

Medicinal plant diversity of Maharashtra with special reference to endemism

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Maharashtra state, with its varied climate, soil and phytogeography, supports a rich medicinal plant heritage. Since time immemorial, most of the plants are being used by local and tribal people of the state as herbal remedy for different diseases. The present paper deals with 150 materials of 136 plant species collected from Maharashtra state showing various biological activities during primary screening programme. Of these, 21 materials have already confirmed their activity, in the follow up study. However, 29 plant species showing biological activity, are endemic to India. Plant species described in this paper provide correct botanical name, part screened, collection period, locality and important biological activity.

Key-words — Endemic plants, medicinal plant, Maharashtra.

INTRODUCTION

MAHARASHTRA state covers a larger part of Indian Peninsula, lying between latitude 16⁰4'-22⁰1' north and longitude 72⁰6'-80⁰9' east. It is about 800 km east-west and 700 km north-south, covering an area of 3,07,690 sq km. The state is bounded on the west by the Arabian sea, on the north-west by Gujarat, on the north by Madhya Pradesh, on the south-east by Andhra Pradesh and on the south by Karnataka and Goa. Physiographically, the state is divided into 5 divisions, viz., Konkan, Deccan or Desh, Khandesh, Marathwada and Vidharbha. Presently the state has been divided into 34 districts. The drainage system of the state is fed by six major river systems, viz. Narmada-Tapi-Purna, Wardha, Godavari, Bhima, Krishna and Hiranyakeshi or Ghatprabha. The climate of the state is monsoonal.

Due to varied geographical areas and phytogeographic regions, like north Western Ghats including Sahyadri range of hills, a long stretch of coastal region and remaining plain lands, the state harbours a rich biological diversity. Western Ghats is one of the megacentres of endemism in India. Out of 6500 species of flowering plants occurring in Peninsular India, 1750 species and 144 infraspecific taxa have been reported to be endemic to the region. Majority of these endemics are palaeoendemics. Western Ghats provide shelter to 4500 species of flowering plants of which

1720 species and 135 infraspecific taxa are endemic. The Maharashtra state possesses about 3500 species of flowering plants. Over 500 species and 45 infraspecific taxa endemic to Peninsular India occur in Maharashtra of which 130 species and 12 infraspecific taxa are known only from this state. Out of these 142 taxa, 8 taxa are possibly extinct, 53 taxa are critically endangered, 41 taxa are endangered, 20 taxa are vulnerable, 6 taxa are low risk and 14 taxa are data deficient (Mishra & Singh 2001).

Maharashtra state, with its Sahyadri ranges and Konkan region, is also considered as veritable emporium of medicinal plants. The tribal people of the state mostly rely on traditional medicines directly based on plant materials. The therapeutic value of some of these herbs is mentioned in 'Rig Veda' (3500-1800BC), which seems to be the earliest record of use of plants in medicine. A more detailed account however is available in 'Atharv Veda'. Then come 'Charak Samhita' (1000-800BC) and 'Susruta Samhita' (800-700BC).

In recent years, the indigenous system of medicine, viz. Ayurveda, Siddha and Unani, are getting more importance because almost every allopathic treatment has side effects. There are also some diseases like jaundice, asthma, etc. which have no proper medicine in allopathy system. Important contributions in medicinal plants of Maharashtra were made by Agharkar (1953), Vartak (1959), Janardhanan (1964,

1965), Malhotra and Moorthy (1976), Ved Prakash and Mehrotra (1987), Deokule and Megdum (1992), etc.

The Central Drug Research Institute has initiated a programme of collection and screening of plants for biological activity in 1963. The objective of this programme is to find out sources of the biologically active compound which can be developed as drug or to discover the lead molecules that can be modified through chemical procedures into useful drugs. This is a multidisciplinary research work that involves collaborative participation of botanists, phytochemists, pharmacologists, toxicologists, clinicians and biologists from other disciplines such as parasitology, microbiology, virology, reproductive biology, etc., depending upon the biological screens to be carried out, the type of biological activities observed during primary screening and nature of the drug to be developed.

