



Identification and Documentation of Ethnomedicinal Plants Used by Tribal People of Ranchi District, Jharkhand

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ABSTRACT

This survey was conducted in Ranchi district and its surrounding villages in order to determine the useful plants consumed for different ethnobotanical purposes such as animal fodder, ornamental plants, good, fuel and dye by the local people living in the area. The survey was conducted in the year 2015-16. The present study exposed that total 63 medicinal plants species belonging to 37 families in this area. In between 63 medicinal plants reported in area maximum 9 plants from Fabaceae family followed by 7 from Malvaceae and minimum 1 plants found from each of the families such as Acanthaceae, Mimosoideae, Uglyhuridthis and Nyctaginaceae. The remaining each of the 24 family's single plant was found. Out of reported 63 medicinal plants, 29 species were plants followed by 24 trees and minimum shrub 01. Hence, the plants in terms of number of species 46.03 % as these are abundant and frequently found in their surroundings.

Key words: Ethnobotanical, Documentation, Ranchi, Medicinal plants, Trees

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INTRODUCTION

Medicinal plants are presently in demand and their acceptance is increasing progressively. Undoubtedly, plants play an important role by providing essential services in ecosystems. Without plants, humans and other living organisms cannot live in a way living should be. Anyway, herbals especially medicinal herbs have constantly acted as an overall indicator of ecosystem health [9]. India has one of the richest plant medical traditions in the world. It is the tradition that is of remarkable contemporary relevance for ensuring health security to the teeming millions. There are estimated to be around 25,000 effective plants based formulations are used in flock medicine and are known to rural communities in India. There are over 1.5 million practitioners of traditional medicinal system using medicinal system using medicinal plants in preventive, promotional and curative application. It is estimated that there are over 7800 medicinal drug manufacturing units in India, which consume about 2000 tonnes of herbs annually Ramakrishnappa [10]. Medicinal plants are used for treatment because they have certain properties, including synergistic actions. The constituents of the plant may interact with each other, and this interaction can be beneficial for both or adverse to either of them or eliminate the harmful effects of both. Plant-derived compounds can dramatically improve hard-to-treat illnesses, such as cancer. Plant components are also characterized by their ability to prevent the development of certain diseases. The toxicity and adverse effects of conventional and allopathic medicines have also been important factors in the sudden increase in population demands and increase in the number of herbal drug manufactures as well as a reduction in the use of chemical drugs Rasool [7]. The use of plants and plant products as medicines could be traced as far back as the beginning of human civilization [7]. They are considered as the backbone of traditional medicine and are widely used to treat a plethora of acute and chronic diseases ranging from the common cold to complex human diseases all over the world [4]. Many higher plants are sources of natural products used as pharmaceuticals, agrochemicals, flavour and fragrance ingredients, food additives, and pesticides [1]. In the Mediterranean region local, orally transmitted knowledge about the uses of plants as medicine and food appears to be declining, mainly as a result of the ongoing socio-

structural changes in Ranchi district of Jharkhand. Several workers in India have also explored various areas and studied different tribes by documenting the indigenous knowledge of ethnobotany uses of plants [2, 3, 5, 11, 12].

MATERIAL AND METHODS

The Jharkhand state being the land of Lord Baidyanath; known as natural sanctuary of spiritual, cultural and herbal heritage in India. The state of Jharkhand lies between latitude 22°00 to 24° 37' N and longitude 83° 15 to 87° 01' E. and well known due to tribal populations, mineral rich region, tropical dry deciduous forests etc. The total population of the state is 26.91 million of which the rural population constituted 77.80% while the schedule tribe constituting 22.50 %. The tribals, forest dwellers and rural people have a rich oral tradition of native and ethnic knowledge about ambient vegetation and forests. A large number of tribal communities like Santhal, Paharia (Sauria Paharia, Mal Paharia etc), Oraon, Munda, Kol, Kharwar, Ho, Asur, Baiga etc. The tribes collect and utilized various herbs, roots, rhizomes, tubers, flowers, fruits, leaves and seeds of many useful plants for meeting their day to day needs and health care from the surrounding forest areas [10]. The data was collected from the predesigned questionnaire as designed by Tiwari [12] with create in modification by the village survey and filling the data by personal contact with villagers and local practitioners as well as visit of adjoin forest area to survey the medicinal plants and their status in two blocks namely Angara and Namkum located in Ranchi district. By using questionnaire survey format data will be all a sampling intensity of 10 or 20 % by selecting individual on random basis each village and information was recorded. The villagers are uses of medicinal plants are different disease cure to gadder the forest area and use of primary treatment use by the villagers.

