



Ethnobotanical Studies & Economic Evaluation of Medicinal Plants of Chhotanagpur Plateau Region

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ABSTRACT

A scientific and systematic ethnobotanical survey was conducted among the Santhal community population in old Chhotanagpur Division (Ranchi, Palamu & Hazaribagh) in order to assess the availability, intensity and the use in treatment of various ailments by local inhabitants. An exhaustive inventory of major medicinal plants found popularly used as medicine and their botanicals identification along with the use of their various parts have been studied in details, Documentation of such study is highly relevant in post WTO (World Trade Organization) and globalization regime, when the interest in herbal medicine has grown enormously. The whole world is looking for safe medicine without any side effect, formulated from the plant's raw materials available at affordable price. This specially gains high significance in deep rural and tribal area of the developing country, where the socio-economic condition of the people is not good enough to bear high cost of modern medicine. The objectives of present studies were to document the various medicinal plants found in the tribal belt of chhotanagpur region and make in-depth study of their ethno-botanical utilization by the local people of the area (*Anand Kumar et. al. 2014*). The effort resulted in documenting variety of useful medicinal plants of the study area situated in Chhotanagpur Plateau, which lies between 20°c North-25° North Latitude 83°27' E-87°50 E longitude with a total area of 86,000 Sq.Km, consisting the districts viz. Ranchi, Hazaribagh, Palamu having tribal population and rich in and also their ethno-botanical uses. Collection of primary and secondary information from the study area revealed that Chhotanagpur plateau is represented by 87 species of Medicinal Plants belonging to 21 families. Many of the medicinal plants were found to be wild in nature and others were cultivated by the local. The research information generated may help in use of the studied plant and their parts as raw material for formulating newer, effective and affordable herbal drugs.

Keywords: NIL.

INTRODUCTION

A scientific and systematic ethnobotanical survey was conducted among the Santhal community population in old Chhotanagpur Division (Ranchi, Palamu & Hazaribagh) in order to assess the availability, intensity and the use in treatment of various ailments by local inhabitants. An exhaustive inventory of major medicinal plants found popularly used as medicine and their botanicals identification along with the use of their various parts have been studied in details, Documentation of such study is highly relevant in post WTO (World Trade Organization) and globalization regime, when the interest in herbal medicine has grown enormously. The whole world is looking for safe medicine without

any side effect, formulated from the plant's raw materials available at affordable price. This specially gains high significance in deep rural and tribal area of the developing country, where the socio-economic condition of the people is not good enough to bear high cost of modern medicine.

Chhotanagpur Plateau, which lies between 20°c North-25° North Latitude 83°27' E-87°50 E longitude with a total area of 86,000 Sq.Km, consisting the districts viz. Ranchi, Hazaribagh, Palamu having tribal population and rich in vegetation (*Lal et. al. 2011*). The forest in this region is rich in floral biodiversity & boost of vast collection of many

indigenous medicinal & aromatic plants. Local Vaidyas, Hakims & Siddha practitioners recommend and uses raw materials from medicinal plants grown in the region for formulation of traditional indigenous medicine for treatment of various diseases including some acute and chronic diseases.

The tribal inhabitant of area largely believes on these medicines and the feedback received is highly encouraging. Further, the demands of the medicinal & aromatic plant in global market are increasing by leaps & bounds. Presently, China is the largest supplier of MAP (Medicinal and Aromatic Plant). However, India has large varieties of MAP, (Kalpana, 2015) which can be grown and supplied to the world market, which will help in income generation, employment of youth, health care, environment protection and also mitigate the ill effect of global warming and climate change. Therefore, in the present context, the ethno-botanical studies and economical evolution study of MAPs in Chhotanagpur plateau region for traditional knowledge becomes important. The objectives of present studies were to document the various medicinal plants found in the tribal belt of chhotanagpur region and make in-depth study of their ethno-botanical utilization by the local people of the area (Anand Kumar *et. al.* 2014). The effort resulted in documenting variety of useful medicinal plants of the study area, and also their ethno-botanical uses.

Material and Method:

For the present study, standard internationally accepted analytical and taxonomical methodology for

survey and analysis was adopted. Five study sites were selected in by Random Sampling Method (Site-1 in Ranchi, Site-2 in Hazaribagh, Site-3 in Palamu, Site-4 in Chatra and Site-5 in Gumla). The periodical trips were undertaken to the different part of the study area to collect the information scientifically and systematically on climatic condition (Max-Min-temp, Rainfall, Relative humidity, Sun-shine hours and wind velocity) and also the soil and water regime details. Further, plants details (Morphological and growth parameters) were done as per recommended method. The medicinal plants found in the study area were collected & brought to the laboratory for proper identifications with the help of identification key of flora given by Hutchison's Benthams and Hooker System (1973). Personal Interview with Local People, cultivators, Hakims and Tribal were carried out by applying structure questionnaire. The data obtained analyzed using proper statistical method (Bhatt 2002).

