Original Article

Ethanomedicinal Studies Of Forests Of Dhamtari District Of Chhatisgarh

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Abstract

Every plant has some use, but some plants are very important from the point of view of traditional medicinal utility. The main intent of the present study is to gather complete information about the diversity of medicinal plants found in forest regions of the Dhamtari district. The forest cover of Dhamtari region has a hilly terrain, a wild enclosure that is suited to the diversity of medicinal plants. In this study, the medicinal plants found there are listed along with their scientific name, local name, family, habit, parts used, and related traditional knowledge as told by the local tribes living there. Total 71 medicinal plant species with 60 genera distributed among 38 families were identified, following taxonomic literature and standard methods. Fabaceae family registered as the largest family with 13 species (18%). The tree showed their maximum presence with 46% and followed by herb 25%, shrub 23%, and a minimum of 6% climbers (4 species). It is also found that in 21% of cases the plant part used was fruit and in 16% of cases, it was leaves. As data indicating there is extremely diverse flora of medicinal plants that need to be conserved with the help of local inhabiting tribes.

Keywords: Chhattisgarh, Ethno-medicinal, Sihawa, Taxonomy, Traditional knowledge, Tribes.

INTRODUCTION

Since human civilization man has been using different plants for his survival. The consistent curiosity of early man had led him to a systematic observation of plants which influenced not only his life but also the mode of his living in the environment.The tribal communities have been using the plants for remedies to cure health for generations and they have strong beliefin their own practices of using plants in medicinal formulations. These herbal medicines are used after some kind of processing. Drugs such as quinine, digoxin, reserpine, artemisinine, D-tubocurarine, khellin, colchicines, emetin, cocaine etc. have been discovered in the plant- products that have important ethnomedicinal role. Medicinal plants/ plant parts such as seeds,barks, leaves, flowers, roots are harvested from the wild to prepare the herbal medicine. These herbs are being destroyed due to the continuous exploitation by human beings; at the same time their natural habitats have also been destroyed.India is endowed with an enormous wealth of medicinal plants (Maheswari, 2011; Parveen et al, 2012) and is aptly called the “Medicinal Garden” of the world. The climatic diversity and regional topography of India accounts for the rich plant diversity (Chittibabu and Parthasarathy, 2000a, b). India is considered as one of the 12 mega-biodiversity centres. Plants are important source of medicines. These are used by the treatment of many diseases from ancient times. There are somany references are present about natural vegetation those are used as medicines in the 'Rig- Veda' which is the India's ancient Religious Grantham. The Indian traditional clinical method 'Ayurveda' is based on Charak Sanhita and Susurta -Sanhita that include description of about 700 medicinal plants. Medicinal plants were known to the early civilizations. As a matter of fact, the history of the drug plants is as the history of these civilizations.

Chhattisgarh state located centrally in India has approximate 44% forest area of the total Geographical area. The state is profuse in forest and mineral resources as it has 55,870 km2 forest cover that is 41.33 percent (3.08 percent dense

forest, 25.92 percent moderate dense,
12.33 percent open forest, and 0.08 percent scrub) of the state's total geographical area (India state of forest report, 2009). Nature has gifted 3 national parks [Indravati (Kutru) National Park, Kanger Valley National Park, and Guru Ghasidas (Sanjay) National Park] and 11

wildlife sanctuaries to this state. In 2000 the state born with a 31.8% tribal population (census, 2011). Dhamtari district is well known for 'the MahendraGiri' hills. And this place is the origin point of the 'Mahanadi' river. The river is a major river in East-Central India. As this basin has enclaves of old hills, rivers, forests, etc. which gives space to many plants, including medicinal plants, it reserves the variety of wild flora and fauna. Dhamtari forest area falls under the category of tropical dry deciduous and tropical moist deciduous forest type. Tribal belt of Dhamtari, Chhattisgarh is dominant with medicinal plants by large numbers of tribal, rural and urban people. Several tribal communities like Kamar, Gond and Baiga inhibit the area.

The plant diversity of Dhamtari district with respect to its medicinal value is important in its natural condition and no data on complete angiosperms and their medicinal value has been published so far. Therefore, a complete up to date survey of district for documenting flora is required, because it keeps changing due to environmental factors and anthropogenic disturbances. Plants are on the verge of getting extinction on account of increasing anthropogenic activities. Therefore, medicinal data must be documented before species diversity is lost.
A large number of medicinally important are present on Mahendra Giri Hill range and other areas including less hospitable northern ranges. Several tribes of Chhattisgarh use the traditional system of medicine. The tribal who depend on forest (mostly their surrounding vegetation) wealth are the real custodians that safeguard the medicinal plants till now. Rapid deforestation caused by over harvesting and exploitative trade of medicinal plants has significantly reduced the availability of the medicinal plants in arid and semi-arid region of Chhattisgarh (Srivastav,1981; Singh and Singh, 1983; Agarawal and Sinha,1994; Pandey, 2018 and Nayar and Sastry, 1987, 1981& 1990). Knowledge about the medicinal propertiesof these plants is confined to tribals only. Generally, the folk people are well acquainted with the medicinal properties of their surrounding vegetation particularly for their well-being (Mahaliket al, 2018; Leleet al, 2018; Khatun and Rahman, 2019; Sharma et al, 2020; Shrivastavet al,1999; Mishra and Kumar, 2001).