RESULT AND DISCUSSION

The herbal medicinal plant practiced in the study area presented in the table 1 which includes local name, botanical name, family, habits, plants parts used in diseases and method of herbal formulation & their use by traditional healers. The present study revealed that a total of 63 medicinal plants species belonging to 37 families.

Table 1: List of Medicinal Plant found for treatment in tribal farmers

S. No	Local Name	Botanical Name	Family	Habit	Plant parts used in Diseases	Method of herbal formulation & their use by traditional healers.
1	Adharakh	<i>Zingiber officinale</i>	Zingiberaceae	Plant	Modified root (cough, fiver khansi)	Patient daily take the 1 – 2 cup juice for 2 – 3 days.
2	Arhar	<i>Cajanus cajan</i>	Fabaceae	Plant	Leaf (mouth infection)	Leaves powdered is kept on the infected parts of mouth
3	Arjun tree	<i>Terminalia arjuna</i>	Combretaceae	Tree	Bark (Blood pressure and gathiya disease)	Arjun bark powdered form and taken daily 1 – 2 times with water for 4 – 5 days.
4	Bhirgi kusum	<i>Schleichera oleosa</i>	Sapindaceae	Plant	Root (pneumonia, cancer)	Root powdered and mixed with honey is given to patient for Pneumonia- 3-4 days Cancer-15 days as reported by villagers.
5	Dumbar plant	<i>Liquidambar styraciflua</i>	Altingiaceae	Plant	Latex (Madi babasir)	Dumber plant secretes milky latex, milk are like a gondh so daily 1 – 7 day lagne se thik ho jata hai.
6	Garlic (Lahsun)	<i>Allium sativum</i>	Amarykkidaceae	Plant	ganth	Garlic 3-4 ganth are boile and taken it daily 4-5 times for relief in caught.
7	Jamun	<i>Syzygium cumini</i>	Myrtacea	Tree	Seed + badam + shoot Disease – Sugar	Jamun seed, badam and gurma shoot are made in powdered and taken daily with

						milk/ water 2 -3 times for 1 month.
8	Kalmegh	<i>Andrographis paniculata</i>	Acanthaceae	Herb	Whole plant Disease - stone, Blood purifier	Kalmegh are boiled and taken daily at morning for 15 days to cure the disease.
9	Karanj plant	<i>Milletta pinnata</i>	Fabaceae	Plantae	Branch (datwan)	Karanj datum used for bleeding gum and bad odour of mouth.
10	Lajwanti plant	<i>Mimosa pudica</i>	Mimosoideae	Plant	Whole plant (Khuni babasir)	Lajwanti plat crushed and take daily one time 3 - 4 days.
11	Mahua	<i>Madhuca indica</i>	Sapotaceae	Plant	Bark (Stone disease)	Mahua bark are boiled 3 - 4 lit. Water 7 - 8 hr. one tea spoonful taken in empty stomach daily for 15 - 18 days.
12	Neem	<i>Azadirachta indica</i>	Meliaceae	Tree	Leaf + narial oil or Karanj oil Disease - Itches.	Neem leaf powdered and mixed with coconut oil or karanj oil and use for 15 days.
13	Patter chatta	<i>Bryophyllum pinnatum</i>	Uglyhuridthis	Plant	Whole plant + kurthi (pathri disease)	Patter chatta and kurthi dal are boiled and its water is taken daily to dissolve kidney stress.
14	Rangani plant	<i>Mirabilis jalapa</i>	Nyctaginaceae	Plant	Fruit + seed	Dried seed are crushed and mixed with mustard oil and taken like hukka and cigarette.
15	Satawar	<i>Asparagus racemosus</i>	Asparagaceae	Climbing plant	Root (sexual disease)	Root powder + silajit + mahasangam bhang given to patient for 4-5 days
16	Shesham	<i>Dalbergia sisoo</i> <i>Aloe vera</i>	Fabaceae	Tree Plant	Leaf + Aloe vera gel + misri	Shesam leaf powdery form, Aloe vera gel, are mixed with little misri and taken daily for 1-2 week, Reported to cure cancer.
17	Sundhari plant	<i>Heritiera fomes</i>	Malvaceae	Plant	Fruit (sexual disorders)	Sundari fruit powdered and mixed with misri and taken twice a day for 1 - 2 months.
18.	Khajur	<i>Phoenix dactylifera</i>	Arecaceae	Tree	Khajur - Gond. Disease - Bone, Menstrual cycle.	Khajur gond taken with milk for 1 week can cure disease. Also called as chuhara gond.
19.	Babool	<i>Acacia nilotica</i>	Fabaceae	Tree	Babool - Pod. Disease - Gastric.	Babool pod are dried & powdered given 1 - 2 spoonful daily for 5 - 7 days.
20.	Aonla	<i>Emblica officinalis</i>	Euphorbiaceae	Tree	Aonla - Leaf, Fruit. Disease - Digestion, sugar, gastric problems.	Aonla leaf powder or fruit juice given 2 - 3 times daily for 1 week.
21.	Palash	<i>Butea monosperma</i>	Fabaceae	Plant	Plash - Seed, Flower. Disease -	Plash dried seed powder taken daily morning for 1 week