MATERIAL AND METHOD

Since the inception of the biological screening programme in 1963, 215 plant species have been collected and screened from Maharashtra state for the evaluation of their biological activity. The dried plant sample is powdered and extracted with ethanol (80%) and other organic solvents for screening of various types of biological activity (Dhar *et al.*, 1972, 1974, 1998). The extracts of these plants put through a broad spectrum of biological screens comprising about 100 *in vitro* and *in vivo* test systems for antiamebic, antibacterial, anticancer, antifertility, antileishmanial, anti-malarial, antiviral, hypolipidaemic and pharmacological activities. Plants found to be active are collected in bulk quantity for detailed chemical and biological investigations with a view to get active fractions and pure compound for toxicity studies and clinical evaluations.

Of the 215 species collected and screened from Maharashtra state, activity is observed in 150 materials of 136 species in primary screening. These biologically active plants have been enumerated alphabetically in Table 1. Each species is provided with its correct botanical name, family, part collected, locality of collection, collection period and biological activity found. The plants that are found biologically active in follow

up secondary screening are denoted by * and the medicinal plants which are endemic to Maharashtra state are marked by **. The voucher herbarium specimens of the plant species enumerated are preserved in the Medicinal Plant Herbarium of the Central Drug Research Institute (CDRI), Lucknow.

DISCUSSION

Out of 150 materials of 136 species from Maharashtra state that show activity in primary biological screening, 21 species have been confirmed for activity in the follow up secondary screening. Total number of endemic plants screened from this state is 46, of which 29 are biologically active. There are 61 plant materials which show activity on central nervous system (CNS), 37 on cardiovascular system (CVS) and 35 on isolated tissue. However, anticancer activity is observed in 20 materials, antiviral in 24, antiprotozoal in 11, anti-inflammatory in 3, anthelmintic in 3, antifertility in 5, diuretic in 27 and hypoglycemic in 15 materials.

It is already mentioned that the Western Ghats is one of the megacentres of endemism. Hence, there is ample scope to get important activities through the screening of the endemic plants which have not been explored much. However, during exploration one should always be conscious about the biodiversity of that region which should not be disturbed. Hence, it is advisable to collect a very few plants from the natural habitats, cultivate them in *in vitro* condition for screening purpose, particularly during secondary screening when bulk materials are required. However, it may not be possible to cultivate some plants in artificial condition or sometimes cultivation is possible but activity may not be found in such plants due to changed habitat and climatic conditions. In such cases collectors should be extremely careful while collecting the plants from natural condition. Only highly experienced scientists should be allowed for this purpose.

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Table1. Biological activity of plants collected from Maharashtra, in primary biological screening at CDRI

