



ISSN (E): 2320-3862
ISSN (P): 2394-0530
www.plantsjournal.com
JMPS 2021; 9(6): 53-59
© 2021 JMPS
Received: 28-09-2021
Accepted: 30-10-2021

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Medicinal trees diversity in tribal village Kewali-Kataud, tehsil Kharsia, district Raigarh (C.G.) in central India

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Abstract

The study area is rich in Plant diversity and significantly utilizing by the peoples/tribes nearby the forest area/villages. In present ethnobotanical study several visits were made in the study area with interaction with local peoples/tribes. There are 42 tree species were recorded which are utilized as Medicinal purpose for primary health care by the local peoples/tribes and are listed in Table -1. Recorded Tree species of Medicinal plants belonging to 19 different families arranged in Table-2. Recorded Trees are efficiently capable to regenerate using their seeds. These Trees also registered to show variation in their utility to treat different disorders among the local peoples/tribes.

Day by day due to overexploitation and by other several reasons like introduction of new species, Urbanization, Industrializations etc. plants are facing problem for their existence in their natural habitat. In this scenario conservation become an urgent need for its protection as well as for proper multiplication in certain ecological areas. Due to rich potential of the recorded Tree species of Medicinal plants Local peoples/tribes were suggested to multiply their population and take significant participation in the process of further Conservation of the valuable Medicinal plants including Tree species.

Keywords: Medicinal plants, plant diversity, trees, tribes

Introduction

Biodiversity includes variation and variability among the different living species of different natural habitats. Out of them plant diversity also placed in significant construction of biodiversity. Plant diversity is affected by several biotic and abiotic factors and is also regulated by their genes. Plant life is always affected by their own population structure, natural effect in different phases of plant life. Interaction between environmental components and biota is important concern among the nature and living species. Each one species in nature willing to live long and to sustain in nature. Aimed for above reason the plants are forming numerous seeds after pollination and fertilization. A seed includes resting embryo between the cotyledons and are also protected by a cover known as seed coat. Seeds are variable in their size, shape, colour and weight etc. These are also unique for their germination tendency in the presence of favourable environmental condition. Resting phase of embryo in seeds are also variable in different plant species in nature.

Plants are unique segments for development and designing of the biodiversity. Associations of the plants of different habit, habitat and uses etc are leading to develop their population in nature. Finally, these are participating role in formation of plant community which is characterized by their number, density and abundance etc. In ecological concern the plant diversity is affected by environmental variations as well as the genes of different plant species individually. Seed production is a unique method for production of new individuals of the plants. Its number and germination capacity are marked for the better growth and development. Seeds are adapted to disperse in nature by several methods. Seed germination and early plant development is a prime stage for creation of plant diversity. In this method only the plants are capable to propagate using seeds. Plants are valuable resources of nature and are widely used for multifold directions like for food, fodder, fuel, medicine etc. Plants are unique for their presence and adaption capacity in changeable environmental condition. Plant diversity includes a variety of plant species in certain ecological areas. Plants are showing variations in their habit, habitat, seed production etc. Variation in above points is key leading reasons for formation of plant diversity and is further a segment of biological diversity in

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nature. Variation can be also seen in the terms of their propagation types and capability in certain natural habitat.

Current study focusses on Ethnobotanical utilization of Tree species of the Medicinal plants in Tribal Village Kewali-Kataud, Tehshil Kharsia, Distt. Raigarh (C.G.) in Central India. The study area is around 25 km. from Kharsia, Distt. Raigarh (C.G.). Periodic Field Visit/Survey made to achieve the goal.

Ahir *et al.* 2011^[1]. Studied on biodiversity of certain medicinal plants of Ahmadnagar region, M.S., India. Ahmed, A. and Sinha, R.R. 2009^[2]. Studied on some indigenous medicinal plants of Patana used to cure different Gynecological ailments. Traditional knowledge of Kani tribals in Kouthalai of Tirunelveli hills, Tamil Nadu, India was studied by Ayyanar M and Ignacimuthu S. 2005^[3]. Balakrishnan *et al.* 2009^[4] focused Ethnobotanical Studies among Villagers from Dharapuram Taluk, Tamil Nadu, India. Diversity and conservation of medicinal plants in Barak Valley, Northeast India was recorded by Barbhuiya *et al.* 2009^[5]. Ex-situ conservation studies on ethnomedicinal rare, endemic plant species from Western Ghats of Maharashtra was made by Biswas B. S. 2010^[6].