					Vomiting, wound, effect of burning in body due to sun stroke.	and flower are crushed and paste in use on the body to relieve burning sensation.
22.	Tulsi	<i>Ocimum sanctum</i>	Lamiaceae	Plant	Tulsi – Leaf Caught, Fever & Potency.	Tulsi leaves boiled in water and 3-4 raw leaves are given to chew five times a day. 1g seeds 2-3 times chewing for 1months increase potency.
23.	Kali Musli	<i>Cruculigo orchioides</i>	Hypoxidaceae	Plant	Kali Musli – Root. Disease – Potency, night fall.	Kali musli root powdered are given with milk for 1 week.
24.	Bargad	<i>Ficus benghalensis</i>	Rutaceae	Tree	Bargad – Bark, Latex.	Bargad bark burnt along with ghee & put on the wound taking milky latex with batasha or sugar increase potency.
25.	Aloe – Vera	<i>Aloe - Vera</i>	Liliaceae	Plant	Aloe – Vera – Leaf (gel) Disease – cough, burning part of the body, liver, etc.	Aloe – Vera gel nd misri are mixed and taken for 5 – 6 day & gel are mixed with haldi used in burned part of the body.
26.	Beng saag	<i>Centella asiatica</i>	Apiaceae	Plant	Bang saag – leaf Disease – sun stroke, jaundice, appetizer.	Beng saag powdered mixed with misri and take daily morning for 1 week & past applied on the body.
27.	Harjora	<i>Cissus quadrangularis</i>	Malvaceae	Tree	Harjora – whole plant. Disease – joints of bone.	Harjora, turmeric and colocacia are mixed & powdered and then used on fractured portion of the bone for 15 – 20 days.
28.	Okara or Ban Bhindi	<i>Abelmoschus esculentus</i>	Malvaceae	Plant	Okara – Root Disease – Jaundice.	Okara root are cut in small pieces and soaked in water and taken daily morning for 5 -6 days.
29.	Sal	<i>Shorea robusta</i>	Dipterocarpaceae	Tree	Sal - Leaf Disease – Dysentery.	Sal, Guava, Jamun, Mango, leaf are made in powder form and taken with water 1-2 times daily for 1 week.
30.	Bhumi amla	<i>Phyllanthus niruri</i>	Phyllanthaceae	Plant	Bhumi amla – Whole plant Disease – Jaunice, itches, burning sensation in urinary tract, apitizer & healing of wound.	Bhumi amla are crashed & mixed with sugar and milk and taken, root of Bhumi amla with Arwa rice are salt & used for 1 – 2 times for 15 days to cure the disease.
31.	Brahmi	<i>Baccopa monniera</i>	Plantaginaceae	Perennial herb	Brahmi – Whole plant Disease – Brain tonic, Histeria, Insomnia.	Brahmi panchang taken daily 1 -2 spoon with ½ spoon ghee taken after meal, and to store this product brahmi juice & milk are boil for ½ hr and mixed with ghee and

