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ETHNOBOTANICAL BIORESOURCES FROM SANGLI, SATARA AND KOLHAPUR DISTRICTS OF MAHARASHTRA

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ABSTRACT:

The practice of traditional medicine by using various plant parts that relief from different ailments in human throughout the India since from ancient time. A field investigation was conducted from last ten years continuously and periodically and efforts has been paid attention for the medicinal value of plants and was put on records through periodic interviews with various experienced workers in traditional practitioners including old mans, bhagats, devpujari, guravs, vaidues, dhangars and even farmers and farm workers. Ethnobotanical studies are essential from various parts of country and were documented before the loss of knowledge from rural and remote areas. Therefore, present work has been undertaken to collect the data, information from these experienced peoples from southern region of Maharashtra in general and Sangli, Kolhapur and Satara district particular. Plants were collected, identified and information on their parts used with their medicinal values in the treatment of human affliction was documented.

KEY WORD: Ethnomedicinal uses, Documentation, Southern Maharashtra.

INTRODUCTION:

Human curiosity is endless and always endeavourer to search of bioresources in his ambience to their benefits in terms of food and health.

Several plants have been beneficial and used for food, fodder, medicine and other miscellaneous purposes and number of ethnobotanist published such work including, Nayak *et al.* 2009; Patil, D.A. *et al.* 2007; Patil, P.S. *et al.* 2010; Tahir, M. 2012; Thomas, *et al.* 2000). There are small and large inventories of traditional and local important plant species from Indian region and ethnic groups of India published on the subject including Jain (1981, 1991), Jain and Srivastava (2001), Jain and Mudgal, V (1999) and Trivedi (2002); Deokar and Kamble, 2012; Ilahi Mujawar, 2012, 2013. Angiosperms are flowering plants species used for the treatment of various ailments in human that lead to development of potential bio-product to different diseases. Further, it is helpful in mass awareness of people to conserve the traditional medicinal knowledge for next generation that demand has everly increased in herbal medicine, essential for safety life. During present investigation and data collection huge numbers of plant species are used in indigenous medicine but very few of them selected which were easily available, non endemic that harbors commonly and distributed in and around the studied areas of three district viz. Sangli, Satara and Kolhapur of western Maharashtra.

Present study recorded total 131 species of which herbs are (50 species) 38.16%, shrubs (25 species) 19.08%, trees (41 species) 31.29% and twinner and climber (15 species) 11.45%. Dicot species recorded 91.60% while monocot are 8.39% in which 89.06% dicot families and 10.93% monocot families. Majorly herbs are used followed by leaves, bark, fruit, stem, root/rhizome/tubers, gum/resin/latex and flowers are least recorded. Further, whole plant is one of the main sources in indigenous medicine.

MATERIAL AND METHODS:

The plant collections were carried out in different seasons round the year since from last ten years i.e. 2005 to 2015 to investigate the medicinal value of angiosperm plants and methods were adopted previously by Ilahi Mujawar, 2012. The interviews were conducted and information was collected from experienced people in traditional medicinal practitioner. The field data was entered in the field note book. The specimens were identified in the Laboratory with the aid of taxonomic literature from regional, state and local floras including, Bentham and Hooker (1862-1883); T. Cooke, 1958; Sharma, Karthikeyan and Singh, 1996; Singh and Karthikeyan, 2000; Singh N.P., P. Lakshminarasimhan., S. Karthikeyan and P.V. Prasanna, 2001, Yadav and Sardesai, 2002 and Ilahi Mujawar 2013. The collected and identified specimens were pressed and prepared into herbarium, following the drying method of Jain and Rao, 1960; Rao and Sharma, 1990. All specimens were deposited in the Herbarium, Department of Botany, K.R.P. Kanya Mahavidyalaya, Islampur district Sangli.

RESULTS AND DISCUSSION:

Various plant parts like root, stem, leaves, bark, fruit and seeds are employed in the preparing medicinal recipes. They are used in the form of paste, extracts, decoction, powder and juice. Smoke and fumes of plant parts also reported. Some domestic substances are also added in the recipes like honey, deshi ghee, oil, milk, curd, sugar, jiggery and salts. Cow urine, cow milk and goat milk is also reported to add in recipes for fast and good result as well as to accept recipe. These domestic substances probably to increase the efficacy of the drug. Some species have showing same results and reported from other regions of Maharashtra and elsewhere including, Aher, et al., 2009; Badgujar S.B. et al., 2008; Ilahi Mujawar, 2012, 2013; Patil, et al., 2007; P.S. Patil et al., 2010; Selvam, A.B.D.2008 and D.A.Patil,2010.

