee	Padal	Lv, Rt	Sorfinger, malaria	- * *
171	<i>Sesamum orientale</i> L.	Rantilm Til	Fl	Dog bite, antifertility	- - -
172	<i>Barleria prionitis</i> L.	Pivalikoranti	Fl	Leucorrhoea	- - -
173	<i>Blepharis asperrima</i> Nees	Katepan	Lv	Foot injuries	- - -
174	<i>Eranthemum roseum</i> R. Br.	Karavfoshi	Rt	Snake bite	- - -
175	<i>Hygrophila auriculata</i> heyne	Kolasana, Talimkhana	Rt, Sd	Vermifuge, dysentery	- - -
176	<i>Lepidagathis mitis</i> Dalz.	Khadak petari	Wp, lv	Snake bite, wound healing	- - -
177	<i>Peristrophe bicalyculata</i> Nees	Churan	Wp	Cræd feet	- - -
178	<i>Callicarpa tomentosa</i> Murray	Yasar	Lv	Wound healing	- - -
179	<i>Clerodendrum serratum</i> Moon.	Bharangi	Rt	Snake bite	- - -
180	<i>Lantana camara</i> L.	Ghaneri, Gandhari	Ft, Lv	Menstruation period, wound healing	- - -
181	<i>Tectona grandis</i> L.	Sag	Bk	Snake bite, vomiting	- - -
182	<i>Vitex negundo</i> L.	Nirgudi	Lv	Migraine, joint pains, arthritis, fever	- - -
183	<i>Anisomeles heyneana</i> Benth.	Chrimat phangali	Bk, Lv	Wound healing, malaria, swellings	- - -
184	<i>Colebrookea oppositifolia</i> Sm.	Dhasai	Rt, Lv	Arthritis, otalagia, scrofula	- - -
185	<i>Leucas cephalotes</i> Spreng.	Kumbha	Lv	Eye infection	- - -
186	<i>L. martinicensis</i> R. Br.		Lv, Fl	Migraine, headache	- - -
187	<i>L. stelligera</i> Wall. ex Benth.	Kumbhi	Lv	Headache, migraine	- - -
188	<i>Ocimum basilicum</i> L.	Sabja, rantulshi	Sd	Sun stroke	- - -
189	<i>O. gratissimum</i> L.	Rantulshi	Lv, Sd	Headache, vomiting, stomachache	- - -
190	<i>O. sanctum</i> L.	Tulshi	Lv	Skin diseases, cough	* - -
191	<i>Plectranthus mollis</i> Spreng.	Tili, Tilgushi	Wp, Sd	Earache, stomachache, burn wound, diarrhoea	- - -
192	<i>Pogostemon parviflorus</i> Benth.	Phangli	Rt, Lv	Piles, lice control, rat bite, dysentery, wound healing	- - -
193	<i>Salvia plebeia</i> R.Br.	Davana, Rantulas	Sd	Stomachache, diarrhoea	- - -
194	<i>Achyranthes aspera</i> L.	Aghada	Wp, Rt, St, Sd, Lv	Fever, asthma, facilitating delivery, jaundice	* - -
195	<i>Celosia argentea</i> L.	Kurdu	Rt, Lv, Sd	Vomiting, purgative, strangury	* - -
196	<i>Aristolochia indica</i> L.	Nagdavana	Lv	Snake bite	- - -
197	<i>Piper betle</i> L.	Nagvalli, Pan	lv	Cough, Piles	- - -
198	<i>P. nigrum</i> L.	Miri	Ft	Child stomachache	- * -