Borkar *et al.* 2013^[7] studied Ethno botanical importance of some plants of Euphorbiaceae in Gadarwara Tehsil (M.P.). Borkar, S.U. and Theng, P.A. 2010^[8] focused on Traditional uses of *Caesalpinia bonducella* F. in the treatment of Diabetes in the region of Buldhana tahsil, District Buldhana (M.S.). Conservation and Management of endangered plant species a case study from North east India was done by Choudhary B. and Khan M. L. 2010^[9]. Choudhary S. and Kumar R. 2011^[10] recorded on Some important medicinal trees of district Bijnor. Patel DK, 2015^[11] studied on Introduction of Some Tree Species of Medicinal and Aromatic Plants (MAPs) in Herbal Garden for Their Ex-situ Conservation. Diversity and conservation of medicinal plants in the Bomma community of the Brong Ahafo region, Ghana was made by Fordjour *et al.* 2008^[12].

Ethnobotanical survey of some medicinal plants from Gondia district of Maharashtra was done by Ghoshal, K.P. and Saoji, A.A. 2013^[13]. Harney N.V. 2013^[14]. Studied on Ethnomedicinal Plants Diversity of Bhadrawati Tahsil of Chandrapur District, Maharashtra, India. Ethnobotanical investigations among Tribes in Madurai District of Tamil Nadu (India) was done by Ignacimuthu *et al.* 2006^[15]

Some traditional herbals remedies of tribals and rural peoples from the western canopy of Melghat forest area was studied by Iqbal *et al.* 2010^[16]. Conservation of Medicinal plants (Past, Present and Future trends). was done by Kasagana V. N. and Karumuri S. S. 2011^[17]. Khonde *et al.* 2012^[18] focused on Ethnomedicinal plants used by Gond/Madia tribes of Aheri Tahsil, District Gadchiroli. Plant biodiversity in the Saint Catherine area of the Sinai Peninsula, Egypt was done by Mohamed *et al.* 2000^[19]. Patel DK, 2012^[20]. Medicinal plants used as antidotes in northern part of Baster district of

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Pie, S.J. 2001^[22] recorded on Ethnomedicinal approaches of traditional medicine studies: some experiences from Asia. Ethno-veterinary medicinal plants and its conservation status in the Buldhana District was done by Pocchi, V. 2013^[23]. Posey, D. 1992^[24] recorded on Traditional Knowledge, Conservation and the Rain Forest Harvest. In: Sustainable Herb and Marketing of Rain Forest Products, Plotkin. Assessment of plant diversity and prioritization of communities for conservation in Mornaula Reserve Forest was done by Samant S. S. and Pant S. 2007^[25]. Sharma *et al.* 2011^[26] recorded on Conservation status and diversity of some important plants in the Shiwalik Himalaya of Uttarakhand, India. Forest vegetation of the Himalaya was studied by Singh J. S. and Singh S.P. 1987^[27]. Srivastava N. K. 2011^[28] studied on Medicinal plants used by tribals of Bandhavgarh National Park (M. P.) India. Ethnobotanical knowledge in rural communities of Cordoba (Argentina) was done by Toledo *et al.* 2009^[29].

Materials and Methods

The study area is located nearly 25 km away from Kharsia, Distt Raigarh (C.G.). The study made during January to December 2021. A survey was made to record the diversity of tree species which are utilized as medicinal purpose by the local peoples/tribes as their primary health care. Plants were locally named as informed by the villagers/local peoples during interaction with them. Scientific information was gathered using available literatures. Images were taken and each tree species of Medicinal plants are further arranged following Botanical Names, Common Name, Chhattisgarhi Name/Local Name, Family, Propagation, Used Plant Parts, Uses, Mode of Utilization, Etymology (Fl./Fr.) and Native place.

Result and Discussion

A total of 42 Tree species of the medicinal values were identified, recorded and documented based on the collected information/s from tribal peoples as well as available literatures. The recorded 42 tree species of Medicinal plants were belonging to 19 different families. Each one plant is listed and tabulated separately following their relevant information/s. All the recorded Medicinal plants are well regenerating using their Seeds in the presence of favourable environmental condition/s.

