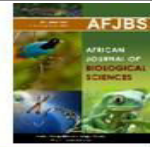


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## Wild Medicinal Plants of Hazaribag district, Jharkhand

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### Abstract:

The biodiversity of medicinal plants is abundant in Jharkhand. Of Jharkhand's entire land, around 40% is covered by forests. There are 32 tribal communities in Jharkhand. According to traditional knowledge, they treat a variety of illnesses with medicinal plants. The primary healthcare provider in rural Jharkhand refers to traditional healers as vaidyas. The locals rely on plant resources for a variety of uses, including fuel, feed, medicine, fiber, and lumber. The local indigenous populations are familiar with the custom of using plants as medicine. These people typically rely on herbs and other things to treat illnesses when they don't have access to modern facilities. A total of 118 species of medicinal plants like trees, shrubs, herbs, and grasses belonging to 51 families and 97 genera were found during the course of this study and were frequently utilized by the locals to treat a variety of illnesses. Whole plants, leaves, stems, roots, tubers, bark, flowers, fruits, and seeds were among the several plant parts that were utilized. The traditional and ethnic knowledge derived from these leads has been crucial in the discovery of new products and the development of fresh concepts about the preservation of natural resources. The goal of this paper is to list the significant biodiversity of medicinal plants which is used by the local people and tribal people of Hazaribag.

**Keywords:** Hazaribag, medicinal plants, tribals, Jharkhand.

### Introduction:

India has a unique position in the world's traditional medical system and a great diversity of aromatic and therapeutic plants (Kumar and Bhagat, 2012). Natural medicinal herbs are all around us. People from all across the world have studied for millennia how to prevent and treat disease with plants. Herbal medicine, which is the foundation of traditional medicine, has long been important in treating a wide range of illnesses in both people and animals. Ayurveda, Siddha, homeopathy, and the Unani medical system all employ about 2000 different plant species (Kirtikar and Basu, 2001). Since the majority of herbal practitioners in India make and dispense their own remedies, this calls for accurate documentation and research. Around 40% of people in the western world report having used herbs to treat a variety of illnesses in the previous year, indicating a steady increase in the usage of herbal medications (Bent and Ko, 2004). The growing frequency of adverse drug responses and the financial

strain of the current medical system have led to an exponential surge in public academic and government interest in traditional remedies (Dubey *et al.*, 2004).

Several ethnobotanists from various regions of India, have made contributions to the subject of ethnomedicine. Few of them are Tarafder and Chaudhuri (1981), Srivastawa and Verma (1981), Tarafder (1983), Vidyarthi *et al.* (2004), Singh (2008), Shankar and Mishra (2011, 2012), Shankar and Singh (2012), Kumar *et al.* (2013), Bhushan and Kumar (2013), Maity *et al.* (2015), Divakara and Prasad (2015), Mandal and Mishra (2016), Jain *et al.* (2017), Hembrom and Kumar (2018), Ranjan and Mishra (2018), Das (2018), Kumar *et al.* (2018), Kumar (2020), Kumar (2020), Kumar and Saikia (2020), Swati *et al.* (2021) and Gupta and Khawas (2022).

### Materials and Methods:

Tribals, Vaidays or Hakims and elder persons above the age of 70 years, having traditional knowledge regarding medicinal plants, were interviewed with the help of semi-structured questionnaire. The medicinal uses for various kinds of diseases were recorded. The field survey was conducted in pre-monsoon, post monsoon and in winter season when plants blossom and exhibit substantial development in order to better understand their natural environment and range. The survey was conducted during March 2021 to February 2022. Plants were photographed and a twig of each plant was preserved to prepare herbarium after drying and pressing. The identification of plant material was carried out with the help of Haines flora, 1925 and Flora of Hazaribagh district, 2000. The traditional knowledge regarding the medicinal plants was obtained with the help of conversations and discussions with the knowledgeable people of the area with respect to their local names, plant parts used, intended usage and their curative properties.

### Study Area:

Hazaribagh district is situated at 23° 25' to 24° 48' North latitude and 84° 27' to 86° 34' East longitude. Its average altitude above mean sea level is 610 meter. Encompassing a land area of 3,555 sq.kms., the district is bordered to the north by Koderma district, to the east by Giridih district, to the west by Chatradistrict, and to the south by Ranchi, Ramgarh, and Bokaro districts. There are 16 tehsils in the district Hazaribagh. Due to large forest cover (48%) and favourable environmental condition, this district is rich in plant diversity.



**Fig. 1: Map of Jharkhand state highlighting the district Hazaribagh.**

**Table 1: Medicinal plants collected from the below mentioned sites of Hazaribagh district.**

<b>1.</b>	Canary Hill park, Hazaribag	<b>10.</b>	Near Hazaribag Lake, Hazaribag
<b>2.</b>	Krishi Paryatan Kendra, Morangi, Hazaribag	<b>11.</b>	LakheyBagaitcha, Imambada Road, Hazaribag
<b>3.</b>	Friends park, Sandoori, Hazaribag	<b>12.</b>	Simpson Park, Hazaribag
<b>4.</b>	Sarle Jheel Park, Lake Road, Pug Mill Road, Hazaribag	<b>13.</b>	Guru Govind Singh Park, Nawabganj, Hazaribag
<b>5.</b>	Mahatma Gandhi Park, Vishnupuri, Hazaribag	<b>14.</b>	Jan Nayak karpuri Thakur Paratima Sthal, Hazaribag
<b>6.</b>	BarsoPani Cave, Barkagaon, Hazaribag	<b>15.</b>	Hazaribag National Park, Hazaribag
<b>7.</b>	Demotand Park, Ranchi-Patna Road, Morangi, Hazaribag	<b>16.</b>	Swarna Jayanti Park, Shakuntla Kunj, Hazaribag
<b>8.</b>	Shaheed Nirmal Mahto Park, Hazaribag	<b>17.</b>	Hazaribagh Wildlife sanctuary, Hazaribag
<b>9.</b>	Near Panch Mandir, Hazaribag	<b>18.</b>	Active Youth park, Baihari, Hazaribag