						taken daily 1 spoon after meal for 20 days.
32.	Muchkund or Kanak champa	<i>Pterospermum acerifolium</i>	Malvaceae	Tree	Muchkund – Flower Disease - Jaundice	Muchkund flower soaked in water at night & in the morning put in nostril for 10 day to cure the disease.
33.	Pipli,	<i>Piper longum</i>	Piperaceae	Plant	Pipli – Fruit Disease – Cough, asthma, night fall, Fiver stomach pain.	Pipli + black piper+ soanthe are powdered , taken 2 – 3 pinch with honey in the morning for 5 – 6 days for adult & taken 2 – 3 spoon for child in milk/ water.
34.	Punarnava	<i>Boerhavia diffusa</i>	Nyctaginaceae	Prostrating on the ground sometimes erect	Punarnava – Whole plant. Disease – Low B.P, Weakness, Menstrual cycle, jaundice, kalazer, cough, stomach pain, rapid.	Punarnava juice taken 2 – 3 spoon daily & root powder mixed with honey or milk for 2 – 3 times for 15 days to cure the disease.
35.	Sanyai putti	<i>Aplectrum hyemale</i>	Orchidaceae	Herb	Sanyaiputti – Leaf Disease – Stomach pain, vomiting & lose motion.	Sanyaiputti dried leaf powdered taken 2 – 3 spoon with Milk/Water 1 – 2 times daily for 1 week.
36.	Anjan	<i>Hardwickia binata</i>	Fabaceae	Tree	Anjan – Seed. Disease – Night fall, weakness, burning sensation in urinary tract.	Anjan seed powder given daily with milk/water up to 15 days to cure the disease.
37.	Ashwagandha	<i>Withania somnifera</i>	Solanaceae	Plant	Ashwagandha – Whole plant. Disease – Burning sensation in urinary tract, night fall, weakness.	Ashwagandha panchang plant powder given with milk daily 2 – 3 times for 15 days.
38.	Bel	<i>Aegle marmelos</i>	Rutaceae	Tree	Bel – Fruit, Leaves. Disease – Vomiting, Burning sensation in urinal tract, stomach pain, piles, jaundice & ulcer.	Bel pulp given daily and 5 – 6 leaves taken daily for 1 week to cure the disease.
39.	Safed Musli	<i>Chlorophytum borivillianum</i>	Liliaceae	Herb	Safed Musli – Root. Disease – Night fall, weakness.	Safed musli peeled off root powder is mixed with milk and given 15 days, 5 – 10 gm in one glass of milk.
40.	Sataver	<i>Asparagus racemosus</i>	Asparagaceae	Climbing plant	Sataver – Root. Disease - Night fall, weakness, shwet pradar & leucorrhia.	Shataver root powder mixed with milk or water and given daily 1 – 2 times for 15 days.

41.	Amrita	<i>Tinospora cordifolia</i>	Menispermaceae	Herb	Amrita – Whole plant. Disease – T.B. Fiver, weakness, Asthma, Itching and sugar.	Amrita herb used in powder from and given in the morning for 15 days and amrita shoot are cut 1 -2 inch and boil with water, this boiled water are taken in morning for 15 days.
42.	Behera	<i>Terminalia bellirica</i>	Combretaceae	Tree	Behera – Seed Disease – Weakness, analgesic & cough.	Behera seed powdered are given daily 1 – 2 times for 15 days as cure the disease.
43.	Konch	<i>Mucuna pruriens</i>	Fabaceae	Climber	Konch – seed. Disease – Night fall, weakness, headache, general vigour and vitality.	Konch seed powdered 1 -2 spoon mixed with milk/ water and taken daily for 15 days to cure disease.
44.	Paneer bandh	<i>Withania coagulans</i>	Solanaceae	Tree	Paneer – Fruit. Disease – Diabetic.	2 – 3 paneer fruit mix with water at night and taken daily in the morning for 1 month.
45.	Sajana or Munga	<i>Moringa oleifera</i>	Moringaceae	Tree	Munga – Leaf, Fruit. Disease -	Munga leaf powdered taken daily 2 – 3 spoon water & fruit are taken directly, chewed and taken for 1 week.
46.	Salam panja	<i>Dactylorhiza hatagirea</i>	Orchidaceae	Perennial herb epiphyte	Salampanja – Leaf Disease – weakness, night fall.	Salampanja laef powder mixed with misri is given 2 – 3 times daily for one week.
47	Black Mustard	<i>Brassica nigra</i>	Cruciferaea	Plant	Black Mustard – Seed Disease – Body pain, headache, Burning parts of the body.	Black Mustard oil and Garlic are heated for 1 – 2 minute and used on body parts as pain reliever. And also used in urine problem of child black mustard oil used for cleaning of wax of the Ear.
48	China Rose	<i>Hibiscus rosa</i>	Malvaceae	Plant	China rose – Flower. Disease – Night fall, Weakness.	China rose flower are crushed and mix with misri and taken daily 2 – 3 times for 1 week.
49	Duddhi grass	<i>Euphorbia hirta</i>	Euphorbiaceae	Herb	Duddhi grass – whole Plant Disease – Vomiting, lose motion.	Duddhi grass and boiled rice are cooked in water and then wrapped in Sal leaves and the drained water is used to cure the loose motion and vomiting.
50	Beetal (paan)	<i>Piper betal</i>	Piperaceae	Climber	Paan – leaf Disease – Dog bite.	Paan leaf and Banana shoot, kali mirch are powdered and mixed with misri taken 15 – 16 times.
51	Nag Kunda	<i>Tabernaemontana alternifolia</i>	Apocynaceae	Small Tree	Nag kuda – Leaf Disease – skin, wound.	Nagkuda leaf are boil and mixed with ghee and used on the wound portion daily 1 – 2 times.