Present study documented total 131 indigenous medicinal angiosperm species commonly distributed in three district of southern Maharashtra. Majorly herbs and whole plants are used followed by leaves, bark, fruit, stem, root/rhizome/tubers, gum/resin/latex and flowers are least recorded. Further, whole plant is one of the main sources in indigenous medicine. Out of 131 belongs to under 64 families of which 57 dicotyledons and 7 monocotyledons. Papilionaceae and caesalpinaceae recorded highest species (7 each) followed by Lamiaceae (6), Solanaceae, Malvaceae, Mimosaceae and Solanaceae (5each) Euphorbiaceae (4) while Annonaceae and Amaranthaceae have 3 species each. There are 37 families comprising only one species while 17 families with 2 species each has been recorded as ethnobotanical bioresource used in indigenous medicine.

In the search of indigenous medicine and use of different plant parts by various practioners during present investigation, out of 131 plant species, the leaves (40) 30.53% are majorly used as main plant organ to cure various affliction in human bodies followed by Bark (25) 19.08% , whole plant (22) 16.79%, seeds (20) 15.26%, fruit (17) 12.97%, root (14) 10.68% while stem(6) 4.58%, rhizome/corm/bulb (4) 3.05%, latex/gum/resin (3) 2.29% and flowers (2) 1.52% species has been also contribute their role. Plant part wise species distribution showed that, there are higher species in which leaves, bark, whole plant, and seeds are more and common used could be due to more efficient to get results or may be effective ingredients are present in their tissues. Majorly annual herb species used as a whole plant in medicine may be their effective affection and fast in action on different ailment in human body.

Collected data on the ethno-medicine of various angiosperm species from studied area are documented and enumerated in the tabular form. It is followed alphabetically of plant species, family, plant habit, plant parts used and their uses.

CONCLUSION:

The present study concluded that no anyone plant and any plant part is useless, each have its own capacity in the treatment of different ailments and to relief safely. Out of huge number of flowering plants useful in indigenous medicine, recorded on the basis of commonly distributed and easily available from three districts. The total 131 species grouped under 64 families of which herbs (50) 38.16 %, shrubs (25) 19.08%, trees(41) 31.29% and climbers and twinners (15) 11.45%. Herbaceous species and whole plants are mostly common used in ethnomedicine followed by trees, shrubs then climbers and twinners. Further, leaves, bark, whole plant, and seeds are more and commonly used could be more efficient to get effective results. In perennial trees, bark and seeds is most useful plant organ.

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ENUMERATION:

Sr. No.	Name of the plants	Family	Plant habit	Plant parts used	Uses.
1.	<i>Abelmoschus moschatus</i> Medik.	Malvaceae	Shrub	Seeds	Seeds considered as a very good sex tonic when used powder with milk daily at night.
2.	<i>Abrus precatorius</i> L.	Papilionaceae	Twiner	Leaves & Seeds	Roots and leaves are astringent, emetic and diuretic used either fresh or in powder form. The seeds are acrid, bitter, astringent, purgative and abortifacient.
3.	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Shrub	Leaves & Seeds	Leaves locally applied over boils and as a fomentation to painful parts of the body to cure wounds. Seeds useful in piles, chronic cystitis, sexual debility mixed with honey in glass of milk.
4.	<i>Acacia catechu</i> (L.f.) Willd	Mimosaceae	Tree	Stem bark & Gum	Stem bark astringent. Gum yielded by the tree is used as a substitute for Gum Arabic. Heartwood used for tanning and dyeing
5.	<i>Acacia nilotica</i> (L.) Del. ssp. <i>indica</i> (Benth.) Brenan	Mimosaceae	Tree	Bark, leaves, pods, seeds & gum.	Tender leaves demulcent. Pods are expectorant, also useful in urinogenital diseases. Bark is a powerful astringent. Gum is useful in cough, asthma with warm water. Diarrhea, dysentery, seminal weakness with water and salt.
6.	<i>Acalypha indica</i> L.	Euphorbiaceae	herb	Roots & Leaves	The roots and leaves are used to treat skin diseases in paste form, in constipation & ulcers take

