ETHNOMEDICINAL PLANTS OF MORADABAD DISTRICT, U. P., INDIA

Devendra Kumar, Bharat Bhushan and Himanshu
Department of Botany, OPJS University, Churu, Rajasthan, India

Abstract : The paper reports on ethnomedicinal plants used by the native people of Moradabad district of Uttar Pradesh. A total of 69 plant species belonging to 39 families and 64 genera have been documented from Moradabad.

KEY WORDS Medicinal, Moradabad, Uttar Pradesh, Indigenous

INTRODUCTION

From time immemorial, the indigenous communities, all over the world, have been depending upon the ambient natural resources for their sustenance. This indigenous knowledge has evolved independently in a variety of ecosystem in different parts of the world (Jain and Sharma, 2000). Ethnobotany is the study of how people of a particular culture and region make of use of indigenous plant. Ethnobotanists explore how plants are used for such things as food, shelter, medicine, clothing, hunting and religious ceremonies. Ethnobotany has its roots in botany, the study of plants. Botany, in turn, originated in part from an interest in finding plants to help fight illness. In fact, medicine and botany have always had close ties.

Many of today's drugs have been derived from plant sources. Pharmacognosy is the study of medicinal and toxic products from natural plant sources. At one time, pharmacologists researching drugs were required to understand the natural plant world, and physicians were schooled in plant-derived remedies. However, as modern medicine and drug research advanced chemically- synthesized drugs replaced plants as the source of most medicinal agents in industrialized countries. Although research in plant sources continued andplants were still used as the basis for some drug development, the dominant interest (and resulting research funding) shifted to the laboratory.

Table 1: Selected references in chronological order on the ethno-medicinal flora with special reference to Uttar Pradesh.

Author(s)	Year of Publication	Publications/places covered/General remarks
Dixit & Pandey	1984	Documented their work on folk medicines used in Bundelkhand (U.P.). They have recorded the uses of 14 locally available plants used by the natives of Jhansi and Lalitpur sections of Bundelkhand.
Jain & Puri	1984	Studied about100 medicinal plants which are being used by local Jaunsari tribe for the treatment of various ailments.
Singh et al.	2002	Presented the folk medicinal uses of 125 plants by tribes of Sonbhadra district in Uttar Pradesh.
Maliya	2004	Highlighted the uses of 16 ethnomedicinal plants which are traditionally utilized by the Tharu tribals and other rural inhabitants of Bahraich district, Uttar Pradesh
Upadhyay and Singh	2005	Documented ethnomedicinal uses of 30 plant species from Tikri forests of Gonda district, Uttar Pradesh
Prachi et al.	2009	Recorded 15 plant species which are used as urolithiatic agents, Uttar Pradesh
Singh & Singh	2009	Reported uses of 40 medicinal plants during an ethnobotanical study of medicinal plants in Chandauli district in Uttar Pradesh.
Chaudhary	2011	40 medicinal plant species were recorded for 36 types of ailments from district Bijnor
Prakash	2011	Explored traditional knowledge of some threatened and potential ethnomedicinal plants among the triabals of Uttar Pradesh.
Singh & Dubey	2012	Reported use of 143 medicianl plants in Sonbhadra district of Uttar Pradesh.
Kumar et al.	2012	Revealed 25 plant species used for medicinal purposes from western Uttar Pradesh
Anand et al.	2013	Enlisted ethnobotanical uses of 30 tree species found in Sonbhadra district.
Rahul	2013 b	Ethnobotanical study on medicinal shrubs used by the people in Lakhmanpura region of Bundelkhand, Uttar Pradesh.
Shukla et al.	2013	Documented 184 plant species which provide the crude drugs pertain to 151 genera and 74 families used as traditional medicinal plants which are helpful in the treatment of various kinds of diseases from Uttar Pradesh.
Agarwal	2013	Underground plant parts of 15 medicinally important species belonging to 13 families were recorded for the therapeutic uses from Fatehpur district, Uttar Pradesh
Kumar and Akhtar	2013	Reported ethnomediincal uses of 14 species of Solanaceae from Eastern Uttar Pradesh.
Bhati et al.	2014	Studied 153 plant species belonging to 16 families have been recorded from Moradabad district, Uttar Pradesh
Kumar et al.	2015	A total of 98 plant species belonging to 61 families and 95 genera were recorded

		and identified which are being utilized by the indigenous people of Chandra Prabha Wildlife sanctuary, Uttar Pradesh.
Gautam et al.	2015	Reported 52 plant species belonging to 31 families and 51 genera from Kusmi forest, Uttar Pradesh
Sachan et al.	2015	Enumerated 31 medicinal plants used for various kinds of diseases such as cough, cold, fever, gastro-intestinal disorders, etc. from different districts of Uttar Pradesh.
Chaudhary and Kumar	2015	Documented 50 medicinal plant species belonging to 44 genera and 32 families which are useful for curing diverse form of ailments from Ghaziabad district of western Uttar Pradesh.

MATERIAL AND METHODS

Study Area

Moradabad district is a part of Moradabad division. Moradabad, known as Brass city, is renowned for brass work. The modern, attractive and artistic brassware, jewellery and trophies made by skilled artisans are the main crafts. Moradabad lies between $28^0 21'$ and $28^0 16'$ North Latitude and $78^0 4'$ East and $79^0 0'$ Longitude. The district Moradabad is bounded by Bijnor on the North and Nainital districts, on the East by Rampur district and on the South by Sambhal. There are four Tehsils in the district Four Tehsils in the district are (i) Kanth, (ii) Moradabad, (iii) Thakurdwara, and (iv) Bilari.

Most of the vegetation is of tropical origin. The common plants of this area are *Terminalia arjuna*, *Syzygium cumini*, *Lantana camara*, *Psidium guajava*, *Ficus carica*, *Ficus palmata*, *Ficus benghalensis*, etc.