Result & Discussion:

Collection of primary and secondary information from the study area revealed that Chhotanagpur plateau is represented by 87 species of Medicinal Plants belonging to 21 families. Many of the medicinal plants were found to be wild in nature and others were cultivated by the local. Table – 1 presents the details of medicinal plants found in the study area with their scientific classification and evident use of the plant as herbal medicine used by local inhabitant, Vaidya & Hakim (Bondya *et. al.* 2011).

Table – 1 the details of the Ethno-botanical aspect of the plants found in Jharkhand study area.

S. No	Name of Medicinal Plant	Family	Parts of the Plant	Ethnobotanical Uses
1	<i>Achyranthus aspera</i> Linn Local Name- Chirchiri Common/English Name- chaff-flower, prickly chaff flower	Amaranthaceae	Stem	Purgative, diuretic in dropsy piles, boils, skin eruptions, colic, snake bite.
			Root	Infusion of root astringent.
			Seed	In hydrophobia, emetic.
2	<i>Albizia lebbek</i> Benth Local Name- Siris Common/English Name- lebbeck, lebbek tree, flea tree, frywood, koko and woman's	Mimosaceae	Bark	It is an astringent given in piles, diarrhea. It is also used in case of anemia and for curing itch.
			Seed	It is an astringent given in piles, diarrhoea.

	tongue tree		Leaf	It is used in case of anemia and for curing itch.
			Fruit	It is used in case of anemia and for curing itch.
			Flower	Flowers are useful as a cooling medicine.
3	<i>Anona Squamosa</i> Linn Local Name- Sarifa, Sitaphal Common/English Name- sugar apple or sweetsop, custard-apple	Anonaceae	Seed, fruit and leaf	Seeds, fruits and leaves are used as insecticide fish poison and to remove lice in head.
4	<i>Anthocephalus chinensis</i> Lamk <i>Anthocephalus indicus</i> A. Rich Local Name- Kadam Common/English Name- Burflower-tree, laran, and Leichhardt pine	Rubiaceae	Leaf	Leaves used as gargle in cases of aphthae and stomatitis bark tonic, astringent in snake bite.
5	<i>Abrus precatorius</i> Linn Local Name- Gunga, Chunchi Common/English Name- Jequirity bean or rosary pea	Fabaceae	Root	Roots are used in obstinate cough.
			Leaf	The juice of fresh leaves mixed with some oil and applied to relief pain.
6	<i>Accacia nilotica</i> (Linn) Del <i>Accacia arabica</i> wild Local Name- Babul, Kikar Common/English Name- Gum arabic tree, babul, thorn mimosa, Egyptian acacia or thorny acacia	Mimosaceae	Bark	Bark is used as an astringent in diarrhoea and dysentery, substitute for oak galls-relaxed condition of the mucous membranes and external application in leucorrhoea.

7	<i>Barleria cristata</i> Linn <i>Barleria ciliolata</i> Roxb Local Name- Jati, Banpatoli Common/English Name- Philippine violet, bluebell barleria or crested Philippine violet	Acanthaceae	Roots and leaves	Roots and leaves used to reduce swelling in fusion given in cough, snake bite.
8	<i>Buchanania lanzan</i> Spreng <i>Buchanania Latifolia</i> Roxb Local Name- Chironji, piyal Common/English Name- Almondette tree, Cheronjee, Cuddapah almond	Anacardiaceae	Leaf	It is used in the treatment of skin diseases.
			Root	The roots are astringent, acrid, cooling, depurative and constipating, and are useful in treatment of diarrhoea.
			Fruit	Fruits are used in treating cough and asthma.
9	<i>Bauhinia variegata</i> Linn Local Name- Kachnar Common/English Name- Orchid tree, Mountain ebony	Caesalpinaceae	Root, bark and flower	Root is given in dyspepsia and flatulency. Bark, flower and root triturated in rice water as a cataplasm to promote suppuration.
			Leaf	Dried buds are used in piles and

				dysentery.
10	<i>Clerodendron indicum</i> (Linn) Itze <i>Siphnanthus inducus</i> Linn Local Name- Bamanhati, Bharangi Common/English Name- Chhoti arani, Chingari	Verbenaceae	Root	Root is useful in asthma and cough.
			Leaf	Juice of leaves used with ghee as an application to herpetic eruptions and pemphigus. It is bitter tonic.
11	<i>Dalbergia sissoo</i> Roxb. Local Name- Shisham, Sisso Common/English Name- Indian Rosewood	Fabaceae	Leaf	The leaves in decoction are esteemed in eruptive diseases, vomiting.
			Bark	The bark made into pills with aromatics is used to check cholera.
12	<i>Diospyros embroyopteris</i> Pers <i>Diospyros malabarica</i> Desai Local Name- Gara Tiril, Mahakenda, Gab Common/English Name- Gaub tree, Malabar ebony, black-and-white ebony or pale moon ebony	Ebenaceae	Fruit and Bark	Fruit and bark stringent used as gargle in aphthae and sore throats, juice used as wounds and ulcers. Bark used in fever.
			Seed	Oil of seeds given in diarrhoea and dysentery.
13	<i>Elaphantopus scaber</i> Linn Local Name- Manjur Juti, Samdulan Common/English Name- Elephant Foot, Prickly-leaved elephant's foot, Bull's Tongue, Ironweed	Compositae (Asteraceae)	Root	The paste of the root is given and applied locally for cure of pimples in infants or urinary troubles.

