



## STUDY OF MEDICINAL PLANT DIVERSITY IN BARNAWAPARA SANCTUARY WITH SPECIAL REFERENCE TO THEIR USES BY LOCAL TRIBES

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**Abstract:** From ancient era mankind has used different types of plants and their product to cure various disease and physical suffering .Whole plant ,flower ,leaves,stem and bark are used as in indigenous system of medicine and homeopathic system to some extent .Various tribal and ethnic groups are used medicinal plant and their different parts.The main ojective of the paper to exploration,inventorying and documentation of plants that are used as medicine by local tribes living around Barnawapara Forest Range.Medicinal herbs are used by rural people in wide range for fever,disease related to skin,hedach,digestive problem ,in burnt,body pain ,piles and paralysis. The trible people mostly use some of the plants as medicine for the various types of disease and sell the medicinal herbs in the market .Barnawapara forest is rich for different types of medicinal plant species and green vegetation .This paper is concern with current status of knowledge on medicinal plant species found in Barnawapara forest division.This forest are rich of floristic diversity.In this research paper we recorded 70 species of medicinal plants belonging to 35 family from Barnawapara forest range.Total 70 medicinal plant species were found in the research area.

**Keywords:** Plant diversity, Exploration, Sanctuary, Barnawapara, Tribes, Homeopathic, Disease.

**1.INTRODUCTION:**The term “Medicinal plant” include different types of plants used in herbalism (herbal medicine).The word “Herb” has been derived from the latin word, “herba”. It is the use of plants for medicinal purpose,and the study of such uses.Before prehistoric period, plants have been used for medicinal purpose.Indeginous cultures such as Rome,Egypt,Iran and Africa used herbs as medicine for treatment of various type of disease.Barnawapara Wildlife Sanctuary is located in Balodabazar district of Chhattisgarh state covers an area of approximately 244.66 Sq.km.It was established in 1976.The primary object of the sanctuary of conserving the unique and different types of flora in the region.It is home to a diverse range of flora which contributes to the rich biodiversity of the region.The Barnawapara Wildlife Sanctury derives its name from the two forest villages of “Bar”and “Nawapara” which are located within the sanctuary boundries.The survey revealed that most of these wild medicinal plants are used by tribes in wide volumes.The trible people mostly

used plants as medicine. Various type of tribal people like ,Gond,Binhwar,Baiga are found primarily around the Barnawapara. The tribble peoples are mostly defend on the medicinal plants and herbs.Plants are primary source of drugs in traditional and alternative system of medicine in various form such as juice,decoction,latex and crude extract.