Identification of plants

A questionnaire was framed before survey to the study sites to gather information regarding the native medicinal plants. The information was collected from many Vaidyas and elderly village people. Herbarium sheets were prepared having all the details necessary for a herbarium specimen. Collection number was allotted to each herbarium sheet. The original digital photographs of the plant were taken from the study sites. Identification was carried out with the help of local floras.

The present work was carried out on the basis of ethnomedicinal inventory encompassing families names in alphabetical order followed by botanical name, local name, English name, part used and ethnomedicinal uses. Medicinal plant species were collected from different localities of Moradabad district. The plants were properly pressed, poisoned, glued over herbarium sheets and preserved with collection number. The herbarium sheets were deposited in the department of Botany for further reference.

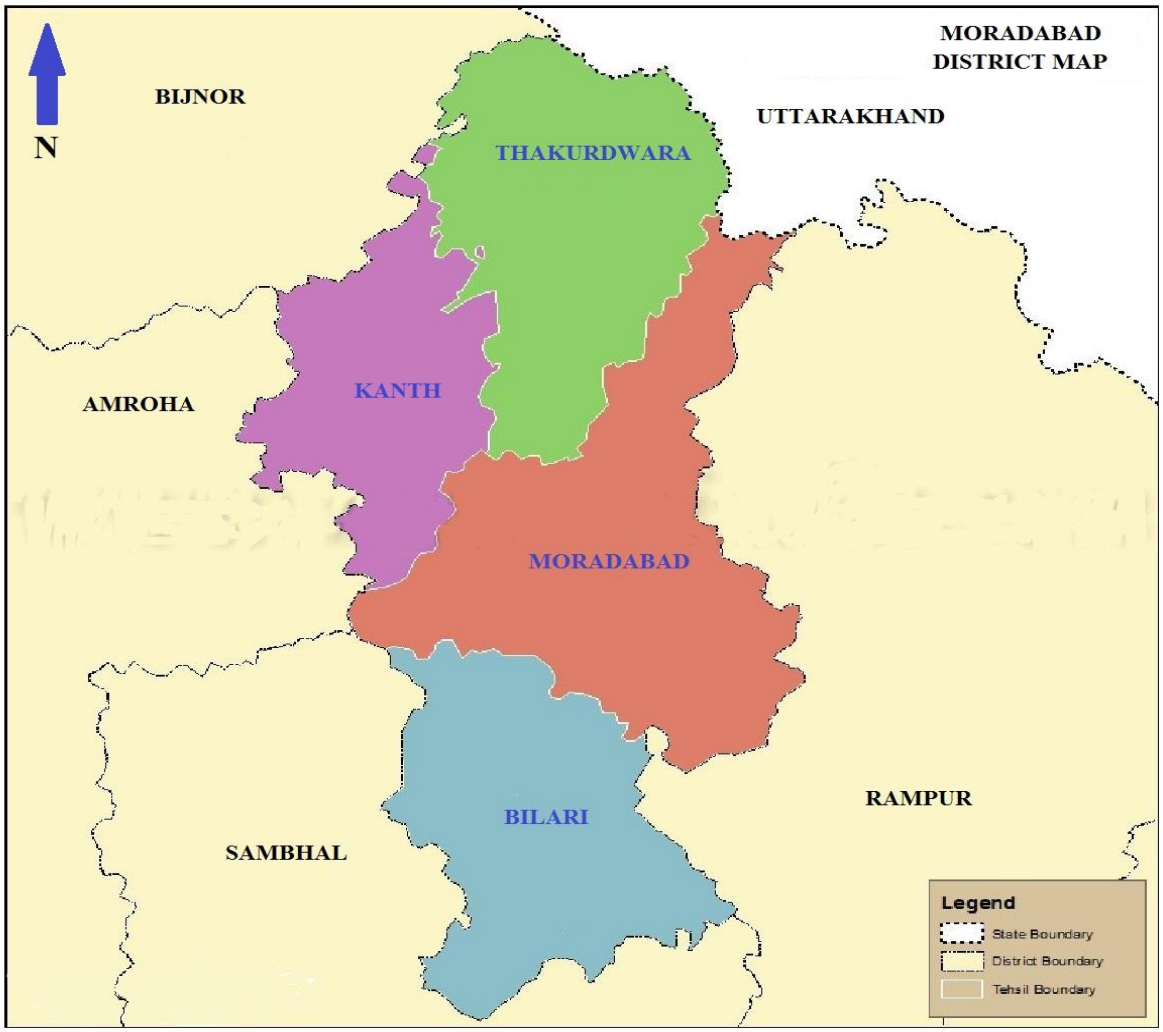

Fig. 1: Location map of Moradabad district

Table 2: Name of medicinal plants with detailed description used in Moradabad district, Uttar Pradesh, India.					
S. NO.	***BOTANICAL NAME***	**LOCAL NAME**	**ENGLISH NAME**	**PART USED**	**MEDICINAL USES**
ACANTHACEAE					
1	***Adhatoda vasica*** Nees.	Vaisaka	Malabar nut	Leaves, roots & flowers	➢ The leaves are used to reduce fever. ➢ A poultice of the leaves is applied over fresh wounds joints and for swellings. ➢ Roots are used against lung infections and act as anthelmintic. ➢ The flowers and fruits are useful in digestion.
AMARANTHACEAE					
2	***Achyranthes aspera*** Linn.	Puthkanda	Devil's horse whip	Leaves & roots	➢ Fresh leaves are applied externally on scorpion stings. ➢ Root is used as an abortifacient. ➢ Root is given in stomach pain, mouth sores, and toothache.
3	***Amaranthus viridis*** Linn.	Jangli Cholai	Amaranth	Leaves	➢ Poultice of leaves is applied to abscesses, piles and wounds.
ANACARDIACEAE					
4	***Mangifera indica*** Linn.	Aam	Mango	Leaves, bark & seeds	➢ A powder of the tender leaves is given in diarrhoea and diabetes. ➢ The bark is given in dysentery, bleeding piles, haemorrhage from the lungs, intestines or uterus. ➢ The juice extracted from seeds has potential to stop bleeding from the nose.
APOCYNACEAE					
5.	***Alstonia scholaris***R.Br.	Chatian	Devil's Tree	Bark & leaves	➢ Paste of bark is applied to painful joints, wrist and ankles. ➢ A mixture of bark juice is used in earache. ➢ It is also used in the form of liquid extract for chronic diarrhoea, asthma, cardiac troubles, dysentery and snake bite. ➢ Leaves are used in beri-beri, dropsy and liver diseases.
6.	***Catharanthus roseus***G. Don.	Sadabahar	Madagascar periwinkle	Leaves & roots	➢ Leaf contains agents for some specific types of cancers such as leukaemia. ➢ Infusion of leaves is applied to get relief from pain caused by wasp sting. ➢ Decoction of roots and leaves is used to controlhigh blood pressure.
7.	***Tabernaemontana divaricata*** (Linn.) Alston	Chandni	Pinwheel flower	Root & flowers	➢ Root bark is anthelmintic. ➢ Juice of flowers is mixed with oil to relieve burning sensation. ➢
8.	***Thevetia nerifolia*** Juss.	Peeli Kaner	Yellow Oleander	Bark, leaves & seeds	➢ The tincture of bark is cathartic and also used asfebrifuge. ➢ Leaves are purgative. ➢ Seeds act as abortifacient.
ASCLEPIADACEAE					