**Table 2: A detailed list of plants used as medicines by native and tribal people of Hazaribag district, Jharkhand.**

S. No.	Name of Plant species	Family	Vernacular Name	English Name	Plant part used	Medicinal uses
1.	<i>Abutilon indicum</i> (Linn.) Sweet	Malvaceae	Pili Bhuti	Indian Abutilon	Leaves, Roots, Seeds	Useful in diarrhoea, gonorrhoea, inflammations of the bladder, chest affections and fever
2.	<i>Acacia catechu</i> (L.f.) Willd.	Fabaceae	Khair	Cutch Tree	Bark, Leaves and Heartwood	Acts as antidiabetic, anti-bacterial, anti-ulcer, antidiarrhoeal and also effective against jaundice
3.	<i>Acacia nilotica</i> (Linn.) Delile	Fabaceae	Kikar	Indian gum arabic tree	Bark, Gum, and Fruits	Effective in bleeding, sore throat, dysentery, diabetes, chest complaints and cough
4.	<i>Achyranthes aspera</i> Linn.	Amaranthaceae	Latjira, Cahirchita	Devil's horse whip	Whole plant	Used in urinary diseases, boils, skin eruptions, colic, snake bite, bronchial affections, abortification, diarrhoea, dysentery, piles, stomach pain and toothache
5.	<i>Acorus calamus</i> Linn.	Acoraceae	Bach	Sweet Flag Myrtle Grass	Rhizome	Act as rejuvenator (enhance memory), antifungal agent, antioxidant, anti-ulcer, blood sugar lowering activity and might stop the stomach's acidic secretion
6.	<i>Adhatodavasica</i> Linn.	Acanthaceae	Basaka	Malbar nut, Adulsa plant	Root, Bark, Leaves, Flowers and Fruits	Acts as febrifuge, antiseptic and anthelmintic and also useful in scabies, neuralgic pains, cough and asthma
7.	<i>Adiantum capilliveneris</i> Linn.	Adiantaceae	Kalijant	Walking Maiden hair Fern	Whole plant	Used in epileptic fits, ulcers, diarrhoea, rabies, elephantiasis and throat affections
8.	<i>Aegle marmelos</i> (L.) Correa. ex Roxb.	Rutaceae	Bael	Wood Apple	Fruits and Leaves	Useful in indigestion, constipation, diabetes and effective against jaundice

9.	<i>Ageratum conyzoides</i> Linn.	Asteraceae	Bhakkoo	Goat Weed	Roots, Leaves and Flowers	Effective in skin diseases, to check the development of stone in bladder and healing of wounds
10.	<i>Albizia lebbek</i> Benth.	Fabaceae	Siris	East Indian Walnut	Seeds, Leaves, Flowers and Bark	Diarrhoea, ophthalmia, boils, eruptions, swellings, ulcers, snake-bite wounds, leucoderma and as antidote to poisons
11.	<i>Aloe barbadensis</i> Mill.	Liliaceae	Ghee Kanwar	Burn Plant	Leaves	Acts as carminative, anthelmintic, stomachic, and useful in tumours, enlargement of spleen, liver complaints, skin diseases, fever and swellings
12.	<i>Alstoniascholaris</i> R. Br.	Apocynaceae	Chatian	Devil's tree	Bark and Leaves	Used in painful joints, earache, chronic diarrhoea, asthma, dysentery and snake bite
13.	<i>Alternanthera sessilis</i> DC.	Amaranthaceae	Gokula	Sessile joy-weed	Leaves	Very effective in piles treatment and acts as astringent, digestive, galactagogue and febrifuge
14.	<i>Althaea rosea</i> Cav.	Malvaceae	Gule-khera	Holyoke	Roots, Leaves, Flowers and seeds	Analgesic, given in dysentery, earache, breast inflammation, cough, irritable conditions of intestine and urinary bladder
15.	<i>Amaranthus spinosus</i> Linn.	Amaranthaceae	Cholai	The Thorny Amaranth	Leaves and roots	Used in eczema, menorrhagia, haemoptysis and leucorrhoea
16.	<i>Amaranthus viridis</i> Linn.	Amaranthaceae	Jangli Cholai	Large-fruited Amaranth	Leaves and roots	Used for the treatment of urination and constipation
17.	<i>Anagalis arvensis</i> Linn.	Primulaceae	Jonkmari	Blue pimpernel	Leaves and Whole plant	Used against skin infections, rheumatism, diuretic, diaphoretic, hepatic and renal complaints
18.	<i>Anthocephalus cadamba</i> Miq.	Rubiaceae	Kadamb	Malay Peach	Bark and Leaves	Febrifuge, skin diseases and have potent wound healing capacity

19.	<i>Argemone mexicana</i> Linn.	Papaveraceae	Satyanashi	Mexican Prickly Poppy	Whole plant, Roots and Latex	Fever, febrifuge, lactagogue, skin diseases, rabies, jaundice, scabies and used in gonorrhoea
20.	<i>Artemisia capillaris</i> Thunb.	Asteraceae	Danti	Red-Stem wormwood	Whole plant	Antipyretic, antiseptic, cholagogue, diuretic and vasodilator
21.	<i>Asparagus racemosus</i> Willd.	Liliaceae	Shatavri	Asparagus	Roots	Dyspepsia, nervous and rheumatic complaints, throat infections, cough, gonorrhoea, hypertension and abortion
22.	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Neem	Margo tree	Bark, Leaves and Flowers	Insecticidal, astringent, liver tonic, tuberculosis, intestinal burns, leprosy and intestinal burns
23.	<i>Bambusa bambos</i> Voss.	Poaceae	Bans	Spiny bamboo	Stem, Leaves and Rhizome	Burning sensation, diseases of blood, leucoderma, wounds, bleeding gums and joint pains
24.	<i>Bauhinia variegata</i> Linn.	Caesalpiniaceae	Kachnar	Mountain ebony	Bark and Roots	Skin diseases, blood purifier, anthelmintic, astringent, leprosy, syphilis, diarrhoea, dyspepsia and used to prevent obesity
25.	<i>Boerhaavia diffusa</i> Linn.	Nyctaginaceae	Punarnava	Hog weed	Whole plant	The extract of plant is a good diuretic, controlling urinary trouble, jaundice and liver complaints
26.	<i>Bryophyllum pinnatum</i> (Lam.) Kurz.	Crassulaceae	Pathar chat	Miracle leaf	Leaves	Acts as astringent, refrigerant, carminative, and used in bruises and boils
27.	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	Palash	Flame of Forest	Stem bark and Leaves	Acts as anti-bacterial, anti-inflammatory, effective in decreasing the blood glucose level by increasing glucose metabolism
28.	<i>Caesalpinia pulcherrima</i> (Linn.) Sw.	Caesalpiniaceae	Guletura	Peacock Plant	Leaves, Stem, Roots and Oil	Treatment of menstrual pain, asthma, chest pain, kidney stones, anti-inflammatory activities, antiviral and antimicrobial activities.

29.	<i>Calotropis gigantea</i> R. Br.	Asclepiadaceae	Akra	Gigantic Swallow Work	Root, Leaves, Juice of plant and Flowers	Diaphoretic, purgative, asthma, syphilis, elephantiasis, intermittent fevers, astringent and cure inflammations
30.	<i>Calotropis procera</i> (Ait.) R.Br.	Asclepiadaceae	Amader, Akra	Rooster Tree	Root bark, Leaves, Flowers and Latex	Used in treatment of leucoderma, asthma, cough, ulcers, old sores, swellings and rheumatic joints
31.	<i>Canna chinensis</i> Linn.	Cannaceae	Sabbajaya	African Arrow Root	Roots, Leaves, Flowers and Seeds	Demulcent, stimulant, fever, dropsy, diaphoretic, anthelmintic, analgesic and eye diseases
32.	<i>Cannabis sativa</i> Linn.	Cannabinaceae	Bhang	Hemp	Whole plant, Leaves, Bark, Flowering shoots and Seeds	Effective in malaria, black water fever, dysentery, inflammations, haemorrhoids, digestion problems, dandruff, wounds and sores
33.	<i>Cassia fistula</i> Linn.	Caesalpiniaceae	Amaltas	Golden Shower Tree	Leaves, Root, Bark and Fruit	Useful against ringworm infections, rheumatism and facial paralysis
34.	<i>Cassia occidentalis</i> Linn.	Caesalpiniaceae	Kasunda	Ant-bush	Leaves, Roots and Seeds	Acts as anti-malarial, antibacterial, antimutagenic, anticarcinogenic, and useful in yellow fever, headache and conjunctivitis
35.	<i>Cassia surattensis</i> Burm. f.	Caesalpiniaceae	Tarvar	Glossy Shower	Bark and Leaves	Useful in diabetes and gonorrhoea
36.	<i>Cassia tora</i> L.	Caesalpiniaceae	Cakvat	Foetid Cassia	Seeds	Useful in weightloss and removing unwanted toxins from the body
37.	<i>Catharanthus roseus</i> G. Don	Apocynaceae	Sadabahar	Madagascar periwinkle	Whole plant and Leaves	Useful against cancer, menorrhagia and hypertension

