

A preliminary ethnobotanical investigation of Gumla district, Jharkhand, India

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ABSTRACT

A survey was conducted in the district of Gumla from February 2023 to 2024 to know about the plants used by the aboriginals and ethnic community to cure various ailments. The present investigation reveals the presence of 142 species of plants species which is being used by the local ethnic community to cure the various ailments. In the present communication, the list of all 142 plant species along with their botanical name, family local name and their uses is discussed in brief.

Key Words - ailments, aboriginals, ethnic community, emporia

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INTRODUCTION

India has all the three elements that contribute to ethnobotanical richness of an area i.e. floristic diversity, ethnic diversity and rich culture diversity. The Indian subcontinent represents, without a doubt one of the greatest emporia of ethnobotanical wealth. Much has been done in ethnobotanical research in India and there is lot more scope for it.

India is the land of tribal people, the tribal people of India mostly live in forests hills, plateaus and naturally isolated regions and are differently termed as Adivasi (original settlers), Adim niwasi (oldest ethnological sector of population), Adimjati (primitive caste), Anusuchit Janjati (scheduled tribe) and several names signifying their ecological or economic or historical or cultural characteristic. Among these the most popular is 'Adivasi', while in India constitution name for them is 'Anusuchit Janjati' (Scheduled tribe) (Jain, 1987).

In India there are about 550 tribal communities of 227 ethnic groups as per the classification made

by anthropologists on linguistic basis. Their population in India is 84.3 million constituting 8.2% of the total population (2011) census. They mainly inhabit about 5000 forested villages or lead a nomadic life in the forest (Pushpangadan and Pradeep, 2008).

The term 'Ethnobotany' was first coined by Dr. J.W. Harshberger on 4th Dec. 1895, at a lecture in Philadelphia, to describe his field of inquiry, which he defined as the study of "plants used by primitive and aboriginal people." In 1896, Harshberger published the term and suggested "ethnobotany" be a field which elucidates the "cultural position of the tribes who used the plants for food, shelter or clothing" (Harshberger 1896).

Ethnobotany has been defined as the study of the past and present interrelations of primitive or aboriginal human societies with the ambient vegetation. It was in 1916 that Robbins, Harrington and Marreco promulgated the broad definition of the term ethnobotany which went beyond mere

identification and cataloguing of plants used by primitive peoples and attributed to this discipline a study and evaluation of the knowledge of all phases of the plant life amongst primitive societies, and of the effects of the vegetal environment upon the life, customs, beliefs and history of the peoples of such societies. Some authors even use this term to include the entire scope of economic botany, but it is more appropriately employed for the relationship between primitive man and plants.

Gumla is predominantly a tribal rich district of Jharkhand. Schedule Tribe (ST) constitutes 34.94 percent. The primitive tribe's population is 11283, SC population is 24329, ST population is 476316, and BC population is 132610 and others population is 61951. Since obvious that the district has a total of 68% of tribal population, therefore, it comes within scheduled area. The dominant tribes found in Gumla are Oraon, Munda, Asur, Chick Badaik, Kharia, Birhor, Lohra, Mahli etc.

MATERIALS AND METHODS

Study area

Blessed with nature's beauty, the district of Gumla is covered by dense forests, hills and rivers. It is situated in the southwest portion of the Jharkhand State. The district lies between 22° 35' to 23° 33' north latitude and 84° 40' to 85° 1' east longitude.

The most popular one ascribes to its word 'Gumla' in Mundari language, which relates to the occupation of the local Tribes in rice processing work (dhan-kutna). The second legend 'Gau-mela' relates to cattle fair. Cattle fair was weekly held in Gumla town every Tuesday. In rural areas, Nagpuri and Sadri people still call it 'gomila'. Till 30th April 2001, Gumla district consisted of 2 sub-divisions viz Gumla and Simdega. But after the creation of Jharkhand State, a new district of Simdega was carved out of Gumla district on 30th April, 2001. Now, Gumla district consists of three sub-division namely Gumla, Chainpur and Basia. Total area of the district is about 5327 sq. km. The total population of district as per 1991 census is 706489, out of which 355505 is male population and 350984 is female population. There is predominance of

tribal people in Gumla district. The terrain is highly undulating and there are existence of many rivers and streams. The forest cover of the district is 1.35 lakh hectares out of the total 5.21 lakh hectares of land i.e. round 27% of the total area of the district. There are three major rivers, which flow through the Gumla district viz. South Koyel, North Koyel and Shankh River. There are various streams/tributaries to the main rivers on which there are some picturesque waterfalls.