14	<i>Gmelina arborea</i> Linn Local Name- Gamhar Common/English Name- Beechwood, gmelina, goomar teak, Kashmir tree, Malay beechwood, white teak, yemane	Verbenaceae	Plant	Plants used in snake bite and scorpion sting.
			Leaf	Juice of leaves demulcent, used in gonorrhoea, cough and to remove fetid discharges and worms from ulcer.
15	<i>Tectona grandis</i> Linn Local Name- Sagwan, Teak, Sagun Common/English Name- Teak	Verbenaceae	Wood	Wood chips cures eczema and ringworm.
16	<i>Jasminum arborescens</i> Roxm Local Name- Chameli, Bonomali Common/English Name- Navamallika	Oleaceae	Leaf	Leaves slightly bitter, astringent, tonic, stomachic, juice of leaves used with pepper and garlic.
17	<i>Woodfordia fruticosa</i> Kurz Local Name- Dhauri, Bela Common/English Name- Woodfordia, Fire flame bush, Fore-Flame bush, Shiranjitea	Lythraceae	Leaf	It is used a sores and ulcer.
			Root	Crushed roots are given to cattle for rheumatism.
18	<i>Ziziphus mauritiana</i> Lamk <i>Ziziphus jujaba</i> (Linn) Caertn	Rhamnaceae	Fruit	Mucilaginous fruit, purify the blood and aid digestion.

	Local Name- Ber Common/English Name- Chinese date, ber, Chinese apple, jujube, Indian plum, Regi pandu, Indian jujube		Bark	It is used for curing diarrhoea.
			Root	It is used in decoction in fever and powder applied to old wounds and ulcer.
19	<i>Datura metel</i> Linn Local Name- Dhatura Common/English Name- Jimsonweed (jimson weed) or devil's snare	Solanaceae	Whole Plant	Leaves, flowering top and seeds used in bronchitis, asthma and control salivation in mouth.
20	<i>Terminalia bellerica</i> Roxb Local Name- Bahera Common/English Name- Bibhitaki, Baheda, Belliric Myrobalan, Bastard myrobalan, Beach almond, Bedda nut tree	Combrataceae	Fruit	The dried fruits are useful in indigestion and diarrhoea. It is given also as a brain tonic and is applied on eyes as a soothing lotion. It is also useful in leprosy, dropsy, piles and fever.
21	<i>Tinospora cordifolia</i> (Wild) Hook f e th Local Name- Giloya, Gilo Common/English Name- Heart-leaved moonseed, gaduchi, and giloya	Menispermaceae	Root and Stem	The starch obtained from the roots and stems of the plants is useful in diarrhoea and dysentery. It is also a nutrient.
			Stem	The drug is useful as a tonic and antiperiodic.
22	<i>Acacia catechu</i> wild Local Name- Khair, Lavalonj Common/English Name- White Thorn, White catechu, White cutch tree	Mimosaceae	Root	Root paste applied on the joints for seven days for rheumatism.
			Plant	Plant extract is used as an astringent in fever and other maladies, useful in diarrhoea also.
23	<i>Amelocissus latifolia</i> Planch <i>Vitis latifolia</i> Roxb Local Name- Panibel Common/English Name- Wild Grape	Vitaceae	Root	Curing eczema (root is made into paste with mustard oil).
24	<i>Bredelia retusa</i> <i>Bredelia spinosa</i> Roxb Local Name- Kadrapala, Khaja Common/English Name- Spinous Kino Tree	Euphorbiaceae	Bark	Bark is made into a paste which is used during menstruation to fertility.
25	<i>Cassia tora</i> Linn <i>Cassia obtusifolia</i> Linn <i>Sennatoroides</i> Roxb Local Name- Chakor, chakunda, singhani Common/English Name- Sickle Senna or Sickle Wild sensitive-plant, sickle pod, tora, coffee pod, tovara, chakvad, thakara	Caesalpinaceae	Root	Root paste and powder prepared from the horn of a cow is given daily in high fever and to a patient who is unable to speak and hear.