The current findings are listed in Table – 1 and Familywise distribution of the Medicinal trees is arranged in Table -2. A maximum of Tree species of the Medicinal plants was belonging to the family Fabaceae. Total 12 maximum Trees belong to the Fabaceae family. In second position Moraceae include 4 Tree species and *Combretaceae*, *Myrtaceae* include 3 species of the Medicinal trees. Rest of the plant family includes 1 and 2 tree species listed individually.

Table 1: Medicinal Trees Diversity in Tribal Village Kewali-Kataud, Tehsil Kharsia, Distt. Raigarh (C.G.) in Central India.

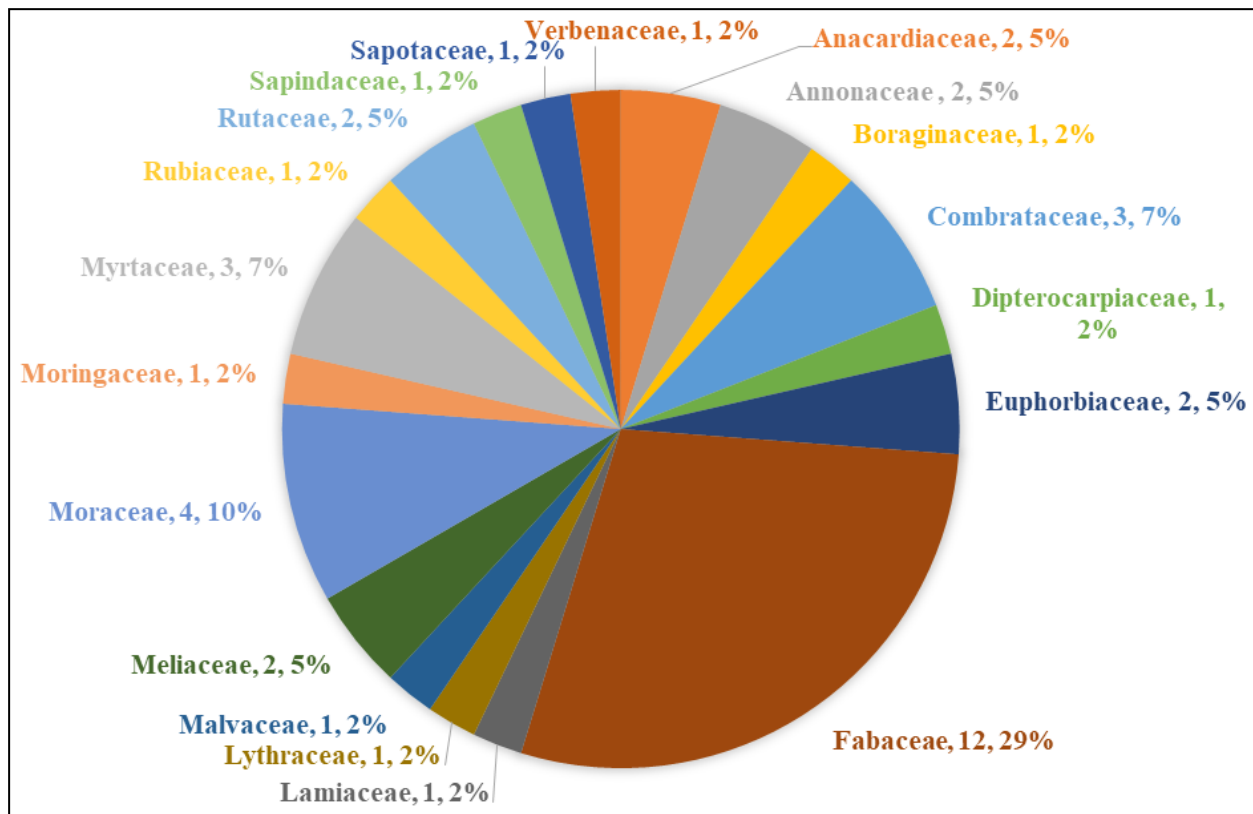
S. No.	Botanical Names	Common Name	Local/ Chhattisgarhi Name	Family	Propagation	Used Plant Parts	Uses	Mode of Utilization	Etymology (Fl., Fr.)	Native Place
1.	<i>Acacia catechu</i> (L.f.) Willd.	Khair	Khair	Fabaceae	Seed	Bark	Toothache, Headache, Diarrhoea, Cough, Digestive, Skin disease	Bark decoction used in preparation of pan	March-May	India
2.	<i>Acacia nilotica</i> (L.) Delile	Babool	Bambri	Fabaceae	Seed	Twig	Toothache, Dysentery, Antiseptic for wounds	Extract, As Tooth brush	March-May	Africa and Western Asia
3.	<i>Aegle marmelos</i> (L.) Correa.	Bael	Bel	Rutaceae	Seed	Bark	Stomachic, Piles, Cardiotonic, Laxative, Anti Inflammatory, Jaundice, Urinary trouble, Diabetes, Piles, Dysentery	Juice taken orally	March-May	Indian subcontinent and Southeast Asia
4.	<i>Albizia lebbek</i> (Linn.) Benth.	Siras	Sersauha	Fabaceae	Seed	Bark	Antidote, Saponin for snake position, Skin disease, Asthma, Piles, Diarrhoea	Decoction taken orally	December-April	Indo-Malaya, New Guinea
5.	<i>Albizia procera</i> (Roxb) Benth.	White Siras	Karhi	Fabaceae	Seed	Bark	Rheumatism, Ulcer, Stomach pain, anti-inflammatory and analgesic	Decoction taken orally	December-April	India to southwest China
