

## Medicinal flora of Madhya Pradesh and Chattisgarh – A Review

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Plants are natural industries, which provide high quality food and raw material for pharmaceutical, cosmetic and perfumery industries without causing environmental degradation. Medicinal plants as a group comprise approximately 8000 species and account for around 50% of all the higher flowering plant species of India. India possesses almost 8% of the estimated biodiversity of the world with around 0.126% million species. In India, Madhya Pradesh & Chattisgarh are known to harbour a rich wealth of medicinal plants. Studies have shown that these two states are pool of dozens of pharmaceutically important plants. Medicinal activity of few such plants has already been reported but a good number of plants still used by local folklore are yet to be explored. A detailed survey was carried out by the authors to collect information on both reported and unreported medicinal plants of this region. The present article represents statistical data of the medicinal plants of this region.

**Keywords:** Medicinal plants, Madhya Pradesh, Chattisgarh

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*Ayurveda*, the Science of Life, dates back to the days of *Caraka Samhita* and *Sushruta Samhita* (1,200 AD). That the body and mind should remain healthy and there should be equilibrium between the two is the recurring theme of *Ayurveda*. And, that for achieving this end, drug-plants and drug-yielding plants, has been acknowledged throughout the centuries<sup>1-7</sup>.

The passage of time saw the birth and development of modern medical system. Tremendous loss to environment due to inhabitation and industrialization of country has made us realize that the civilization to which we owe our comfort has exhausted the planet's environmental capital. Modernization has exposed the human race to increased risk of bronchitis, asthma, lung cancer, and various skin diseases. Global Warming and Green House Effect are the problems of gigantic magnitude that have threatened the very existence of life on this planet.

The faster pace of life and the need for rapid cure led to the proliferation of synthetic drugs. However, with synthetic drugs came the problems of side effects, ill effects, and complications. This has led to the revival of herbal treatments for a large number of diseases. Since, the world population is growing at an alarming rate, so is the demand for medicines. To cope with the increasing demands of medicines, steps are being taken to populate

important economic plants to meet ever-increasing demands of human populations.

India is one of the 12-megabiodiversity centres with two hot – spots of biodiversity in the Western Ghats and Northeastern Region. There are about 400 families in world of the flowering plants; at least 315 are represented by India<sup>8</sup>. In India, Madhya Pradesh and Chattisgarh are the two states known to have a rich flora of medicinal plants. The present review aims to create awareness about this medicinal wealth of Madhya Pradesh and Chattisgarh to draw the attention of phytochemists.

Ethnomedicinal survey was conducted in different parts of Madhya Pradesh and Chattisgarh and a number of valuable data on the uses of indigenous medicinal plants were recorded<sup>9-15</sup>. The survey of literature shows that considerable work has been done on tribals of Bastar, Bhopal, Chhatarpur, Chhindwara, Durg, Jabalpur, Jhabua, Khargone, Rewa, Raipur, Sagar, Satpura, Seoni and few other districts of Madhya Pradesh and Chattisgarh<sup>16-21</sup>. An obvious advantage of such an approach is that, we can compare the uses of plants by different tribal people located in various parts of state. Sometimes, it is found that same plant is used for the same purpose by the people located hundred miles apart, although same part of the plant may not be used. Or sometimes same plant is found to be used for different ailments in different region of the same state.

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Fig. 1 *Balanites aegyptiaca* Delile.



Fig. 2 *Oregea volubilis* Benth.



Fig. 3 *Mimosa pudica* Linn.