26	<i>Cissampelos pareria</i> Linn Local Name -Akanadi, Khorar Common/English Name -Velvet Leaf, False Pareira Brava, Abuta, Pereira Root, Barbasco	Minispermaceae	Root	Used in fever.
27	<i>Cleome viscosa</i> Linn Local Name -Burhur, Hurhuria Common/English Name -Asian spider flower, Yellow spider flower, Cleome, Tickweed	Capparidaceae	Stem	To cure constipation and cure intermittent fever.
28	<i>Crotalaria bialata</i> Roxb <i>Crotalaria alata</i> Han Local Name -Maranga jhunka, Murgijori Common/English Name -Rattlepod or rattlebox	Fabaceae	Stem and Leaf	Treatment in discharge of blood with urine. The juice of the root is used in the treatment of malarial fever.
29	<i>Croton oblongifolius</i> Roxb Local Name -Kuti, Putri, Mahson Common/English Name -Ghanasura, Ghansura Assamese	Euphorbiaceae	Bark and Root	Bark and root are given as a purgative and also in dysentery.
			Stem	Stem juice is applied on ringworm.
			Leaf	Young twig is cure blindness and also to remove cataract.
30	<i>Cuscuta reflexa</i> Roxb Local Name -Amarbail, Algusi Common/English Name -Amar Bel, Devils Hair	Convolvulaceae	Whole Plant	Plant is made into a paste which is applied with bandage for curing exira. It is also used in veterinary practice.
31	<i>Dendrophthoe falcata</i> Linn f <i>Loranthus falcatus</i> Linn f <i>Loranthus longiflorus</i> Desr Local Name -Sakhua ka banda Common/English Name -Honey Suckle Mistletoe, Neem mistletoe	Loranthaceae	Whole Plant	Applied on the paralytic part of the body
32	<i>Flemingia chappera</i> Ham Local Name -Rani Dant Kata, galphuli Common/English Name -Flemingia	Fabaceae	Seed	One to two drops of juice extracted from pressed seeds are put in the eyes as a remedy in eye troubles and to remove cataract.
33	<i>Glossogyne pinnatifida</i> DC <i>Bidens pinnatifida</i> Heyne <i>Glossogyne bidens</i> Linn Local Name -Bandhania, tabarangu Common/English Name -Tejraj, Barangom	Asteraceae (Compositae)	Leaf	It is kept in the side of the teeth for extracting tooth worm and for curing toothache.
			Plant	Plant is made into a paste which is prescribed in dysentery.

34	<i>Grewia asiatica</i> Linn <i>Grewia subinaequalis</i> DC. Local Name -Phalsa, Kukur Ahwar Common/English Name -Bariuan, Phalsa, Black Currant	Tiliaceae	Stem	Curing inflammation of the testicles.
35	<i>Hibiscus rosa Sinensis</i> Linn Local Name -Urhul, Chinese shoe flower. Common/English Name -Chinese hibiscus, China rose, Hawaiian hibiscus, rose mallow and shoeblackplant	Malvaceae	Flower bud	Flower bud is made into a paste which is prescribed in impotency.
36	<i>Leela arispa</i> Linn Local Name -Hasna, Ban Chalita Common/English Name -Daffodil, Daffadowndilly, Narcissus and Jonquil	Amelidaceae	Root and Bark	The root with bark of is made into a paste which is prescribed in case of snake bite.
37	<i>Leonotis nepetaefolia</i> B. Br. Local Name -Karizari, Jamum-dhomp Common/English Name -klip dagga, Christmas candle stick or Lion's ear	Labiatae	Plant	Ashes of the plant with fruit are mixed with mustard oil and applied on the body for during paralysis.
38	<i>Lepidagathis hamitoni</i> Wall Local Name -Bhui Nim, agric-khair Common/English Name -Bukhar Jadi, agric-khair, Bhui Gend	Acanthaceae	Plant	Curing itching and sores.
39	<i>Meyna laxiflora</i> Robyns <i>Vangueria Pubescens</i> Kurz Local Name -Alu, Aaliv Common/English Name -Muyna	Rubiaceae	Leaf	Decoction of leaves is prescribed in dysentery.
40	<i>Ochna Pumila</i> Buch-Ham Local Name -Champa baha Common/English Name -Champa	Ochnaceae	Plant	It is used in snake bite and for certain menstrual complaints consumption and asthma.
			Root	Root is made into a paste which is prescribed in fever.
41	<i>Pterospermum acerifolium</i> wild Local Name -Makchand, Kanak Champa, Machkunda Common/English Name -Kanak Champa, Muchakunda or Karnikar Tree	Sterculiaceae	Flower	Flowers used for indigestion body dehydration and passing of blood with urine.
42	<i>Polygala chinensis</i> Linn Local Name -Rali, Gaighura Common/English Name - Indian Milkwort	Polygalaceae	Plant	This is prescribed in cough and asthma.