52	Joundish phool	<i>Sesbania grandiflora</i>	Fabaceae	Tree	Joundish phool – Fruit, flower. Disease – Joundish, Vomiting.	Fruit & Flower are crushed with water during night and used in the morning 1 – 3 day to cure the disease.
53	Minjur gori	<i>Celrodendrum infortunatum</i>	Lamiaceae	Shrub	Minjur gori – Bark Disease – T.B.	Minjur gori + Kunjori root are powdered and mixed with misri and taken daily 3 times for 1 week.
54	Saman jori	<i>Albizia saman</i>	Mimosaceae	Tree	Saman jori – Bark, Leaf. Disease – Mirgi (Epilepsy).	Saman jori + Palti are powdered and mixed with sugar/misri taken daily 1 -2 times for 1 month.
55	Amarbeal	<i>Cuscuta reflexa</i>	Convolvulaceae	Plant	Amarbeal – seed, bark. Disease – Stomach pain, jaundice.	Amarbeal bark, seed +Neem leaves +seeds of Cassia tora (Charota) are powdered and taken daily with Milk/water for 15 days.
56	Banmethi	<i>Sida acuta</i>	Malvaceae	Plant	Banmethi – Leaf Disease – Body pain	Banmethi leaf paste is applied on body to cure body pain for 2 - 3 hours.
57	Bakin	<i>Melia azadirachta</i>	Meliaceae	Plant	Bakin – fruit Disease – headache, toothache,	Bakin fruit is ground into paste and mixed with honey to use daily 1 -2 times for 1 week to cure disease.
58	Bija sal	<i>Pterocarpus marsupium</i>	Fabaceae	Tree	Bija sal – Gum Disease – Toothache, Earache.	Bija sal gum are mixed with honey and applied to cure toothache problem for 3 – 4 days. and also used the Hara seed powdered to use brush to cure the wound & bleeding of mouth parts.
59	Buch	<i>Acorus calamus</i>	Acoraceae	Plant	Buch – Rhizomes Disease – Liver disorders	Buch Rhizomes are collected dried and powdered are consumed with water for 15 days.
60	Kali Haldi	<i>Curcuma longa</i>	Zingiberaceae	Plant	Kali Haldi – Rhizome Disease – Asthma, cold, cough.	The pest prepared from rhizome of Kali Haldi is applied externally on lungs and affected parts to cure asthma for 1 months.
61	Semul	<i>Bombax ceiba</i>	Malvaceae	Plant	Semul – Bark, Leaf, flower, seed. Disease – Snake bite. Urinary infection, menstrual disorders.	Semul + moringa leaf are crushed and pest is prepared then this pest is applied on wounds caused by snakebite to relief 1 – 2 hours. and also used as a Kapok . Tribal use root decoction prepared from semul +Curculigo orchioides (Kali musli) is filtered by a piece of cloth and

						50 ml of this preparation is given twice a day for period of 10 -15 days for cure infection.
62	Tikhur	<i>Curcuma angustifolia</i>	Zingiberaceae	Plant	Tikhur – Root, stem, tuber, and leaves. Disease – Bone Fracture	Tikhur + solanum torvum (Ringi) plant are powdered and pest is prepared and applied the fracture portion of the body for 2 -3 times daily for 1 -2 months.
63	Mango	<i>Mangifera indica</i>	Anacardiaceae	Tree	Mango – Fruit Disease – sun strock.	Unripe Mango fruit pulp are mixed with water & taken daily and mango past applied for 3 – 5 days.

Out of 63 medicinal plants reported in the present paper maximum 9 plants were from Fabaceae family followed by 7 from Malvaceae and minimum 1 plants from each of the families such as Acanthaceae, Mimosoideae, Uglyhuridthis and Nyctaginaceae. The remaining each of the 24 families possesses single plant only in table 2.