Sisai, Bharno and Kamdara blocks have plain lands while other areas are mostly undulating in nature. There is a hill range named as 'Ghera-pahar', which starts from Palkot block area and continues to Bishunpur block area. These elevated plateau areas of Bishunpur and Ghaghra blocks are locally known as 'PAT' area. These PAT areas are made-up of volcanic rock. The average height of these PAT areas is about 2500 ft. to 3000 ft. above the mean sea level.

Gumla district enjoys a good climate characterized by a pleasant cold and temperate weather conditions. The average temperature is about 23 degree Celsius. Earlier the average annual rainfall in the district was 1400-1600 mm. but the recent statistics has shown a decline in the average annual rainfall to about 1000-1100 mm.

In Gumla District the important minerals like Bauxite and Laterite (Aluminium ore) are found in villages of Amkipani, Langdatanr, Chirodih, Jalim, Narma, Bahagara and Gurdari of Bishunpur block, Langatanr, Lupungpat and Chota-Agiatu in Chainpur block and Harup, Serengdag and Jalim in Ghaghra block. The total number of Bauxite mines is Twenty-one. Beside these china clay is also found in some part of the district. Other mining activities like stone crusher, Brick kiln and stone chip mining lease are also available in different part of the district.

The major component of soil is Laterite, which comes from abrasion of ancient Lava and finally comes into existence in form of Laterite & Bauxite. In fact, there are different types of rocks in the whole district. These rocks are of different Physical, Chemical and organic properties. The humidity of

the soil in hilly area is less than that of the plain area. In local language the higher land is known as 'TANR' where as the lower land is known as 'DON'.

Ethnobotanical survey was conducted during Feb 2022 Feb 2024 through regular field trips in different seasons at rural and tribal rich areas of Gumla of Jharkhand, India for ethnobotanical study.

The present work is the outcome of two years of intensive floristic and ethnobotanical survey among the prevailing tribal communities of the Gumla district,

Field trips were made to different parts of the district in regular intervals in order to collect the plants in their flowering and fruiting conditions. Tribal, rural villages and forest localities were visited in the way so that each block with their localities could be studied in each season of the year. Periodic collections of the plants were made from each locality to obtain the floristic and ethnobotanical reports.

The ethnobotanical information's were carried out through interviews using semi-structured questionnaire with local Vaidyas, Kaviraj, informants, village head man and patient to know the plant species and their doses, duration, method of preparation, mode of administration etc.