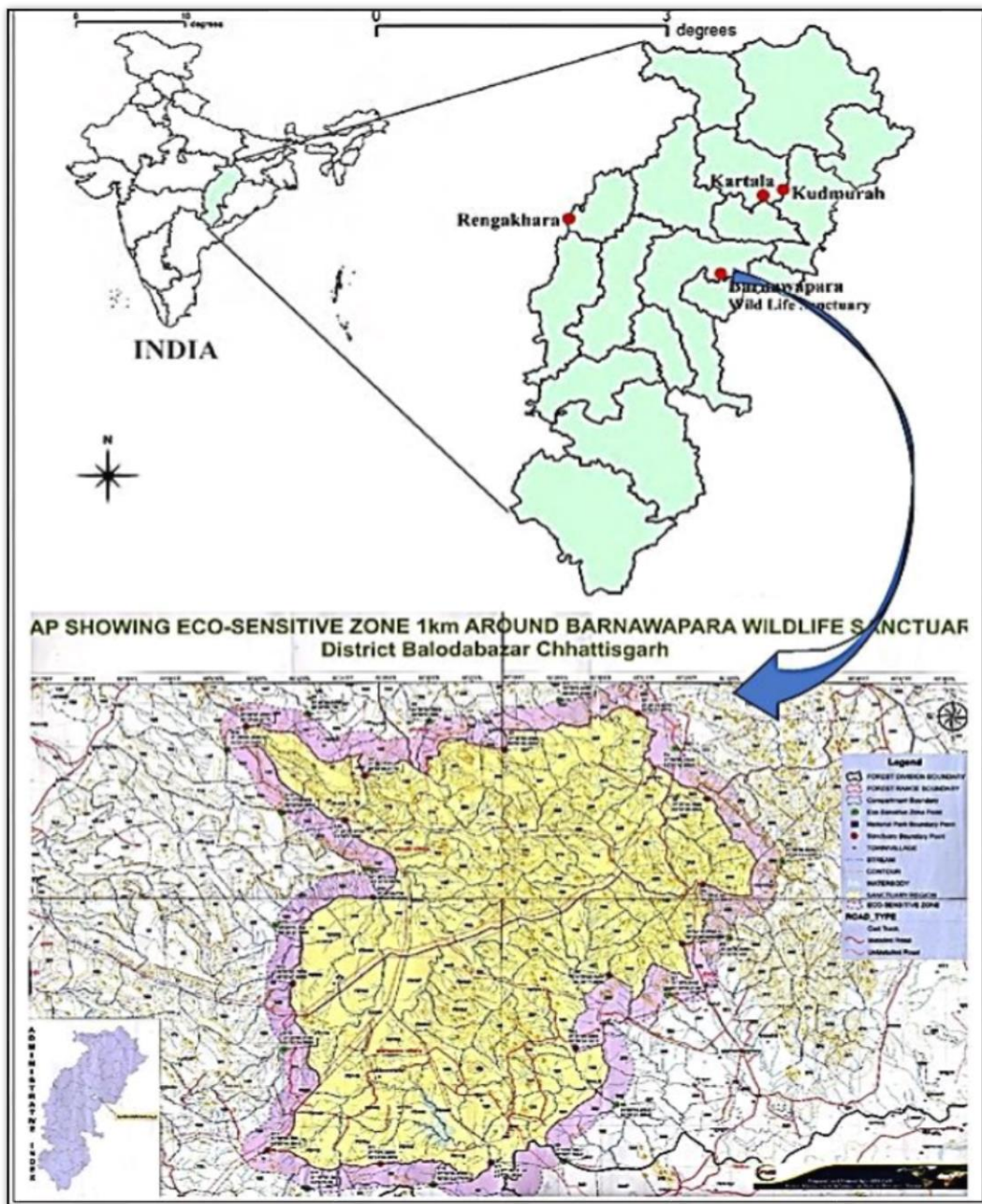
A Medicinal plant is any plant which ,in one or more its organs ,contains substance that can be used for therapeutic purpose or which are precursors for the synthesis of useful drugs.Medicinal plants provide major source of molecule with medicinal properties due to presence of natural compounds .Medicinal plants are useful for curing various types of human disease and play a significant role in healing due to presence of phytochemical constituents.

Herbal medicine is one of the oldest forms of medical treatment in human history and could be considered one of the forerunners of the modern pharmaceutical trade.Baheda(*Terminallia bellirica*) ,Satawar(*Asparagus racemosus*), Giloy(*Tinospora cordifolia*),Kalmegh(*Andrographis paniculata*),Harra(*Terminallia chebula*),Safed musli(*Chlorophytum borivilinum*),Neem (*Azadirachta indica*) ,Bael(*Aegle mormelos* ), Munga(*Moringa oleifera*),Tendu(*Diospyros melanoxylon* Roxb.),Amla(*Emblca officinalis* ) are common medicinal plant found in Barnawapar Forest Range.