38.	<i>Centella asiatica</i> (Linn.) Urban.	Apiaceae	Brahmi	Indian Pennywort	Whole Plant	Cardio-tonic, nervine tonic, diuretic, febrifuge and useful in dysentery
39.	<i>Chenopodium album</i> Linn.	Chenopodiaceae	Bathwa	Wild spinach	Leaves, Flowers and Buds	Laxative, blood purifier, anthelmintic, indigestion, aphrodisiac, hepatic disorder and spleen enlargement
40.	<i>Chenopodium ambrosioides</i> Linn.	Chenopodiaceae	Ban Bathua	Worm Seed	Whole Plant	Anthelmintic, antispasmodic, antimicrobial and antifungal and intestinal parasites
41.	<i>Chukrasiatubularis</i> A. Juss.	Meliaceae	Chikrassy	Indian red wood	Bark	Antipyretic, astringent, diuretic, skin irritations and allergies
42.	<i>Cleome viscosa</i> Linn.	Capparidaceae	Hurhul	Wild Mustard	Seeds and Leaves	Digestive, anthelmintic, carminative, febrifuge, cardiac tonic, stimulant and useful in fever
43.	<i>Clerodendrum inerme</i> (Linn.) Gaertn.	Verbenaceae	Sangkupi	Indian Privet	Stem and Leaves	Cough, venereal infections, skin diseases, vermifuge, febrifuge, beri-beri disease, fever, cough, skin rashes and boils, umbilicord infection and for cleaning the uterus
44.	<i>Coccinia cordifolia</i> Cogn.	Cucurbitaceae	Kanduri	Ivy gourd	Leaves, Roots, Bark and Fruits	Carminative, antipyretic, galactagogue, skin eruptions, bloody dysentery, biliousness and diabetes
45.	<i>Convolvulus arvensis</i> Linn.	Convolvulaceae	Lehli, Hiranpadi	Wild Moring glory	Leaves, Flowers, Roots and Rhizomes	Purgative, laxative, fever and heal wounds
46.	<i>Cordia dichotoma</i> Forst. f.	Boraginaceae	Lasura	Fragrant manjack	Leaves, Fruits and Bark	Diuretic, ulcers, headache, lungs and spleen infections



47.	<i>Cuscutta reflexa</i> Roxb.	Convolvulaceae	Amar-bel	Giant Doddar	Whole plant, and stem	Astringent, anthelmintic, fevers, diarrhoea, sores, itches, headache and stomachic
48.	<i>Cynodon dactylon</i> Pers.	Poaceae	Durbhaghas	Bermuda grass	Whole Plant and Rhizome	Astringent, haemostatic, cooling, haematuria, vomiting, chronic diarrhoea, urinary sedative, gout and rheumatism
49.	<i>Cyperus rotundus</i> Linn.	Cyperaceae	Motha	Nut grass	Tubers, Whole Plant and Roots	Galactagogue, insecticidal, anti-microbial, anthelmintic and intestinal problems of children
50.	<i>Dalbergia sissoo</i> Roxb.	Fabaceae	Sheesham	Indian Rosewood	Leaves, bark and Roots	Scabies, antiemetic, astringent, aphrodisiac, dysentery, diarrhoea, constipation and eye diseases
51.	<i>Datura stramonium</i> Linn.	Solanaceae	Datura	Devil's Apple	Leaves, Roots and Flowers	Asthma, eye pain, headache, enlargement of testicles and boils
52.	<i>Eclipta prostrata</i> (Linn.) L.	Asteraceae	Bhrangraj	Flase Daisy	Whole Plant	Hepatic and spleen enlargement, cough, headache, jaundice and intestinal astringent
53.	<i>Elusine indica</i> Gaertn.	Poaceae	Balraj	Crowfoot grass	Whole Plant	Diuretic, laxative, depurative, stomachic, sudorific and febrifuge
54.	<i>Emblica officinalis</i> Gaertn.	Euphorbiaceae	Amla	Indian gooseberry	Fruits and Seeds	Diarrhoea, haemoptysis, diuretic, laxative, fever, vomiting, constipation and other digestive disorders
55.	<i>Euphorbia heliscopia</i> Linn.	Euphorbiaceae	Mahabi	Sun Spurge	Whole Plant, Roots and Seeds	Ascites, oedema, tuberculosis and anthelmintic
56.	<i>Euphorbia hirta</i> Linn.	Euphorbiaceae	Dodak	Asthma weed	Whole Plant and Latex	Vermifuge, urinogenitory diseases, respiratory diseases, breast pain, gastrointestinal disorders and have hypoglycaemic properties

57.	<i>Euphorbia milli</i> Ch. des Moul.	Euphorbiaceae		Christ plant	Latex	Molluscicidal properties, hepatitis and abdominal edema
58.	<i>Euphorbia prostrata</i> Ait.	Euphorbiaceae	Dhodhial	Prostrate spurge	Whole Plant	Diarrhoea and haemorrhage
59.	<i>Euphorbia royleana</i> Boiss	Euphorbiaceae	Dandathor	Asthma plant	Latex	Cathartic and anthelmintic properties
60.	<i>Evolvulusalsinoides</i> Linn.	Convolvulaceae	Sankhpushpi	Slender dwarf morning glory	Whole plant, Leaves, Flowers and Fruits	Memory enhancer, fever, anthelmintic, antiphlogistic, febrifuge, antispasmodic, leucoderma, vermifuge, epilepsy, nervine complaints and bleeding
61.	<i>Ficus benghalensis</i> Linn.	Moraceae	Bargad	Banyan Tree	Bark, Latex, Roots and Leaves	Astringent, diarrhoea, leucoderma, dysentery, rheumatism, sores, ulcers, vomiting, burning and abscesses
62.	<i>Ficus carica</i> Linn.	Moraceae	Anjir	Punjab fig	Fruits and Latex	Laxative, constipation, analgesic and effective against warts treatment
63.	<i>Ficus palmate</i> Forsk.	Moraceae	Anjeer	Wild Himalayan fig	Fruits and Plant sap	Constipation, gastrointestinal, hypoglycaemic, antitumour, anti-ulcer, anti-diabetic and antifungal activities
64.	<i>Ficus racemosa</i> Linn.	Moraceae	Gular, Doomar	Cluster Fig, Country Fig	Bark, Fruit, Latex and Roots	Diarrhoea, dysentery, astringent, diabetes, and leucoderma
65.	<i>Ficus religiosa</i> Linn.	Moraceae	Peepal	Sacred Ficus	Bark, Fruits and Seeds	Astringent, scabies, toothache, hypoglycemia, laxative and digestive