Sl. No.	Name and family	Part screened	Collection period & locality	Biological activity on
1	<i>Abutilon persicum</i> (Burn.f.) Merr. (Malvaceae)	PX	January, Khandala	Antifertility
2	<i>Acanthus ilicifolius</i> L. (Acanthaceae)	PX	December, Vengurla	Cardiovascular system and diuretic
*3	<i>Actinodaphne angustifolia</i> Nees (Lauraceae)	LF	October, Mahabaleshwar	Cardiovascular system and isolated tissue
*4	<i>Adelocaryum coelastinum</i> (Lindl.) Brand. (Boraginaceae)	PL	September, Amboli	Diuretic
*5	<i>Aglaia odoratissima</i> Blume (Meliaceae)	PX	September, Ratnagiri	Anticancer
6	<i>Allophyllus serratus</i> (Roxb.) Radlk. (Sapindaceae)	PX	September, Ratnagiri	Cardiovascular system and CNS
7	<i>Alstonia scholaris</i> (L.) R. Br. (Apocynaceae)	SB	March, Pune	Cardiovascular system and anticancer
8	<i>Anacardium occidentale</i> L. (Anacardiaceae)	LF	March, Pune	Hypoglycemic and anticancer
*9	<i>Argyreia hookeri</i> Cl. (Convolvulaceae)	PL	September, Ratnagiri	Cardiovascular system and CNS
*10	<i>Arundinella metzii</i> Hochst. ex Miq (Poaceae)	PL	October, Amboli	Anticancer
11	<i>Atalantia racemosa</i> Wt. & Arn. (Rutaceae)	RT	October, Amboli	Antiviral
12	<i>Atalantia racemosa</i> Wt.& Arn. (Rutaceae)	PX	March, Khandala	Antiviral
13	<i>Avicennia marina</i> ssp. <i>acutissima</i> Stapf & Moldenke (Verbenaceae)	PX	December, Vengurla	CNS
14	<i>Bauhinia racemosa</i> Lamk. (Caesalpinaceae)	SB	March, Pune	Cardiovascular, system CNS and anticancer
*15	<i>Blumea malcolmii</i> (Cl.) Hook.f. (Asteraceae)	PL	February, Khandala	Diuretic
16	<i>Bombax insigne</i> Wall. (Bombacaceae)	SB	February, Khandala	CNS
17	<i>Boswellia serrata</i> Roxb. ex Coelb. (Bursaraceae)	RT	March, Pune	CNS and anticancer
18	<i>Boswellia serrata</i> Roxb. ex Coelb. (Bursaraceae)	FR	March, Pune	Cardiovascular system and hypoglycemic
19	<i>Boswellia serrata</i> Roxb. ex Coelb. (Bursaraceae)	ST	March, Pune	Hypoglycemic
20	<i>Bridelia squamosa</i> (Lamk.) Gehrm. (Euphorbiaceae)	PX	March, Khandala	Cardiovascular system, CNS and Antiviral
**21	<i>Caesalpinia spicata</i> Dalz. (Caesalpinaceae)	PX	September, Ratnagiri	Cardiovascular system and CNS
22	<i>Calicarpa lanata</i> L. (Verbenaceae)	PX	March, Khandala	CNS
23	<i>Calotropis gigantea</i> (L.) R. Br. ex Ait. (Asclepiadaceae)	RT	March, Pune	Isolated tissue and anticancer
24	<i>Calotropis gigantean</i> (L.) R. Br.ex. Ait. (Asclepiadaceae)	LF	March, Pune	Anticancer
25	<i>Cansjera rheedii</i> Gmel. (Opitiaceae)	PX	March, Khandala	Isolated tissue
26	<i>Canthium dicoccum</i> (Gaertn.) T. & B. (Rubiaceae)	SB	January, Amboli	Antiprotozoal
27	<i>Capparis longispina</i> Hook. f. & Th. (Capparaceae)	PX	April, Mahabaleshwar	Antiviral and isolated tissue
28	<i>Capparis moonii</i> Wt. (Capparaceae)	PX	March, Khandala	CNS
29	<i>Capparis rotundifolia</i> Rottl. (Capparaceae)	PX	September, Ratnagiri	Cardiovascular system and CNS
*30	<i>Carissa inermis</i> Vahl. (Apocynaceae)	PX	September, Ratnagiri	Cardiovascular system and CNS
**31	<i>Carvia callosa</i> (wall.) Bremek (Acanthaceae)	PX	September, Amboli	CNS and diuretic
32	<i>Casearia ovata</i> (Lamk.) Willd. (Flacourtiaceae)	PX	September, Amboli	Anticancer
33	<i>Cheliantes farinose</i> Kaulf. (Pteridaceae)	PL	September, Ratnagiri	CNS and isolated tissue
34	<i>Cinnamomum iners</i> Reinw. (Lauraceae)	PX	September, Ratnagiri	CNS and isolated tissue, Anthelmintic and antiviral
35	<i>Cissus discolor</i> Bl. (Vitaceae)	PL	September, Savantwadi	Diuretic
36	<i>Cissus trilobata</i> Lamk. (Vitaceae)	PX	December, Amboli	Diuretic
*37	<i>Clematis hedysarifolia</i> DC. (Ranunculaceae)	PX	October, Khandala	CNS
*38	<i>Commelina undulata</i> R.Br. (Connaraceae)	PX	October, Amboli	Anticancer and diuretic

