



TRADITIONAL USES OF MEDICINAL PLANTS BY TRIBAL AND RURAL FOLK FROM MULA RIVER VALLEY OF RAHURI AND ITS ADJOINING AREA OF PARNER AND SANGAMNER TAHSILS OF AHMEDNAGAR DISTRICT (M.S.).**ABHANG A.R.*¹, PATHARE S.A.² AND ROHOKALE P. G.³**^{1,2} Arts, Science and Commerce College, Rahuri. -413 705 (M.S.) India³ Nanotech Laboratory, Dept. of Chemistry, Shri Shivaji Science College, Amravati (M.S.) India.**ABSTRACT**

The Mula river valley of Rahuri, Parner and Sangamner tahsils is rich in medicinal and economically important plants. Various plants were used by the tribal and rural folk to cure diseases since long back. Keeping this view in mind, survey of medicinal plants from mula river valley of Rahuri, Parner and Sangamner tahsil was carried out in 2011 -2013. The Mula river valley is known for tribal region and different tribal communities such as Thakar, Mahadev koli, Bhill and Dhangar. The tribal of the study area depends on the herbal drug for their primary health care that is attributed partly to their socio-economic and cultural background. During the study, altogether 86 species of Angiosperms belonging to 39 families were collected, their local uses were overviewed.

KEY WORDS: Mula river valley, Medicinal plants, Folk and Tribals

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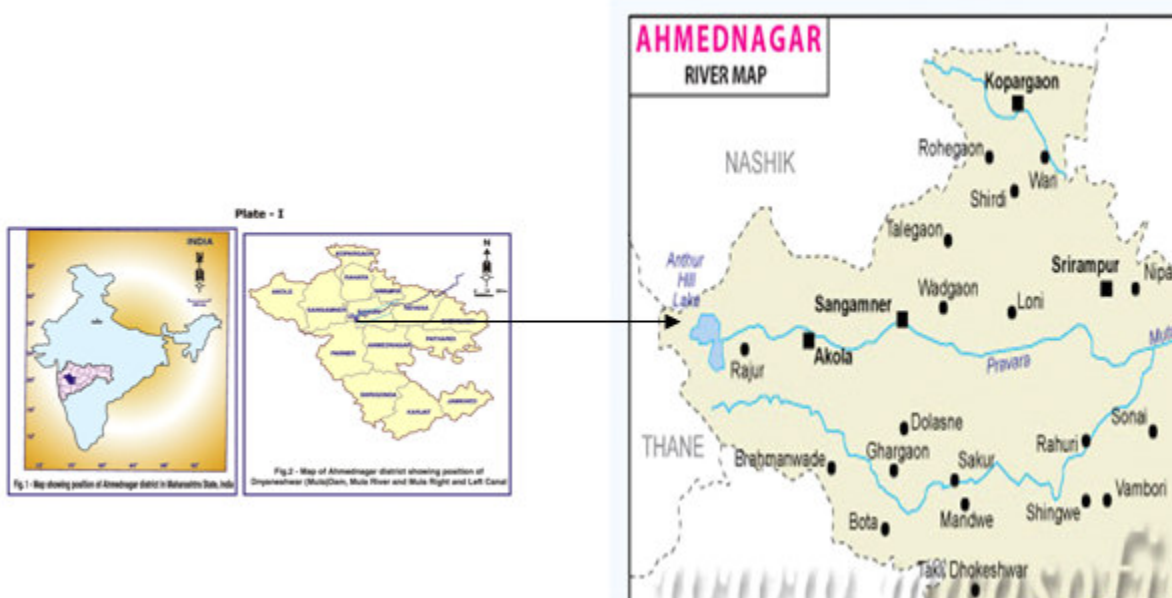
INTRODUCTION

In India medicinal plants have been traditionally occupied an important position in the socio cultural and spiritual arena of rural and tribal lives. The medicinal plants are potential renewable natural resources. According to an estimate between 35,000 and 70,000 species are used in folk medicine worldwide. Though the Indian traditional systems of medicine are time tested and practiced successfully since a long back. The products from hundreds of species are being collected from remote forest and meadows and traded to international market and consumed. About 70 to 80 % of world population use traditional medicine for curing their illness and ailments. India is one of the mega-biodiversity hot spots of the world and has two recognized hot spot, the Himalayas and the Western Ghats has approximately 5800 species, out of which 33 % of the species are endemic²¹. About 3500 species are reported from Western Ghats of Maharashtra. Mula river valley is the part of Western Ghats and supports a good natural wealth of medicinal plants. The vegetation has not yet been fully surveyed for their medicinal aspects. Therefore, necessity was felt to conduct survey of medicinal plants from the study area. Medicinal uses of plants in different diseases from different areas has been reported earlier.^{7,8,15,18,2,16,1,23.}