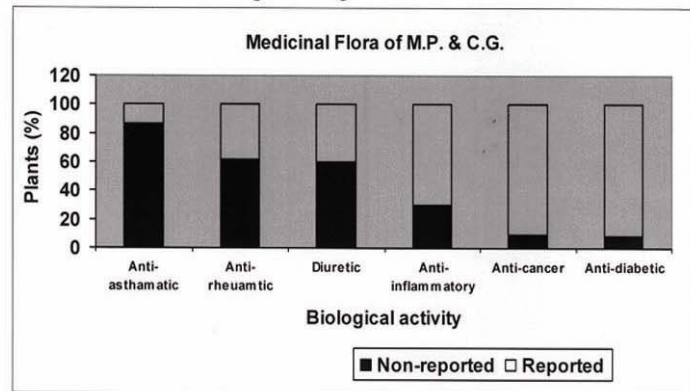


Fig. 4 Plants with reported and non-reported medicinal activities

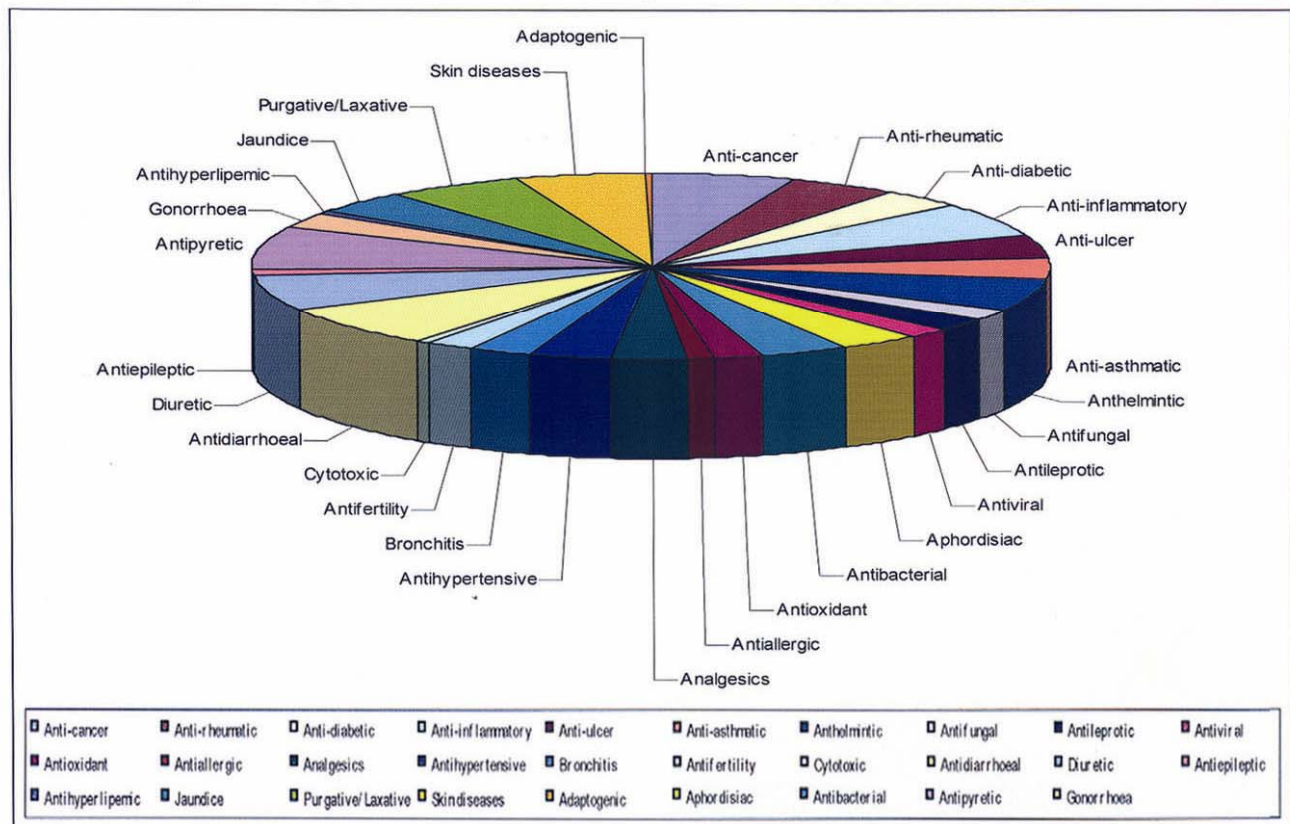


Fig. 5 Plants showing various biological activities

Table 1— Plants with biological activity

Botanical name	Common name	Family	Part used	Reference
<b>Plants with anticancer activity</b>				
<i>Bacopa monnieri</i> Wett.	Jalbrahmi	Scrophulariaceae	Plant	18
<i>Cardiospermum halicacabum</i> L.	Kanphuti	Sapindaceae	Plant	2
<i>Cleome viscosa</i> L.	Hulhul	Capparidaceae	Plant	2
<i>Clerodendrum serratum</i> Spreng.	Bhargi	Verbenaceae	Root	3
<i>Eulophia nuda</i> Lindl.	Ambarkand	Orchidaceae	Tuber	4
<i>Mallotus philippinensis</i> Muell. Arg.	Kamila	Euphorbiaceae	Fruit	3
<i>Operculina turpethum</i> Silva Manso Enum.	Nisotha	Convolvulaceae	Root	3
<i>Solanum surattense</i> Burm.F.	Kateri	Solanaceae	Plant	8
<b>Plants with antidiabetic activity</b>				
<i>Cocculus hirsutus</i> L.	Jamti	Menispermaceae	Plant	7
<i>Kyllinga triceps</i> Rottb.	Nirbisi	Cyperaceae	Root	4, 18
<i>Madhuca longifolia</i> var. <i>latifolia</i> (L.) Macbride	Madhua	Sapotaceae	Bark	18
<i>Pongamia pinnata</i> (L.) Merr.	Karanj	Fabaceae	Plant	8
<b>Plants with antiinflammatory activity</b>				
<i>Balanites aegyptiacas</i> Delile.	Hingot	Zygophyllaceae	Root	2
<i>Barleria cristata</i> L.	Jhinti	Acanthaceae	Plant	3
<i>Clerodendrum serratum</i> Spreng.	Barangi	Verbenaceae	Root	3
<i>Desmodium gangeticum</i> DC.	Shalparni	Fabaceae	Root	2
<i>Dregea volubilis</i> Benth.	Nakchhikni	Asclepiadaceae	Plant	3
<i>Euphorbia neriiifolia</i> L.	Sehund	Euphorbiaceae	Plant, Leaves	3
<i>Girardinia zeylanica</i> Decne.	Alla, Bichua	Urticaceae	Leaves	3
<i>Gossypium herbaceum</i> L.	Kupas, Rui	Malvaceae	Flower	2