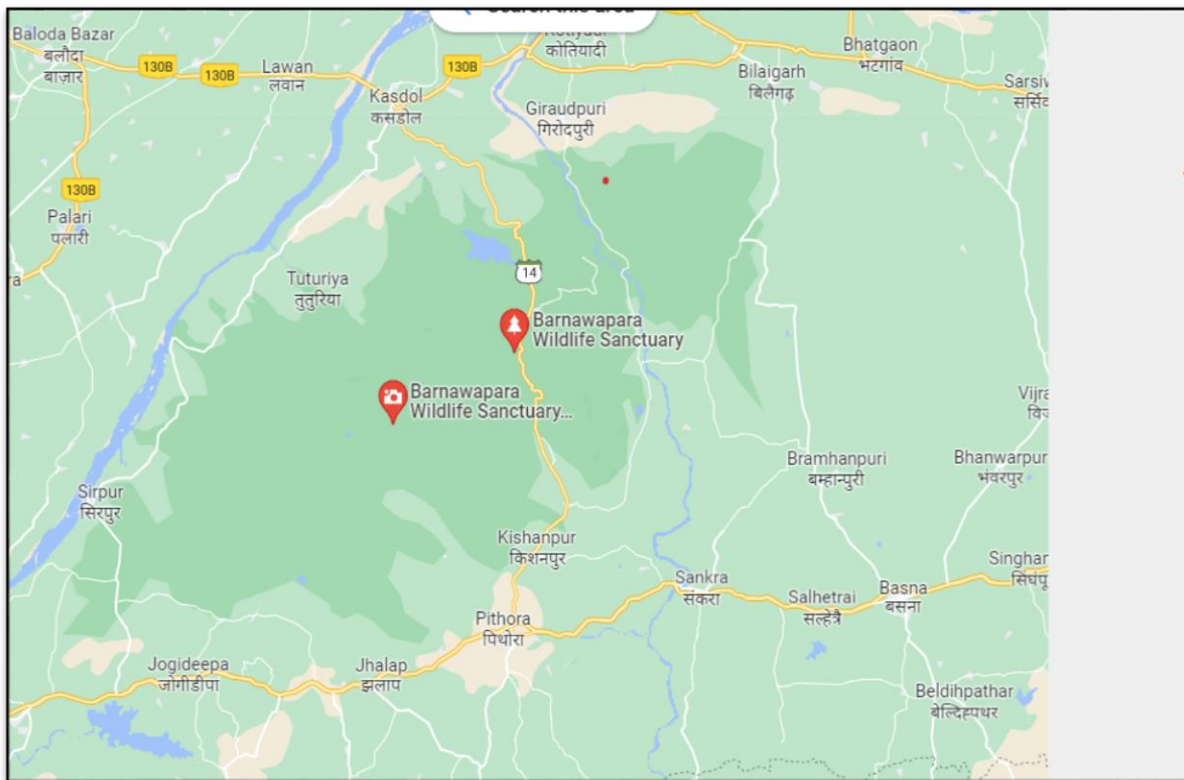
## 2.MATERIALS AND METHODS:

**1.Study Area: Barnawapara Wildlife Sanctuary :** The present research work is done in Barnawapara Forest Range (Barnawapara wildlife Sanctuary). Barnawapara Sanctuary is located in Balodabazar district of chhattisgarh. Geographically,extention of this sanctuary between 80° -22'30''to 82°-37'30''East longitude and 21°-18'45'' to 21°-30'0''North latitude.

The study area is rich of various types of medicinal flora and green vegetation.







**2.Field visit and Data Collection:** Field visit was carried out during June – Sep.2022 to June -Sept.2023 in Barnawapara Wildlife Sanctuary. Collected herbs from different site of the Sanctuary.

The collected medicinal plant was studied on the basis of its various properties .The species have been found and recognized with the assist of nearby villages and tribal people.

Finally,collected various medicinal plants were documented and identified by available different associated literature inducing flora/,encyclopaedia etc.and with the help of fields experts and also tribal people.

### 3.RESULT AND DISCUSSION:

A total of 70 medicinal plant species were reported in this study .Among them 12 plant species were belonging to fabaceae family, 4 species were belonging to Combretaceae family,3 plant species were belonging to Liliaceae family, 4 plant species were belonging to Moraceae family and others .

Fabaceae family was the dominant ,presenting 12 of the total plant species recorded. Among 35 families documented in the survey ,the Fabaceae was the most prevalent family with the 12 species followed by the combretaceae,moraceae(with 4 species each),Families with 3 species include Liliaceae,Lamiaceae,Euphorbiaceae and Myrtaceae. Families with 2 species include Apocynaceae,Malvaceae,Anacardiaceae,Amaranthaceae,and Zingiberaceae.