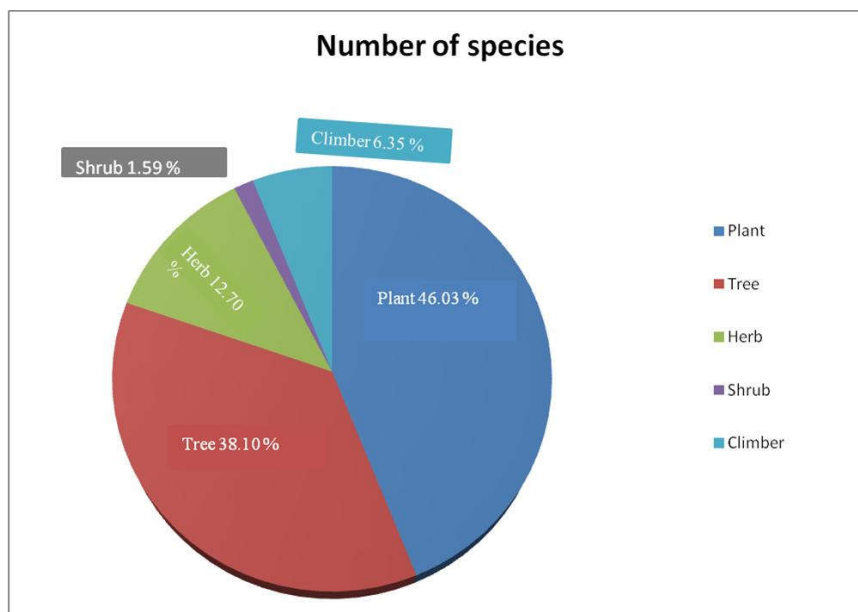
Table2: List of family of Medicinal Plant found in tribal farmers

Sl. no.	Name of family	Number of species
1.	Acanthaceae	1
2.	Acoraceae	1
3.	Altingiaceae	1
4.	Amarykkidaceae	1
5.	Anacardiaceae	1
6.	Apiaceae	1
7.	Apocynaceae	1
8.	Arecaceae	1
9.	Asparagaceae	2
10.	Combretaceae	2
11.	Convolvulaceae	1
12.	Cruciferaea	1
13.	Dipterocarpaceae	1
14.	Euphorbiaceae	2
15.	Fabaceae	9
16.	Hypoxidaceae	1
17.	Lamiaceae	2
18.	Liliaceae	2
19.	Malvaceae	7
20.	Meliaceae	2
21.	Menispermaceae	1
22.	Mimosaceae	1
23.	Mimosoideae	1
24.	Moringaceae	1
25.	Myrtacea	1
26.	Nyctaginaceae	1
27.	Nyctaginaceae	1
28.	Orchidaceae	2
29.	Phyllanthaceae	1
30.	Piperaceae	2
31.	Plantaginaceae	1
32.	Rutaceae	2
33.	Sapindaceae	1
34.	Sapotaceae	1
35.	Solanaceae	2
36.	Uglyhuridthis	1
37.	Zingiberaceae	3

Out of reported 63 medicinal plants, 29 species were plants followed by 24 trees and minimum shrub 01. Hence, the plants in terms of number of species 46.03 % as these are abundant and frequently found in their surroundings.

Table 3: Nature of habit of Medicinal Plant

Sl. No.	Nature of Habit	Number of species
1.	Plant	29
2.	Tree	24
3.	Herb	08
4.	Shrub	01
5.	Climber	04



CONCLUSION

The study of ethnomedicinal plants in traditional management of human ailments indicates that the study area is rich in its medicinal plant composition and the associated indigenous knowledge. The wide uses of these medicinal plants indicate that there is good consensus on the effectiveness of their medicinal properties. The traditional medicinal plants are central to the rural cultures. People are knowledgeable about the plants, their distribution, use, and conservation. Indigenous practices somehow contributed to the sustained use, management and conservation of medicinal plants. This is further buffered by cultural and spiritual practices. Traditional medicinal plants are harvested largely from wild stands and in small proportion from cultivated plants for various purposes. Moreover, most medicinal plants were reported to have other use values in addition to their medicinal use, such as fodder, wild edible plants (food), hygienic and perfuming use, live fencing, fuel wood and charcoal, rituals use, construction etc.

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