STUDY AREA

The Mula river rises on the eastern slopes of the Sahyadri between Ratangad and Harishchandragad and draining to the Southernmost Kotul valley of Akole sub-division. Then it crossed through Sangamner and Parner tahsils of Ahmednagar district. Dnyaneshwar dam is constructed across the river at Baragaon Nandur (fig.1). The Mula river valley region is situated at 19° 21' North latitude and 73°41' Eastern longitude in Ahmednagar district (M.S). Topographically the area can be divided in the plains and hills with its different flora. The study area covers villages and hamlets (Tarwadi, Jambhali, Wavrath, Agrewadi, Daradgaon, Tas, Chikhalthana, Mandave, Sakur, Ghargaon, Ambi, Kolewadi, Thakarwadi and Baragaon Nandur). It has somewhat dry climate condition, with mostly red-brown rocky soil with rich treasure of the medicinal plants. The area is inhabited by number of tribes like Thakar, Bhill, Mahadev-koli, Dhor and Dhangar. Most of the herbal medicines traditionally used to cure the different ailments. The survey was undertaken because Rahuri and its adjoining area have many rare and endemic species which are having great medicinal properties.

Figure 1
Map showing position of Mula river valley



MATERIALS AND METHODS

The present investigation was carried out from the Mula valley during 2011 to 2013. Traditional medicinal plants were used by tribal people in various regions of Mula river valley was collected. The usual personal observations and oral interviews were done. The discussion was held with villagers, tribals, Bhagat's and medicine men who have knowledge about visible plants of that region. Plant Markets and tribal villages (Baragaon Nandur, Daradgaon, Chikhalthana, Sakur, Ghargaon) were also surveyed. The plant species were collected and herbarium sheets were prepared by traditional methods. The plant species were identified with the help of floras.^{19,21,5,17,22} The information on the collected species were recorded for their medicinal uses by using documents available.^{13,4,25,12,9,10,14,3,6,11,24,20} Information was collected from local informants also. A total 86 medicinal plants were listed which are serially arranged as per their alphabetical botanical names, their family, local name, plant part used and medicinal uses.

RESULTS AND DISCUSSION

During the investigation, it was found that 86 plants species belonging to 77 genera and 39 families were using as an herbal medicine for the treatment of various diseases. These are herbs, shrubs, climbers, small and large trees. The survey provides evidence that the tribal people and other villagers residing in the Mula river valley and its adjoining area uses about 86 plant species for the treatment for various ailments and house hold uses. The people of this area possess tremendous knowledge of herbal drugs and their healing properties for the different ailments. The plants were generally used for curing various diseases like cold, cough, fever, diarrhea, dysentery, diabetes, skin diseases, various kidney diseases, antidote for poison, snake bite, jaundice, wound, blood purifier, tooth gum, indigestion, stomach ache, inflammation, bronchitis and asthma. For the benefit of tribal, the reported plants species should be taken care and also steps be taken for their conservation as well as cultivation. Further investigation at biochemical level are

needed to ascertain the active principles present in the plants before recommending them to use the elite.

Table 1
List of medicinal plants used in the Mula river valley of Ahmednagar district.