43	<i>Rivea hypocrateriformis</i> Chois Local Name -Jamruchalum, Kalmilata Common/English Name -Midnapore Creeper, Common Night Glory	Convolvulaceae	Leaf	Prescribed for concentration of semen.
44	<i>Scoparia dulcis</i> Linn Local Name -Jalan Common/English Name -Licorice weed, goatweed, scoparia-weed and sweet-broom	Scrophulariaceae	Leaf	Leaves paste is used for burning sensation during urination.
45	<i>Sida acuta</i> Burm f Local Name -Kamraj, Bon-methi, Jungli Methi Common/English Name -Wireweed	Malvaceae	Root	Root is made into a paste which is mixed with mustard oil and heated. It is applied on the waist as a remedy for pain.
46	<i>Sida cordifolia</i> Linn Local Name -Ilima, Sidha Common/English Name -Ilima, flannel weed, bala	Malvaceae	Leaf	It is prescribed in gonorrhoea and for concentration of semen.
47	<i>Soyimida febrifuga</i> A. Juss Local Name -Parair, Hohini Common/English Name -Indian Redwood, Bastard cedar	Meliaceae	Twig	Twigs of the plant are given to cows to accelerate extrusion placenta after delivery.
48	<i>Terminalia tomentosa</i> W & E Local Name -Aswan, Sain, Karaka, Asana Common/English Name -Asna, saj or saaj, Indian laurel	Combretaceae	Twig and Leaf	Made into a paste which is given in vomiting and loose motion.
49	<i>Ventilago Calyculata</i> Tul Local Name -Raj-dhani, Bomga, Sanarjom Common/English Name -Raktapita	Rhamnaceae	Root	Paste is prepare from root and is heated, then cool. It is prescribed in earache and flow of pus from the ears.
50	<i>Wattakaka Volubilis</i> (Linn) stap f. Local Name -Bari, Nakchikni, Barka Common/English Name -Sneeze Wort, Cotton milk plant, Green milkweed climber, Green wax flower, Sneezing silk	Asclepiadaceae	Bark	It is made into a paste. It is prescribed in discharge of blood with urine and other urinary troubles.
51	<i>Withania Somnifera</i> Dunal Local Name -Ashwagandha Common/English Name -Ashwagandha	Solanaceae	Root	Dried root of the plant used in constipations, sexual and general weakness and rheumatism.

52	<i>Tylophora indica</i> (Bum f) Merr. Local Name -Antamul Common/English Name -Indian Ipecac, Indian ipecacuanha, emetic swallow- wort, vomiting swallow-wort	Asclepiad aceae	Root	The dried roots are useful in treatment of dysentery. An infusion of the drug is given is asthma and bronchitis.
53	<i>Terminalia bellirica</i> (Gaerth) Roxb Local Name -Triphala Common/English Name -Baheda, Belliric Myrobalan, Bastard myrobalan, Beach almond, Bedda nut tree	Combreta ceae	Seed	It is useful in piles leprosy, dropsy and fever.
			Fruit	The fruit are useful in stomach disorders such as indigestion, diarrhoea. It is given also as a brain tonic and is applied on eyes as a scathing lotion. The Bahera fruit is one of three constituents of the famous Indian preparation (Triphala).
54	<i>Terminalia chebula</i> Retz Local Name -Harad, Harre, Har, Haritaki Common/English Name -Chebulic Myrobalan, Myrobalan	Combrata ceae	Fruit	The dried fruits constitute the drag, It can be applied externally on chronic ulcers, wounds and used as laxative and blood pressure. It is and ingredient of the wall known preparation "Triphala."
55	<i>Tamarindus indica</i> Linn Local Name -Imli Common/English Name -Tamarind	Caesalpin aceae	Fruit	The pulp of the fruits is medicinal, tamarind pulp's infusion in water is a very refreshing drink. It is useful in fevers.
56	<i>Eugenia Jambolana</i> Lam Local Name -Jamun, Jam Common/English Name -Malabar plum, Java plum, Black plum	Myrtacea e	Bark	The bark is used in sore throats, bronchitis, asthma, ulcers and dysentery, and as a gargle.
			Seed	It is very useful in diabetes.
57	<i>Sterculia urens</i> Rexb Local Name -Gulum, Kulu, Karai Common/English Name -Ghost tree, kulu, Indian tragacanth, Gum karaya, katira, sterculia gum or kateera gum.	Sterculiac eae	Fruit	The gum is used as mechanical laxative, in throat infection and in dental fissures.
			Leaf	It is useful in pleura pneumonia in cattle.
58	<i>Solanum xanthocarpum</i> <i>Solanum surattense</i> Burm-f Local Name -Kateri, ringi Common/English Name -Thorny Nightshade, Yellow Berried Nightshade, Thai eggplant	Solanacea e	Root	The dried roots are used in cough, asthma, pain in chest and certain kinds of fevers, It is also useful n stones in bladders.
			Fruit	It is useful in bronchitis, sore throat muscular pain, fever etc.