9	***Calotropis procera***(Ait.). R. Br.	Akra	Rooster tree	Root & leaves	➢ The bark of the root is used in leucoderma. ➢ A poultice of the slightly roasted leaves is applied to inflammatory swellings and rheumatic joints.
ASTERACEAE					
10	***Ageratum conyzoides*** Linn.	Ajgandha	Goat Weed	Whole plant, leaves, roots & flowers	➢ The plant is also used as a nervine tonic and has anti-tetanic property. ➢ A paste of the leaves and flowers is applied on cuts and wounds to stop bleeding and healing of wounds. ➢ The juice of roots stops the development of stone in bladder.

11	***Eupatorium purpureum*** Linn.	Gravel Weed		Leaves	➢ Leaves are diuretic. ➢ The paste of leaves is used in the treatment of asthma and bronchitis.
12	***Parthenium hysterophorus*** L.	Gajar Ghas	Carrot Grass	Leaves	➢ Externally leaf paste is used for wound healing activity.
BOMBACACEAE					
13	*Bombax ceiba* Linn.	Simbal	Red-silk cotton tree	Leaves & roots	➢ The leaf has medicinal importance also and is used as a tonic, febrifuge, emmennagogue and analgesic. ➢ A decoction of roots is given indysentery.
CAESALPINIACEAE					
14	***Bauhinia variegata*** Linn.	Kachnar	Mountain Ebony	Bark & roots	➢ Bark is useful in skin diseases. ➢ The bark acts as blood purifier, anthelmintic and astringent. ➢ Decoction of roots is used as an antidote to snake poisoning and is also used to prevent obesity
15	***Cassia fistula***Linn.	Amaltas	Golden Shower Tree	Roots, leaves & fruits	➢ The root is astringent, tonic, purgative and febrifuge ➢ The alcoholic extract of the root bark is used for black water fever. ➢ The leaves are rubbed into affected parts. ➢ The fruit cures leprosy, diseases of heart and is applied externally in rheumatism and snake bite.
16	***Cassia occidentalis*** Linn.	Kasondi	Ant-bush	Leaves, roots & seeds	➢ Leaves have antimalarial, antibacterial, and anticarcinigenic activity. ➢ Roots are considered as diuretic. ➢ Seeds are used as febrifuge and used for skin diseases.
17	***Saraca asoca*** (Roxb.) Willd.	Ashok	Ashoka Tree	Bark & Flowers	➢ The decoction of bark is effective remedy for piles. ➢ The dried flowers are given in diabetes.
18	***Tamarindus indica*** Linn.	Imli	Tamarind	Leaves & bark	➢ The decoction of leaves is used as an anthelmintic for killing worms in children and also for jaundice. ➢ The bark of the tree is astringent, and promotes menstruation. ➢ Its decoction is useful in diarrhoea and also helpful in gum problems.
CANNABINACEAE					
19	***Cannabis sativa*** Linn.	Bhang	Hemp	Bark, leaves & seeds	➢ The bark is used in inflammations and haemorrhoids. ➢ The juice of the fresh leaves is used for removing dandruff from the head and removes pain in the ear. ➢ A powder of the leaves is useful for dressing fresh wounds and sores. ➢ A poultice of the fresh leaves is useful in the eye diseases of eyes and also in piles. ➢ The seeds are carminative and aphrodisiac.
CANNACEAE					
20	***Canna chinensis*** Linn.	Keli	Canna	Roots, rhizome, leaves & flowers	➢ Root decoction is useful in fever and dropsy. ➢ Rhizome helps to kill intestinal worms. ➢ Leaf juice is used to relieve earache. ➢ The flowers are helpful in curing eyediseases.
CARYOPHYLLACEAE					
21	***Stellaria media*** (L.) Vill	Gandel	Chick weed	Whole plant	➢ Poultice of plant is useful for cooling and soothing minor burns and also for skin irritations. ➢ Paste of the plant to treat acne and eczema. ➢ In small quantities, this herb also helps in digestion of food.
CHENOPODIACEAE					