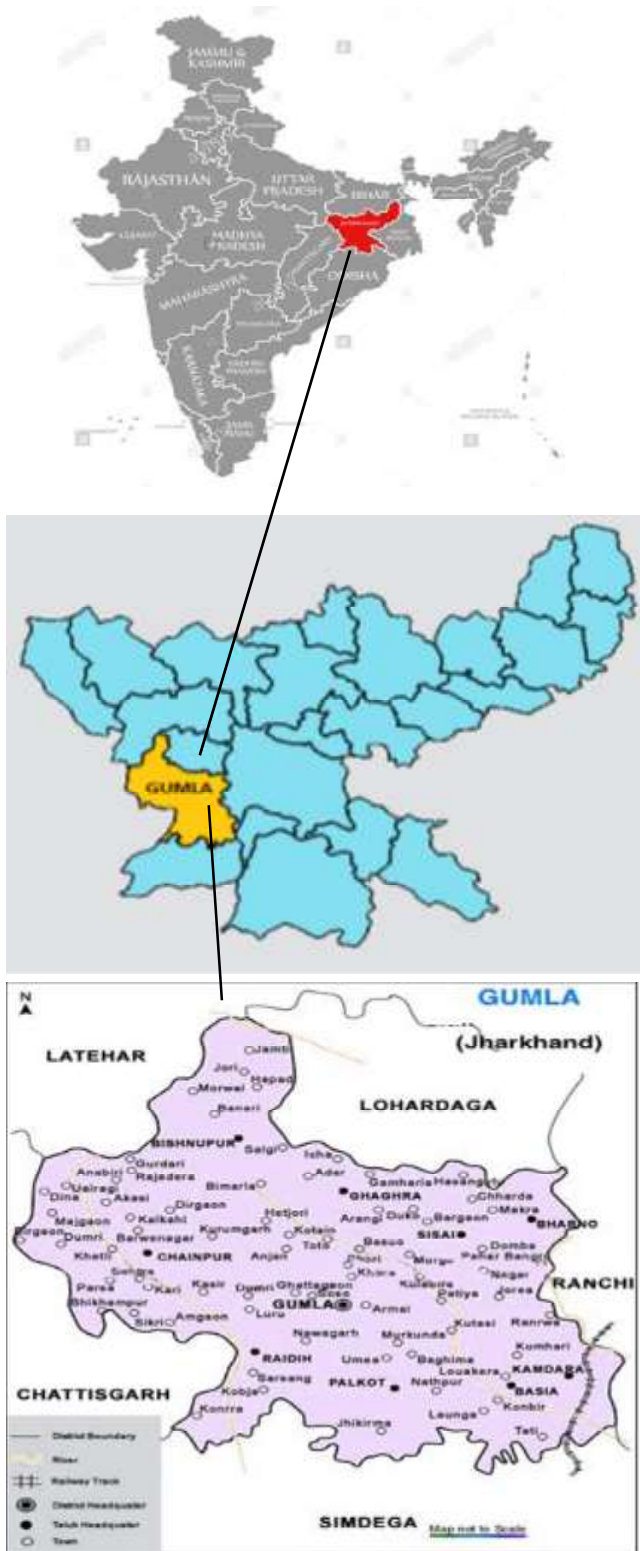
Collections of plants

Throughout the field studies the collection of plants were done using necessary equipment's like vasculum, polythene bags, cutter, digger, knife, camera, blotting sheets, newspaper, field press, binoculars, shoulder bags, cloths, forceps, scales, pens, pencils, pocket lens, field proforma, notebooks, identity card, medicines, water bottles, etc.

Endeavour was made to collect the plants in their flowering and fruiting conditions. Parts of some species like roots, barks, leaves, stems, fruits, seeds, corms were also collected from various localities.

All the collected plant species were brought home, dissected properly and identified with the help of local available flora like "Botany of Bihar and Orissa", "A hand book of Medicinal plants" (Narayan *et.al.* 2003), "Indian medicinal plants" (Kirtikar and

Basu, 1918) and "The Treatise on Indian Medicinal plants" (Chatterjee and Prkrashi, 2013).



Map of Gumla district

TABLE-1 Lists of Plants used to cure various ailments found in Gumla district, Jharkhand

S.No.	Botanical Name	Local Name	Family	Uses
1.	<i>Abrus precatorius</i> Linn	Kawet	Fabaceae	10 seeds each from <i>Abrus precatorius</i> and <i>karanja</i> (<i>Derris pinata</i>) grinded and put into fire, fumes inhaled, cures severe head ache and Hemicrania. Unripened fresh pod juice rubbed on scalp, checks hair fall.
2.	<i>Abutilon indicum</i> (Linn.)sw.syn	Kanghi	Malvaceae	Infusion of roots used in fevers.
3.	<i>Acacia arabica</i> (Willd)	Pah.-Bawla, Babure	Mimosaceae	Helps in reducing body loss and cholesterol level
4.	<i>Acalypha indica</i> Linn.	Muktajara,	Euphorbiaceae	Macerated thick paste of fresh leaves applied at anal pore, prevents constipation. Lukewarm juice as eardrops, checks ear ache. Leaves are used as wormicide.
5.	<i>Achyranthes aspera</i> Linn.	Chirchiti	Amarantaceae	Flowers are made into paste and applied externally as an antidote against the poison of scorpions and snakes. Infusion of roots is used as an astringent.
6.	<i>Acorus calamus</i> (L.) Sweet flag	Ghorbach	Araceae	Decoction of Rhizome along with roots of <i>Angelonia grandiflora</i> taken twice a day cures diarrhea.
7.	<i>Actinoscirpus grossus</i> , (L.f.) Goetgh. & D.A. Simpson	Kesari	Cyperaceae	Tubers prevents constipation
8.	<i>Adhatoda vasica</i> Nees. <i>Justicia adhatoda</i>	Basak	Acanthaceae	Leafjuice is very effective in cold and cough. Root powder is also beneficial.
9.	<i>Adiantum capillus-veneris</i> L.	Hansraj	Adiantaceae	Whole plant applied externally to cure skin diseases of domestic animals.
10.	<i>Aegle marmelos</i> Corr.	Bel	Rutaceae	Pulp of ripened fruit is used as laxative. Root decoction relieves high BP. Fresh leaves relieve cough when chewed.
11.	<i>Agave americana</i> Linn.	Century plant	Amaryllidaceae	Used as anti-inflammatory.
12.	<i>Ageratum conyzoides</i> (L)nor <i>Siberex steud</i>	Uchunti	Asteraceae	Crushed leaf juice is applied on wounds and cuts, it stops bleeding.
13.	<i>Alangium salvifolium</i> (L.f.) Wang.	Dhela	Alangiaceae	Bark paste prescribed as local application, also administered orally(10gm.), administered in snake bites cat bite & mad dog bites. Poison is believed to be excreted out through urine. Root and <i>Tragiain volucrata</i> Linn. fruit taken in equal amount made into paste and applied on paralyzed parts twice a day for two months, cures paralysis.
14.	<i>Albizia lebbek</i> Benth	Siris	Mimosaceae	To treat skin bites and skin infection.
15.	<i>Allium cepa</i> Linn	Palandu	Liliaceae	The warm juice is applied in ear ache.
16.	<i>Aloe barbadensis</i> Mill.	Ghritkumari	Liliaceae	In the diseases of liver and spleen, the pulp of one leaf is administered with black salt and ginger, cures Acute indigestion. Mucilaginous juice rubbed on head, stops giddiness. The juice of roasted leaf is being given for cough and cold.