39	<i>Connarus monocarpus</i> L. (Connaraceae)	PX	September, Ratnagiri	Cardiovascular system, CNS and antiviral
*40	<i>Costus speciosus</i> (Koen.) J.E. Sm. (Zingiberaceae)	PL	September, Ratnagiri	Cardiovascular system, CNS and antiviral
41	<i>Crotalaria retusa</i> L. (Fabaceae)	PX	March, Khandala	Isolated tissue and CNS
42	<i>Cucumis callosus</i> (Rottle.) Cogn. (Cucurbitaceae)	PX	October, Khandala	Antiviral
43	<i>Cyanotis cristata</i> (L.) D. Don (Commelinaceae)	PL	October, Amboli	Anticancer
*44	<i>Cyanotis fasciculata</i> (Heyne ex Roth) J.A. & J.H. Schult. (Commelinaceae)	PL	October, Amboli	Anticancer and diuretic
*45	<i>Cyathea gigantean</i> (Wall.) Hol. Hum. Holtt. (Cyatheaceae)	PX	February, Mahabaleshwar	Anti-inflammatory
46	<i>Cylista scariosa</i> Roxb. (Fabaceae)	RT	March, Pune	CNS
47	<i>Cymbopogon jawarancus</i> (Jones) Schult. (Poaceae)	PL	October, Khandala	Isolated tissue
*48	<i>Dalbergia sympathetica</i> Nimmo ex Grah. (Fabaceae)	PX	March, Khandala	Isolated tissue and CNS
49	<i>Derris indica</i> (Lamk.) Bennet (Fabaceae)	LF	February, Khandala	Isolated tissue and cardiovascular system
50	<i>Derris indica</i> (Lamk.) Bennet (Fabaceae)	ST	February, Khandala	Isolated tissue
51	<i>Dimeria gracilis</i> Nees (Poaceae)	PL	December, Amboli	CNS and diuretic
*52	<i>Diospyros candolleana</i> Wt. (Ebenaceae)	SB	January, Amboli	Diuretic
53	<i>Dysophylla stellata</i> Benth. (Lamiaceae)	PL	December, Amboli	Isolated tissue and Diuretic
*54	<i>Dysoxylum binectariferum</i> Hook.f. (Meliaceae)	PX	September, Ratnagiri	CNS
55	<i>Ecbolium viride</i> Forsk. (Acanthaceae)	PL	September, Savantwadi	Cardiovascular system
56	<i>Elaeagnus conferta</i> Roxb. (Elaeagnaceae)	PX	January, Mahabaleshwar	Isolated tissue
57	<i>Elaeocarpus tectorius</i> (Lour.) Poir. (Elaeocarpaceae)	LF	January, Mahabaleshwar	Cardiovascular system
*58	<i>Embelia viridiflora</i> Scheff. (Myrsinaceae)	PX	March, Khandala	Antifertility, diuretic and anti-inflammatory
59	<i>Eragrostis diarrhena</i> (Schult.f.) Steud. (Poaceae)	PL	February, Lonavala	Antiprotozoal, diuretic
**60	<i>Erinocarpus nimmonii</i> Graham (Tiliaceae)	LF	October, Khandala	CNS and antiviral
*61	<i>Erinocarpus nimmonii</i> Graham (Tiliaceae)	SB	October, Khandala	Isolated tissue
*62	<i>Erinocarpus nimmonii</i> Graham (Tiliaceae)	ST	October, Khandala	Antiprotozoal
63	<i>Eriocaulon brownianum</i> var. <i>nilgiriense</i> Fyson (Eriocaulaceae)	PL	December, Amboli	CNS
*64	<i>Ervatamia heyneana</i> Cooke (Apocynaceae)	PX	September, Ratnagiri	CNS
65	<i>Euphorbia longan</i> Steud. (Euphorbiaceae)	PX	September, Ratnagiri	CNS
66	<i>Euphorbia tirucalli</i> L. (Euphorbiaceae)	PX	March, Mahabaleshwar	Antiprotozoal and CNS
67	<i>Ficus hispida</i> L. (Moraceae)	PX	March, Khandala	CNS
68	<i>Ficus virens</i> var. <i>sublanceolata</i> (Miq.) Corner (Moraceae)	PX	October, Khandala	Cardiovascular system
**69	<i>Garcinia indica</i> Choisy (Clusiaceae)	PX	March, Khandala	CNS and antifertility
*70	<i>Garcinia talbotii</i> Raiz. ex Sant. (Clusiaceae)	PX	March, Khandala	Cardiovascular system and antiviral
71	<i>Gardenia turgida</i> Roxb. (Rubiaceae)	FR	April, Pune	Cardiovascular system, antiviral and anticancer
*72	<i>Glochidion hohenackerii</i> Bedd. (Euphorbiaceae)	PX	March, Pune	Cardiovascular system, CNS, hypoglycemic and antiprotozoal
73	<i>Gloriosa superba</i> L. (Liliaceae)	PL	September, Thane	Isolated tissue and CNS
74	<i>Gnetum ula</i> Brongn. (Gnetaceae)	PX	March, Khandala	Cardiovascular system and isolated tissue
75	<i>Grewia tiliaefolia</i> Vahl var. <i>argentina</i> Burret (Tiliaceae)	PX	March, Khandala	CNS and diuretic