Sr No.	Botanical Name	Family	Local Name	Plant Part Used	Medicinal Uses
1	Abrus precatorious L	Fabaceae	Gunj	Leaves	Chewing with betel nut leaves as a good appetizer and mouth ulcer. It also used on chronic inflammation of eyes, intestinal worms and skin diseases
2	Abutilon indicum (L) Sweet .J	Malvaceae	Mudra	Seeds Leaves and Roots	Leaves used for regular menstrual cycle and dyspepsia. Its leaves with E. tirucalli used in case of piles.
3	Acacia catechu (Linn. F) Willd	Mimosaceae	Khair	Leaves, Wood Gum, Bark	Paste of young tender leaves cure malignant. Twig used to cure teeth trouble. Root is applied on skin diseases.
4	Acacia nilotica (L.) Wild	Mimosaceae	Babhul	Leaves, Wood , Gum, Bark	The raw gum obtains from stem used as cooling, healing and astringent properties .It is used in the treatment of diarrhea, dysentery and diabetes. Stem and bark powder with common salt applied on teeth and gum to stop offensive smell of mouth
5	Achyranthes aspera L.	Amaranthaceae	Aghada	Root and Leaves.	The root powder is used in dysentery. Root decoction used in scorpion stings. Root ash is given to children in cough. Leaf Juice drops puts in nostrils to cure headache..
6	Adathoda vesica Nees	Acanthaceae	Adulsa	Leaves	Extract of dried leaves used as expectorant Juice of fresh leaves given to relieve of cough and cold.
7	Amaranthus spinosus L.	Amaranthaceae	Katemath	Root	Its root juice is used for diarrhea and dysentery.
8	Aloe vera (L.) Barm	Liliaceae	Korfad	Leaves	Juice of roasted leaf is given for cold, cough and fever. Aloe - gel is used in cosmetics to remove wrinkles and skin diseases, and as remedy for burns. Leaf juice with ginger juice is used to cure acute indigestion and jaundice.
9	Argemon mexicana L.	Papavaraceae	Bilayat/ Pivala Dhotra	Whole Plant	It is used in dental disorder. Root and stem extract in renal infection. Stem latex is used in dropsy jaundice and eye infection.
10	Azadirachta indica A. Juss	Meliaceae	Neem	Whole Plant	It is used in burning sensation near the heart, fever, cough, ulcers, and inflammation. Leprosy, skin- disease, to expel the worms and as diuretic
11	Bacopa monnieri L.	Scrophula -riaceae	Brahmi	Whole Plant	Used in bone fracture, improvement of mental functions, promotes memory and urinary disorders. It also used as a diuretic, blood purifier and laxative
12	Barleria prionitis L	Acanthaceae	Kate-	Leaves ,	Roots are used as ingredient of tooth

			korenty	Roots	powder; leaves are used in cold, fever pains in teeth.
13	Bombox ceiba L.	Bombacaceae	Kateri savar	Whole Plant	Roots are used in dysentery, cooling and stimulant, gum is used in dysentery, influenza. Seeds are used in gonorrhoea.
14	Boerhaavia diffusa L.	Nyctagi naceae	Punarnava	Whole Plant	Roots are laxative and used in asthma jaundice and dropsy .Hot water extract is used in urinal and respiratory problems, cough bronchitis, fever and purification of blood.
15	Butea monosparma (Lam Taub)	Fabaceae	Palas	Whole plant	Flower and leaves used on boils. pimples , colic worms and piles, Seed and gum used on diarrhea. Bark is used on snake bite.
16	Bidens pilosa L..	Asteraceae	Chorpushpi	Whole Plant	Plant used in anti septic, ulcers, swollen glands, cough, eye and ear trouble.
17	Cadaba indica Lam. LQR	Capparidaceae	Habab	Leaves and root	Used in uterine obstruction.
18	Calatropics procera R.Br.	Asclepiadaceae	Rui /Madar	Whole plant	Flowers used in cold, cough and asthma. Powdered root bark used in dysentery fresh leaves in ulcer and such as wormicidal.
19	Carissa carandus L..	Apocynaceae	Karvandi	Root Latex	Decoction of root is given to woman to relieve from delivery pain after child birth. Latex is applied on lips to protect them in winter.
20	Caralluma edulis Benth	Asclepiadaceae	Makad -shingodi	Whole plant	Stem crushed in water and administered orally to the cattle and sheep in foot and mouth disease. While Plant is used on stomachache indigestion and jaundice
21	Cassia tora L.	Caesalpineaceae	Takala	Leaves , Root seeds	Leaf and seed used in skin disease for ring worm and itch. Roots are used on snake bite.
22	Cassia auriculata L.	Caesalpineaceae	Tarwad	Leaves	Leaves used as poultice, roots are aromatics and used on skin disease.
23	Cardiospermum halicacabum L.	Sapindaceae	Kapalphodi	Whole plant	It used in strangury, fever, lumbago, arthritis otalgia and ophthalmodynia, amenorrhoea and neuropathy.
24	Celocia argentea L.	Amaranthaceae	Kurdu	Seeds	Seeds as are used to dissolve urinary stones.
25	Ceropegia bulbosa Rorb.	Asclepidiaceae	Kandil/ Hamankanda	Tuber	Used in colds, eye diseases and to cause sneezing.
26	Ceropegia tuberosa Rorb.	Asclepidiaceae	Parala - tumbadi	Tuber.	Used in diarrhea, dysentery inflammations, fever tonic and bowel complaints.
27	Cocculus hirsutus (L.) Diels.	Menisper –maceae	Wasanvel	Leaves	Leaf Juice used externally in eczema and impetigo.
28	Cleome viscosa L.	Capparaceae	Pivali tilwan	Leaves , seeds	Leaf juice is used for ear trouble. Seeds are carminative and antihelmintic
29	Commelina benghalensis L.	Commelinaceae	Kena	Whole plant	Plant used on leprosy diuretic, febrifuge and anti inflammatory.
30	Croton tiglium L.	Euphorbiaceae	Jamalgota	Seeds	Seeds are used on asthma Bronchitis, Paralysis and gout.
31	Cryptolepis buchanani R.andS.	Asclepidiaceae	Medvad	Root latex	Latex is applied on goiter .Root paste is applied over fracture.
32	Carculigo orchioides Gertrn.	Hypoxidaceae	Kali musali	Tuber	Dried tubers are used for the treatment of sexual impotency. It is used in urinary and venereal disease, and as a general health tonic.
33	Curcuma arometica (Salish)	Zingiberaceae	Ranhalad	Rhizome	Root and stem are used as torrid and help in digestion. It also used for blood purification, on swelling and bone fractures.
34	Cyperus rotundus L.	Cyperaceae	Lavhala/ Nagarmotha	Rhizome	It is used on nausea, fever, inflammation pain reduction , muscle relaxation, on wounds, bruises, carbuncles etc.
35	Daemia extensa R.Br.	Asclepiadaceae	Utrandi	Leaves	Leaves are used to cure asthma,