<i>Gymnema sylvestri</i> R. Br.	Merasingi	Asclepiadaceae	Plant	3
<i>Lepidium sativum</i> L.	Chaunsar	Cruciferae	Seed	2
<i>Martynia annua</i> L.	Bichu, Hathajori	Pedaliaceae	Fruit	3
<i>Operculina turpethum</i> (L.) Silva Manso Enum.	Nisotha	Convolvulaceae	Root	3
<i>Oxalis corniculata</i> L.	Clover sorrel	Oxalidaceae	Leaves	2
<i>Pavonia odorata</i> Willd.	Bala, Sugandhibala	Malvaceae	Root	2
<i>Pistia stratiotes</i> L.	Jalkhumbi	Araceae	Root	4
<i>Polycarpha corymbosa</i> Lamm.	Bhisatta	Caryophyllaceae	Leaves	2
<i>Spilanthes acmella</i> L.	Akar kara	Asteraceae	Flower	8
<i>Stereospermum suaveolens</i> DC.	Padal	Bignoniaceae	Root	3
<i>Tectona grandis</i> L.	Sagwan	Verbenaceae	Wood	3
<i>Tephrosia purpurea</i> Pers.	Sarpankha	Fabaceae	Root	2
<i>Thespesia populnea</i> Soland.	Bhendi, Parsipur	Malvaceae	Flower	2
<i>Vanda tessellata</i> Hook.ex G.Don	Vanda	Orchidaceae	Root	4
<b>Plants with antirheumatic activity</b>				
<i>Alangium salvifolium</i> L. F.	Ankol, Akola	Alangiaceae	Leaves	18
<i>Althaea rosea</i> Cav.Diss.	-	Malvaceae	Flower	2
<i>Baliospermum montanum</i> Muell.	Danti	Euphorbiaceae	Root	3
<i>Berberis asiatica</i> Roxb.	Rasont	Berberidaceae	Plant	2
<i>Boerhavia diffusa</i> L.	Punarnova	Nyctaginaceae	Root	3
<i>Cardiospermum halicacabum</i> L.	Kanphuti	Sapindaceae	Leaves, Plant	18
<i>Cocculus hirsutus</i> (L.) Diels	Chireta, Jamti	Menispermaceae	Root	2,18
<i>Costus speciosus</i> Sm.	Keu	Zingiberaceae	Root	4
<i>Crateva nurvala</i> Ham.	Barna, Barun	Capparidaceae	Leaves	2
<i>Cryptolepis buchananii</i> Roem & Schult.	Dudhi	Asclepiadaceae	Leaves	18
<i>Cymbopogon martinii</i> (Roxb.) Wats.	Palmarosa Grass	Poaceae	Whole Plant	18
<i>Cynodon dactylon</i> Pers.	Dubghas	Poaceae	Plant, Rhizome	4