22	***Chenopodium album***Linn.	Bathu	Wild Spinach	Leaves & seeds	➢ The juice of the leaves is also applied on the de-pigmented skin spots ➢ The decoction of the seeds induces abortion in women and is effective in cough and cold.
COMBRETACEAE					
23	***Terminalia arjuna*** (Roxb.) Wight & Arn.	Arjun	White marudar	Leaves, bark, fruits & seeds	➢ Juice of leaves is used in earache. ➢ Bark is astringent, and febrifuge. ➢ Paste of bark is applied on pimples and other minor skin eruptions. ➢ Fruits and seeds are used for killing abdominal worms in children. ➢ Roasted seeds used in diarrhoea and fever.
CONVOLVULACEAE					
24	***Convolvulus arvensis*** Linn.	Shankhpushpi	Wild morning glory	Rhizome, leaves, roots & flowers	➢ Rhizomes are effective against constipation. ➢ Decoction of leaves used as a wash on spider bites. ➢ Roots have strong emetic effects. ➢ Flower tea used to reduce fever and heal wounds.
25	***Cuscutta reflexa***Roxb.	Amar bel	Dodder	Whole plant & seeds	➢ Whole plant is used externally in the treatment of itchy skin. ➢ The stem is also used in the treatment of bilious disorders. ➢ Seeds are anthelmintic and are used in the treatment of bilious disorders.
CUCURBITACEAE					
26	***Coccinia cordifolia*** Wight & Arn.	Kanduri	Ivy gourd	Whole plant, leaves & roots	➢ Juice of plant cures ear pain. It is highly valued for its antidiabetic potential. ➢ Leaves applied externally in eruption of skin. ➢ Powder of root is taken with water to stop vomiting; paste applied to forehead in headache.
CYPERACEAE					
27	***Cyperus rotundus*** Linn.	Motha	Nut Grass	Whole plant & roots	➢ The roots are considered stomachic, tonic, diuretic, and stimulant. ➢ Root paste is applied for healing wounds and sores**.** ➢ The plant is effective in intestinal problems of children.
EUPHORBIACEAE					
28	***Emblica officinalis*** Gaertn.	Amla	Indian Gooseberry tree	Fruits & seeds	➢ The fruit is used in combination with that of *Terminalia chebula* and *T.bellerica* in the form of powder and decoction known as Triphala (three fruits) as a cooling and refrigerant. ➢ It is also used in diarrhoea. ➢ The fresh fruit is laxative, also used in fevers, vomiting, indigestion, habitual constipation and other disorders of digestive system ➢ Powder of seeds is given in fevers, diabetes, and bilious–affections.
29	***Euphorbia nerifolia*** L.	Sehund	Indian Spurge Tree	Latex	➢ White milky juice is acrid and poisonous. ➢ The juice is applied externally to kill maggots in wounds and on skin diseases and warts.
30	***Mallotus philippensis*** (Lam.) Muell.- Arg.	Kamala	Monkey face tree	Bark & fruits	➢ Cold infusion of the bark is given in dose of 40-50 ml to treat renal calculi and in retention of urine. ➢ Decoction of bark is given to treat skin diseases and also acts as a blood purifier. ➢ The powder of fruits is highly beneficial for expelling out intestinal worms in children.
31	***Ricinus communis*** Linn.	Arand	Castor Bean	Leaves, fruits & seeds	➢ The leaf juice is given as an emetic in narcotic poisoning. ➢ A paste of fruit is applied in toothache

					➢ A poultice of seeds is applied to scorfulous sores, boils and rheumatic swellings.
FABACEAE					
32	***Dalbergia sissoo***Roxb.	Sheesham	Indian Rosewood	Leaves, wood, oil & roots	➢ The leaves are effective to cure eye diseases. ➢ The wood oil relieves the burning sensation of the body. ➢ The oil is also used in the treatment of scabies and leprosy. ➢ Roots are useful in diarrhoea and dysentery.
33	***Tephrosia purpurea*** Baker.	Sarphuka	Mild Indigo	Whole plant & roots	➢ The plant is bitter, astringent, anthelmintic, digestive, laxative and tonic. ➢ Roots are useful in skin diseases, elephantiasis, asthma and bronchitis. ➢ A decoction of the plant may be used for killing intestinal worms.
LAMIACEAE					
34	***Ajuga parvilfora*** Benth.		Bugle Weed	Whole plant	➢ The part of plant is applied on the wounds.
35	***Mentha arvensis*** Linn.	Pudina	Mint	Leaves, oil & leaves	➢ The leaves are a classical remedy for stomach cancer. ➢ The essential oil in the leaves is antiseptic. ➢ The leaf juice is a good cardio-tonic. ➢ Leaves are also used in swollen gums, mouth wash and toothache. ➢ It also acts as a good blood cleanser.
36	***Ocimum sanctum***Linn.	Tulsi	Holy Basil	Whole plant, leaves, roots & seeds	➢ Plant is considered stomachic, diaphoretic, expectorant, carminative, stimulant and anthelmintic. ➢ The juice of leaves is useful in earache, seminal weakness and fevers. ➢ Roots are used in constipation complaints in children. ➢ The seeds act as demulcent, used in cases of habitual constipation, and piles.
LAURACEAE					
37	***Cinnamomum tamala*** (Ham.) Nees & Ebrm.	Tej Patta	Indian Bay Leaf	Leaves	➢ The dried powder of leaves along with honey is taken against cough. ➢ The leaves are also recommended against jaundice.
LILIACEAE					
38	***Aloe barbadensis***Mill.	Ghee Kanwar	Burn Plant	Whole plant & leaves	➢ The plant is anthelmintic, stomachic, emmenagogue, useful in eye diseases, tumours, enlargement of the spleen, liver complaints, pains in muscles, and vomiting. ➢ Fresh juice is cathartic, cooling and useful in fever. ➢ Pulp is used in menstrual suppression and root is colic. ➢ Leaves are used as hot poultice to get relief from swellings.
MALVACEAE					
39	***Hibiscus rosa-sinensis*** Linn.	Gurhal	Shoe Flower	Leaves, roots & flowers	➢ Leaves are used to get relief form pain. ➢ Roots are used for cough. ➢ Fresh root juice is given for gonorrhoea and fever. ➢ The flower buds are astringent and remove inflammation of the body, urinary discharge, uterine and vaginal discharges, seminal weakness and piles. ➢ Its use promotes the growth of the foetus. ➢ The flowers fried in ghee check excessive menstruation.
MELIACEAE					
40	***Azadirachta indica*** A. Juss.	Neem	Margosa tree	Bark Leaves, Flowers	➢ The bark has insecticidal properties. ➢ The leaves are bitter, ophthalmic, anthelmintic and appetizer. ➢ The flowers are useful in intestinal burns. ➢ The seeds are useful in leprosy, ulcer, and diabetes and to kill insects.