66.	<i>Grewia asiatica</i> Mast.	Tiliaceae	Phalsa	Lavender star flower	Roots, bark, Leaves and Fruits	Gonorrhoea, rheumatis, astringent, stomachic properties, heart and blood disorders, diarrhoea, throat troubles and pustular eruptions
67.	<i>Ipomoea palmata</i> Forsk.	Convolvulaceae		Messina creeper	Whole Plant	Anti-inflammatory, analgesic, antipyretic, anti-ulcerogenic, laxative and anticarcinogenic
68.	<i>Jasminum grandiflorum</i> (Linn.) Kobuski	Oleaceae	Chameli	Spanish Jasmine	Roots, Leaves and Flowers	Ringworms, skin diseases, toothache, mouth ulcers, headache and weak eyes
69.	<i>Jasminum sambac</i> (Linn.) Ait	Oleaceae	Mogra	Arabian Jasmine	Leaves and Flowers	Lactifuge and useful for indolent ulcers
70.	<i>Lantana camara</i> Linn.	Verbenaceae	Ghaneri	Angel lips	Whole plant and Flowers	Gonorrhoea, antitumoral, antibacterial, antihypertensive, cough, fever, yellow fever and high blood pressure
71.	<i>Launaearesedifolia</i> L. Kuntze	Asteraceae		Launea	Whole plant	Antibacterial, anti-inflammatory and hepatic pains
72.	<i>Lawsoniainermis</i> Linn.	Lythraceae	Mehndi	Henna	Leaves	Spermatorrhoea, jaundice, rheumatic joints, inflammatory swelling, bruises, skin diseases, leprosy, hair tonic and ulcers
73.	<i>Mallotusphilippensis</i> (Lam.) Mull. Arg.	Euphorbiaceae	Kamila	Red Berry	Bark, Leaves and Fruits	Abdominal diseases, diabetes, indigestion and have potential to reduce the glucose level in blood
74.	<i>Malvastrumcoromandelianum</i> Garcke	Malvaceae	Kharenti	Broom weed	Whole plant	Diaphoretic, emollient, cooling, antidysenteric, antiinflammatory and used in sores and wounds
75.	<i>Mangifera indica</i> Linn.	Anacardiaceae	Aam	Mango	Leaves, Bark, Gum, Fruits and Seeds	Diarrhoea, diabetes, menorrhagia, leucorrhoea, dysentery, scabies, skin diseases and antiscorbutic

76.	<i>Melia azedarach</i> Linn.	Meliaceae	Bakain	Bead tree	Bark, Leaves, Flowers, Fruits and Seeds	Rheumatism, leprosy, diuretic, headache, anthelmintic, antispasmodic and leprosy
77.	<i>Mentha arvensis</i> Linn.	Lamiaceae	Pudina	Mint	Leaves	Anaesthetic, aromatic, antiseptic, antispasmodic, galactofuge, refrigerant, stomachic, diuretic, digestive disorders, and stomach cancer
78.	<i>Mentha longifolia</i> (Linn.) Nathh	Lamiaceae	Jangli Pudina	Wild Mint	Leaves	Carminative, stimulant, respiratory ailments, coughs, colds, indigestion and headache
79.	<i>Mimosa pudica</i> Linn.	Fabaceae	Lajwanti	Touch me not	Whole plant, Roots and Seeds	Blood purifier, carminative, diarrhoea, dysentery, headache, piles, asthma and antiseptic
80.	<i>Mirabilis jalapa</i> Linn.	Nyctaginaceae	Jalap	4 O'Clock Plant	Leaves and Roots	Itching, dysentery, cholera, and diarrhoea
81.	<i>Moringa oleifera</i> Lam.	Moringaceae	Sahjan, Sainjna	Drumstic k Tree	Leaves, Bark, Root, Gum and Flowers	Scurvy, stimulant, diuretic, epilepsy, hysteria, gout, dropsy, dyspepsia and liver enlargement
82.	<i>Morus alba</i> Linn.	Moraceae	Shehtoot	White Mulberry	Bark, Roots, Leaves and Fruits	Acts as purgative, vermifuge, anthelmintic, astringent and dyspepsia
83.	<i>Murrayakoenigii</i> (Linn.) Spreng.	Rutaceae	Ganda Nim, Gandela	Curry Leaf Tree	Leaves, bark and Roots	Used in dysentery, diarrhoea, improve appetite and digestion, fever, and renal pain
84.	<i>Nelumbo nucifera</i> Gaertn.	Nymphaeacea e	Kamal	Scared Lotus	Leaves, Flowers and Seeds	Headache, leprosy, astringent, cardiac tonic, diuretic, cholera, cough, piles and liver disorders
85.	<i>Nyctanthes arbor- tristis</i> Linn.	Oleaceae	Har-shingar	Night Jasmine	Leaves, Bark and Seeds	Expectorant, anthelmintic, laxative, sciatica, diaphoretic and diuretic
86.	<i>Opuntia dillenii</i> Haw.	Cactaceae		Cactus	Stem and Fruits	Cough, refrigerant, demulcent, gonorrhoea and boils