76	<i>Gymnema montanum</i> Hook.f. (Asclepiadaceae)	PX	December, Amboli	CNS and isolated tissue
77	<i>Gymnema sylvestre</i> R.Br. (Asclepiadaceae)	PX	April, Mahabaleshwar	Isoalted tissue
*78	<i>Holigarna arnotiana</i> Hook.f. (Anacardiaceae)	PX	September, Savantwadi	Cardiovascular system
79	<i>Hydrolea zeylanica</i> Vahl. (Hydrocharitaceaea)	PL	March, Pune	Antiprotozoal and hypoglycemic
80	<i>Isachne globosa</i> (Thunb.) O. Ktze. (Poaceae)	PL	October, Khandala	Isolated tissue
81	<i>Ischaemum semisagittatum</i> Roxb. (Poaceae)	PL	October, Khandala	Diuretic
82	<i>Ixora arborea</i> Roxb. (Rubiaceae)	PX	March, Khandala	Antiviral
83	<i>Ixora nigricans</i> R.Br. ex Wt. & Arn. (Rubiaceae)	PX	March, Khandala	Isolated tissue and antiviral
*84	<i>Jasminum malabaricum</i> Wight (Oleaceae)	PX	March, Khandala	Cardiovascular system
**85	<i>Knema attenuata</i> (Wall.) Warb. (Myristicaceae)	PX	September, Ratnagiri	CNS
86	<i>Lagerstroemia lanceolata</i> Wall. (Lythraceae)	PX	September, Ratnagiri	Cardiovascular system and CNS
87	<i>Lasiosiphon eriocephalus</i> (Grah.) Dcne. (Thymeleaceae)	RT	March, Pune	Isolated tissue and CNS
88	<i>Lasiosiphon eriocephalus</i> (Grah.) Dcne. (Thymeleaceae)	ST	March, Pune	Antiviral
89	<i>Lasiosiphon eriocephalus</i> Decne. (Thymeleaceae)	SB	April, Mahabaleshwar	Cardiovascular system and isolated tissue
**90	<i>Leea indica</i> (Burm.f.) Merrill (Leeaceae)	LF	March, Pune	CNS, antiviral and hypoglycemic
91	<i>Lepidagathis cristata</i> Willd. (Acanthaceae)	PL	December, Nagpur	CNS
92	<i>Leucas ciliata</i> Benth. (Lamiaceae)	PL	April, Mahabaleshwar	Isolated tissue
93	<i>Ligustrum neilgherrense</i> var. <i>obovata</i> Cl. (Oleaceae)	PX	September, Ratnagiri	Isolated tissue, CNS and anticancer
94	<i>Luvunga eleutherandra</i> Dalz. (Rutaceae)	PX	December, Amboli	Cardiovascular system, isolated tissue and diuretic