17.	<i>Aloe vera</i> L. Brumf.	Ghritkumari	Liliaceae	Treat skin problems.
18.	<i>Alstonia scholaris</i> (L.) Br.	Chatwan	Apocyanaceae	Bark powder (5mg) collected from old crushed and boiled in cow's milk drunk twice a day for a month, cures Gonorrhoea. Bark powder (5mg) mixed with 2ml of latex and 100ml rice water prescribed as a Galactagogue for nursing woman and cows.
19.	<i>Alternanthera sessilis</i> (L.) R. Br. Et. D.C.	Garundi Ara,	Amaranthaceae	Root grounded to powder, pasted and applied on the affected area inside mouth in mouth cancer.
20.	<i>Amaranthus spinosus</i> Linn.	Kanta Chaulai	Amaranthaceae	Infusion of shoots is applied in eczema.
21.	<i>Amaranthus blitum</i> Linn. Var. <i>oleracea</i> Hook.f.	Chauli	Amaranthaceae	Used as potherb
22.	<i>Amaranthus spinosus</i> L.	Janum leper 'aa'	Amaranthaceae	5g powdered leaf mixed in 100 ml of water and drunk early in the morning for three days
23.	<i>Amorphophallus campanulatus</i> (Roxb) BL	Elephant foot	Araceae	Effective against asthma
24.	<i>Andrographis paniculata</i> (Burm. F.) wall	Kalmegh,	Acanthaceae	Used to treat Chronic Fevers.
25.	<i>Andropogon muricatus</i> (Retz.) <i>Vetivirazanoidis</i> (Linn.)	Khasi kiru	Poaceae	Administered as an antidote for Snake bite. Root is grounded and applied externally, as a paste, on the bitten part and also taken orally.
26.	<i>Areca catechu</i> Linn.	Katha	Rutaceae	Used to kill worm
27.	<i>Argemone mexicana</i>	Pili kantili	Papaveraceae	Its oil is used for itches and other skin diseases.
28.	<i>Aristolochia indica</i> Linn.	Iswarmul,	Aristolochiaceae	Cures Spermatorrhoea.
29.	<i>Asparagus racemosus</i> Willd	Satavari	Liliaceae	Root's juice is used with honey as a demulcent in bilious dyspepsia or in diarrhoea. Constituent in the preparation of medicated oils for external application in nervous & rheumatic affections.
30.	<i>Atrocarpus integrifolia</i> (L.)	Kathal	Moraceae	Used against Diarrhea
31.	<i>Azadirachta Indica</i> A. Juss.	Neem	Meliaceae	Leaf extract purifies blood.
32.	<i>Bacopa monnieri</i> (Linn) Pennel	Brahmi	Scrophulariaceae	The plant is very effective nerve tonic
33.	<i>Bauhinia racemosa</i> Lam.	Kachnar	Caesalpiniaceae	The decoction prepared by the roots is used for abdominal disorders
34.	<i>Bauhinia variegata</i> Linn	Kachnar	Caesalpiniaceae	Cures Asthma, Skin diseases.
35.	<i>Biophytum sensitivum</i> (L.) DC	Lajauni	Oxalidaceae	It is given to children to induce sleep. It is also used in chest complaints and its ash for stomach-ache.
36.	<i>Boerhaavia diffusa</i> Linn.	Punarnava,	Nyctaginaceae	Its root is used for the treatment of diarrhoea. Dysentery and cholera. It is also diuretic.