41	***Melia azedarach***Linn.	Bakain	Bead Tree	Leaves, fruits, flowers & bark	➢ The leaves, fruits and bark are useful in relieving headache, rheumatism and leprosy. ➢ The leaves are diuretic. ➢ The leaf juice is applied for resolving cold, and swelling, ➢ A poultice of leaf is used for headache, anthelmintic and antispasmodic. ➢ The flowers are used to kill head lice and for eruptive skin diseases.
42	***Toona ciliata***M. Roem.	Toon	Red Cedar	Bark	➢ The bark is cardio-tonic, anthelmintic and good for scabies. ➢ It is also useful in ulcers, leprosy and cures fevers
MENISPERMACEAE					
43	***Tinospora cordifolia*** (Willd.) Miers ex Hook f. & Thoms	Giloy	Tinospora	Whole plant	➢ The juice is useful in diabetes and in enlarged spleen. ➢ The juice of the fresh plant is also given in gonorrhoea.
MIMOSACEAE					
44	***Acacia catechu*** (Linn. f.) Willd.	Khair		Root	➢ Root paste along with castor oil is applied on joints and affected parts of patients suffering from rheumatism.
45	***Acacia nilotica*** (Linn.) Delile	Kikar, Babool	Indian Gum Arabic Tree	Bark, gum & pods	➢ The decoction of bark produces spongy gum which is useful in sore throat, to stop bleeding from wounds. ➢ Powdered gum is also given in diabetes. ➢ The fried gum is considered a nutritive tonic. ➢ Pods are used to stop bleeding from bites of leeches.
46	***Albizia lebbeck*** Benth.	Siras	Lebbeck	Seeds, leaves, flowers & bark	➢ The seeds are used in the treatment of piles and as an astringent in diarrhoea. ➢ Leaves are useful in ophthalmia. ➢ The flowers are used to cure swellings, and act as antidote to poisons. ➢ Powder of shoot bark strengthens gums
MORACEAE					
47	***Ficus benghalensis*** Linn.	Bargad	Banyan Tree	Latex, Buds	➢ The latex is commonly used for sores, ulcers, pains and toothache. ➢ The buds are useful in diarrhoea and dysentery.
48	***Ficus carica*** Linn.	Anjir	Fig	Fruits & latex	➢ Fruit syrup or syrup of figs is still a remedy for mild constipation. ➢ The fruit's pulp helps to relieve pain, inflammation, swellings and gum abscesses. ➢ The milky latex from leaves and stems is has long been used to treat warts, insect bites and stings.
49	***Ficus racemosa*** Linn.	Gular	Cluster Fig	Fruits & bark	➢ Fruits are used for external burning, skin inflammation, diarrhoea, and dysentery. ➢ It is astringent, carminative, vermifuge and an anti-dysentery drug. ➢ The extract of fruit is used in diabetes, and leucoderma. ➢ It is used locally to relieve inflammation of skin wounds. ➢ A decoction of fresh bark is an antifertility agent.
50	***Ficus religiosa*** Linn.	Pipal	Sacred Ficus	Bark, fruit & seeds	➢ The bark decoction is given in gonorrhoea, scabies and snake bite. ➢ Fruit is digestive. ➢ Seeds are cooling and laxative.
MYRTACEAE					
51	***Eucalyptus citridora*** Hook.	Liptis	Lemon-scented Gum	Leaves	➢ Leaf juice exhibits nematicidal activity against the larvae of root-knot nematode. ➢ The leaf paste is applied on the forehead in headache. ➢ A decoction of leaves is given in cold and cough.