59	<i>Reuolfia Serpentina</i> (Linn)Bentham kurz Local Name -Sarpagandha, Chotachand Common/English Name -Indian Snakeroot, Serpentine wood	Apocynaceae	Root	It's root contain several alkaloids. It is used in insanity and high blood pressure. The sedative action of the drug is slow and therefore, the drug is not useful in acute cases. The root of the plant is useful also in diseases of bowels and in fever.
60	<i>Saraca indica auct, non-Linn</i> Local Name -Ashoka Common/English Name -Ashok or Asoca	Caesalpinaceae	Flower	Flowers are useful in hemorrhagic and dysentery.
			Seed	Seeds are useful in urinary discharges.
			Bark	The dried bark is used as an astringent in the treatment of excessive menstruation as a uterine sedative.
61	<i>Ricinus communis</i> Linn Local Name -Castor oil plant Common/English Name -Castor bean, Castor oil plant, Wonder tree	Euphorbiaceae	Seed	The Oil obtained from seeds called castor oil, is used as a purgative. It's oil is best administered with milk or fruit juice. It is also used in ointments. The seeds are poisonous.
62	<i>Psoralea corylifolia</i> Linn Local Name -Babchi Common/English Name -Purple Fleabane, Scurfy Pea, Blackdot, Malaysian Scurfpea	Fabaceae	Plant	The drug is useful in leukoderma and leprosy as an external application in the form of ointment.
			Seed	Powdered seeds of P. Corylifolia and Acacia tora with lime juice are used in cases of ringworm.
			Root	Roots are useful in cure of teeth.
			Leaf	It is useful in diarrhoea.
63	<i>Plantago ovata</i> Forsk Local Name -Ishapgola or Ispgol Common/English Name -Blond plantain, Desert Indianwheat, Blond psyllium and Ispaghul	Plantaginaceae	Whole Plant	It is very useful in several kinds of chronic dysentery and soothing agent for mucous membranes and is useful in constipation.
64	<i>Ipomoea turpethum</i> R.B. Local Name -Pithori, Nisothe, Indian jalpa Common/English Name -Transparent Wood Rose, White day glory, Indian jalap	Convolvulaceae	Root	It is used as a purgative and prescribed in scorpion sting and snake-bite.
65	<i>Purgularia daernia</i> (Forsh) Chiov <i>Daemia extersa</i> R.Br. Local Name -Sadovani, Mosiphul, utran Common/English Name -Trellis-vine	Asclepiadaceae	Plant	it is used as a uterine tonic, expectorant and emetic. It is useful in curing gynecological condition such as excessive bleeding etc.

66	<i>Ocimum sanctum</i> Linn Local Name -Tulsi Common/English Name -Holy basil	Labiatae	Leaf	The juice of the leaves is useful in bronchitis, catarrh, digestive complaints. The oil obtained from leaves has the property of destroying bacteria and insects. It is dropped in ears to relieve earache.
			Seed	It is useful in complaints of urinary system.
			Root	Decoction of root is given malarial fever.
67	<i>Peganum harmala</i> Linn Local Name -Harmal, Gandhaya Common/English Name -Harmal, Syrina Rue, Turkey red	Rutaceae	Seed	The dried seeds are used in asthma, hysteria, calic pains, fever, jaundice, gallstones, and painful menstruation. They are also used as narcotic anti-helminthic and emetic.
68	<i>Mentha arvensis</i> Linn Local Name -Wild mint Common/English Name -Field Mint, Wild Mint, Corn Mint	Labiatae	Leaf	Leaves infusion is used in rheumatic pains and indigestion.
69	<i>Lawsonia alba</i> Linn <i>Lawsonia intermis</i> Linn Local Name -Mehndi Common/English Name -Henna, Henna Egyptian Privet, Egyptian Privet	Lythraceae	Leaf	it is used as , skin diseases. The paste of leaves is used in Indian homes in headache burning sensation in feet etc.
			Bark	Bark is given in jaundice and enlargement of the spleen, in skin diseases and leprosy.
70	<i>Hygrophila auriculata</i> (Schum) Heine <i>Hydrophila spinosa</i> T. and <i>Asteracantha longifolia</i> Nees Local Name -Talmakhana, Kuliakanta Common/English Name -Marsh Barbel	Acanthaceae	Seed	It is useful in dropsy rheumatism and diseases of urinogenital system. Seeds are considered useful also in venereal diseases.
			Leaf	Leaves are useful in cough and urethral discharges.
71	<i>Hemidesmus indicus</i> R.Br. Local Name -Anantmul, Hindi salsa Common/English Name -Indian Sarsaparilla	Asclepiadaceae	Leaf	It is used in fever, skin, diseases, loss of appetite syphilis, leucorrhoea and other urinary complaints. It is largely used as a blood purifier and in rheumatism.
72	<i>Euphorbia hirta</i> Linn <i>Euphorbia pilulifera</i> auct. Non-Linn (P.B.I) Local Name -Lal Dubhi Common/English Name -Asthma Weed, Common spurge, Cats hair	Euphorbiaceae	Leaf	It is useful in removing worm in children, in bowel complaints asthma and cough.
			Root	The roots of the plant stop vomiting.