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					powder with warm water. Paste of leaves is applied on scabies, arthritis, eczema, burns & ringworm.
7.	<i>Achyranthes aspera</i> L.	Amaranthaceae	Herb	Whole plant/Roots	The whole plant especially roots are anti-inflammatory used in paste form and uterine stimulant. Decoction of the roots used in stomach troubles. Roots also used as an antidote for insect bites.
8.	<i>Acorus calamus</i> L.	Araceae/Acoraceae	Herb	Rhizomes	Rhizome carminative, stimulant and tonic. Rhizome powder with honey or milk used to increase memory power.
9.	<i>Adhatoda vasica</i> Nees	Acanthaceae	Shrub	Fresh or dried Leaves	Leaves used in bronchial troubles and asthma in the form of smoke (bidi/cigar). Leaf juice used in diarrhea & dysentery.
10.	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	Tree	Fruits	Unripe fruits with jaggery useful in diarrhea, dysentery and stomachalgia. Ripe fruits cooling, febrifuge and used to cure dyspepsia, diarrhea.
11.	<i>Ailanthus excelsa</i> Roxb.	Simaroubaceae	Tree	Bark & Leaves	Bark and leaves tonic, used especially in debility after childbirth. Bark used for treating asthma and bronchitis
12.	<i>Albizia lebbek</i> (L.) Benth.	Mimosaceae	Tree	Bark, leaves & seeds	Leaves and seeds useful in eye troubles, bark in boils in paste form.
13.	<i>Albizia odoratissima</i> (L.f.) Benth.	Mimosaceae	Tree	Leaves & Bark	Useful in ulcers, leprosy, skin diseases, cough, bronchitis, diabetes and burning sensation.
14.	<i>Aloe barbadensis</i>	Liliaceae	Herb	Leaves	Leaf juice cathartic and

Sr. No.	Name of the plants	Family	Plant habit	Plant parts used	Uses.
	Mill.				refrigerant, used in liver and spleen ailments, eye troubles, skin disorders. Gum in leaf cathartic, useful in constipation.
15.	<i>Alternanthera sessilis</i> (L.) DC.	Amaranthaceae	Herb	Aerial parts	Plant have galactagogue properties used to treat night blindness. Leaves used to prepare soups.
16.	<i>Ananas comosus</i> (L.) Merr.	Bromeliaceae	Tree	Leaves	The leaves are anthelmintic & emmenagogue and are useful in helminthiasis, amenorrhoea and whooping cough.
17.	<i>Annona reticulata</i> L.	Annonaceae	Tree	Bark & fruits	Bark is a powerful astringent. Decoction of bark is given in diarrhoea. Fruits edible. Unripe fruits anthelmintic. Seeds are highly poisonous.
18.	<i>Annona squamosa</i> L.	Annonaceae	Tree	Bark	Bark is a powerful astringent and tonic, useful in diarrhoea. Fruits good for digestion. The seeds are used to destroy lice.
19.	<i>Argemone mexicana</i> L.	Papaveraceae	Herb	Roots & Seeds	Roots stimulant & used in skin diseases. Seeds poisonous if taken internally and cause dropsy. Seeds laxative, emetic, expectorant, demulcent.
20	<i>Argyreia nervosa</i> (Burm. f.) Bojer	Convolvulaceae	Twiner	Leaves	Leaves applied externally in itch, czema, and other skin troubles. Leaves antiseptic and astringent and very good medicine for boils.
21.	<i>Aristolochia indica</i> L.	Aristolochiaceae	Twiner	Roots	Roots and rhizomes esteemed as a gastric stimulant and bitter tonic. Roots considered as antidote for different

Sr. No.	Name of the plants	Family	Plant habit	Plant parts used	Uses.
					kinds of poisons.
22.	<i>Asclepias curassavica</i> L.	Asclepiadaceae	Herb	Roots	Roots emetic and cathartic; used in ulcer, piles and gonorrhea.
23.	<i>Asparagus racemosus</i> Willd.	Asparagaceae	Herb	Roots	Tuberous roots useful in nervous disorders, dyspepsia, burning sensation, throat infections, cough, bronchitis, fatigue, hyperacidity & in hypertension. It is a very good galactagogue drug.
24.	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Tree	Barks, leaves & seeds	Leaves considered antiseptic, applied over boils in the form of poultice. Bark used in skin troubles. Seeds yield non-drying oil (Neem oil) useful in skin diseases.
25.	<i>Bacopa monnieri</i> (L.) Wettst.	Scrophulariaceae	Herb	) Aerial parts	The plant is said to improve intellect, used to treat epilepsy, insanity and other nervous diseases. Leaves used as diuretic and aperients.
26.	<i>Bauhinia racemosa</i> Lam.	Caesalpiniaceae	Tree	Leaves	The leaves astringent and anthelmintic. The paste of leaves applied on wounds and headache.
27.	<i>Biophytum reinwardtii</i> (Zucc.) Klotzsch	Oxalidaceae	Herb	Whole plant	A decoction of the herb is useful in fevers. The leaves and roots are given in insomnia.
28.	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Herb	Whole plant	Plant is cooling, tonic, astringent, diuretic, aphrodisiac, cardiac stimulant, diaphoretic, expectorant, anti-inflammatory.
29.	<i>Butea monosperma</i> (Lam.) Kuntze	Papilionaceae	Tree	Flowers & seeds	The flowers used to cure leprosy, swellings, arthritis, bone fractures and are very effective in birth control. The seeds useful in herpes, skin