52	***Syzygium cumini*** (Linn.) Skeels	Jamun	Java plum	Bark, leaves & seeds	➢ The bark is refrigerant, diuretic, digestive, anthelmintic, and febrifuge. ➢ The tender leaves are used for vomiting. ➢ Powdered seeds are used in diabetes.
NYCTAGINACEAE					
53	***Boerhaavia diffusa*** Linn.	Punarnava	Hog weed	Whole plant	➢ The extract of plant is given in controlling urinary trouble, jaundice and other liver problems. ➢ It is also administered in anaemia, and cough.
NYMPHEACEAE					
54	***Nelumbo nucifera*** Gaertn.	Kamal	Indian Lotus, Sacred Lotus	Leaves, flowers & seeds	➢ The leaf juice is given in diarrhoea. ➢ Paste of leaf stalks is applied to the forehead for the relief of headache ➢ The flowers are refrigerant, astringent, cardiac tonic, diuretic and used in cholera, cough, piles and liver disorders. ➢ The seeds check vomiting and are also given in irritated conditions of the intestine. The rhizome is given to children indysentery.
OXALIDACEAE					
55	***Oxalis corniculata*** Linn.	Khatti Butti	Wood Sorrel	Whole plant & leaves	➢ The plant is used to treat burns, wounds and body sores. ➢ The leaves are cooling refrigerant, and appetizing stomachic. ➢ Its infusion is given in fevers, dysentery, scurvy and biliousness. ➢ The leaf juice is an antidote for intoxicating effects of dhatoora. ➢ The leaves are locally used for removing warts.
PAPAVERACEAE					
56	***Argmone mexicana*** Linn.	Satyanashi/Kandiali	Mexican Prickly Poppy	Whole plant	➢ Yellow juice is used in the treatment of ringworm and scabies.
POACEAE					
57	***Cynodon dactylon*** Pers.		Bermuda grass	Whole plant & roots	➢ The juice of the plant is used to check bleeding of nose. A few drops of the juice are dropped into the nostrils to arrest bleeding. ➢ The cleaned and washed roots of the plant are used as memory enhancer.
58	***Bambusa bambos*** Voss.	Bans	Thorny bamboo	Leaves & rhizome	➢ Leaves are useful in piles. ➢ The leaves are emmenagogue,and good as eyewash. ➢ Rhizomes act as tonic and applied to ring worm, bleeding gums and joint pains.
59	***Saccharum officinarum*** Linn.	Ganna, Ikh	Sugarcane	Stem	➢ The stems are cooling, emollient, laxative, cardiotonic, diuretic, and tonic. ➢ They are useful in fatigue, leprosy, cardiac debility, cough, bronchitis, anaemia, seminal weakness and general debility.
PTERIDACEAE					
60	***Adiantum capillus-veneris***L.	-	Maiden Hair	Leaves	➢ It crushes or breaks up stone in bladder and kidneys. ➢ Leaf paste is useful in headache, chest pains and respiratory problems.
RHAMNACEAE					
61	***Zizyphus mauritiana*** Lam.	Ber	Indian Jujube	Bark	➢ Powder of stem bark is applied on eczema anditch.
RUBIACEAE					
62	***Anthocephalus cadamba*** Miq.	Kadam	Maly Peach	Bark & leaves	➢ The bark has been used as a febrifuge. ➢ Paste of leaves is widely used by tribes for treating skin diseases.

					➢ Leaf extract have wound healing capacity.
RUTACEAE					
63	***Aegle marmelos*** Correa ex Roxb.	Bael	Stone Apple	Fruits & leaves	➢ Fruits useful in diarrhoea, vomiting, and intermittent fever. ➢ The leaves are useful in ophthalmia, diabetes and asthmatic complaints.
SOLANACEAE					
64	***Capsicum annum*** Linn.	Mirch	Chilly	Fruit	➢ Fruit has a bitter taste, heart and general stimulant. ➢ It is a source of vitamin C. ➢ It has a powerful action on the mucous membrane and is particularly beneficial in sore-throat.
65	***Datura stramonium***Linn.	Dhatura	Thorn apple	Leaves, roots, flowers & seeds	➢ The leaves are universally used in the treatment of asthma. ➢ The leaves after roasting are applied locally to relieve eye pain, headache, and enlargement of testicles. ➢ The roots are useful in reducing inflammation. ➢ The flowers are dried and roughly powered with or without the leaves and rolled into a cigarette for the relief of asthma. ➢ The seeds act as tonic, skin diseases, ulcers, itching, bronchitis, jaundice andpiles.
66	***Withania somnifera*** Dunal.	Ashwagandha	Winter Cherry	Leaves, roots & fruits	➢ The leaves are anthelmintic and febrifuge. ➢ These are applied to lesions, painful swellings and sore eyes. ➢ Roots have been in use for cough, dropsy, rheumatism and female disorders. ➢ Fruit is used for cough, dropsy rheumatism
VERBENACEAE					
67	***Lantana camara*** Linn.	Ghaneri	Angel Lips	Leaves	➢ Leaf paste is generally used for healing of wounds of livestock. ➢ Leaf juice is also used for skin infections.
68	***Tectona grandis*** Linn. f.	Sagwan	Teak	Bark, wood & roots	➢ Bark is astringent, diuretic, hepatic, stimulant, local refrigerant and sedative. ➢ Wood boiled in water is used as a local application to relieve headache, toothache, and irritation of skin. ➢ Roots are given in retention of urine.
ZINGIBERACEAE					
69	***Curcuma longa*** Linn.	Haldi	Turmeric	Rhizome	➢ The rhizome is used for anti-gastric, antiulcer, and anti- inflammatory. ➢ Turmeric is given in diarrhoea, intermittent fevers, dropsy, liver disorders and urinary tract disorders. ➢ The fresh juice is used as an anthelmintic. ➢ Turmeric with the juice of amla (*Emblica officinalis*) is prescribed for diabetes and jaundice.

RESULTS AND DISCUSSIONS

The documented medicinal plants and all relevant data of the present study are summarized in Table 2. Altogether 69 medicinal plants belonging to 39 families and 64 genera were documented from the study area. Caesalpiniaceae (7%), Apocynaceae (6%), Euphorbiaceae (6%), Moraceae (6%), Asteraceae (4%), Lamiaceae (4%), Mimosaceae (4%), Poaceae (4%), Solanaceae (4%) and Meliaceae (4%) were the dominant families (Fig. 2). Among the genera, *Ficus* (4 spp.), *Acacia* and *Cassia* (2 spp. each) were dominant genera. Among 69 studied medicinal plants, 30 plant species belong to trees, followed by 26 herbs, shrubs (9), herbaceous climber (3) and woody climbers (1) (Fig.3).