The most commonly reported medicinal plants include the following :Harra,Baheda,Neem,Tulsi,Bael,Giloy and other plant.

Barnawapara Sanctuary is rich source of plants with medicinal properties.

Some important medicinal plants summarised under the following (Table1):

**Table :1 List of important medicinal plants commonly used by the local tribal people collected from Barnawapara Forest Range.**

S.N .	Local Name	Botanical Name	Family	Part used	Medicinal Uses
1	Harra	<i>Terminalia chebula</i>	Combretaceae	Fruit&Leaves	Digestive disorder,rheumatic swelling,ophthalmia,Diarrhoea cold and coughs.
2	Baheda	<i>Terminalia bellirica</i>	Combretaceae	Fruit&Leaves	Digestive disorder,rheumatic swelling,ophthalmia,Diarrhoea,colds and coughs
3	Neem	<i>Azadirachta indica</i>	Meliaceae	Fruits &Leaves ,Bark	Bark is used in skin troubles,Ulcers and eczema.rheumatism,Herbal pesticide.
4	Tulsi	<i>Ocimum sanctum</i>	Lamiaceae	Leaves,Entire plant	Ringworm and other cutaneous disease.
5	Satavari	<i>Asparagus racemosus</i>	Liliaceae	Roots	Gastric ulcer ,Dyspesiya& nervous disorder.
6	Safed musli	<i>Chlorophytum borivilianum</i>	Liliaceae	Tuber	Heumatism,Tonic for general debility
7	Palas	<i>Butea monosperma</i>	Fabaceae	Flowers	Leucorrhoea
8	Bhelva	<i>Semecarpus anacardium</i>	Anacardiaceae	Bark, fruits	Cuts & healing wounds
9	Bael	<i>Aegel mormelos</i>	Rutaceae	Fruits & Roots	Digestion,Clean stomach,Treating fever,Nausea,Vomiting,swelling,dysentery,Dyspepsiya,Urinary problems.
10	Giloy	<i>Tinospora cordifolia</i>	Menispermaceae	Entire plant	Use in fever,Digestive disorder,Dengue ,Diabetes,Leprosy
11	Ghritkumari	<i>Aloe barbadensis</i>	Liliaceae	Plant leaf,roots &Flower	Used on burns,treatment of leukoderma,Purgative
12	Kalmegh	<i>Andrographis paniculata</i>	Acanthaceae	Entire plants	Treatment of dysentery and dyspepsiya, Jaundice
13	Bhumi Amla	<i>Phyllanthus niruri</i>	Euphorbiaceae	Whole plant	Help in managing liver disorder , in Ulcer ,Protectecting stomach lining. Jaundice .
14	Amla	<i>Emblica officinalis</i>	Euphorbeacea	Fruits	Antioxident ,anti inflammatory & antimicrobial
15	Harshingar	<i>Nyctanthes arbortristis</i>	Oleaceae	Stem,Leaves &seeds	Useful for joint pain &malaria,piles
16	Arjuna / Kahuva	<i>Terminalia arjuna</i>	Combretaceae	Bark	Bark is useful in managing high cholesterol level,
17	Nirgundi	<i>Vitex negundo Linn.</i>	Lamiaceae	Leaves	Pain, fever coldand cough ,leukoderma,inflammation.
18	Dhavai	<i>Woodfordia fruticose Linn.</i>	Lythraceae	Flower, Leaves	Irregular menses
19	Kulthi	<i>Macrotyloma uniflorum</i>	Fabaceae	Seeds	For treatment in kidney disorder.
20	Jamun	<i>Syzygium cuminii</i>	Myrtaceae	Fruits ,seed	Used in diabetes
21	Kosam	<i>Schlechera oleosa</i>	Sapindaceae	Seeds oil	Body pain,Cleaning stomach