37.	<i>Borassus flabellifer</i> (L.)	Tar	Arecaceae	The juice is good against gastric and hiccough.
38.	<i>Bridella retusa</i> (Spreng)	Snt.-Karupala, Karki, S.Pah.-Jirke Mal.-Mukkayini	Phyllanthaceae	Antibacterial, Antifungal, Antiviral
39.	<i>Bryophyllum pinnatum</i> Kurz.	Ghamari /Patharchur	Crassulaceae	Leaf juice is given in diarrhea, cholera etc. They are slightly toasted before they are applied to wounds, cuts, ulcers, bites of venomous insects.
40.	<i>Buchanania lanzan</i> spreng.	Piyar	Anacardiaceae	The filaterate is used against chest pain.
41.	<i>Butea monosperma</i> (Lamk.) Taub.	Palas	Fabaceae	As an antihelminthic.
42.	<i>Caesalpinia bonduc</i> (L.)Roxb.	Kathkaranja,	Fabaceae	Root bark is used as an emmenagogue, febrifuge and stomachic. Leaves are used as anthelminthic. Seeds are used as bitter, astringent.
43.	<i>Calotropis gigantea</i> (Linn) R. Br. ex. Ait.	Akwand	Apocyanaceae	Used against Snake bite
44.	<i>Calotropis procera</i> (Ait) R.Br.	Akwan	Apocyanaceae	Traets wounds and Scars
45.	<i>Cannabis sativa</i> Linn.	Bhang	Cannabaceae	Used in cuts and wounds, Checks bleeding.
46.	<i>Capparis Zeylanica</i> Linn.	H.-Ardaha, Snt.-Asaria, Buru Asaria,	Capparaceae	
47.	<i>Cardiospermum helicacabum</i> Linn.	Baloon vine	Sapindaceae	Filtered root extract is administered for menstrual disorder and white discharge.
48.	<i>Cassia angustifolia</i> Vahl.	Senna	Fabaceae	
49.	<i>Cassia fistula</i> Linn.	Bandari Lauri	Caesalpineaceae	As an antipyretic.
50.	<i>Cassia occidentalis</i> L.	Kasondi	Caesalpinaceae	7.5 g of leaf powder is mixed with one teaspoon of sugar and taken with a glass of water for two times in a day for three days.
51.	<i>Cassia tora</i> Linn.	Chakwar	Caesalpinaceae	Seeds of the plant along with the <i>Curcuma longa</i> L., applied as poultice against gonorrhoea.
52.	<i>Catharanthus roseus</i> (L.)	H.-Sadabahar, Mal.-Ushamalari	Apocynaceae	The root and leaf abstract is given for the treatment of Leukemia.
53.	<i>Celastrus paniculatus</i> Willd.	Kujri	Celastraceae	Leaves are emmenagogue. Seed oil is bitter, expectorant, brain and liver tonic, cures joint-pains, paralysis and weakness.
54.	<i>Centella asiatica</i> Linn.	Beng sag, Mandukaparni	Apiaceae	Used to treat insanity and Spermatorrhoea.
55.	<i>Chlorophytum tuberosum</i> , (Roxb.) Baker.	Dundin Sanga	Liliaceae	Roots are used as tonic.
56.	<i>Cinnamomum camphora</i> Nees &Eberm.	Champhor Tree	Lauraceae	Used to recover from fever, Convulsion and stroke.
57.	<i>Cinnamomum cassia</i> Blume .	Cassia	Lauraceae	Help to fight against bacteria and fungi.