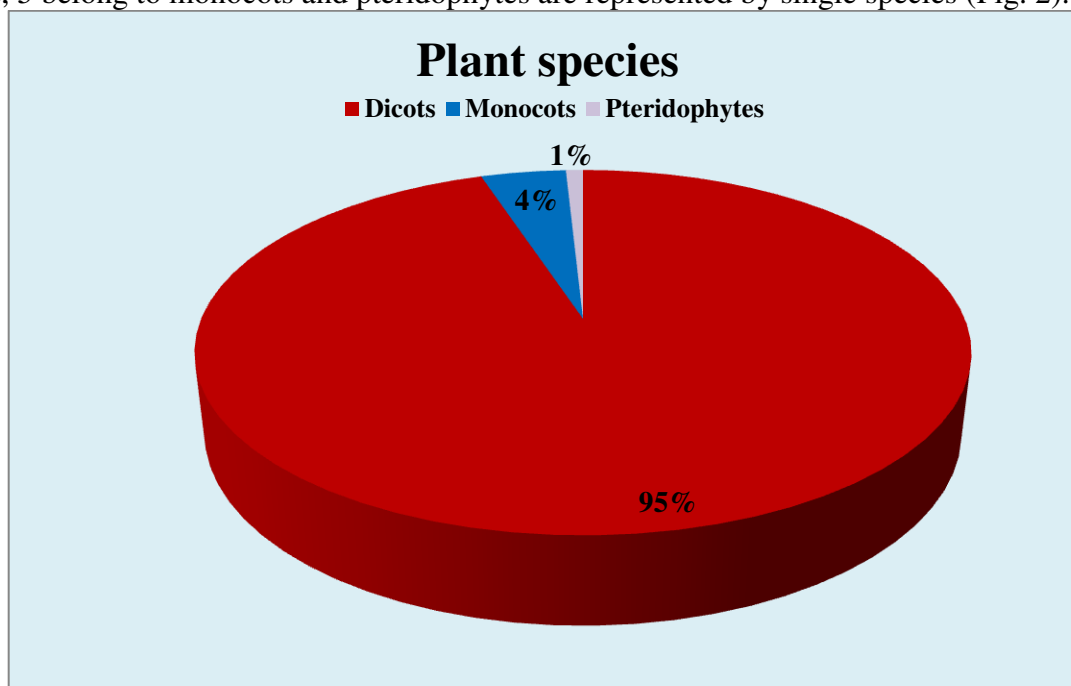
87.	<i>Oroxylum indicum</i> Vent.	Bignoniaceae	Saona	Indian Trumpet flower	Root bark, Stem bark, Fruits and Seeds	Astringent, diarrhoea, dysentery, digestion, fever, cough, urinogenital disorders and skin diseases
88.	<i>Oxalis corniculata</i> Linn.	Oxalidaceae	Tin patti	Wood Sorrel	Whole plant and Leaves	Cooling refrigerant, dysentery, scurvy and used for removing warts
89.	<i>Parthenium hysterophorus</i> Linn.	Asteraceae	GajarGhaas	Congress Grass	Whole plant and Roots	Dysentery, febrifuge, emmenagogue and analgesic
90.	<i>Phyllanthus fraternus</i> Webster	Euphorbiaceae	Bhumi Amla	Country Gooseberry	Whole plant, Leaves and Roots	Febrifuge, antiseptic, astringent, diuretic, stomachic, laxative, diabetes, gonorrhoea, genito-urinary diseases, jaundice and constipation
91.	<i>Plumbago zeylanica</i> Linn.	Plumbaginaceae	Chitrak	Wild Portulaca	Roots	Gastric stimulant, appetizer, rubefacient, abortifacient, diarrhoea, piles and leucoderma
92.	<i>Plumeria rubra</i> Linn.	Apocynaceae	Gopur Champa	Temple Tree	Roots, Leaves, Bark, Flowers and Latex	Diuretic, diaphoretic, anti-inflammatory, anti-itch, febrifuge and antiherpetic, and gonorrhoea
93.	<i>Polyalthia longifolia</i> Thw.	Annonaceae	Ashoka tree	The Mast tree	Bark	Febrifuge, anthelmintic, fever, skin diseases, diabetes, hypertension and helminthiasis
94.	<i>Populus alba</i> Linn.	Salicaceae	Poplar	White Poplar	Bark	Antiseptic, astringent, diuretic, arthritis, gout, urinary complaints, digestive and relieve the pain of menstrual cramps
95.	<i>Putranjivaroxburghii</i> Wall.	Euphorbiaceae	Putranjiva	Jiaputa	Leaves and Nuts	Cold, fever, rheumatism, and attributed with the birth of a male child
96.	<i>Rauvolfiaserpentine</i> Benth. ex Kurz.	Apocynaceae	Sarpgandha	Rauvolfia	Roots and Leaves	Intestinal disorders, diarrhoea, dysentery, anthelmintic and febrifuge
97.	<i>Ricinus communis</i> Linn.	Euphorbiaceae	Arand	Castor bean	Leaves, Fruits, and Seeds	Purgative, lactagogue, toothache, diarrhoea, constipation and dysentery
98.	<i>Rumex dentatus</i> Linn.	Polygonaceae	Jangali Palak	Toothed dock	Leaves and Roots	Diuretic, refrigerant and used as cooling agent

99.	<i>Saracaasoca</i> (Roxb.) De Willde.	Caesalpiniacea e	Jasundi	Ashoka Tree	Bark and Flowers	Haemorrhagic dysentery, bleeding piles, anthelmintic, burning sensation, tumours, enlargement of abdomen and retention of urine
100.	<i>Sidarhombifolia</i> Linn.	Malvaceae	Binjani	Arrow- leaf Sida	Whole Plant, Leaves and Stem	Tuberculosis, rheumatism, diarrhoea and swellings
101.	<i>Solanum nigrum</i> Linn.	Solanaceae	Mako	Black nighshade	Whole plant, Leaves, Flowers and Fruits	Ulcers, skin diseases, , enlargement of liver, jaundice, pustules, burns and rheumatic joint pains
102.	<i>Solanum xanthocarpum</i> Linn.	Solanaceae	Kanteli	Yellow- berried nighshade	Whole plant, Roots and Fruits	Anthelmintic, astringent, diuretic, useful against bronhitis, muscular pains, vomitting and fever
103.	<i>Sonchus asper</i> Hill	Asteraceae	Dodhak	Spiny sow thistle	Whole plant	Wounds, boils, injuries and applied on breast to increase lactation
104.	<i>Stellaria media</i> (Linn.) Vill	Caryophyllace ae	Gandel	Chickwee d	Whole plant	Burns, skin irritations, acne, eczema, chest ailments and also helps in digestion
105.	<i>Syzygiumcumini</i> (Linn.) Skeels	Myrtaceae	Jamun	Java Plum	Bark, Leaves, Fruits and Seeds	Anthelmintic, febrifuge, constipation, stomachic, antibacterial, antidiabetic, dysentery, diarrhoea and ringworm infections
106.	<i>Tabernaemontanadi varicata</i> (Linn.) Alston	Apocynaceae	Chandni	Crape Jasmine	Root, Root Bark, Leaves, Stem-bark, Flowers, Wood and Milky juice	Anthelmintic, refrigerant, used in burns and inflammation
107.	<i>Tectona grandis</i> Linn. f.	Verbenaceae	Sagwan	Teak	Bark, flowers, Seeds and Seed oil	Effective in anuria, scabies, toothache, headache, skin irritations and also helpful in liver infections
108.	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Combretaceae	Arjun	White Marudar	Leaf, Bark, Fruits and Seeds	Earache, febrifuge, anti-dysenteric, skin eruptions, hypertension, cardio-tonic and diuretic in liver cirrhosis

109.	<i>Terminalia bellerica</i> Roxb.	Combretaceae	Bahera	Belliric Myrobalan	Bark, Fruits and Seeds	Astringent, diuretic, gastro-intestinal, genito-urinary systems, gonorrhoea, piles and chronic constipation
110.	<i>Terminalia chebula</i> Retz.	Combretaceae	Hararh	Myrobalan	Fruits	Astringent, anti-inflammatory, laxative, carminative, cardio-tonic, febrifuge, epilepsy, skin diseases and neuropathy
111.	<i>Tinospora cordifolia</i>	Menispermaceae	Giloe	Heart-leaved moonseed	Stem	Anti-oxidative, anti-diabetic, anti-allergic, anti-stress and anti-inflammatory
112.	<i>Toona ciliata</i> M. Roem.	Meliaceae	Tun, Toon	Red Cedar	Bark and Seeds	Cardio-tonic, expectorant, anthelmintic and good for scabies
113.	<i>Tribulus terrestris</i> Linn.	Zygophyllaceae	Gokhru	Puncture vine	Roots, Leaves and Fruits	Stomachic, diuretic, dysuria, acute gonorrhoea, nocturnal seminal emission, calculus affections and ulcers
114.	<i>Vitex negundo</i> Linn.	Verbenaceae	Nirgundi	Negundo Chaste Tree	Roots, Leaves and Flowers	Dyspepsia, dysentery, ulcer, cough, leprosy, diarrhoea, cholera, cardiac disorders, headache and rheumatism
115.	<i>Withaniasomnifera</i> Dunal.	Solanaceae	Ashwagandha	Winter Cherry	Leaves, Roots and Fruits	Anthelmintic, febrifuge, lesions, cough, dropsy, rheumatism, ulcers and scabies
116.	<i>Xanthium strumarium</i> Linn.	Asteraceae	Chhota-gokhru	Rough cocklebur	Leaves, Root and Fruits	Cancer, ulcers, boils and also acts as diuretic
117.	<i>Ziziphus nummularia</i> (Burm. f.) Wight & Arn.	Rhamnaceae	Jhar Beri	Indian cherry Plum	Roots, Bark and Fruits	Headache, ulcers, diarrhoea and helpful in digestion
118.	<i>Zizyphus mauritiana</i> Lam.	Rhamnaceae	Ber	Indian Jujube	Leaves, Bark, Fruits and Roots	Rheumatism, conjunctivitis, wound dressing, dysentery, gingivitis and promote menstruation