6.	<i>Anacardium occidentale</i> L.	Kaju	Kaju	Anacardiaceae	Seed	Bark	Contraceptive, Cracks on sole of feet	Fruit juice and decoction taken orally	December-May	Brazil
7.	<i>Annona reticulata</i> L.	Ramphal	Ramphal	Annonaceae	Seed	Leaf, Fruit	Cardiac problems, Worm infestation, Constipation, antibacterial Fever, Ulcer	Extract taken orally	November-May	Tropical Americas and West Indies
8.	<i>Annona squamosa</i> L.	Custard Apple	Sitafal	Annonaceae	Seed	Leaf, Fruit	Constipation, Vomiting, Cough, Purgative. Seed Powder used to kill lice	Extract taken orally	July-October	Tropical America and West Indies
9.	<i>Artocarpus heterophyllus</i> Lam.	Jack Fruit	Kathal	Moraceae	Seed	Bark, Fruit	Asthma, ringworm Heal cracking of the feet. Diabetes,	Fruit pulp and decoction taken orally	November-April	Malaysia
10.	<i>Azadirachta indica</i> A. Juss	Neem	Leem	Meliaceae	Seed	Leaf, Bark, Twig	Skin diseases, Toothae, Antidote, Fever, Wounds	Leaf paste, oil utilized externally, Decoction taken orally	March-July	Burma
11.	<i>Bauhinia variegata</i> L.	Kachnar	Kachnar	Fabaceae	Seed	Bark	Diarrhoea, Skin diseases, Diabetes, Inflammation, Piles, Worm killer	Decoction taken orally	September-March	Southeast Asia
12.	<i>Bridelia retusa</i> (L.) A. Juss.	Kasai, Kaji, Spinous Kino Tree	Kashihi	Euphorbiaceae	Seed	Fruit, Bark	Anemia. Asthma, Cough, Diarrhoea, Joint pain, Skin Problem,	Fruit juice taken orally; bark decoction taken orally	December-June	Indo china, Malaysia
13.	<i>Butea monosperma</i> (Lam.) Taub.	Palas, Tesu	Parsa	Fabaceae	Seed	Bark	Urinary disorder, Worms, Diabetes, Inflammation, Skin diseases	Decoction taken orally	December-May	Indian subcontinent, Indo China, Malaysia
14.	<i>Cassia fistula</i> L.	Golden shower tree,	Amaltas, Dhanbaher	Fabaceae	Seed	Bark	Purgative, Antiviral, Tonic, Boil, Ringworm	Decoction taken orally	December-March	Indian subcontinent