58.	<i>Cissampelos pareira</i> (L.)	H.-Akanadi Snt.-Tejomala S.Pah.-Kothari N. Poa, Mal.- Kattuvalli	Menispermaceae	Used against chest and stomach pain.
59.	<i>Cissus quadrangularis</i> (wall.)	Harjora	Verbenaceae	Used against bone fracture.
60.	<i>Cleome viscosa</i> Linn.	Asian Spider flower	Capparaceae	Used as antihelmentic.
61.	<i>Clerodendron infotunatum</i> (Gaertn)	Snk.- BhantSnt.- Bharni, S.Pah.- Ghetu, Mal.- Peringalam.	Verbanaceae	Laef paste is applied in hair to check hair fall.
62.	<i>Clerodendrum inerme</i> (Linn.) Gaertn.	Sankuppi	Lamiaceae	Used for the treatment of rheumatism, skin disease and venereal infection.
63.	<i>Coccinia indica</i> W & A.	Kundra	Cucurbitaceae	It is used as antibiotic
64.	<i>Cochlospermum religiosum</i> (Linn) Alston.	Sonali Simul	Bixaceae	The bark contains a cordage fibre.
65.	<i>Coldenia procumbens</i> Linn.	Tripakshi	<i>Boraginaceae</i>	Used to treat rheumatic swelling.
66.	<i>Convolvulus pluricaulis</i> L.	Gudulatur	Convolvulaceae	Used as a Heart Tonic.
67.	<i>Crotalaria juncea</i> Linn	sun hemp	Fabaceae	Infusion of bitter leaves are used externally and internally for gastric and bilious fever.
68.	<i>Croton oblongifolius</i> (Roxb)	Snk.- Bhutankush Snt.-Guti S.Pah.-Putalo	Euphorbiaceae	Used against chest and stomach pain
69.	<i>Curcuma longa</i> Linn.	Haldi	Zingiberaceae	This is anticancer, antimicrobial and anti-inflammatory.
70.	<i>Cuscuta reflexa</i>	Amar bel	Convolvulaceae	Used against whooping cough.
71.	<i>Cyanodon dactylon</i> (Linn.) pers.	Dubghas	Poaceae	Infusion of root is used stop bleeding from the piles. Fresh juice effectively controls the nasal bleeding, when applied as nasal drops.
72.	<i>Cymbopogon citratus</i> (DC) Stapf	Lemon grass	Poaceae	It improves digestion, helps against nausea and treats menstrual problem.
73.	<i>Cyperus rotundus</i> Linn.	Motha	Cyperaceae	Essential oil is extracted from the tuber, which is said to stimulate the secretion of milk, in lactating mothers. The acetone and ethanol extracts of tubers were found to possess anti-bacterial activity.
74.	<i>Cyperus rotundus</i> Linn.	Motha	Cyperaceae	Tuber extract is applied as a stimulant.
75.	<i>Dalbergia sissoo</i> (Roxb.)	Shisam	Fabaceae	It treats sore throats, dysentery syphilis and bronchitis.
76.	<i>Datura metel</i> (L.)	Kala Datura	Solanaceae	Seeds are used against tooth ache.
77.	<i>Datura stramonium</i> Linn.	Sada Dhatura	Solanaceae	Used to cure stomach and intestinal pain caused due to worm infection.

78.	<i>Dioscorea bulbifera</i> , L.	Haaranbo / Piska Sanga	Dioscoreaceae	Processed tuber is given in gastric disorders and constipation. The tubers are first boiled in water; skin is peeled off, then cut into thin slices and put in some porous container for overnight under running water.
79.	<i>Dioscorea dumetorum</i> , (Kunth.) Pax	Kulu Sanga	Dioscoreaceae	Cooked tubers relieve from constipation and piles.
80.	<i>Dioscorea glabra</i> , Roxb.	Onotong Sanga / Ren Onotong Sanga	Dioscoreaceae	Cooked tubers relieve from constipation and piles.
81.	<i>Diplocyclos palmatus</i>	Rowa/Bon Kakra	Cucurbitaceae	Plant pacifies inflammation, cough, flatulence, skin diseases and general debility.
82.	<i>Eclipta alba</i> Hassak L.	Bhangaria	Asteraceae	Plants used externally in scorpion stings, is used for the treatment of hepatitis and cirrhosis. Plant is rubbed on the gums in toothache and applied with a little oil for relieving headache and with sesame oil in elephantiasis.
83.	<i>Elaeodendron glaucum</i> (Pers.)	H.-Jamrassi, M.-niri Daru, Snt.-NiuriS. Pah-Mara Gira,	Celastraceae	Used as antidiabetic and cardiac complains.
84.	<i>Elephantopus scaber</i> Linn.	Mayurjhanti	Asteraceae	Against intestinal worm
85.	<i>Eugenia jambolana</i> (Lamk)	Jamun	Myrtaceae	Antidiabetic
86.	<i>Euphorbia hirta</i> L.	Dudhi	Euphorbiaceae	Its root is given to stop vomiting. Juice of plants used in dysentery and colic.
87.	<i>Ficus benghalensis</i> (L.)F.Indica	M.-Bare Daru,	Moraceae	The stem bark was used for the treatment of diabetes, diarrhea, and dysentery.
88.	<i>Ficus racemosa</i> (L.)F. <i>Glomerata</i> (Roxb.)	Gular,	Moraceae	Effective against liver disorder, diarrhea, inflammatory conditions, respiratory and urinary diseases.
89.	<i>Ficus religiosa</i> (L.)	Pipal	Moraceae	Bark is used against Leucorrhoea.
90.	<i>Fleurya interrupta</i> (Goud) <i>Laportea interupta</i>	M.-Sengel Sing, B.- Bichhoti	Urticaceae	The plant is useful against indigestion, constipation, insomnia and chest pain.
91.	<i>Gloriosa superba</i> Linn.	Kalahari	Liliaceae	Tuber is pungent, bitter, heating, anthelmintic, laxative, abortifacient, and useful in ulcers, leprosy, piles, inflammations and abdominal pains
92.	<i>Hemidesmus Indicus</i> (L.) (Br.)	Anatamula	Apocynaceae	Used for the treatment of inflammation and pain in joints, muscles and Fibrous tissues.
93.	<i>Holarrhena antidysenterica</i> (Wall)	Hat Baha	Apocynaceae	Used against stomach disorder and ulcers.
94.	<i>Ichnocarpus frutescens</i> (L.) (Br.)	Kali dudhi	Apocynaceae	Used against epilepsy.
95.	<i>Ipomea aquatica</i> Forsk	Kalmi sag, Kurdmi 'aa'	Convolvulaceae	3g leaves powder is mixed with 100ml of water and taken orally thrice a day for three to four days.