199	<i>Actinodaphne angustifolia</i> Nees	Pisa, Malva	Lv	Wound healing, strangury, lactagogue, arthritis	- - *
200	<i>Gnidia glauca</i> Gilg.	Ramteha	Bk, Lv, Fl	Toothache, scorpion bite, wound healing, piles	- - -
201	<i>Dendrophthoe falcata</i> Etting.	Bandgul	Wp, Ft	Urinary disorder, bone fracture, diarrhoea, tonic	- - -
202	<i>Viscum angulatum</i> Heyne ex DC.	Hadsandhi, B andoli	Wp, St	Bone fracture, jaundice	- - -
203	<i>Osyris quadriparita</i> Salzmex Decne.	Lotal, Rhautal	Bk	Stomachache, dysentery	- - -
204	<i>Santalum album</i> L.	Chandan	St	Viper snake bite	- - -
205	<i>Baliospermum montanum</i> Muell. Arg.	Dati	Rt, Wp	Purgative, wound healing	- - -
206	<i>Breynia retusa</i> Alst.	Tikali	Rt, Bk, Lv	Irritating pimples, wound healing, leucorrhoea, tonsils	- - -
207	<i>Bridelia squamosa</i> Gehrman.	Awala	Bk, Lv, Ft	Wound healing, toothache, cough	- - *
208	<i>Emblica officinalis</i> Gaertn.	Awala	Bk, Lv, Ft	Wound healing, toothache, cough	- - *
209	<i>Euphorbia hirta</i> L.	Dudhi	Lv	Skin diseases, eczema	- - -
210	<i>E. laeta</i> Heyne ex Roth	Pisola	Lt	Skin diseases, eczema	- - -
211	<i>E. nivulia</i> Buch. - Ham.	Sabar	Lt, St, Wp	Bone fracture, swellings, asthma	- - -
212	<i>E. tirucalli</i> L.	Sher, Kandihadsandi	Wp, Lt	Bone fracture, earache, arthritis, wound healing	- - -
213	<i>Jatropha curcas</i> L.	Chandarjoti, Erand	Rt, Bk, St, Lv, Lt	Dysentery, jaundice, tooth cleaning, scabies, conjunctivitis	- * -
214	<i>Kirganelia reticulata</i> Baill.	Pavan, Datwan, Nilumbi	Lv	Scabies	- - -
215	<i>Mallotus philippensis</i> Muell.- Arg.	Shendri	Lv	Bleeding through nostrils	- - -
216	<i>Phyllanthus asperulatus</i> Hutch.	Bhuiawali	Wp	Jaundice	- - -
217	<i>Ricinus cummunis</i> L.	Erand, Tidaka Erand	Rt, St, Lv	Gonorrhoea, jaundice, arthritis	- - -
218	<i>Sapium insigne</i> Benth.	Shirud	Lt	Abscess, bone fracture, headache, arthritis	- - -
219	<i>Securinega virosa</i> Pax. & Hoffm.	Katekamoti	Lv	Scabies	- - -
220	<i>Trewia nudiflora</i> L.	Petari	Rt, Lv	Scrofula, asthma	- - -
221	<i>Trema orientalis</i> Bl.	Goli, Khaliar	Lt	Scorpion bite	- - -
222	<i>Girardinia zeylanica</i> Dcne.	Budwala agga	Lv	Epilepsy	- - -
223	<i>Artocarpus heterophyllus</i> Lamk.	Phanas	Lv, Lt	Scabies, skin diseases, asthma	* - -
224	<i>Ficus benghalensis</i> L.	Vad	Rt, Lt	Strangury, leucorrhoea, foot cracks, toothache	- - -
225	<i>F. exasperata</i> Vahl	Kharmat, Gandaumber	Lt, Ft	Leucoderma, scabies, toothache	- - -
226	<i>F. racemosa</i> L.	Umbar	Rt, Bk, Lt	Measles, dysentery, diarrhoea, muscular pains	- - -
227	<i>Nervilia discolor</i> Schltr.	Talyakand	Rt	Deep cuts wound	- * *
228	<i>Venda testacea</i> Reichb.	Zadilasani	Rt, Lt, Lv, Sd	Bone fracture, eczema, wound healing, earache	- - -
229	<i>Curcuma aromatica</i> Salisb.	Ambehalad, Ranhalad	Rh	Stomachache, jaundice, snakebite, scrofula, dysentery	- - -
230	<i>C. longa</i> L.	Haldi	Rh	Cough	* - -
231	<i>C. zedoaria</i> Rosc.	Kachora	Rh	Child fever, anthelmintic	- - -