**RESULTS AND DISCUSSIONS:**

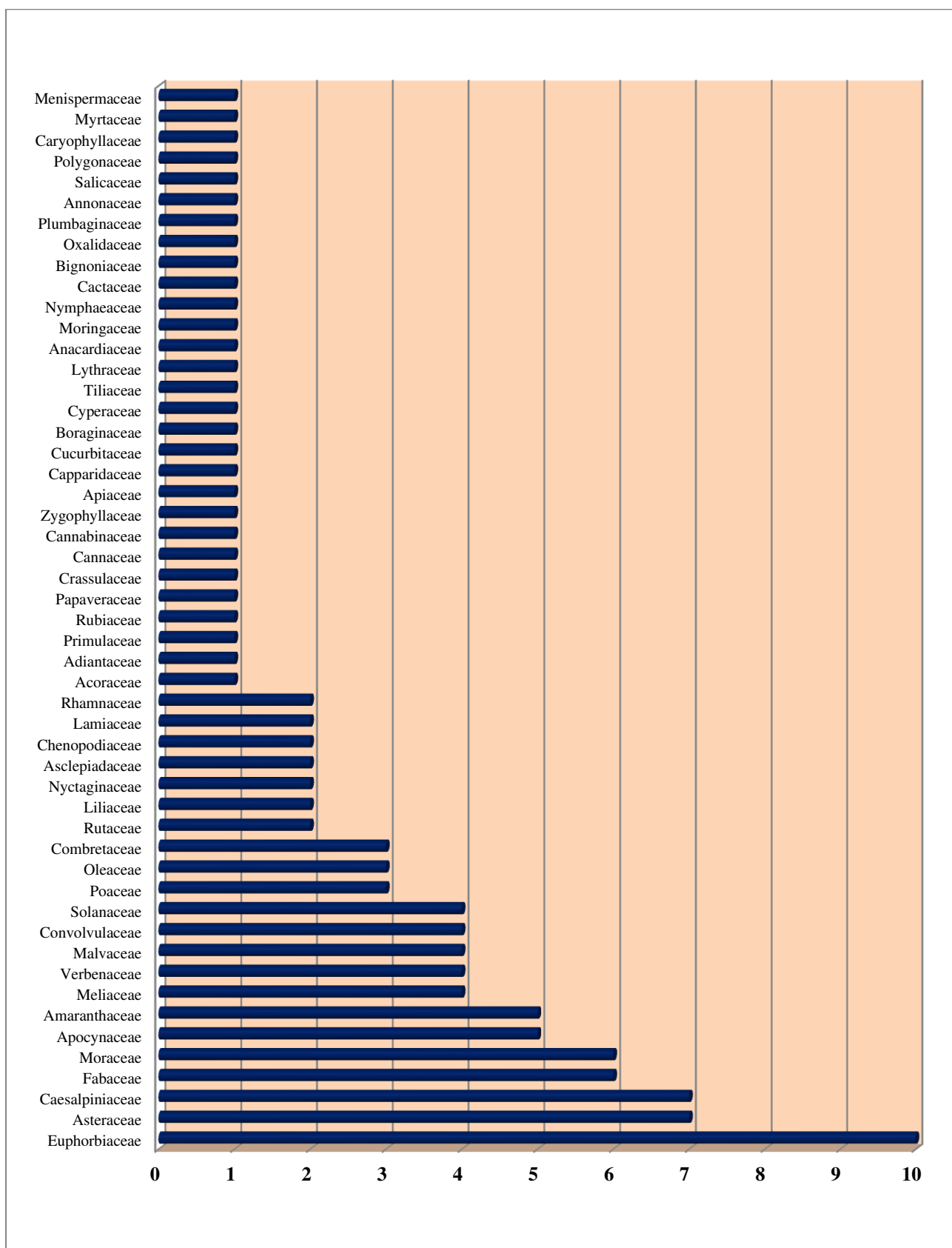
A total of 118 wild medicinal plants have been identified of which 112 plant species belong to dicots, 5 belong to monocots and pteridophytes are represented by single species (Fig. 2).



**Fig. 2 : Categorization of plant species recorded from Hazaribag, Jharkhand (in per cent).**

Among the 51 plant families, the most dominant family is Euphorbiaceae with highest number of 10 plant species followed by Asteraceae (7), Caesalpiniaceae (7), Fabaceae (6), Moraceae (6), Apocynaceae (5), Amaranthaceae (4), Meliaceae (4), Verbenaceae (4), Malvaceae (4), Convolvulaceae (4), Solanaceae (4), Poaceae (3), Oleaceae (3), Combretaceae (3), Rutaceae (2), Liliaceae (2), Nyctaginaceae (2), Asclepiadaceae (2), Chenopodiaceae (2), Lamiaceae (2), Rhamnaceae (2) and rest all the families are represented by single genera. The numbers put in parentheses represent the number of species (Fig. 3).