96.	<i>Jatropha curcas</i> (L.)	Kulhai Ara' Daru	Euphorbiaceae	Used against Sciatica, dropsy and paralysis.
97.	<i>Kaempferia rotunda</i> L.	Bhu champa	Zingiberaceae	Rhizomic decoction used to treat abdominal discomfort.
98.	<i>Lawsonia inermis</i> L.	Mehendi, Menjati	Lythraceae	Infusions of leaves are prepared by adding 5g of leaf powder with 2 liter of water and drank 250ml twice a day for three days.
99.	<i>Leea macrophylla</i> (Roxb.)	Hathilar,	Vitaceae	The plant is antimicrobial, antidiabetic, hepatoprotective, cardiovascular etc.
100.	<i>Mallotus phillippinensis</i> (Lam) Muell.Arg	Kapila	Euphorbiaceae	Its effective against intestinal worm.
101.	<i>Manihot esculenta</i> , Crantz.	Edel Sanga	Euphorbiaceae	Tubers are considered good for digestion.
102.	<i>Mimosa pudica</i> L.	Lajwanti, Japidsingh,	Mimosaceae	Decoction of shoot is prepared by adding 5g of shoot powder with 50ml of water and taken once in a day for five days.
103.	<i>Moringa olerifera</i> Lam	Sahjan	Moringaceae	Used in fever, ear infections and controlling blood sugar level
104.	<i>Morus indica</i> Linn .	Tuter	Moraceae	It regulates blood glucose level in diabetic patient.
105.	<i>Nelumbium speciosum</i> , Willd.	Salkub Sanga	Nymphaeaceae	Tubers used in the composition of a drug given leucorrhoea.
106.	<i>Neolamarckiana cadamba</i> (Roxb.)Bossler	Kadam	Rubiaceae	Used against uterine disorder
107.	<i>Nyctanthes arbor tristis</i> (L.)	Harshingar	Oleaceae	The plant is antihelmenthic and antipyretic.
108.	<i>Ocimum sanctum</i> (L.)	Tulsi	Lamiaceae	The leaf juice is used against bronchitis
109.	<i>Oroxylon indicum</i> (L.)	Hathi Panjar,	Bignoniaceae	Used against Jaundice and epilepsy.
110.	<i>Oxalis corniculata</i> L.	Piri Chatom Ara	Oxalidaceae	Whole plant except roots, is used in preparing medicine for paralysis.
111.	<i>Oxalis debilis</i> , Kunth.	Piri Chatom Ara	Oxalidaceae	Used for treatment of dysentery and diarrhea.
112.	<i>Oxalis latifolia</i> , Kunth.	Piri Chatom Ara	Oxalidaceae	Plant is helpful in treating ulcers, healing wounds, dysentery and diarrhea.
113.	<i>Peuraria tuberosa</i> (Roxb.ex Willd.)DC.	Ban Kumra	Fabaceae	Tubers are used for the treatment of Dysuria, cough, rheumatism, and malarial fever. The roots are to be used as a demulcent and refrigerant in fevers and as galactogoue. Rejuvenates the male reproductive system and increases both quality and quantity of semen that increase its count and mobility.
114.	<i>Phoenix dactylifera</i> Linn.	Khajur	Arecaceae	Useful against treatment of bacterial infection.
115.	<i>Phyllanthus niruri</i> Linn.	Bhuin amla	Euphorbiaceae	Fresh juice of the whole plant along with clarified butter is very effective in the treatment of Mennorrhagia, Leucorrhoea and Gonorrhoea. It is administered in Jaundice, Dropsy and Genital urinary infection.
116.	<i>Plumbago zeylanica</i> Linn.	Chitrak	Plumbaginaceae	Cardiotonic, hepatoprotective and neuroprotective.