					diarrhea, cough and intestinal worms on swelling and rheumatic joints.
36	Datura metal L.	Solanaceae	Kala-dhotara	Whole Plant	Leaf juice applied in wounds ulcers and skin diseases.
37	Dicrostachys cinerea (L) WQA	Mimosaceae	Segumkati	Roots	Roots are used externally in rheumatism , diseases of vagina and uterus pain in joints and eye trouble
38	Derris scandens	Fabaceae	Garud vel	Leaves stem	Leaves and stem are used for the protein and blood purification.
39	Echinops echinatus Roxb.	Asteraceae	Utkatar	Flower and seeds	Used in wounds of cattle and destroy maggots.
40	Eclipta alba Hassk	Asteraceae	Maka	Whole plant	Entire plant given as tonic in spleen enlargement and leaf juice used in eczema and as hair tonic.
41	Euphorbia hirta L.	Euphorbiaceae	Dudhani	Whole plant	Sap is applied on cuts and wounds. Entire plant used in bronchial affections, cough and asthma.
42	Euphorbia nerifoliata L.	Euphorbiaceae	Saver	Stem	Latex is tapped from stem and homogenized in mother's milk, it is given orally to a baby at night for stomachache..
43	Ficus exasperata Vahl.	Moraceae	Bhuiumber	Bark	Bark is boiled in water and the filtrate is given to promote fertility in women.
44	Ficus benghalensis L.	Moraceae	Vad	Stem Latex	Latex of the plant is used to treat dysentery diarrhea , piles tooth - decay and skin diseases
45	Ficus glomerata Roxb.	Moraceae	Umber	Whole plant	The leaves of these species are astringent and used as a mouth wash for spongy gums. Latex of the stem is useful in the treatment of piles and diarrhea. Fruits are edible, astringent and carminative. They are useful in relieving stomachache.
46	Ficus religiosa L.	Moraceae	Pipal	Whole plant	Leaf Juice applied on bleeding from nose. Decoction of bark is given to treat gonorrhoea and scabies. Fruits are used as a laxative.
47	Gloriosa superba L.	Liliaceae	Kal - javi	Rhizome	Root paste with mustard oil is used for curing periodic fever. Leaf paste applied on the forehead and neck for curing asthma of children. Leaf extract is given internally to cattle to kill ring worms. Useful in promoting liver pain and expulsion of placenta.
48	Gynandropsis pentaphylla D.C.	Capparidaceae	Pandhari -tilvan	Leaves and seeds	Paste of leaves is applied externally to boil, to prevent pus formation. Seeds are internally given for expelling round worm.
49	Hemidesmus indicus (L) Schultes	Asclepiadaceae	Anantmul	Entire plant	Root powder is taken internally for urinary troubles. Root paste is taken internally on snake bite. It is also used in the treatment of fever, diabetes, cough and blood disorders.
50	Hibiscus aculeatus Roxb.	Malvaceae	Ambadi	Fruit	Fruits used in scurvy and inflammation during urination. Fruits well for Levering acidity.
51	Helicteres isora L.	sterculiaceae	Murud sheng	Bark, root, fruit	Bark power is given in snake bite. Smooth paste is prepared by rubbing fruits and given internally for flatulence and colic in children. Decoction of roots is taken internally for diabetes.
52	Hygrophilla spinosa [Tand]	Acanthaceae	Talimkhana	Leaves, seed	Leaves and seeds are used in jaundice.dropsy rheumatism and urinogenital disorder. Seeds taken internally along with milk which acts as aphrodisiac.
53	Jatropha curcas L.	Euphorbiaceae	Mogli yerand.	Whole plant	The young twigs used as tooth brush in gum disease. The seed oil is used in muscular pain and body swellings.