22	Imli	<i>Tamarindus indica</i>	Fabaceae	Fruits , Leaves	Tamarindus juice may be help with conjunctivitis,Leaves may be effective for malaria,Fever reducing agents.
23	Choulai bhaji	<i>Amaranthas viridis</i>	Amaranthaceae	Leaves	Heart problems, eye problems.
24	Dahiman	<i>Cordia macleodii</i>	Boraginaceae	Leaves,Bark	Healing wounds,Treating jaundice. In treating cancer
25	Kuchala	<i>Strychnos nux-vomica</i> Linn.	Loganiaceae	Seeds	Treatment of cancer and heart disorder.
26	Amaltas	<i>Cassia fistula</i> Linn.	Fabaceae	Leaves,flower	Chronic fever,ring worm and in rheumstism
27	Semal	<i>Bombax ceiba</i> Linn.	Malvaceae	Whole plant	Asthama, pulmonary tuberculosis,and influenza.
28	Karanj	<i>Pongamia pinnata</i>	Fabaceae	Seed,roots & Leaves	Treating rheumatic problem,hemorrhoids,dyspepsiya &leprosy, stomach aliments , wound healing.
29	Shisham	<i>Dalbergia sissoo.Roxb.</i>	Fabaceae	Leaves ,seed oil	Leprosy
30	Hadjod	<i>Cissus quadrangulari</i> s	Vitaceae	Entire plant	Fracture healing,wound healing,Reducing pain and inflammations
31	Chirchita	<i>Achyranthes aspera</i> Linn.	Amaranthaceae	Roots ,Stem and Leaf	Used in the treatment of boils,asthma,bleeding ,bronchitis,cold &cough,headache, dysentery
32	Aprajita	<i>Clitoria ternatea</i>	Fabaceae	Roots, Flower ,leaves	Antimicrobial,antidiabetic,diuretic and insecticidal properties .Snakbite
33	Mokhara	<i>Hygrophila auriculata</i>	Acanthaceae	Entire plants	Treatment of pain,jaundice,
34	Sahijan/ Munga	<i>Moringa oleifera</i>	Moringaceae	Leaves ,Fruits and Roots	Prevent inflammation ,Improve body immunity,Antibacterial properties,Control blood pressure,sugar,Killing worm
35	Dudhi	<i>Euphorbia hirta</i>	Euphorbiaceae	Whole plant	Leucorrhea,dengue,gastrointestinal disorder,respiratory problem,treatment of mouth infection.
36	Saja	<i>Terminalia eliptica willd.</i>	Combretaceae	Bark,Leaves	Bark is used against diarrhoea
37	Bija	<i>Petrocarpus marsupium</i> Roxb.	Fabaceae	Bark	Treatment of inflammation ,Dysentery etc.
38	Pudina	<i>Mentha spicata</i>	Lamiaceae	Entire plant,Leaves	Inflammation, Rheumatism
39	Lajwanti	<i>Mimosa pudica</i>	Fabaceae	Leaves	The leaf and root paste is used in case of piles and diseases of kidney.The root is used in treating asthma,cough,dysentery and fever.
40	Karela	<i>Momordica charantia</i> Linn.	Cucurbitaceae	Fruits,Leaves	To control blood glucose level,Provides relief from piles,Improve skin condition,Help in respiratory problems.
41	Gurhal	<i>Hibiscus rosa-sinensis</i> Linn.	Malvaceae	Fruits,leaves,&bar k	To treat hypertension ,Cholesterol production.swelling,Disorder of circulation.
42	Babul	<i>Acacia nilotica</i>	Fabaceae	Bark,Flower	Used in oral and dental hygiene,skin disease
43	Khair	<i>Acacia catechu</i>	Fabaceae	Seed ,Fruits and leaves	Diarrhoea,sore throat,and wounds.
44	Lahsun	<i>Alium sativum</i>	Amaryllidaceae	Whole plant	Preventing blood clotting and protecting the liver.
45	Adarak	<i>Zingiber officinale</i> Linn.	Zingiberaceae	Rhizome	Cough,pneumonia,help digestion,control blood pressure.
46	Punarnava	<i>Boerhaavia diffusa</i> Linn.	Nyctaginaceae	Whole plant ,root, leaf	Anemia,liver disease,wounds healing.