		Amaltas, Indian laburnum								
15.	<i>Ceiba pentandra</i> (L.) Gaertn.	Kapok	Semal	Malvaceae	Seed	Bark	Diuretic, Aphrodisiac, Headache, Anthelmintic, Dysentery, Diuretic, Antidiarrhoeal	Decoction taken orally	November-March	Tropical America.
16.	<i>Citrus lemon</i> Linn. Burm. F.	Lemon, Neebu	Limau	Rutaceae	Seed	Fruit	Purgative, Urinary problem, Digestive, Stimulant, Anthelmintic	Fruit juice taken orally	Over the year	South Asia
17.	<i>Cordia myxa</i> Senuc L.	Pidar	Bohar	Boraginaceae	Seed	Bark	Fever, Diarrhea, anti-inflammatory, antimicrobial, antiparasitic, insecticidal, cardiovascular, respiratory,	Decoction taken orally	October-April	Tropical America
18.	<i>Dalbergia sissoo</i> DC.	Shishoo	Sheesham	Fabaceae	Seed	Bark	Skin disease, Dysentery, Itching,	Decoction taken orally	October-April	Indian subcontinent
19.	<i>Delonix regia</i> (Hook.) Raf.	Gulmohar	Gulmohar	Fabaceae	Seed	Bark	Inflammation, Arthritis, Diabetes, Gastric problems, Body pain	Decoction taken orally	March-June	Madagascar
20.	<i>Eucalyptus globulus</i> Labill	Neelgiri	Neelgiri	Myrtaceae	Seed	Leaf, Bark	Pain killer, Cold and respiratory problem, Antimicrobial, Dental problem, Wounds	Decoction taken orally	December-April	Australia
21.	<i>Ficus benghalensis</i> L.	Bargad	Bar	Moraceae	Seed	Milky Latex, Leaf, Bark	Asthma, Diabetes, for Pain, Burn	Decoction taken orally	November-April	tropical Asia
22.	<i>Ficus racemosa</i> L.	Gular	Dumar	Moraceae	Seed	Milky Latex, Leaf, Bark	Asthma, Ulcer, Skin disease, Leucoderma, Uri- nary problem	Decoction taken orally	November-April	Indian Subcontinent and Indo-China
23.	<i>Ficus religiosa</i> L.	Peepal	Pipar	Moraceae	Seed	Milky Latex, Leaf, Bark	Diarrhoea, Piles, Eye trouble, Mouth ulcer	Decoction taken orally	November-April	Indian <i>subcontinent</i> and Indochina
24.	<i>Gmelina arborea</i> Roxb.	Khmar	Khamhar	Lamiaceae	Seed	Bark	Digestive, Cardiotonic, Diuretic, Laxative, Digestive, Ulcer	Decoction taken orally	November-April	<i>Indian</i> Sub-continent
25.	<i>Lawsonia inermis</i> L.	Heena	Mehandi	Lythraceae	Seed	Leaf	Antibacterial, Anti-inflammatory, Wounds, anti-inflammatory, analgesic and antipyretic, anti-parasitic,	Leaf paste utilized externally	April-July	North Africa, Asia and Australia
26.	<i>Madhuca longifolia</i> (J. Koenig ex L.) J.F. Macbr.	Mahua	Mauha	Sapotaceae	Seed	Seed, Bark	Burn, Antibacterial, Bronchitis, Cough, Ulcer, Skin disease	Seed oil applied externally; Decoction taken orally	November-April	southeast Asia
27.	<i>Mangifera indica</i> L.	Aam	Aama	Anacardiaceae	Seed	Fruit, Leaf, Bark	Dysentery, Digestive, Vita. A, Tonic, Tism	Leaf, Fruit juice and Bark decoction taken orally	December-May	South Asia
28.	<i>Melia azedarach</i> L.	China berry, Bakain	Bakain	Meliaceae	Seed	Bark	Antioxidative, Analgesic, anti-Inflammatory, Insecticidal,	Paste utilized externally	November-April	Australia and South East Asia.