117.	<i>Pongamia glabra</i> (Vent.)	Karanj	Fabaceae	Used against skin diseases.
118.	<i>Pterospermum aceriform</i> (Linn.) Willd	Knakchampa,	Sterculiaceae	The Plant is useful to cure inflammation, ulcers, blood problems and in tumors.
119.	<i>Rauwolfia serpentina</i> Benth.	Sarpagandha,	Apocynaceae	Alkaloids in the plants reduce Blood Pressure. Depresses activity of the central nervous system.
120.	<i>Ricinus communis</i> (L.)	Arandi	Euphorbiaceae	Seeds area used as purgative.
121.	<i>Scoparia dulcis</i> (L.)	Guru Ara'S./Pah.-Embe, Mithi dhania	Plantaginaceae	Used against Blood dysentery
122.	<i>Semecarpus anacardium</i> L.f	Bhelwa	Anacardaceae	Used against nervous disability.
123.	<i>Sida rhombifolia</i> L.	Atibala, Ipi - Piung	Malvaceae	Bean sized tablets are prepared and 2 tablets are taken twice a day for three to five days with warm water for five days.
124.	<i>Solanum xanthocarpum</i> Schrad & Wendl.	Rangani	Solanaceae	Whole plant is used as medicine with another expectorant as Bronchodilator. Fruits boiled in ghee are given for cough & toothache.
125.	<i>Soymida febrifuga</i> (Roxb.)	Chengarohin	Meliaceae	The plant is useful in vaginal infections, rheumatic pains, stomach pains.
126.	<i>Sphagneticola trilobata</i> (L.) Pruski	Bhringraj	Asteraceae	The plant is useful in treating back pain, muscles cramp, gout and arthritis.
127.	<i>Spilanthes acmella</i> (L.)	Akarkara		The plant is stomachic, stimulant and antidiarrhoeal.
128.	<i>Spondias pinnata</i> (L.f.) Kurz	Amra	Anacardiaceae	Used for treatment of joint pain.
129.	<i>Symplocos racemosa</i> (Roxb.)	Lodh	Symplocaceae	The plant is used for the treatment of eye, skin and ear diseases.
130.	<i>Terminalia arjuna</i> (Rox.D.C.)	Arjun	Combretaceae	The plant is very effective against angina pain, hypertension and congestive heart failure.
131.	<i>Terminalia bellirica</i> (Gaertn) Roxb.	Bahera	Combritaceae	Used for the treatment of hepatitis, asthma, dyspepsia, piles diarrhea cough etc.
132.	<i>Terminalia chebula</i> Retz.	Harre	Combritaceae	It is a good laxative, increases appetite, liver stimulant etc.
133.	<i>Thevetia nerifolia</i> (Juss.) <i>Cascabela thevetia</i> (L.) Lippold	Kanail	Apocyanaceae	It is used against jaundice and fever.
134.	<i>Tinospora cordifolia</i> (willd.) Miers ex Hook. F. & Thoms.	Amrita, Hadjoda	Menispermaceae	2g leaf powder and 3g stem powder are mixed; the mixture is added to 200ml warm water and drunk twice a day 100ml each time for three to six days.
135.	<i>Tragia involucrate</i> (L.)	Barhanta	Euphorbiaceae	Used in treating inflammation, wounds, eczema, scabies and skin infection.
136.	<i>Ventilago Calyculata</i> (Tul.)	Bonga Sarjal	Rhamnaceae	Effective against skin problems.

137.	<i>Vernonia anthelmintica</i> (Willd)	Bakuchi Samraj, J	Asteraceae	Used to treat asthma and kidney troubles.
138.	<i>Vernonia cinerea</i> Less.	Jhur-Jhuri	Asteraceae	Plants considered diaphoretic, used to promote perspiration in fever. Flowers administered for conjunctivitis. Seeds are also used as constituent of tonic for Horses.
139.	<i>Vitex negundo</i> Linn.	Sinduar	Verbenaceae	Used against arthritis.
140.	<i>Vitex peduncularis</i> (Wall.)	Charigodwa	Lamiaceae	Used to treat malarial and black fever.
141.	<i>Xanthimumstrumarium</i> Linn.	Banokra	Asteraceae	Plants used as diaphoretic, sedative. Roots are bitter tonic, useful in Struma diseases and cancer. Fruits are useful in small pox.
142.	<i>Ziziphus oenoplia</i> (L.)Mill.	Kanout	Rhamnaceae	The plant is antimicrobial and antidiabetic.

RESULT & DISCUSSION

The preliminary ethnobotanical investigation of Gumla district reveals the presence of 142 plant species used by the ethnic communities. These plant species are used to cure various ailments by the local tribal communities. A list of all the plant species known to cure various ailments has been given in table -1.

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