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					diseases, arthritis, constipation & diabetes.
30.	<i>Brassica nigra</i> (L.) Koch	Brassicaceae	Herb	Seeds	Seeds yield a slow drying oil, used in swelling, joint ache, & in body pain as well as in muscles relaxation.
31.	<i>Caesalpinia bonduc</i> (L.) Roxb.	Caesalpinaceae	Scandent shrub	Leaves, fruits & seeds	Seeds, Leaves and bark febrifuge, emmenagogue and anthelmintic. Fruits used as tonic and antipyretic. Seeds useful in colic.
32.	<i>Calophyllum inophyllum</i> L.	Clusiaceae	Tree	Bark	Bark is applied in orchitis and its juice used as a purgative. Bark is used stomach trouble & to cure wounds and ulcers.
33.	<i>Calotropis gigantea</i> (L.) Aiton f.	Asclepiadaceae	Shrub	Root	The powdered root promotes gastric secretions. It is used to cure asthma, bronchitis and dyspepsia.
34.	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Climber	Whole plant, leaves & seeds	The leaves are rubefacient and useful in arthritis. The seeds are tonic and diaphoretic. The plant has sedative action on the central nervous system.
35.	<i>Carica papaya</i> L.	Caricaceae	Tree	Bark	This plant yields a blood anticoagulant substance. Latex used from different parts of the plant is used as a digestant.
36.	<i>Cassia auriculata</i> L.	Caesalpinaceae	Shrub	Leaves & Fruits	Paste of leaves is used in skin disorders including leprosy. Seeds used in eye troubles, diabetes etc. Whole plant is used in tanning leather.
37.	<i>Cassia fistula</i> L.	Caesalpinaceae	Tree	Leaves & fruits	The leaves are laxative, antiperiodic and also useful in leprosy. Dried fruits used as purgative; laxative for habitual constipation.

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38.	<i>Cassia siamea</i> Lam.	Caesalpiaceae	Tree	Leaves	Leaves are used in skin diseases and in leprosy.
39.	<i>Capparis decidua</i> (Forssk.) Edgew.	Capparaceae	Tree	Bark	Bark is crushed in water and a cup of water is given to drink during early morning for seven days in heat.
40.	<i>Carissa congesta</i> Wight var. <i>congesta</i>	Apocynaceae	Shrub	Root	Root paste is applied locally until wound heals.
41.	<i>Celastrus paniculatus</i> Willd.	Celastraceae	Tree	Bark & fruits	The bark is abortifacient, depurative and a brain tonic. Seeds tonic and aphrodisiac. Seed oil is a reputed nerve stimulant and used in brain tonic.
42.	<i>Celosia argentea</i> L. var. <i>cristata</i> (L.) O. Ktze.	Amaranthaceae	Herb	Whole plant	The whole plant powder is given with cup of milk during night for white discharge.
43.	<i>Centella asiatica</i> (L.) Urb.	Apiaceae	Herb	Leaves	Diuretic and tonic also used in skin diseases, leprosy and improve memory. It is good brain stimulator and used in nerve tonic.
44.	<i>Ceropegia hirsute</i> Wight & Arn.	Asclepiadaceae	Twiner	Leaves	Three to five fresh leaves are chewed in stomach ache.
45	<i>Chlorophytum borivillianum</i> Sant. & Fernand.	Liliaceae	Herb	Liliaceae)	Tuberous roots, a well-known energizer and tonic. It is mainly used as aphrodisiac agent and to treat general debility. It is considered as a very good sex tonic.
46	<i>Cinnamomum tamala</i> (Buch.-Ham.) Nees & Eberm.	Lauraceae	Tree	Leaves & bark	Leaves carminative, flavour foods. Bark is used as tannin.
47..	<i>Cissus quadrangularis</i> L. Mant.	Vitaceae	Climber	Fleshy stem	One spoon paste of fleshy stem is orally take single dose for abortion. Stem paste is very specific for bone fracture