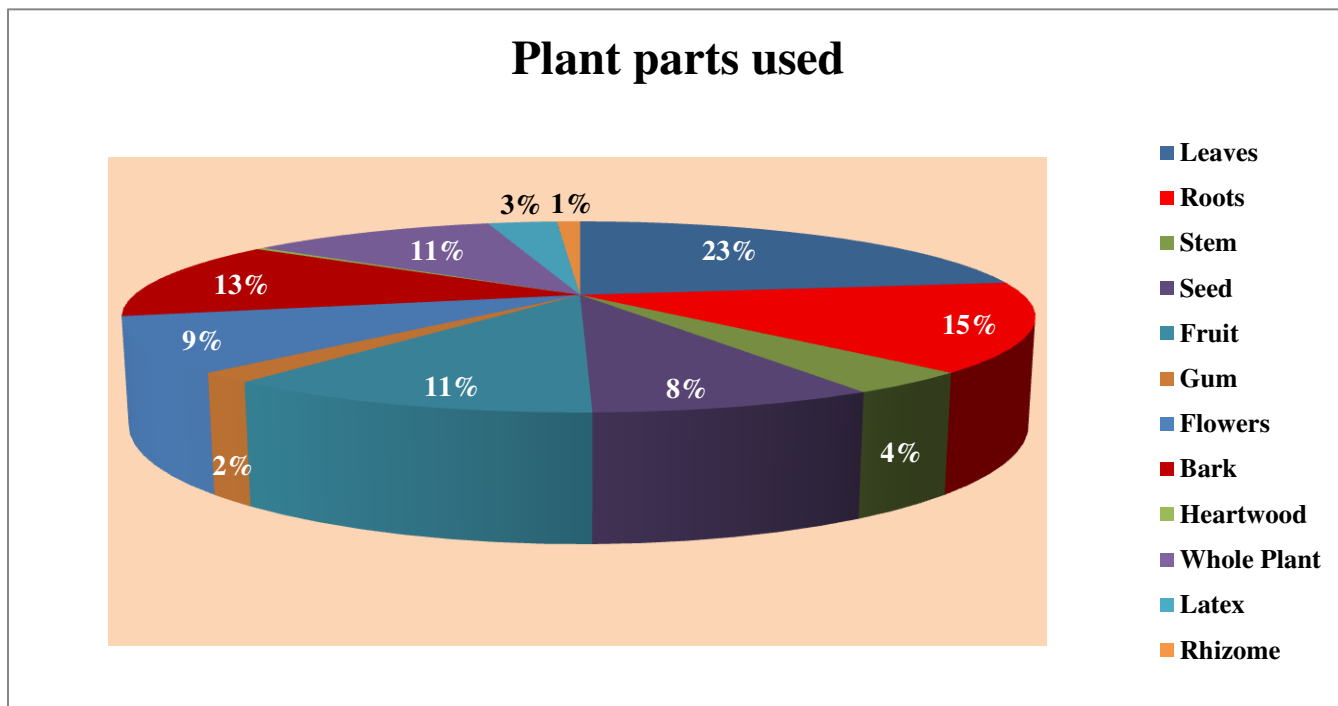




**Fig. 3: Floristic composition (family-wise) of medicinal plants recorded from Hazaribag, Jharkhand**

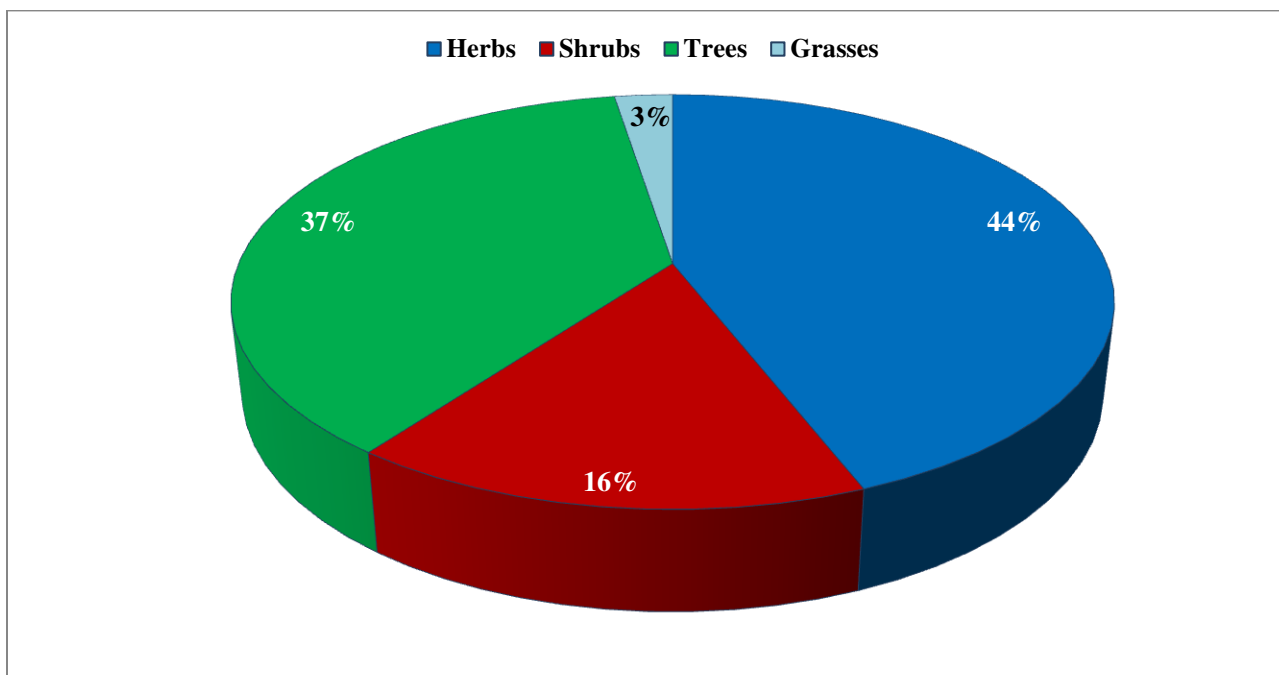
The most dominant genus among the 97 genera is *Euphorbia* which is represented by 5 species followed by *Ficus* (5), *Cassia* (4), *Terminalia* (3), *Acacia* (2), *Amaranthus* (2), *Calotropis* (2), *Chenopodium* (2), *Jasminum* (2), *Mentha* (2), *Solanum* (2), *Ziziphus* (2) and rest all the 85 genera are represented by single species.

Different plant parts, including leaves, roots, berries and leaves, aerial parts, latex, latex and roots, leaves and flowers, rhizomes, root and flowers, leaves and fruits, were found to be utilized. Leaves (67) are more dominant among all other plant parts followed by roots (44), bark (39), fruit (32), whole plant (32), flowers (27), seed (24), stem (11), latex (9), gum (5), rhizome (3) and heartwood (1) (Fig. 4). The numbers put in parentheses represent the number of species.



**Fig.4: Plant parts used by native people of Hazaribag, Jharkhand (in per cent).**

Almost all the life forms contribute in the medicinal flora recorded from Hazaribag. Herbs are the most dominant with share of 44% followed by trees (37%), shrubs (16%) and grasses (3%). (Fig. 5)



**Fig.5 :Life forms of the recorded medicinal plants from Hazaribag, Jharkhand.**

#### **Acknowledgement**

The authors express their sincere gratitude to the residents of the neighboring villages of Hazaribag, particularly the tribals, vaidyas, and elders, for providing important information regarding the local names for plants and their traditional usage.