							Rodenticidal, Antidiarrhoeal, Diuretic, Antidiabetic,			
29.	<i>Moringa oleifera</i> Lam.	Horse Radish Sahijan	Munga	Moringaceae	Seed	Leaf, Fruit, Bark	Asthma, Diabetes, Digestive, Stomach pain, Diarrhoea, Skin problem	Decoction taken orally	November-Mach	Africa and Asia
30.	<i>Neolamarckia cadamba</i> (Roxb.) Bosser	Kadamb	Kadamb	Rubiaceae	Seed	Bark	Inflammation, Antibacterial, Diabetes, Cough, Fever, Asthma	Fruit juice and Decoction taken orally	July-November	Australia, China and India
31.	<i>Phyllanthus emblica</i> L.	Amla, Indian Goose berry	Aura	Euphorbiaceae	Seed	Leaf, Fruit, Bark	Laxative, Diuretic, Carminative, Stomachic, Antidiarrhoeal, Jaundice, Eye problem, Digestive	Bark, fruit juice taken orally	October-February	tropical South-Eastern Asia
32.	<i>Pithecellobium dulce</i> (Roxb.) Benth.	Jungle jalebi	Ganga Imli	Fabaceae	Seed	Fruit, Bark	Diarrhea, Dysentery, Ulcer, Antidiabetic,	Decoction taken orally	January-April	Tropical America
33.	<i>Pongamia pinnata</i> Linn. Pierre	Karanj	Karanj	Fabaceae	Seed	Leaf, Fruit, Bark	Skin disease, Leukoderma, Carminative, Parasiticide, Bleeding	Pulp and crushed part used externally	November-April	tropical and temperate Asia
34.	<i>Psidium guajava</i> L.	Guava, Amrud	Bihi	Myrtaceae	Seed	Leaf, Fruit, Bark	Diarrhoea, Laxative, Ulcer, Vomiting, Digestion	Fruit juice and extraction taken orally	August-December	Mexico, Central America
35.	<i>Schleichera oleosa</i> Lour. Merr.	Kusum	Kosam	Sapindaceae	Seed	Fruit, Bark	Arthritis, Headache, Skin diseases, Fever, Inflammation, Ulcer	Fruit juice and extraction taken orally	April-August	India
36.	<i>Shorea robusta</i> Roth.	Sal	Sarai	Dipterocarpaceae	Seed	Bark	Wounds, Ulcers, Cough, Headache, Diarrhoea, Boil, Antidiabetic	Extract taken orally	January-May	Indian Subcontinents
37.	<i>Syzygium cumini</i> Linn. Skeels.	Jamun	Jam	Myrtaceae	Seed	Leaf, Fruit, Bark	Antidiabetic, Digestive, Diarrhoea, Asthma, Ringworm, Blood purifier, Anthelmintic,	Juice taken orally	April-July	Indian Subcontinent
38.	<i>Tamarindus indica</i> Linn.	Imli	Amla	Fabaceae	Seed	Leaf, Fruit, Bark	Digestive, Wounds, Stomach pain, Diarrhea, Fever, Respiratory problems	Juice and Decoction taken orally	August-December	tropical East Africa and West Asia
39.	<i>Terminalia arjuna</i> Roxb.	Arjun	Kauha	Combretaceae	Seed	Bark	Antidysentery, Antiesthetic, Cardiotonic, Ulcer, Diuretic, Leukoderma, Antidote	Decoction Taken orally	November-May	Indian subcontinent
40.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Bahera	Bahera	Combretaceae	Seed	Fruit, Bark	Digestive, Respiratory Problem, Cough, Dysentery. Skin problem, Burn	Decoction Taken orally	October-May	Tropical Asia
41.	<i>Terminalia chebula</i> Retz.	Harra	Harra	Combretaceae	Seed	Fruit, Bark	Digestive, Respiratory Problem, Cough, Diarrhoea, Liver problem, Stomach pain,	Decoction Taken orally	October-May	North East India and Indo-Burma region
42.	<i>Vitex negundo</i> Linn.	Negur	Negur	Verbenaceae	Seed, Stem cutting	Leaf, Stem	Toothache, Swelling, Digestive, Tonic, Asthma, Dysentery, Rheumatism, Skin disease,	Twig used as tooth brush, Decoction Taken orally		

Table 2: Familywise distribution of Medicinal Trees

S. No.	Family	Number of Trees
1.	Anacardiaceae	2
2.	Annonaceae	2
3.	Boraginaceae	1
4.	Combretaceae	3
5.	Dipterocarpaceae	1
6.	Euphorbiaceae	2
7.	Fabaceae	12
8.	Lamiaceae	1
9.	Lythraceae	1
10.	Malvaceae	1
11.	Meliaceae	2
12.	Moraceae	4
13.	Moringaceae	1
14.	Myrtaceae	3
15.	Rubiaceae	1
16.	Rutaceae	2
17.	Sapindaceae	1
18.	Sapotaceae	1
19.	Verbenaceae	1
	Total	42



Number of Medicinal Trees

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