232	<i>Zingiber officinale</i> Rosc.	Ale, Ginger	Rh, L v	Snake bite, cough	- - -
233	<i>Z zerumbet</i> Sm.	Gawarkand	Rh, F1	Abscess, tonsilitis	- - -
234	<i>Ensete superbum</i> Cheesman	Kavadar, Chavin	Rh, Sd	Facilitating delivery, urinary complaints, measles	- - -
235	<i>Musa paradisiaca</i> L.	Keli, Kel	Rh	Facilitating delivery	* - -
236	<i>Curculigo orchiooides</i> Gaertn.	Kali musali	Rh	Tonic	- - -
237	<i>Dioscorea bulbifera</i> L.	Kadkin, Kadukand	Rh	Fertility drug	* - -
238	<i>D. esculenta</i> Burkill	Kanger, Kanaka	Rh	Chronic dysentery, stomachache	* - -
239	<i>D. pentaphylla</i> L.	Chai, Chava, Shendvel	Rh	Bone fracture	* - -
240	<i>Asparagus racemosus</i> Willd.	Shatvar, Nadang	Rt	Tonic, lactagogue, stomachache	- * *
241	<i>Aloe vera</i> Burm.f.	Korphad	Lv, St	Conjunctivitis, spleen disease	- * *
242	<i>Gloriosa superba</i> L.	Kalalawi	Rt	Facilitating delivery	- * -
243	<i>Phoenix sylvestris</i> Roxb.	Shindi, Khajuri	Rt	Facilitating delivery	- - -
244	<i>Caryota urens</i> L.	Bherli mad	Sd	Migraine	- - -
245	<i>Typha angustata</i> Bory.	Pankanis	P	Wound healing	- - -
246	<i>Arisaema murrayi</i> Hook	Diva	Rt	Piles	- - -
247	<i>Remusatia vivipara</i> Schott.	Rukhalu	Rt	Piles, scropula	- - -
248	<i>Sauromatum pedatum</i> Schott.	Sheval, Badad	Lv, Sd, Rt	Stomachache, piles, guinea worm	* - -
249	<i>Eriocaulon diana</i> Fyson	-	Wp	Child mother care	- - -
250	<i>Carex glaucina</i> Boeck.	Surgrass	Wp	Eye cleaning	- - -
251	<i>Coix lacryma-jobi</i> L.	Kusar, Kasai	Rt	Kidney stone	- - -
252	<i>Cynodon dactylon</i> Pers.	Durva	Lv	Burn wound, scorpion bite	- - -
253	<i>Dendrocalamus strictus</i> Nees	Mes, Manga	Bk, Lv	Wound healing, Ascaris, cough	- - -
254	<i>Elusine coracana</i> Gaertn.	Nagali, Nachani	Sd	Tonic	- - -
255	<i>Aleuritopteris farinosa</i> Fee	Kombadnakhi	Rt	Wound healing, non-abortifient, swollen joints	- - -
256	<i>Lygodium flexuosum</i> Sw.	Madnich-tana	Lv	Arthritis	- - -

flowers, seed or whole plants and exudes like-resins, mucilage, latex have been used. Germplasm of important medicinal plants has been maintained in live or dry forms at the Agharkar Research Institute, Pune 411 004.

## DISCUSSION

Mahadeokoli tribe has been using 256 medicinal plants in their traditional health care system. Most of them have been collected from the adjoining forest areas and few of them like - *Tagetes erecta* L., *Ocimum sanctum* L., *Nicotiana tabacum* L., *Curcuma longa* L., *C. zedoaria* Rosc., *Aloe barbadensis* Mill. have been cultivated in

their kitchen gardens. During survey, it was noticed that *Rauwolfia serpentina* (L.) Benth. ex Kurz., a commercially important medicinal plant, was extensively used as a source of reserpine administered on hypotensive conditions and also in mental disorders, has been grown in their kitchen gardens for instant use.

Information on commercial exploitation of medicinal plant species obtained from pharmaceutical industries and from Mahadeokoli's indicated that 80 plant species are commercially exploited from forest resources. Genetic diversity of *Abrus precatorius*, *Celastrus paniculatus*, *Bombax ceiba*, *Cissampelos pareira*, *Costus speciosus*, *Helicteres*

*isora*, *Woodfordia fruticosa*, *Sapindus laurifolius*, *Schleichera oleosa*, *Oroxylum indicum*, *Stereospermum personatum*, *Emblica officinalis*, *Ricinus communis*, *Ficus racemosa*, *Ficus religiosa*, *Butea monosperma*, *Pterocarpus marsupium*, *Cassia fistula*, *Anogeissus latifolia*, *Terminalia bellirica* used in pharmaceutical industries as well as in tribal medicines has been documented. Rao (1990) stressed the need of strengthening fragile ecosystem by protecting the landscape and by conserving the biodiversity. This can be achieved by motivation to the local and traditional inhabitants in India. Arora and Engels (1993) emphasised on germplasm collection of medicinal plant resources while collecting ethnobotanical information from tribal pockets which has immense value.

Variability in the species is to be studied by population sampling and hunting for material in bulk quantities. Directories of germplasm collection have to be maintained which will supplement the information on collection and management to the cultivators, breeders and users. Germplasm of 34 medicinal plant species has been collected during the survey. Different tribal communities like Mahadeokoli have a knowledge of medicinal plant resources and their local uses that needs to be tapped and assessed. A multidisciplinary team embodying botanists, anthropologists, biochemists and geneticists would prove rewarding in this difficult task of conservation of genetic diversity

and wealth of knowledge inherited by the tribal communities in India.

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