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48.	<i>Cleome gynandra</i> L.	Capparaceae	Herb	Aerial parts	plant is useful in treating rubifacient, & in treating rheumatism and fever.
49.	<i>Clerodendrum serratum</i> (L.) Spreng.	Verbenaceae	Shrub	Leaves & seeds	Leaves used as febrifuge. Seeds aperient, employed in external applications for cephalagia and ophthalmia. Seeds aperient, used in dropsy.
50	<i>Colocasia esculanta</i> (L.) Schott	Araceae	Herb	Corms	Boiled and fried corm tubers consumed. Corm is laxative, demulcent, nutritive & alactagogue.
51.	<i>Corchorus olitorius</i> L.	Tiliaceae	Herb	Seeds	Mature seeds are crushed in glass of water and taken orally for one time in poison & in irritation.
52.	<i>Costus speciosus</i> (Koen.) Sm	Zinziberaceae	Herb	Root	Root paste is applied over swollen part & in joint pain.
53.	<i>Crateva religiosa</i> Forst.f.	Capparaceae	Shrub	Bark	Bark stimulates liver, its extract used as a laxative and for promoting appetite also given in calculus and urinary affections.
54.	<i>Cryptolepis buehneri</i> Schult.	Periplocaceae	Twiner	Whole plant	This plant used to cure children from rickets.
55.	<i>Cullen corylifolia</i> (L.) Medik.	Papilionaceae	Herb	Seeds	Seeds recommended for leucoderma, leprosy & psoriasis.
56.	<i>Curcuma domestica</i> Valetton	Zingiberaceae	Herb	Rhizomes	Dried rhizome powder is applied on wounds, cuts, swellings. It is used as a colouring agent in food.
57.	<i>Cynodon dactylon</i> Pers.	Poaceae	herb	Whole plant	Half a glass juice of whole plant with two spoon honey is given orally during early morning in Asthma.
58.	<i>Cymbopogon citratus</i> (DC.) Stapf	Poaceae	Herb	Leaves	Leaves yield an essential oil with fresh lemon scent useful in cold & cough and as flavouring agent in tea. It has anticancer property. It is used in aromatherapy.

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59.	<i>Datura innoxia</i> Miller	Solanaceae	Herb	Whole plant	It is antihydrophobic. Leaf useful in asthma and boils. Fruits in Rheumatism. Seeds in pyorrhoea.
60.	<i>Datura stramonium</i> L.	Solanaceae	Herb	Whole plant	Leaves and seeds anodyne, antispasmodic and narcotic. Leaves useful in dislocation of joints, stomach complaints and tooth ache. Fruits useful in veterinary lactation.
61.	<i>Delonix regia</i> (Bojer ex Hook.) Raf.	Caesalpinaceae	Tree	Flower & Bark	Flowers sweet, astringent, appetizer, demulcent, nutritive used in tonic. Bark and pods astringent.
62.	<i>Diplocyclos palmatus</i> (L.) C. Jeffrey	Cucurbitaceae	Climber	Whole plant	It is used as antiinflammatory, Depurative and in tonic. Seeds given to women in order to conceive pregnancy and useful in leucorrhoea.
63.	<i>Eclipta alba</i> (L.) Hassk.	Asteraceae	Herb	Whole plant	Useful in blackening and strengthening of the hairs, for stopping haemorrhages and fluxes and for strengthening the gums. The seeds good for increasing sexual vigour.
64.	<i>Eucalyptus globulus</i> Labill.	Myrtaceae	Tree	Leaves	Leaves yield an essential oil useful in vitiated conditions of kapha and whooping cough, head ache, tuberculosis, chronic cough, asthma, bronchitis & skin diseases. Oil also used in aromatherapy.
65.	<i>Ferula assa-foetida</i> L.	Apiaceae	Shrub	Resin	The resinous substance of this plant is used in cooking. It is very good carminative and antifatulent.
66.	<i>Ficus benghalensis</i> L.	Moraceae	Tree	Bark & Latex	Bark useful in burning sensation, dysentery, diabetes, skin diseases.