Contd...

Table 1—Plants with biological activity (Contd...)

Botanical name	Common name	Family	Part used	Reference
<i>Dalbergia lanceolaria</i> L.	<i>Bithua</i>	Fabaceae	Oil	2
<i>Euphorbia tirucalli</i> L.	<i>Danda Thuar, Sind</i>	Euphorbiaceae	Milky Juice	3
<i>Ficus benghalensis</i> L.	<i>Bada</i>	Moraceae	Milky juice	3
<i>Holarrhena antidyenterica</i> Wall.	<i>Kurchi</i>	Apocynaceae	Plant	8
<i>Jatropha curcas</i> L.	<i>Safed Arand</i>	Euphorbiaceae	Seed	3
<i>Kydia calycina</i> Roxb.	<i>Puli, Boranga</i>	Malvaceae	Leaves	2
<i>Leonotis nepetifolia</i> R. Br.	<i>Hajurchei</i>	Lamiaceae	Leaves	3
<i>Lepidium sativum</i> L.	<i>Chaunsar, Halim</i>	Cruciferae	Seed	2
<i>Madhuca longifolia</i> (var. <i>latifolia</i> ) (L.) Macbride	<i>Madhua</i>	Sapotaceae	Bark	18
<i>Mallotus philippensis</i> Muell. Arg.	<i>Kamila</i>	Euphorbiaceae	Root	3
<i>Melia azedarach</i> L.	<i>Bakain, Bakarja</i>	Meliaceae	Seed	2
<i>Momordica charantia</i> L.	<i>Karela</i>	Cucurbitaceae	Fruit	8
<i>Nyctanthes arbor-tristis</i> L.	<i>Parijata</i>	Oleaceae	Leaves	18
<i>Papaver rhoeas</i> L.	<i>Lalpost, Lal</i>	Papavaraceae	Root	2
<i>Pavonia odorata</i> Willd.	<i>Bala</i>	Malvaceae	Plant	2
<i>Pergularia daemia</i> (Forsk) Chiov.	<i>Jutuk</i>	Asclepiadaceae	Plant	18
<i>Psoralea corylifolia</i> L.	<i>Bavachi</i>	Fabaceae	Seed	2
<i>Pueraria tuberosa</i> DC.	<i>Bankurma</i>	Fabaceae	Root	2
<i>Sida acuta</i> Burm.	<i>Chikna</i>	Malvaceae	Root	2
<i>Smilax zeylanica</i> L.	<i>Chobchini</i>	Liliaceae	Root	4
<i>Spondias pinnata</i> Kurtz.	<i>Amara</i>	Anacardiaceae	Leaves, Bark	18
<i>Trewia nudiflora</i> L.	<i>Pindara</i>	Euphorbiaceae	Root	3
<i>Tribulus terrestris</i> L.	<i>Chhota Gokhru</i>	Zygophyllaceae	Root	2
<i>Urginea indica</i> Kunth Enum.	<i>Jangli Piyaz</i>	Liliaceae	Bulb	4
<i>Vanda tessellata</i> Hook.	<i>Vanda</i>	Orchidaceae	Root	4
<b>Plants with diuretic activity</b>				
<i>Acalypha indica</i> L.	<i>Khokali</i>	Euphorbiaceae	Plant	3
<i>Althea rosea</i> Cav. Diss.	-	Malvaceae	Seeds	2
<i>Amaranthus caudatus</i> L.	-	Amaranthaceae	Plant	18
<i>Biophytum sensitivum</i> (L.) DC	-	Oxalidaceae	Leaves	2
<i>Boswellia serrata</i> Roxb.	<i>Kundur</i>	Burseraceae	Gum	2
<i>Butea monosperma</i> O. Kuntze	<i>Palas</i>	Fabaceae	Leaves, Flowers	18
<i>Cardiospermum halicacabum</i> L.	<i>Kanphuti</i>	Sapindaceae	Root	2
<i>Cassiytha filiformis</i> L.	<i>Amarbeli</i>	Lauraceae	Plant	3
<i>Chlorophytum arundinaceum</i> Baker.	<i>Safed Musli</i>	Liliaceae	Root	18,2
<i>Cissampelos pareira</i> L.	<i>Akauadi</i>	Menispermaceae	Root	2
<i>Cleome viscosa</i> L.	<i>Hulhul</i>	Capparidaceae	Plant	2
<i>Cordia oblique</i> Willd.	<i>Bhairala</i>	Boraginaceae	Fruit	3
<i>Crinum asiaticum</i> L.	<i>Chindar</i>	Amaryllidaceae	Seeds	4
<i>Curculigo orchioides</i> Gaertn.	<i>Kalimusli</i>	Amaryllidaceae	Rhizome	4
<i>Curcuma zedoaria</i> Rosc.	<i>Kachura</i>	Zingiberaceae	Root	4
<i>Cynodon dactylon</i> Pers.	<i>Dhoboghas</i>	Poaceae	Juice	4
<i>Desmostachya bipinnata</i> Stapf. Infl. Cap.	<i>Dab.</i>	Poaceae	Root	4
<i>Fumaria indica</i> Pugsley.	<i>Pitapapara</i>	Fumariaceae	Plant	2
<i>Gossypium herbaceum</i> L.	<i>Kupas</i>	Malvaceae	Root	2
<i>Gmelina arborea</i> Roxb.	<i>Gamari</i>	Verbenaceae	Fruit	3
<i>Gymnema sylvestre</i> (Retz)R. Br.	<i>Merasingi</i>	Asclepiadaceae	Leaves	3
<i>Heliotropium indicum</i> L.	<i>Hattajurie</i>	Boraginaceae	Plant	3
<i>Heliotropium strigosum</i> Willd.	<i>Chitiphul</i>	Boraginaceae	Plant	3
<i>Hibiscus sabdariffa</i> L.	<i>Lalambari</i>	Malvaceae	Leaves	2
<i>Homonoia riparia</i> Lour. Fl. Cochinch.	-	Euphorbiaceae	Root	3
<i>Indigofera glabra</i> L.	-	Fabaceae	Plant	2
<i>Lepidium sativum</i> L.	<i>Chaunsar</i>	Cruciferae	Seeds	2
<i>Mangifera indica</i> L.	<i>Amb</i>	Anacardiaceae	Fruit	2