					Fresh root powder with black pepper and small amount of asafoetida powder is taken internal for flatulence and dysentery.
54	Justicia adhatoda L.	Acanthaceae	Adulsa	Leaves	Leaf decoction is used in cough bronchitis and rheumatism.
55	Kalanchoe pinnata (Lank) Pers	Crassulaceae	Panfuti	Leaves	Leaves are eaten to avoid urine stone formation. Crushed leaves are used in case of wound healing
56	Kyllinga triceps Rottb.	Poaceae	Mustu	Leaves	This species used in healing of wounds , regulate body heat and to treat nervous trouble and disease of blood.
57	Lantena camera L.	Verbinaceae	Ghaneri	Leaves and Flowers	Leaf and fruits consumed in diabetes, anti malarial diaphoretic, carminative and antispasmodic.
58	Lawsonia inermis L.	Lythraceae	Mehendi	Leaves and seeds	Powdered leaves applied on leg heat and heel cracks. Seeds useful in urinary troubles.
59	Luffa acututagula (L)	Cucurbitaceae	Kadu dodaka	Fruits	Used in stomach disorder.
60	Macrotyloma uniflorum (Lam) Verde	Fabaceae	Kulith	Entire plant	Decoction of kulith is used to release placenta in case of women after child birth. Seeds are used as antihelmintic ..
61	Ocimum americanum L.	Lamiaceae	Ran tulas	Whole Plant	Leaf decoction is given in malaria and abdominal diseases. The plant is boiled and used against hepatitis, cough,bronchitis and gastric disorders.
62	Opuntia elatior Mill.	Cactaceae	Nagphani	Fruits	Baked fruit is given in whooping cough and syrup of the fruit increases secretion of bile.
63	Plumbago zeylanica L.	Plumbaginaceae	Chittrak	Entire Plant	It is used in the treatment of intestinal disorder, skin disease and rheumatism.
64	Pongamia pinnata (L) Pirre	Fabaceae	Karanj	Bark and seeds	Bark powder is pasted on the wounds of animals for healing .Oil extracted from seeds is used for skin disease.
65	Psoralea corylifolia L.	Fabacea	Bavachi	Seeds	Seed Powder or paste is used in leprosy and inflammatory disease of skin
66	Phyllanthus niruri L.	Euphorbiaceae	Bhuiawala	Whole Plant	It used in skin disease. Fruit for diabetics, dysentery ,stomach and genitourinary
67	Rauwolfia Erpentina (L)Benth`	Apocynaceae	Sarpagandha	Root leaf	Used in hypertension and stomach problems. Leaf juice is used as remedy for opacity of cornea.
68	Ricinus communis L.	Euphorbiaceae	Yerandi	leaves and root	Fresh juice of Leaves is given in the treatment of jaundice. Paste of root is applied to the waist to get relief from pains.
69	Ruta chalepensis L.	Rutaceae	Satapa	Leaves	Smell the leaves in case of cough and fever.
70	Sida acuta Burm F.	Malvaceae	Bala Chikana	Root	Crushed roots applied on boils to suck out the pus. Roots are used orally in nervous and urinary disorder and bowel complaints.
71	Sapindus emarginatus Vahl.	Sapindaceae	Ritha	Fruit	Fruit powder used to as soap and antiseptic.
72	Solanum xanthocarpum Schard & Wendi	Solanceae	Bhui ringani	Leaves	Fresh leaves extract of this species is given in case of respiratory disease and dropsy, also used in the treatment of gonorrhoea and snake bite.
73	Tephrosia purpurea (L.) Pers.	Fabaceae	Unhali	Whole plant	Decoction of tender is administered to the diabetic patient. The species also used in inflammation, skin disease, scrofula, elephantiasis, flatulence, stomach pains.
74	Terminalia arjuna (Q C)wt g AM	Combraetaceae	Arjun	Bark	The bark of this species is used as a blood purifier, astringent, febrifuge and as a coolant and cardiac stimulant. Bark decoction with Cows milk given in chest pain and heart