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					Latex with banana cure cracks in legs.
67.	<i>Ficus racemosa</i> L.	Moraceae	Tree	Bark	It is widely used in diabetes, leucorrhoea and diarrhoea.
68.	<i>Ficus religiosa</i> L.	Moraceae	Tree	Bark	Bark astringent, sweet, cooling, aphrodisiac, antiseptic, expectorant and antiphlogistic.
69.	<i>Gardenia resinifera</i> Roth	Rubiaceae	Tree	Leaves	Leaves used in cutaneous diseases to keep off flies and worms.
70.	<i>Glycyrrhiza glabra</i> L.	Papilionaceae	Shrub	Roots	Roots useful in asthma, sore throat, sexual debility, coughs, bronchitis, skin disorders, acidity & jaundice. Roots useful in falling and greying of hairs.
71.	<i>Gymnema sylvestre</i> (Retz.) Schult.	Asclepiadaceae	Twiner	Leaves & roots	Fresh leaves when chewed have loss the sense of taste for sweet and bitter substances so it is considered as a very good drug for diabetes.
72.	<i>Heliotropium indicum</i> L.	Boraginaceae	Herb	Whole plant	Decoction of whole plant is employed in cough, bronchitis, asthma & rheumatism. Paste of leaves is applied on wounds & pimples.
73.	<i>Hemidesmus indicus</i> (L.) Sm.	Periplocaceae	Twiner	Roots	Roots aromatic, sweet, astringent, blood purifier, refrigerant, aphrodisiac, carminative & appetizer. It has a very good blood purifying property.
74.	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Shrub	Roots	Roots sweet cum acid in taste. It is demulcent, useful in coughs. Fresh root juice given for gonorrhoea and powdered root for menorrhagia.
75.	<i>Hyptis suaveolens</i> (L.) Poit.	Lamiaceae	Shrub	Whole plant	This plant is pounded and applied to cutaneous diseases. Infusion is

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					used as a curminative and sudorific in catarrhal conditions.
76.	<i>Jatropha curcas</i> L.	Euphorbiaceae	Shrub	Seeds	The oil extracted from the seeds possesses purgative properties and is used externally in rheumatism and paralytic affections. Bio-diesel prepared from the seeds.
77.	<i>Kalanchoe pinnata</i> (Lam.) Pers.	Crassulaceae	Herb	Roots, stems & leaves	Leaves useful in calculi, haemorrhoids, cut wounds, discolouration of the skin, boils, burns.
78.	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Herb	Whole plant	This herb is having an antipyretic property. Juice of the leaves applied externally in psoriasis, chronic skin eruptions and painful swellings.
79.	<i>Limonia acidissima</i> L.	Rutaceae	Tree	Leaves & frits	Tree lopped for fodder. Leaves aromatic, carminative. Fruits edible, considered tonic, antiscorbutic and alexipharmic.
80.	<i>Linum usitatissimum</i> L.	Linaceae	Herb	Seeds	Crushed seeds used to treat inflammations, ulcers & boils.
81.	<i>Mallotus philippensis</i> (Lam.) Muell.- Arg.	Euphorbiaceae	Tree	Fruits	Glandular hairs of the fruits are acrid, anthelmintic, purgative, Digestive & vermifuge.
82.	<i>Mangifera indica</i> L.	Anacardiaceae	Tree	Bark	bark are astringent, acrid, refrigerant, styptic, antisyphilitic and anti-inflammatory.
83.	<i>Manilkara zapota</i> (L.) Royen	Sapotaceae	Tree	Stem & bark	Bark contains latex, used as a base for chewing gum. Bark also contains tannin used by fisherman for colouring sails. Fruits edible, sweet to taste.
84.	<i>Melia azedarach</i> L.	Meliaceae	Tree	Stem & leaves	The stem yields a valuable timber. The leaves, bark and fruits accredited with

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					insect-repellent properties. Leaves very much useful in skin diseases especially in leprosy.
85.	<i>Mentha piperita</i> L.	Lamiaceae	Herb	Leaves	Herbs aromatic, antiseptic, stimulant, carminative, deodorant & anodyne. It has a very good carminative and rubefacient property. It is used in aromatherapy.
86.	<i>Michelia champaca</i> L.	Magnoliaceae	Tree	Bark	Stem bark useful in chronic gastritis, strangury, cough, bronchitis and cardiac debility.
87.	<i>Mimosa pudica</i> L.	Mimosaceae	Herb	Leaves & Seeds	Leaves useful in fistula, scrofula, cuts wounds and haemorrhages. Seeds useful in rheumatism.
88.	<i>Mirabilis jalapa</i> L.	Nyctaginaceae	Herb	Leaves	Leaves suppress inflammation. Crushed leaves applied to wounds and for allaying itching, & swellings.
89.	<i>Momordica charantia</i> L.	Cucurbitaceae	climber	Fruit	It is a very good medicine for diabetes and liver disorders.
90.	<i>Nyctanthes arbor-tristis</i> L.	Nyctanthaceae	Tree	Leaves	Leaves considered as an herbal aspirin due to the presence of methyl salicylate.
91.	<i>Ocimum americanum</i> L.	Lamiaceae	Herb	Seeds	Seeds mucilaginous, diuretic and tonic. Seeds have very good cooling property, much useful in uro-genital disorders.
92.	<i>Ocimum basilicum</i> L.	Lamiaceae	Herb	Leaves & Seeds	Leaves a very good mosquito repellent. Seeds useful in heat, seminal weakness, diarrhea, chronic dysentery, general debility.
93.	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Herb	Whole plant	It has a very good mosquito repellent, carminative and