47	Kathal	<i>Artocarpus heterophyllus</i>	Moraceae	Fruits,seeds,roots	Liver problems,Blood circulation, Heart problem, Asthma.
48	Sitaphal	<i>Annona squamosa</i> Linn.	Annonaceae	Fruits, leaves	Used for the treatment of dysentery and urinary tract infection,applied to wounds.
49	Amarbel	<i>Cuscuta</i> Linn.	Convolvulaceae	Whole plant	Prevent any types of swelling,provide relief from gastrointestinal disorder.
50	Haldi	<i>Curcuma longa</i> Linn.	Zingiberaceae	Rhizome	Used in fever,Cold and cough,Heal pimples and wounds,anemia.
51	Mahua	<i>Madhuca indica</i>	Sapotaceae	Bark, Fruits & seed	Headache,Diarrhea, wound healing,Skin disease.
52	Keukand	<i>Cheilocostus speciosus</i>	Costaceae	Rhizomes	Headache
53	Makoy	<i>Solanum nigrum</i>	Solanaceae	The whole plant, Leaves, and Fruits.	Roots of the plants are used for insomnia, Joints pain, Inflammation.
54	Lantana	<i>Lantana camara</i> Linn.	Verbenaceae	Leaves	Leaves is mostly used in herbal medicine for wound healing, fever treatment ,cough treatment, influenza treatment, stomach ache, malaria etc.
55	Akol	<i>Alangium salviifolium</i>	Cornaceae	Fruits,leaves and seed oil	Snakebite,Scorpion bite, Dog bite. Burning sensation,improving skin texture.
56	Charota	<i>Cassia tora</i> Linn.	Fabaceae	Leaves, seed	Used as laxative,for the treatment of the leprosy and various skin disorder.
57	Mulberry	<i>Morus alba</i> Linn.	Moraceae	Fruits ,Leaves & Roots	Treatment of dizziness,insomnia,liver and kidney disorder.
58	Sarai	<i>Shorea robusta</i>	Dipterocarpaceae	Bark, Roots and leaves	Leaves and bark are used to treat leprosy, wounds,ulcers,cough, gonorrhoea,headache,diarrhea.
59	Papita	<i>Carica papaya</i> Linn.	Caricaceae	Fruits	Papaya is used for preventing and treating gastrointestinal tract disorder.
60	Peepal	<i>Ficus religiosa</i> Linn.	Moraceae	Stem bark , & root	Diarrhea,Cuts
61	Bargad	<i>Ficus benghalensis</i>	Moraceae	Stem bark, roots & Latex	Used in skin disease ,Ulcer, Diarrhea & Piles.
62	Kachnar	<i>Bauhinia variegata</i>	Fabaceae	Leaves	It is used for the treatment of bleeding hemorrhoids,cough, diarrhea, dysentery,leprosy and malaria.
63	Karonda	<i>Carissa carandas</i>	Apocynaceae	Fruits,Leaves	It is used for the treatment of acidity,indigestion ,Fever ,diarrhea and roots are used itches .
64	Aam	<i>Mangifera indica</i>	Anacardiaceae	Stem ,bark,leaf & Flower	External application of mango parts can help hasten wound healing,Prevent bleeding, Flower can be used to purify blood naturaliy, in diarrhea
65	Nilgiri	<i>Ecalyptus obliqua</i>	Myrtaceae	Leaves,Bark,	Cough & cold ,Sore Throat,Nasal congestion,
66	Kagaj Phool	<i>Bougainvillea glabra</i>	Nyctaginaceae	Leaves,Bark/Stem	Diarrhea,excessive stomach acidity,Cough,flu&fever
67	Lemongrass	<i>Cymbopogon citratus</i>	Poaceae	Whole plant	Relieving anxiety,pain
68	Sadabahar	<i>Catharanthus roseus</i>	Apocynaceae	Leaf	To treat diabetes,high blood pressure, mental disorder .
69	Pilikateli	<i>Argemone mexicana</i>	Papaveraceae	Flowers, whole plant	In treatment of jaundice,Malaria
70	Amrood	<i>Psidium guajava</i>	Myrtaceae	Fruits, leaves,bark	The root is used in various disease like diarrhea,coughs,stomach ache ,dysentery,indigestion and treatment of ulcer,in rheumatism,leaves are used in bronchitis,asthama,pulmonary disease etc.