*95	<i>Maba nigrescens</i> Dalz. (Ebenaceae)	PX	September, Ratnagiri	Cardiovascular system and antiviral
*96	<i>Maba nigrescens</i> Dalz. (Ebenaceae)	SB	January, Amboli	Cardiovascular system and antiprotozoal
**97	<i>Mallotus stenanthus</i> Muell-Arg. (Euphorbiaceae)	PX	September, Ratnagiri	Anticancer and diuretic
98	<i>Maytenus wightiana</i> C.R. Babu (Celastraceae)	PX	January, Mahabaleshwar	CNS, anticancer and diuretic
*99	<i>Meiogyne pannosa</i> (Dalz.) Sinclair (Annonaceae)	PX	January, Amboli	Antiviral
*100	<i>Memecylon umbellatum</i> Burm. (Melastomaceae)	LF	April, Mahabaleshwar	Cardiovascular system, isolated tissue, CNS, anticancer, antiviral and hypoglycemic
*101	<i>Meyna laxiflora</i> Robyns. (Rubiaceae)	PX	March, Khandala	CNS
102	<i>Michelia champaca</i> L. (Magnoliaceae)	SB	March, Mahabaleshwar	Cardiovascular system and hypoglycemic
103	<i>Mimuspos elengi</i> L. (Sapotaceae)	FR	Amboli	Cardiovascular system and anthelmintic
104	<i>Nerium indicum</i> Mill. (Apocynaceae)	RT	April, Pune	Isolated tissue and CNS
*105	<i>Neuracanthus sphaerostachyus</i> Dalz. (Acanthaceae)	PL	September, Thane	CNS
**106	<i>Nothopodytes nimmoniana</i> (J. Grah.) Mabberley (Icacinaceae)	PX	September, Ratnagiri	CNS and anticancer
107	<i>Olea dioica</i> Roxb. (Oleaceae)	PX	March, Khandala	Antiprotozoal
108	<i>Osmunda regalis</i> L. (Osmundaceae)	PX	January, Mahabaleshwar	CNS, diuretic and antiinflammatory
109	<i>Osyris arborea</i> Wall. (Santalaceae)	LF	March, Mahabaleshwar	Antiviral
110	<i>Paramignya monophylla</i> Wt. (Rutaceae)	RT	January, Amboli	Cardiovascular system
*111	<i>Pittosporum dasycaulon</i> Miq. (Pittosporaceae)	PX	October, Amboli	Isolated tissue
112	<i>Plumeria rubra</i> var. <i>acutifolia</i> Bailey (Apocynaceae)	ST	March, Pune	Hypoglycemic
113	<i>Plumeria rubra</i> var. <i>acutifolia</i> Bailey (Apocynaceae)	SB	March, Pune	Hypoglycemic