73	<i>Emblica officinalis</i> Gaerth <i>Phyllanthus Emblica</i> Linn Local Name -Amla, Aonla Common/English Name -Amla, Indian gooseberry	Euphorbiaceae	Fruit	It is used as a laxative and treatment of enlarged liver piles, stomach complaints, pain in eyes etc. It is useful in indigestion anemia, jaundice certain heart complaints cold in nose and for promoting urination. It is very rich source of vitamin C, and dried fruits are useful in diarrhoea and dysentery.
			Seed	Seeds are reported to cure asthma and stomach disorders.
74	<i>Datura stramonium</i> Linn Local Name -Dhatura Common/English Name -Jimsonweed, thornapple, Jamestown-weed, Devil's apple	Solanaceae	Seed	The drug is useful in bronchitis or asthma and controls salivation in mouth. It is antispasmodic and narcotic.
75	<i>Vinca rosea</i> Linn <i>catharanthus roseus</i> (Linn) G. Don. <i>Lochnera rosea</i> (Linn) Reichb Local Name -Sadabahar, Nayantara Common/English Name -Periwinkle, Madagascar periwinkle, Rosy periwinkle, Vinca	Apocynaceae	Plant extract	The drug was known to possess toxic and stomachic properties. It is also useful in leukemia.
76	<i>Cassia fistula</i> Linn Local Name -Amaltas, Bara-chakunda Common/English Name -Amaltas, Golden shower tree, Indian Laburnum	Caseariaceae	Seed	Used as laxative.
			Leaf	Juice of leaves is used in skin diseases and also used as laxative.
			Root bark	Used as laxative.
			Fruit	Fruits cathartic is applied in rheumatism and snake bite.
77	<i>Boerhavia diffusa</i> Linn Local Name -Survari, Santhi, Bishhpupra, Sant Common/English Name -Red hogweed, Tar Vine, Red Spiderling, Wineflower	Nyctaginaceae	Root and Leaf	The roots and leaves constitute the drug. It contains the alkaloid, punarnavine. The main use of the drug is as a diuretic i.e. to promote urination in dropsy and in jaundice and gonorrhea. It is also laxative.
78	<i>Butea monosperma</i> (Lamk) Taub Local Name -Palas, Tesu, Dhak Common/English Name -Flame of the Forest, Battle of Plassey tree, Bengal kino, Palas tree, Parrot tree	Fabaceae	Flower	The red colour gum contains tannis and is valuable for treatment of diarrhoea.
			Seed	The seeds are used as anthelmintic in treatment of roundworms and tapeworm. They are also useful on ringworm.

			Root	The root bark is used in blood pressure.
79	<i>Bacopa monnieri</i> (Linn) Penell <i>Bacopa monniera</i> Wettst <i>Herpestis monnicra</i> (Linn) H.B. & L. <i>Monniera cunerifolia</i> Michx Local Name -Safed chamni, Brahim Common/English Name -Brahmi, herb of grace, Indian pennywort, moneywort, Monnier's bacopa, thyme-leaved gratiola, water hyssop	Scrophulariaceae	Whole Plant	It is prescribed in nervous disorders, mental diseases. Constipation and as a diuretic i.e. to promote urination leaf juice is given to infants in bronchitis, the relief is due to the vomiting and purging brought about by the drug. The plant is considered a blood purifier. It contains an alkaloids "Brahmin" which is a cardiac tonic i.e. provides strength and tone to the heart.
80	<i>Melia Azadirachta</i> Linn <i>Azadirachta indica</i> A. Juss Local Name -Neem Common/English Name -Neem, Indian lilac	Meliaceae	Whole Plant	It consists of dried stem bark, leaves and root bark. It is a bitter tonic, astringent antiperiodic. It is useful in fevers and skin diseases, a decoction of leaves is also taken internally.
81	<i>Andrographis Paninulata</i> (Burn f.) wall ex Local Name - Common/English Name - Creat or green chireta	Acanthaceae	Whole Plant	It is useful in curing fevers worms, dysentery, general weakness and excess gas formation in stomach. It is also prescribed for liver and digestion complaints. The plant has anti typhoid and antibiotic properties.
82	<i>Alstonia scholaris</i> (Linn) R.Br. Local Name - Common/English Name -Blackboard tree or Devil's tree	Apocynaceae		It is useful in chronic diarrhea and dysentery malarial fever. It is also useful in skin diseases.
83	<i>Aegle Marmelox</i> (Linn) Correa Local Name -chhatin, Chhatim Common/English Name -	Rutaceae	Fruit	It is valuable for its mucilage and pectin. It is very useful in chronic diarrhea and dysentery. The half ripe fruits improve appetite and digestion. Fruit and root of this plant. Pulp of the fruits is useful as sweet drinks (Sharbat).
			Leaf	Used as antibiotic.
84	<i>Calotropis gigantea</i> (R.Br.) <i>Asclepias gigantea</i> Wild Local Name -Akaon, Akond Common/English Name - Aak, Madar	Asclepiadaceae	Root	Root bark has been used on elephantiasis.
			Leaf	Tincture of leaves is used in intermittent fever. The heated leaves are applied on any swelling of the legs of cattle.