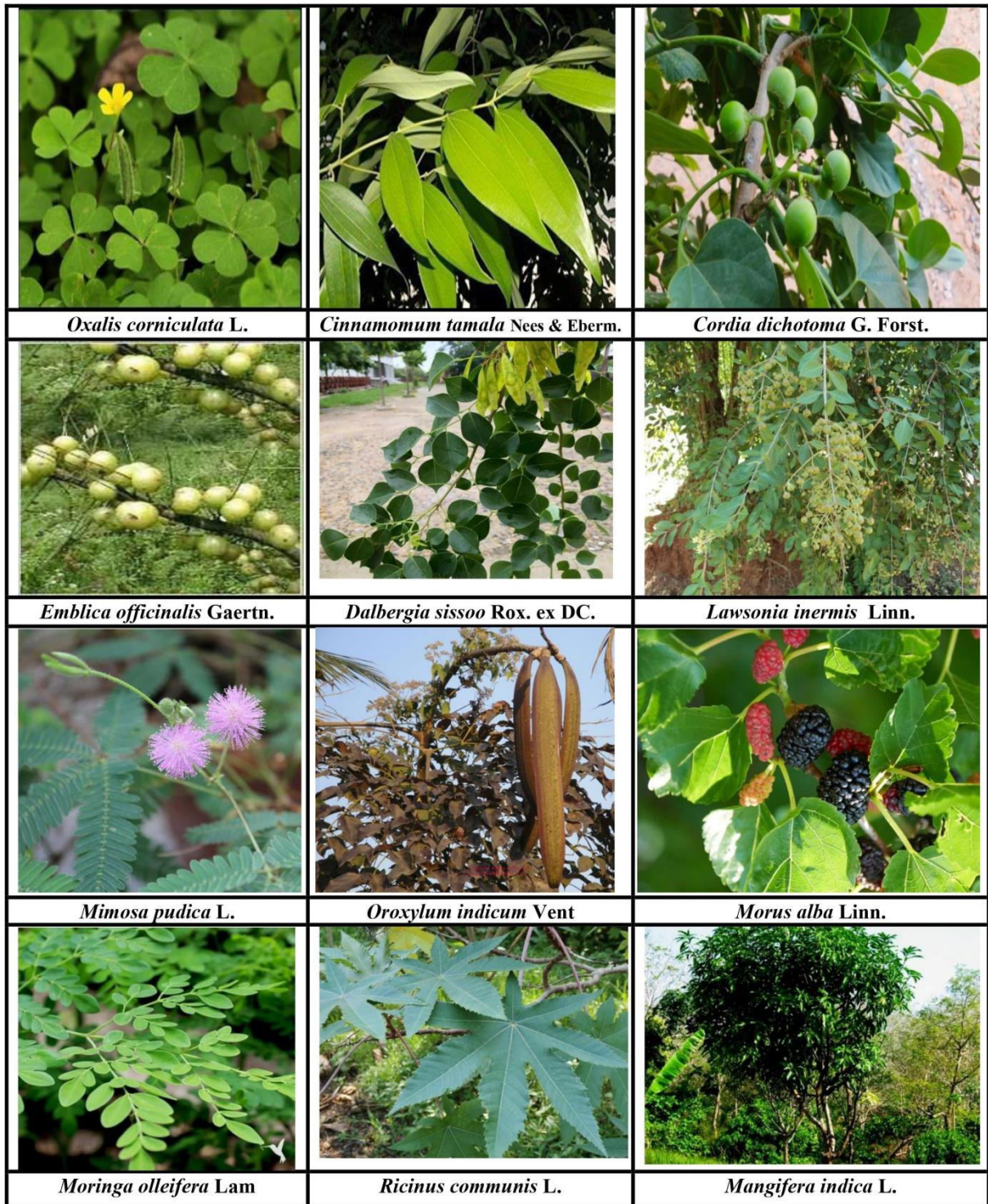
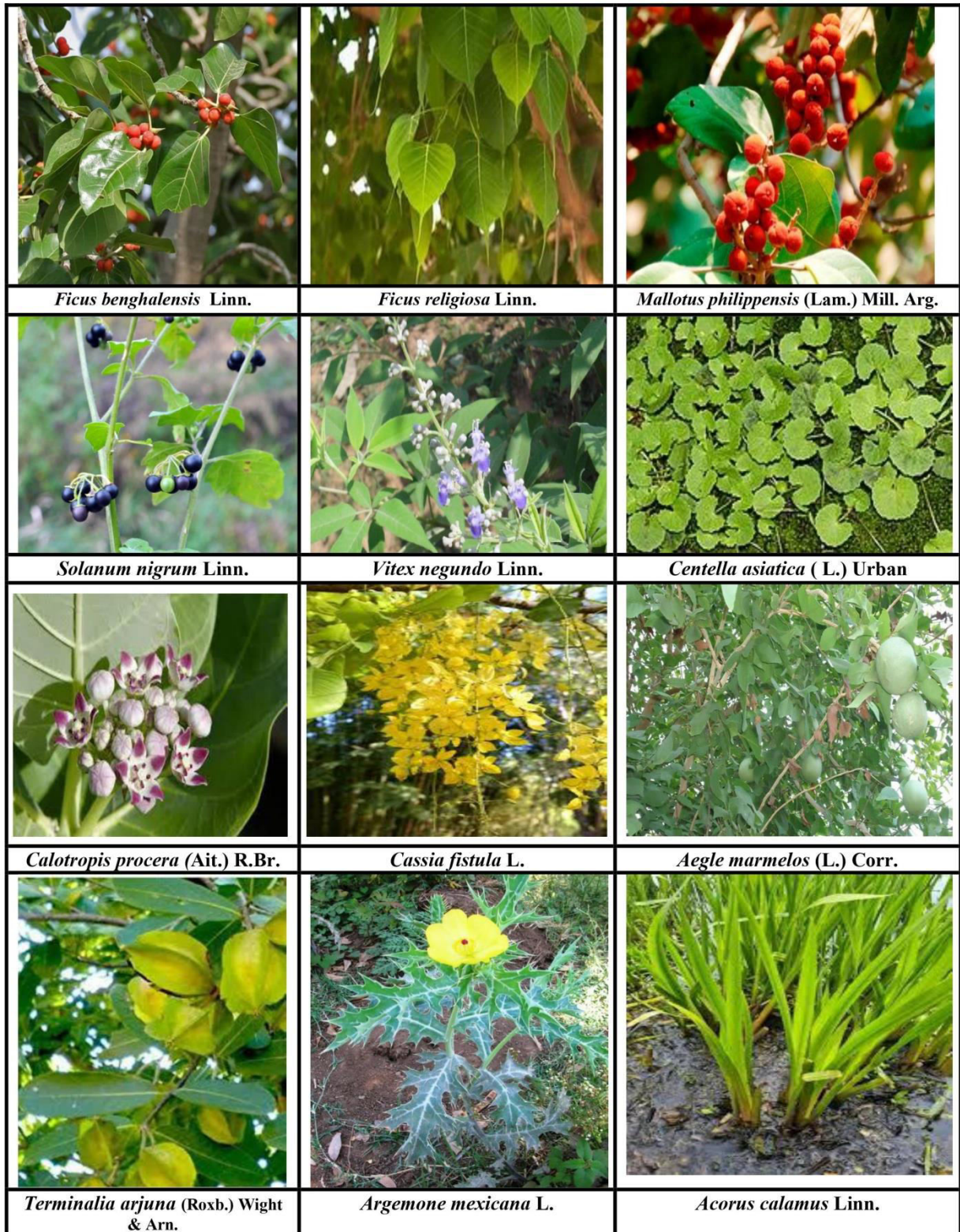


Plate 1: Photographs of some wild medicinal plants collected from Hazaribag, Jharkhand.





**Plate 2: Photographs of some wild medicinal plants of Hazaribagh, Jharkhand.**

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