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					expectorant properties. Seeds are useful in urinary disorders.
94.	<i>Opuntia dillenii</i> (Ker Gawl.) Haw.	Cactaceae	Shrub	Fruits	Baked fruit used in whooping cough and expectorant & to increase the blood haemoglobin.
95.	<i>Oxalis corniculata</i> L.	Oxalidaceae	Herb	Whole plant	It has a very good stomachic and carminative properties. Leaves also used as refrigerant, stomachic and antiscorbutic.
96.	<i>Papaver somniferum</i> L.	Papaveraceae	Herb	Fruits	Opium obtained from the fruits having aphrodisiac, sedative, narcotic, antispasmodic properties. Seeds are the best drug to relieve pain, but in small dose otherwise poisonous.
97.	<i>Physalis minima</i> L.	Solanaceae	Herb	Whole plant	This plant is bitter, sweet, cooling, diuretic, laxative, expectorant, appetising and tonic. It is a good medicine for blood disorders.
98.	<i>Piper betle</i> L.	Piperaceae	Twiner	Leaves	Useful in leprosy, impotency, rheumatism, dyspepsia.
99.	<i>Piper longum</i> L.	Piperaceae	Twiner	Fruits	Useful in rheumatism, sexual debility, asthma, bronchitis, hiccup. It is very much useful in tuberculosis, anaemia and anorexia.
100.	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Herb	Roots	Roots used to treat muscular pain, skin disorders. Also used as abortifacient, antifertility
101.	<i>Polyalthia longifolia</i> (Sonn.) Thw.	Annonaceae	Tree	Bark	Bark is useful in skin diseases, diabetes, hypertension, bleeding piles. Bark is considered as a very good medicine for menstrual problems.
102.	<i>Pongamia pinnata</i>	Papilionaceae	Tree	Bark &	Fresh bark used in

Sr. No.	Name of the plants	Family	Plant habit	Plant parts used	Uses.
	(L.) Pierre			seeds	bleeding piles. Seeds and seed oil used as an external application for skin diseases such as herpes, scabies, leprosy.
103.	<i>Prosopis juliflora</i> (Sw.) DC.	Mimosaceae	Shrub	Leaves & fruits	Foliage used as fodder. Spongy walls of ripe pods (fruits) are highly nutritive food.
104.	<i>Psoralea corylifolia</i> L.	Papilionaceae	Herb	Seeds	Seeds and seed oil useful in leucoderma, scabies, dermatitis, ringworm & elephantiasis. Seed oil is thermogenic, may be mixed with coconut oil before use.
105.	<i>Punica granatum</i> L.	Punicaceae	Tree	Leaves & Roots	Roots and stem bark useful in bleeding piles. Leaves applied in eyes during conjunctivitis and to check abortion.
106.	<i>Ricinus communis</i> L.	Euphorbiaceae	Shrub	Seeds	Seeds used to treat dyspepsia and arthralgia. Seed oil is a very effective purgative. Oil also massaged on cracked soles and lips.
107.	<i>Rosa damascena</i> Mill.	Rosaceae	Shrub	Flowers & fruits	Flowers and fruits useful in brain, eye and heart troubles and in constipation, diarrhoea, burning of body due to high temperature.
108.	<i>Saraca asoca</i> (Roxb.) de Wilde	Caesalpiniaceae	Tree	Bark	Bark is useful in diabetics, skin disorders, burning sensation, menorrhagia, leucorrhoea. It is a very good drug for various gynecological problems.
109.	<i>Sesbania sesban</i> (L.) Merr.	Papilionaceae	Tree	Bark & leaves	Bark used to check excessive menstrual flow and diarrhoea. Leaves anthelmintic, absorbs hydrocele when applied as poultice.
110.	<i>Sida rhombifolia</i> L.	Malvaceae	Herb	Whole	Roots, leaves and seeds