Contd...

Table 1—Plants with biological activity (*Contd...*)

Botanical name	Common name	Family	Part used	Reference
<i>Melia azedarach</i> L.	<i>Bakain</i>	Meliaceae	Flowers, Leaves	2
<i>Mucuna prurita</i> Hook.	<i>Goncha</i>	Fabaceae	Root	2
<i>Nelumbo nucifera</i> Gaertn.	<i>Ambuj</i>	Nymphaeaceae	Root	2
<i>Nicandra physalodes</i> Gaertn.	-	Solanaceae	Plant	3
<i>Oxalis corniculata</i> L.	<i>Amrul</i>	Oxalidaceae	Plant	2
<i>Phyllanthus reticulatus</i> Poir.	<i>Buinowla</i>	Euphorbiaceae	Leaves	3
<i>Phyllanthus urinaria</i> L.	<i>Hazarmani</i>	Euphorbiaceae	Plant	3
<i>Physalis divaricata</i> L.	<i>Chirpoti</i>	Solanaceae	Plant	18
<i>Pistia stratiotes</i> L.	<i>Jalkhumbi</i>	Araceae	Root	4
<i>Plumbago zeylanica</i> L.	<i>Chittrak</i>	Plumbaginaceae	Root	8
<i>Polygonum hydropiper</i> L.	-	Polygonaceae	Herb, Leaves	3
<i>Psoralea corylifolia</i> L.	<i>Bavachi</i>	Fabaceae	Fruit	2
<i>Rorippa indica</i> L.	-	Brassicaceae	Plant	18
<i>Scirpus grossus</i> L.F.	<i>Kasuru</i>	Cyperaceae	Root	4
<i>Sebastiania orientale</i> Muell-Arg.	-	Fabaceae	Seeds	2
<i>Sida acuta</i> Burm.	<i>Chikna</i>	Malvaceae	Root	2
<i>Solanum nigrum</i> L.	<i>Makoi</i>	Solanaceae	Fruit	8
<i>Solanum surattense</i> Burm.F.	-	Solanaceae	Fruit	8
<i>Stereospermum personatum</i> (Hassk.)	<i>Padar</i>	Bignoniaceae	Root Bark	18
<i>Stereospermum suaveolens</i> DC.	<i>Pad</i>	Bignoniaceae	Root Bark	3
<i>Tectona grandis</i> L.	<i>Sagwan</i>	Verbenaceae	Flowers, Seeds	3
<i>Thalictrum foliolosum</i> DC.	<i>Mamira</i>	Ranunculaceae	Root	2
<i>Urginea indica</i> Kunth Enum.	<i>Jangli Piyaz</i>	Liliaceae	Bulb	4
<i>Vetiveria zizanioides</i> (L.) Nash	<i>Khas</i>	Poaceae	Root	8
<b>Plants with antiasthmatic/antibronchitis activity</b>				
<i>Acalypha indica</i> L.	<i>Khokali</i>	Euphorbiaceae	Plant	3
<i>Baliospermum montanum</i> Muell-Arg.	<i>Danti</i>	Euphorbiaceae	Leaves	18
<i>Biophytum sensitivum</i> (L.) DC	<i>Lajalu</i>	Oxalidaceae	Leaves	2