## Photograph of some important medicinal plants



*Terminalia chebula*



*Terminalia bellirica*



*Emblica officinalis*



*Cissus quadrangularis*



*Terminalia arjuna*



*Tinospora cordifolia*





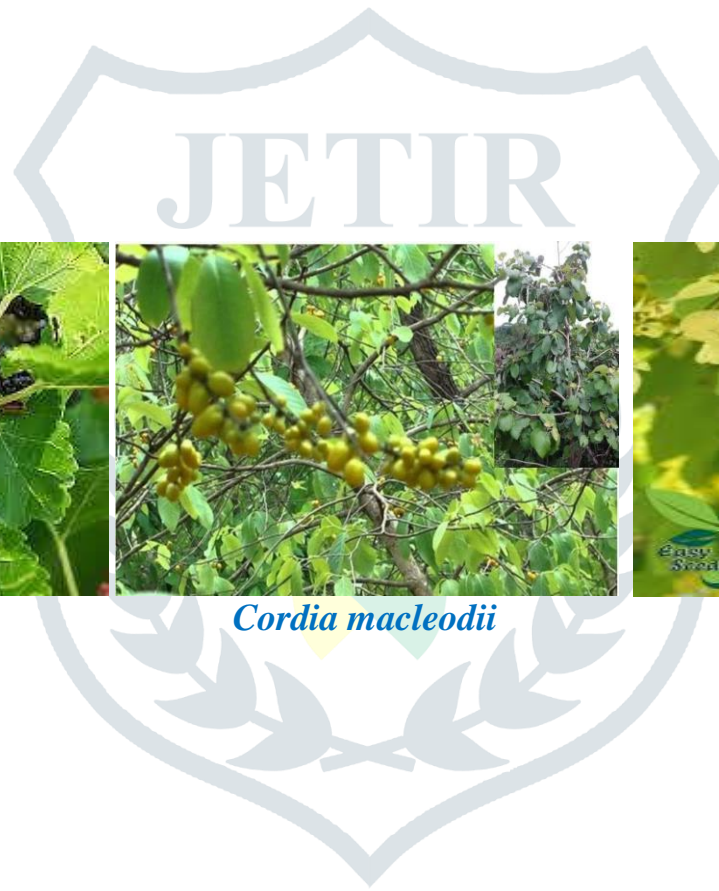
*Azadirachta indica*



*Ocimum sanctum*



*Asparagus officinalis*



*Morus alba*



*Cordia macleodii*



*Cassia fistula*





*Euphorbia hirta*



*Andrographis paniculata*



*Phyllanthus niruri*



*Aloe vera*



*Vitex negundo*



*Dalbergia sissoo*







*Strrchnos nux-vomica*



*Schleichera oleosa*



*Petrocarpus marsupium*



*Acacia nilotica*



*Ficus religiosa*



*Ficus benghalensis*



*Madhuca indica*



*Aegle marmelos*



*Clitoria ternatea*



*Boerhaavia diffusa**Curcuma longa**Nyctanthes arbortristis**Pongamia pinnata**Zingiber officinale*

**4.CONCLUSION:** This study has highlighted the importance of medicinal plants to tribal people and their prospective role in primary health care. Each plant or herb has a specific quality and can be used to treat a multitude of ailments and diseases. Medicinal plants like aloe, turmeric, tulsi, harra, baheda, giloy, bael, jamun, neem, etc. are commonly used by tribal people. The tribal people living in the research area use different methods to prepare different medicines for the treatment of various types of diseases. Decoction method is more common mode of preparation. The study of some medicinal plants collected from the research area have special properties for curing diseases and according to the tribal and non-tribal local people, medicinal plants have been used in first aid in various ways in the treatment, as well as local herbs have also been used by local people to treat various types of diseases.

The study made it clear that the use of medicinal plants is beneficial for the tribal people of rural areas. Tribal people have abundant medicinal resources and traditional knowledge. Core objective of the research to assess the distribution and availability of medicinal plant species in Barnawapara Sanctuary.

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