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				plant	bitter, tonic, diuretic, demulcent, aphrodisiac, expectorant & it is very good drug for asthma and sexual disorders.
111.	<i>Solanum incanum</i> L.	Solanaceae	Herb	Whole plant	Plant used in toothache and sore throat, decoction given in chest troubles.
112.	<i>Solanum nigrum</i> L.	Solanaceae	Herb	Root, Fruits & Seeds	Root very much useful in joint diseases. Fruits antiseptic, antidyenteric. Seeds diuretic.
113.	<i>Solanum torvum</i> Sw.	Solanaceae	Shrub	Fruits	Fruits edible and said to be good for enlargement of the spleen.
114.	<i>Solanum virginianum</i> L.	Solanaceae	Shrub	Leaves & Fruit	Leaves useful in rheumatism and pain. Fruit juice gives relief from ear pain. It is very good medicine for asthma.
115.	<i>Swertia chirayita</i> (Roxb.) Karst.	Gentianaceae	Herb	Whole plant	This plant is useful in all types of chronic and intermittent fevers, diabetes, hiccough, bronchitis, asthma, jaundice, biliousness, liver disorders, skin diseases & leprosy.
116.	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Tree	Stem bark	Bark useful in spleen disorders, jaundice, anaemia, diabetes, Leucorrhoea & stomatitis. It is very good drug for anaemia and diabetes.
117.	<i>Tamarindus indica</i> L.	Caesalpiniaceae	Tree	Bark & leaves	Bark astringent and stomachic, useful in diarrhoea, asthma. Leaves useful in scabies, tumours, ringworm, boils, smallpox and conjunctives.
118.	<i>Terminalia catappa</i> L.	Combretaceae	Tree	Bark leaves & seeds	Decoction of bark and leaves given in diarrhoea & diabetes. Seeds (kernel) edible, used as a substitute for true almond.

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119.	<i>Thevetia peruviana</i> (Pers.) Merr.	Apocynaceae	Shrub	Leaves & fruits	Leaves emetic, purgative and antiseptic. Seeds and latex are drastic cathartic and poisonous, not to use internally.
120.	<i>Tinospora cordifolia</i> (Willd.) Hk.f. & Thoms.	Menispermaceae	Twiner	Stem	Stem used as blood purifier, antipyretic, carminative, appetiser, cardiostimulant, rejuvenating. It is useful in liver disorders.
121.	<i>Trianthema portulacastrum</i> L.	Aizoaceae	Herb	whole plant	Leaves used as vegetable. Juice of the whole plant used to treat asthma, strangury, amenorrhoea, dropsy, oedema & in rheumatism. It has very good diuretic property.
122.	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Herb	Fruits	fruits useful in rheumatism, piles, renal and vesical calculi, impotency, premature ejaculation & in general weakness. It is a very good diuretic and tonic.
123.	<i>Tylophora indica</i> (Burm.f.) Merr.	Asclepiadaceae	Twiner	Leaves	Leaves and roots given in low doses in early morning in cases of whooping cough, asthma, bronchitis, coughs, piles, cancerous tumours & leukaemia. It is a very good medicine for asthma.
124.	<i>Urena lobata</i> L.	Malvaceae	Shrub	Roots & leaves	Roots bitter, abortifacient, antipyretic, aphrodisiac, carminative & blood purifier. Leaves emollient and expectorant, useful in apathae and sore throat.
125.	<i>Urginea indica</i> (Roxb.) Kunth	Liliaceae	Herb	Bulbs	Bulbs emetic, employed in skin diseases, in low doses in heart troubles, asthma, cancer, scabies, paralytic affection. Externally used for removing corns and warts.

Sr. No.	Name of the plants	Family	Plant habit	Plant parts used	Uses.
126.	<i>Vetiveria zizanioides</i> (L.) Nash	Poaceae	Herb	Roots	Roots useful in burning sensation, skin diseases, sprains, hysteria, insomnia, amnesia & in general debility. Essential oil of root is cooling the body.
127.	<i>Vitex negundo</i> L.	Verbenaceae	Shrub	Leaves	Leaves useful in cough, bronchitis, asthma, headache, piles, rheumatism, toothache, leprosy, arthritis, paralysis & in sprain. It is having an insect repellent.
128.	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Herb	Roots	roots tonic, useful in arthritis, diabetics, general debility, sexual debility, infertility, rheumatism, fatigue, asthma, T.B. & in constipation. It is a very good aphrodisiac drug.
129.	<i>Woodfordia fruticosa</i> (L.) Kurz	Lythraceae	Shrub	Flowers & fruits	Flowers useful in miscarriage, infertility, bleeding piles, leprosy, skin diseases, burning sensation, dysentery, foul ulcers, diabetes & in fever.
130.	<i>Xanthium indicum</i> J. Koenig	Asteraceae	Shrub	Roots & Leaves	Roots useful in cancer, toxemia, skin diseases Paste of leaves applied on boils, abscesses & in wounds.
131.	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae		Fruits	Fruits sweet, tonic, cooling, aphrodisiac, styptic, depurative & in appetiser. Fruits may cause cough.