The medicinal plants recognized from the different study sites are used for various kinds of diseases like fever, swellings, joint pains, indigestion, intestinal worms, stings, piles, wounds, diabetes, diarrhoea, bleeding, earache, asthma, snake bite, dysentery, liver diseases, dropsy, leukaemia, high blood pressure, gall stones, kidney failure, emmennagogue, obesity, dandruff, eye infections, scabies, vomiting, elephantiasis, cardiac-arrest, toothache, stomach cancer, fever, jaundice, ophthalmia, warts, scurvy, etc. Among the plant part used, leaves (40), followed by roots (23), bark (20), seeds (15), whole plant (14), flowers (12), fruits (12), rhizome (4), latex (3), wood (2), oil (2), gum (1), pods (1), buds (1) and stem (1) (Fig.4). The number put in parentheses represents the number of species.

Traditional knowledge of the area is greatly affected due to modernization and other factors and there is an urgent need to protect the cultural heritage and traditional knowledge of the natives.

Table- 3: Number of ethno-medicinal plant species per family

S. No.	Family	No. of Species	S. No.	Family	No. of Species	S. No.	Family	No. of Species
1.	Acanthaceae	1	14.	Convolvulaceae	2	27.	Myrtaceae	2
2.	Amaranthaceae	2	15.	Cucurbitaceae	1	28.	Nyctaginaceae	1
3.	Anacardiaceae	1	16.	Cyperaceae	1	29.	Nymphaeaceae	1
4.	Apocynaceae	4	17.	Euphorbiaceae	4	30.	Oxalidaceae	1
5.	Asclepiadaceae	1	18.	Fabaceae	2	31.	Papaveraceae	1
6.	Asteraceae	3	19.	Lamiaceae	3	32.	Poaceae	3
7.	Bombacaceae	1	20.	Lauraceae	1	33.	Pteridaceae	1
8.	Caesalpiniaceae	5	21.	Liliaceae	1	34.	Rhamnaceae	1
9.	Cannabinaceae	1	22.	Malvaceae	1	35.	Rubiaceae	1
10.	Cannaceae	1	23.	Meliaceae	3	36.	Rutaceae	1
11.	Caryophyllaceae	1	24.	Menispermaceae	1	37.	Solanaceae	3
12.	Chenopodiaceae	1	25.	Mimosaceae	3	38.	Verbenaceae	2
13.	Combretaceae	1	26.	Moraceae	4	39.	Zingiberaceae	1