114	<i>Pogostemon plectranthoides</i> Desf. (Lamiaceae)	PL	April, Mahabaleshwar	CNS
115	<i>Prunus ceylanica</i> (Wight) Miq. (Rosaceae)	PX	December, Amboli	CNS and diuretic
116	<i>Psychotria truncata</i> Wall. (Rubiaceae)	PX	April, Mahabaleshwar	Antiviral
117	<i>Pteris mertensioides</i> Willd. (Pteridaceae)	PX	January, Mahabaleshwar	CNS and Diuretic
118	<i>Rauvolfia densiflora</i> Benth. (Apocynaceae)	PL	September, Ratnagiri	Cardiovascular system, isolated tissue and CNS
*119	<i>Salacia macrosperma</i> Wight (Celastraceae)	PX	September, Ratnagiri	CNS
120	<i>Salacia roxburghii</i> Wall. (Celastraceae)	PX	September, Ratnagiri	Antiviral and diuretic
121	<i>Salmalia malabarica</i> Schott & Endl. (Bombacaceae)	FL	March, Pune	Antiviral and hypoglycemic
122	<i>Salvia plebia</i> R. Br. (Lamiaceae)	PL	April, Khandala	CNS
123	<i>Santaloides minus</i> Sche. (Connaraceae)	PX	September, Ratnagiri	Isolated tissue
124	<i>Schefflera venulosa</i> (W. & A.) Harms. (Araliaceae)	PX	September, Ratnagiri	Isolated tissue
125	<i>Scutia myrtina</i> (Burm.f.) Kurz. (Rhamnaceae)	PX	April, Mahabaleshwar	Antiprotozoal, anthelminthic and antiviral
126	<i>Smithia sensitive</i> Ait. (Fabaceae)	PL	September, Savantwadi	CNS and Diuretic
127	<i>Solena heterophylla</i> Lour. (Cucurbitaceae)	PX	May, Khandala	CNS and Diuretic
128	<i>Sonneratia caseolaris</i> Engl. (Sonneratiaceae)	PX	December, Vengurla	Isoalte tissue and CNS
129	<i>Sphaeranthus indicus</i> L. (Asteraceae)	PL	March, Pune	Hypoglycemic
130	<i>Spodiopogon rhizophorus</i> (Steud.) Pilger (Poaceae)	PL	October, Khandala	Antiprotozoal
131	<i>Sterculia guttata</i> Roxb. (Sterculiaceae)	ST	April, Khandala	CNS
*132	<i>Sterculia guttata</i> Roxb. (Sterculiaceae)	LF	February, Khandala	Isolated tissue and Hypoglycemic
133	<i>Strychnos colubrine</i> L. (Loganiaceae)	LF	March, Pune	Isolated tissue
*134	<i>Symplocos beddomei</i> Cl. (Symplocaceae)	PX	September, Ratnagiri	Isolated tissue and CNS
135	<i>Syzygium phillyraeoides</i> (Trim.) Sant. (Myrtaceae)	SB	February, Sindhudurg	Anti-inflammatory
136	<i>Syzygium jambos</i> (L.) Alston (Myrtaceae)	PX	February, Khandala	Antifertility and Diuretic
*137	<i>Tectaria cicutaria</i> (L.) Capel. (Aspidiaceae)	PX	January, Mahabaleshwar	Antifertility
138	<i>Terminalia chebula</i> (Gaertn.) Retz. (Combretaceae)	SB	March, Pune	CNS and Hypoglycemic
139	<i>Terminalia chebula</i> (Gaertn.) Retz. (Combretaceae)	WS	January, Mahabaleshwar	CNS, Isolated tissue and Antiviral
*140	<i>Terminalia chebula</i> (Gaertn.) Retz. (Combretaceae)	LF	January, Mahabaleshwar	Antiviral
141	<i>Terminalia chebula</i> (Gaertn.) Retz. (Combretaceae)	FR	March, Mahabaleshwar	Antiviral and Hypoglycemic
142	<i>Themeda quadrivalvis</i> (L.) O. Ktze. (Poaceae)	PL	October, Khandala	Diuretic
143	<i>Tithonia tagetiflora</i> Desf. (Asteraceae)	PX	April, Khandala	Anticancer
144	<i>Tragia mulleriana</i> var. <i>unicolor</i> Pax & Hoffm. (Euphorbiaceae)	PX	September, Ratnagiri	Cardiovascular system and CNS
145	<i>Trema orientalis</i> (L.) Bl. (Ulmaceae)	PX	September, Amboli	CNS
146	<i>Uvaria narum</i> (Dunal) Bl. (Annonaceae)	PX	January, Mahabaleshwar	Diuretic
147	<i>Ventilago bombaiensis</i> Dalz. (Rhamnaceae)	PX	February, Khandala	CNS
148	<i>Ventilago maderaspatana</i> Gaertn. (Rhamnaceae)	PX	March, Khandala	Cardiovascular system
149	<i>Wattakaka volubilis</i> (L.) Stapf. (Asclepiadaceae)	PL	March, Mahabaleshwar	CNS and Anticancer
150	<i>Wendlandia notoniana</i> Wall. (Rubiaceae)	PX	September, Ratnagiri	Cardiovascular system

Abbreviations used: RT=Root; PX=Plant excluding under part; PL=Entire plant; FR=Fruits; LF=Leaves; WS=Wood of stem; SB=Stem bark; ST=Stem; FL=Flower; CNS=Central Nervous System.

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