			Flower	Powdered flowers are used in colds, asthma and indigestion.
85	<i>Shorea robusta</i> Gaertn f. Local Name -Sal Common/English Name -Sal	Dipterocarpaceae	Leaf and Bark	It is useful in chest pain and stomachache. Traditionally used for various ailments. The leaves and bark are used to treat wounds, ulcers, leprosy, cough, gonorrhea, earache and headache. The bark is also used to treat diarrhea, dysentery and vaginal discharges.
86	<i>Adhatoda Vasica</i> Nees <i>Adhatoda Zeylanica</i> Medik Local Name -Vasika, Bansa, Aduša Common/English Name -Malabar Nut, white vasa, yellow vasa	Acanthaceae	Flower	It is useful as an expectorant it is given in the form of juice syrup or decoction. It is also useful in bronchitis.
			Leaf	The leaves contain an alkaloid, vaccine and an essential oil.

Result and Discussion:

The observations revealed that the study area is highly rich in medicinal plants with variety of flora of diverse traits. Almost all tribal community found in Jharkhand (Approx no. 31) extensively uses these herbs, shrubs and medicinal plants for treatment of their ailments. Besides their use of medicinal plant for curing various diseases local people use them also in homes and in fields as an ornamental plant, shade plants, timber plants, vegetable, fruit plants, food trees etc. Almost all parts of these plants are used as raw materials and other purposes viz. root, bark, stem, flower, seed, fruits (Rani et. al. 2002). The scientific and systematic investigation of these plants from phytochemical and antibacterial fungal aspect may lead to formulation of newer plants based at herbal drugs capable of effective treatment of large number of diseases at affordable prices (Singh et. al. 2003). Increase human activities, industrialization and environmental pollution are threatening the survival of medicinal plant in the study area. Therefore urgent steps are required to be taken for conservation & maintenance of the germplasm of there valuable plants & scientific cultivation of these as per recommended GAP (Good Agronomical Plants).

Conclusion:

The Plateau Region of Jharkhand state is full of biodiversity of flora of various kinds especially the medicinal plant. Systematic and Scientific survey

recorded 86 genera of medicinal plant of ethnobotanical importance in the Chhotanagpur plateau region. However, these plant are facing the risk of being distorted and extinct due to increase human interference rapid urbanization and high pollution. Ethnobotanical and pharmacological detail of these medicinal plants is the need of the hour. Identification, conservation, maintenance and grafting of these plants using GAP is required a priority especially for Jharkhand State.

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References:

1. Anand Kumar, Kumar Raushan & Singh Anil Kumar (2014). Study on the Ethnobotany and Pharmacological perspectives of *Gloriosa superba* L.(Liliaceae) of Sitamarhi district of North Bihar. Unique Journal of Pharmaceutical & Biological Sciences, 2(06):1-3
2. Bhatt, S.C. (2002). The district Gazetteer of Jharkhand, Gyan Publishing House, New Delhi.
3. Bondya, Sutanu Lal & Sharma, H.P. (2004) Ethnobotanical studies on plants used in diabetes (Madhumeha) under the

- Baharagora Block of Jharkhand.
Ethnobotany 16 (1- 2):139-140.
4. Joao B. Calixto (2005). J. Ethnopharmacol 100:131–134.
 5. Kalpana Prasad (2015) C S G M P, BDOJ, Int J SRP Vol. 5 (10).
 6. Lal H.S. & Mishra P.K. (2011). *Gloriosa superba* - an endangered plant spotted for the first time from forest of Topchanchi, Hazaribag (Jharkhand) India. Sci Res Rep 2011; 1(2): 61-64.
 7. Lal H. & Singh (2012): in Medicinal Plants of Jharkhand. Biodiversity of Hazaribagh district.
 8. Mairh, Asutosh Kumar, Mishra, P.K. etc at 2010, Traditional Botanical Wisdom of Birhor tribes of Jharkhand. Indian Journal of Traditional Knowledge. Vol. 9 (3) July PP467-470
 9. Rani, Sandhya & Mishra, G.D. (2002). Some medicinal plants used by the tribes of Jharkhand. Indian Med. Homoeo. Jour. 1(4):16-19.
 10. Saren, A.M., Halder, A.C. & Singh, Harish (2006). Ethnomedicinal plants of Mahilong Forest Range in Ranchi District, Jharkhand. J. econ. taxon. Bot. (inPress).
 11. Singh, C.B. (2003). Forest flora in the life and economy of the tribals of Santhal Parganas, Jharkhand. Jour. Non-Timber Forest Prod. 10(1-2):20-33
 12. Srivastava, Sanjay (2006). Dependence of local people and issues in conserving local resources: Case of Dalma Wildlife Sanctuary, Jharkhand. Indian forester 132(1):31-42