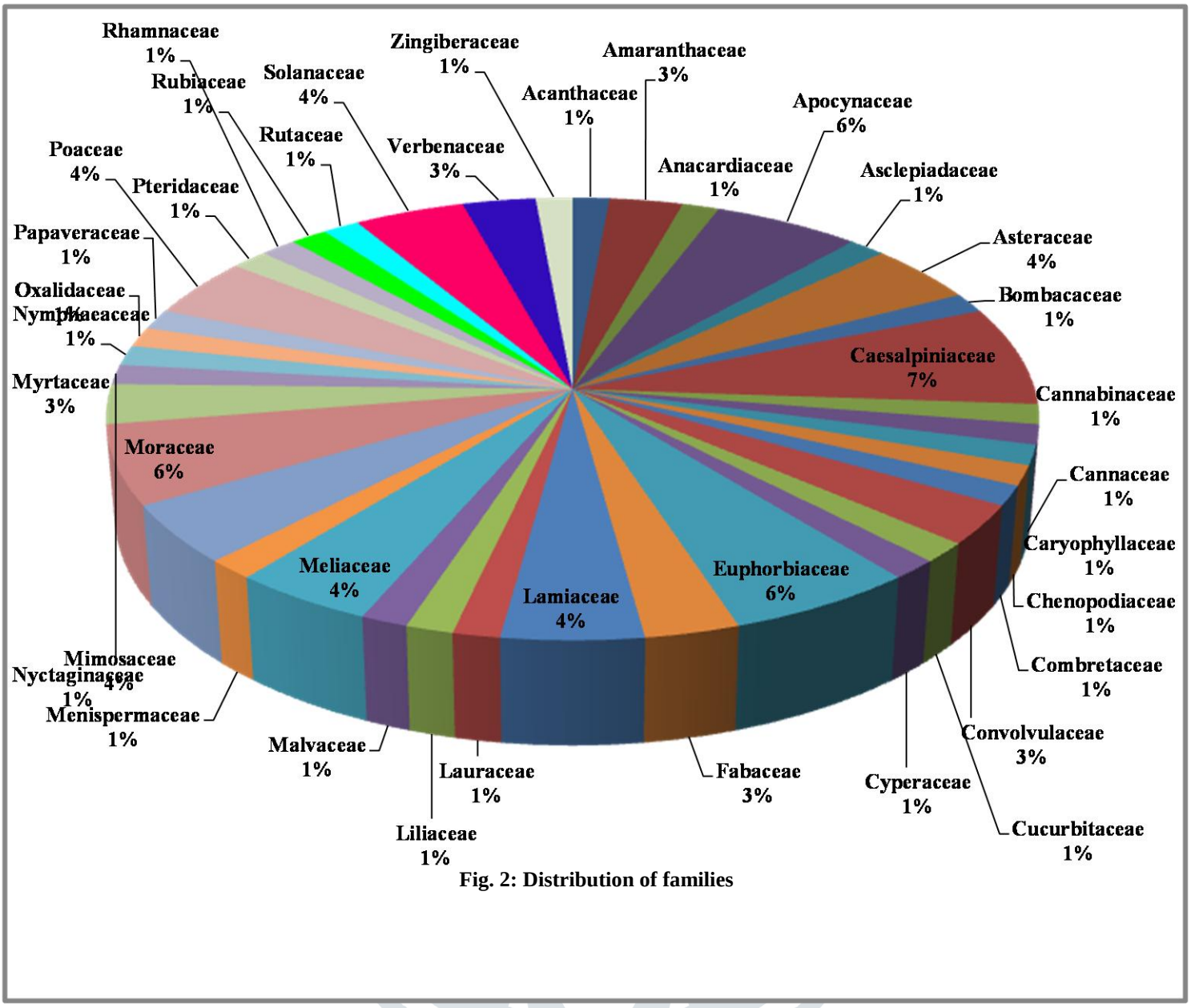

Fig. 2: Distribution of families

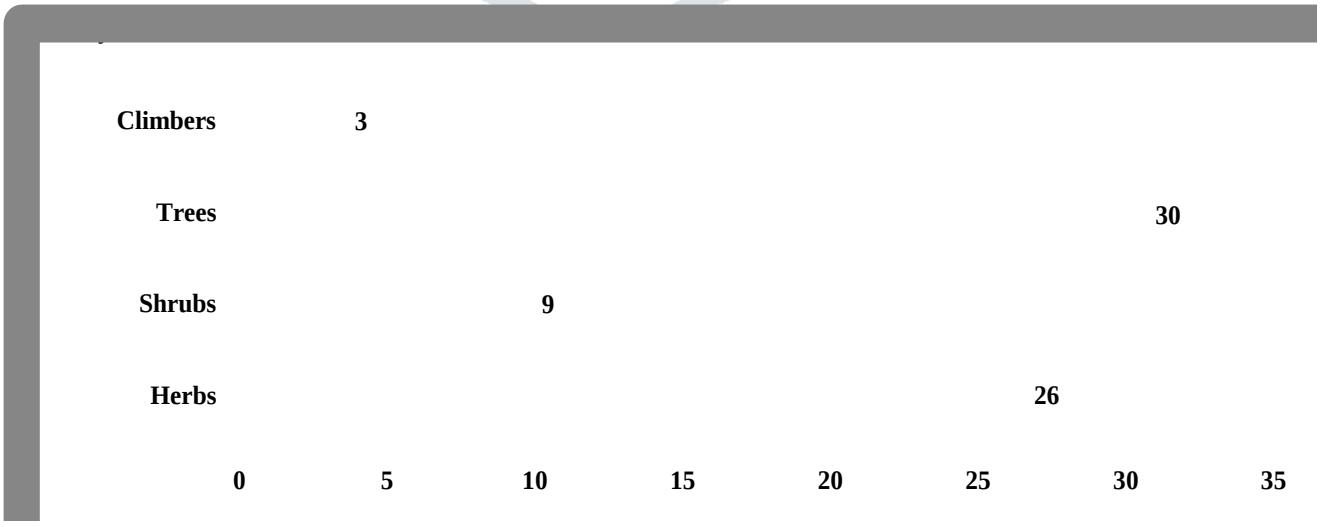

Fig. 3: Distribution of habit.

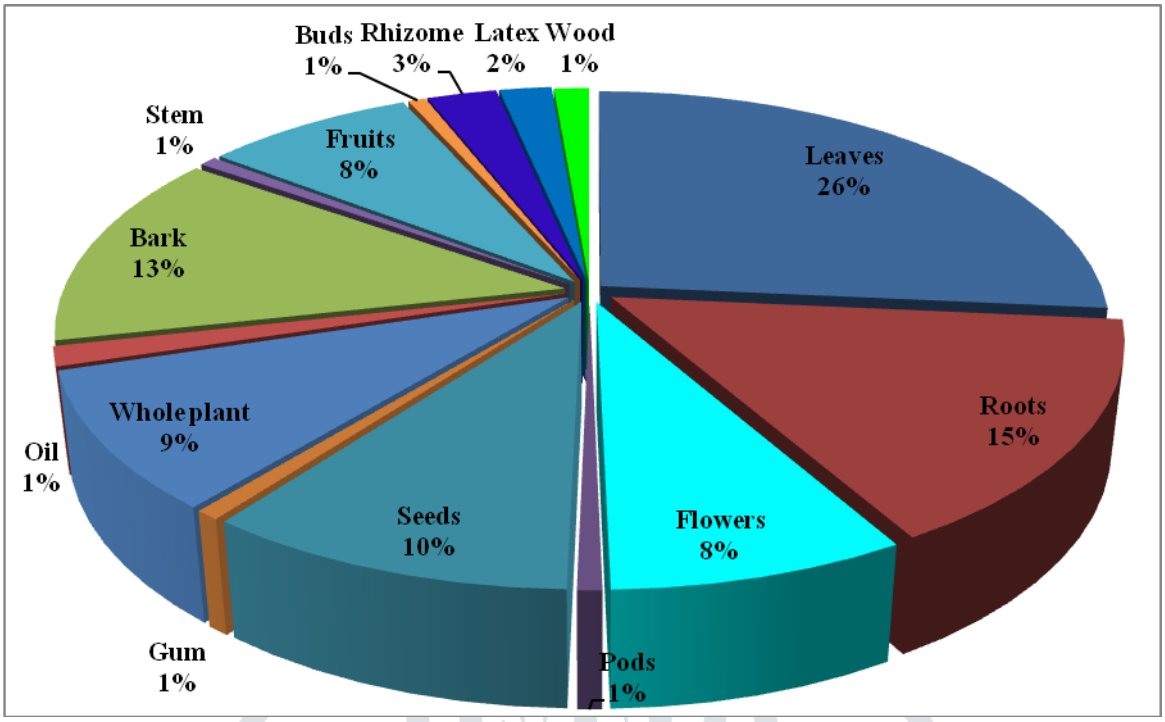

Fig. 4: Distribution of plant parts used.

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