					palpitation.
75	<i>Terminalia bellierica</i> Roxb.	Combrataceae	Behada	Fruit	Dried fruit is used in the treatment of cough, fever, indigestion, dropsy, piles. And powder is used as "triphala churn"
76	<i>Terminalia tomentosa</i> L.	Cambrataceae	Ain/Sadada	Leaf	Leaf juice is used on fresh cuts to stop bleeding and to cure wound.
77	<i>Tinospora cordifolia</i> (Wild) Miers	Menispermaceae	Gulvel	Root	Stem used stomachache antispasmodic, anti-inflammatory, diuretic, antidiabetic. Root extract is used in fever, cold cough, as blood purifier, in acidity and jaundice.
78	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Gokharu/ sarata	Whole plant	Fruit is cooling agent diuretic and used micrutition, impotency and urinary disorders. Paste prepared from leaves is used for treatment of stones in bladder.
79	<i>Tridax procumbens</i> L.	Asteraceae	Ekadandi/ Tuntuni	Leaves	Fresh juice of leaves is applied to wound.
80	<i>Urginia indica</i> Kunth	Liliaceae	Rankanda	Whole plant	The species used in hypertension and to regulate menstrual periods.
81	<i>Vernonea cinerea</i> (L) Less.	Asteraceae	Sahadevi	Whole plant	Herb in fusion makes combination with quinine in malaria. Leaf decoction given orally in diarrhea and stomach ache, cough and colic.
82	<i>Vitex negundo</i> L.	Verbinaceae	Nirgudi	Leaves	Leaves used as a poultis on inflammation, the bark is boiled and the water is drunk in case of typhoid and malarial fever.
83	<i>Withania somnifera</i> Dunal	Solanceae	Ashwagandha	Root and leaves	Leaves used in skin diseases face wash lotion and roots as tonic.
84	<i>Woodfordia fruticosa</i> (L) Kurz	Lythraceae	Dhayti	Leaves and flowers	Alcoholic, used as a tonic. The powder flower is used externally on sores and ulcers.
85	<i>Wrightia tinctoria</i> R. Br.	Apocynaceae	Kalakunda	Bark and seeds	Bark powder mixed with curd and given to dissolve stones in gallbladder. Bark and seeds are used in jaundice and to protect liver.
86	<i>Xanthium strumarium</i> L.	Asteraceae	Landga	Leaves and Fruits	Leaves and fruits of this species used to treat skin and bladder infections, to stop bleeding from cuts, and abrasions, tuberculosis, herpes and small pox.

CONCLUSION

The present investigation proved that the tribal people and other villager residing in Mula river valley region use about 86 plant species for the treatment of various ailment and house hold uses. The tribal people depend mostly on herbal medicines. As the villagers of this area are mostly tribal and illiterate and have no knowledge how to conserve the plants and the methods of applications. It is an appropriate

time to acquire and preserve such traditional system of medicine and by proper documentation and identification of plant specimens. This will help in their conservation through cultivation and to reduces the pressure to over- exploitation from natural habitats. Thus, there is an urgent need for conservation and cultivations of medicinally important plants.

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