<i>Boerhavia diffusa</i> L.	<i>Punarnava</i>	Nyctaginaceae	Plant	3
<i>Celastrus paniculatus</i> Willd.	<i>Jyotismati</i>	Celastraceae	Seed Oil	2
<i>Cissampelos pareira</i> L.	<i>Akauadi</i>	Menispermaceae	Root	2
<i>Clerodendron serratum</i> Spreng.	<i>Bhargi</i>	Verbenaceae	Root	3
<i>Costus speciosus</i> L.	<i>Pushkara</i>	Zingiberaceae	Root	4
<i>Crinum asiaticum</i> L.	<i>Chindar</i>	Amaryllidaceae	Tuber	4
<i>Curculigo orchioides</i> Gaertn.	<i>Kalimusli</i>	Amaryllidaceae	Rhizome	4
<i>Curcuma zedoaria</i> Rosc.	<i>Kalihaladi</i>	Scitamineae	Rhizome	4
<i>Desmodium gangeticum</i> (L.) DC.	<i>Shalpurni</i>	Fabaceae	Root	2
<i>Dregea volubilis</i> Benth.	<i>Nakchhikni</i>	Asclepiadaceae	Plant	3
<i>Eulophia nuda</i> Lindl.	<i>Ambarkand</i>	Orchidaceae	Plant	4
<i>Euphorbia hirta</i> L.	<i>Dudhi</i>	Euphorbiaceae	Plant	3
<i>Euphorbia nerifolia</i> L.	<i>Sehund</i>	Euphorbiaceae	Plant	3
<i>Evolvulus alsinoides</i> L.	<i>Shyamakranta</i>	Covolvulaceae	Leaves	3
<i>Gymnema sylvestre</i> (Retz.) R.Br	<i>Merasingi</i>	Asclepiadaceae	Plant	3
<i>Holarrhena antidysenterica</i> Wall. ex. DC.	<i>Kurchi</i>	Apocynaceae	Bark	8
<i>Indigofera tinctoria</i> L.	<i>Neel</i>	Papilionaceae	Plant	2
<i>Lepidium sativum</i> L.	<i>Chaunsar</i>	Cruciferae	Plant	2
<i>Madhuca indica</i> Gmel.	<i>Madhuca</i>	Sapotaceae	Bark	8
<i>Mallotus philippinesis</i> Muell-Arg.	<i>Kamala</i>	Euphorbiaceae	Leaves	3
<i>Mimosa pudica</i> L.	<i>Touch Me Not</i>	Mimosaceae	Root	8
<i>Nelumbo nucifera</i> Gaertn.	<i>Ambuj</i>	Nymphaeaceae	Flower	2
<i>Ochna Obtusata</i> spp. Pumila	-	Ochnaceae	Root, Bark	18
<i>Operculina turpethum</i> (L.) Silva Manso Enum.	<i>Nisoth</i>	Convolvulaceae	Root	3
<i>Oroxylum indicum</i> Vent.	<i>Arlu</i>	Bignoniaceae	Root Bark	3
<i>Pavonia odorata</i> Willd.	<i>Bala</i>	Malvaceae	Plant	2
<i>Passiflora foetida</i> L.	-	Passifloraceae	Leaves, Fruit	18
<i>Pergularia daemia</i> Forssk.	<i>Sagovani</i>	Asclepiadaceae	Leaves	18

*Contd...*

Table 1—Plants with biological activity (Contd...)

Botanical name	Common name	Family	Part used	Reference
<i>Pistia stratiotes</i> L.	<i>Jalkhumbi</i>	Araceae	Leaves	4
<i>Portulaca oleracea</i> L.	<i>Barlumia</i>	Portulacaceae	Leaves	2
<i>Psoralea corylifolia</i> L.	<i>Bavchi</i>	Fabaceae	Leaves	2
<i>Ricinus communis</i> L.	<i>Jada</i>	Euphorbiaceae	Root	3
<i>Solanum indicum</i> L.	<i>Barhata</i>	Solanaceae	Root	3
<i>Solanum nigrum</i> L.	<i>Makoi</i>	Solanaceae	Berries	3
<i>Solanum surattense</i> Burm. F.	<i>Kateli</i>	Solanaceae	Roots	18
<i>Stereospermum suaveolens</i> DC.	<i>Padal</i>	Bignoniaceae	Root	3
<i>Tectona grandis</i> L.	<i>Sagwan</i>	Verbenaceae	Flower, Bark	3
<i>Tephrosia purpurea</i> L.	<i>Sarphonka</i>	Fabaceae	Plant	2
<i>Urginea indica</i> Kunth Enum.	<i>Jangli piyaz</i>	Liliaceae	Bulb	4
<i>Vanda tessellata</i> Hook.	<i>Rasna, Vanda</i>	Orchidaceae	Root	4

The given percentage-divided bar diagram represents, data of such plants of Madhya Pradesh and Chattisgarh with their reported and non-reported medicinal uses (Fig. 5). From the above diagram, it is observed that activity of 62 % of plants for rheumatism, 86.79 % for asthma, 60.22 % for diuretic, 29.62 % for inflammation, 9.75 % for cancer and 8.33 % for diabetes is yet to be established.

A detailed list of such plants is enumerated below in their alphabetical order along with their common name, family, parts used and references.

Locals of Madhya Pradesh & Chattisgarh are using approximately 400 medicinal plants (Figs.1-3). They can be classified depending upon the pharmacological activity (Table 1). A graphical representation for this has been presented (Fig.4). Though recent ethnobotanical, phytochemical and pharmacological researches have reported these medicinal and pharmaceutical values of plants, all of them are not worked out and many species used by tribals of Madhya Pradesh and Chattisgarh are yet to be explored for their pharmaceutical value and to isolate the active principle.

The rate with which diseases like diabetes, cancer, rheumatism, asthma, etc. is progressing it seems to have an immediate and effective solution for making a comfortable future for human population against such diseases. Hence, there is an urgent need to study plants with medicinal efficiencies against such diseases. Accordingly, an effort has been made to describe plants with such uses but has to be explored for their claimed activities.

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