MATERIALS AND METHODS

Present investigation has been focused with the identification and documentation of Ethno- botanical significant plants, followed by their medicinal values and photographs with specificfocused on those plants which occurred in deep forest area having great medicinal values. The investigation was made during January, 2018 to January, 2020.
The information was collected tehsil of Nagri (Sita Nadi Wild Life Sanctuary). The information was gathered through discussion with tribal people and local healers. During field visit the information regarding the local name, medicinal values of plant materials and other uses of the plants were gathered from traditional village therapist, elderly village people, local herbal drug practitioners and knowledgeable persons. The details about local name, plant parts used and uses were recorded against each recorded plant in Ethnobotanical field book during survey. The plants were collected pressed and later identified with the help of keys. Local names were provided in their own language by the tribal and traditional physician, information regarding botanical name family name and medicinal uses for each plant was collected from text book and internet (Singh et al., 2014; Sandey and Sharma, 2016). The plant families under study were arranged alphabetically at the same time plant species were collected, capturing of photographs and herbarium sheets were prepared by traditional method, sample of plant species and plant image were made during morning time. Rendering to Ethnobotanical investigation such as local name, scientific name, families, plantpart used, traditional uses are simultaneously recorded. The identification of plant material was done by standard literature and advice of experts in this regards was also taken.

Ethno botanical knowledge will be documented from various parts of Indians subcontinent (Gamble, 2005: Matthew, 2003). All habitats of the study area surveyed carefully. Ethno medicinal data were collected by the suggested methodology. The aim of the present survey is to highlight that local people knowledge, role in resource

management and focus on the diversity of ethnobotanical plants for future use and provide the framework to aware the people how to use plants to solve different type of problem. Review literature will be helpful in identification of plant species belong to herbs, shrubs, tree and climbers.

Study Area

Dhamtari Forest Division Dhamtari Forest Division is located between 31075‘E and 32015‘Elongitude and 200 0‘N and 200 40‘N Latitude. The division stretches about 58 kms from North to South and 39 km from East to West. The total geographical area of Dhamtari districtis 4,081sq kms, out of which the forest area comprises 21,25,540 km^2 (52.1% of total geographical area). It's a dolomite rich region surrounded by dense forests in the north and the coal mines of the Hasdeo Valley in the east. Dhamtari district is surrounded by Koria District in the north, Anuppur District of Madhya Pradesh, Mungeli and, Baloda Bazar-Bhata Para District in the south and Korba and Janjgir-Champa District in the east.

Forest Types of the Study Area

Around 38.78% of the total area is covered by forest. The southern part of the district is a plain land with gentle slopes covering an area of 48% of the total geographical area in the district. It is also called the Chhattisgarh plains. The land is very fertile and is mostly used forthe agriculture purposes with few surface irrigation facilities. The northern part of the district is mostly hilly with highly undulating topography where the agriculture is restricted to few patches only. The net area sown during the year 2011 is around 360195 ha. Paddy is the main crop (88%) followed by pulses. There are three medium and 125 no of small irrigation projects exist in the district. The forests of this division are of two types viz. Sal and Mixed forests. The Sal (Shorearobusta) forests are found concentrated in four ranges namely, Dugli, Nagri, Birgudi and South Singpur whereas, mixed forest types of Dhamtari district are covered by, Keregaon and North Singhpur forest ranges.

The residents of the Dhamtari district practice several forms of worship for the district's trees and forest deities. It is our responsibility to conserve the district's forest and biological diversity because they are priceless national treasures that have been given to us. These are the hotspots that not only have a lot of tree genera linked with them, but also the religious sentiments of the populace.

RESULTS AND DISCUSSION

Dhamtari district has a rich heritage of ethnomedicinal plants. After survey of the district following medicinal plant species have been selected and collected. Study area was visited and field trips conducted with the local persons including sadhus, vaidhs and tribals. Generally, tribes, who know about the herbal medicine, do not want to give all the information because they believe that when the medicinal plant is disclosed its medicinal properties will be lost. For this reason, the information collected from the tribal is an important aspect of ethno medicinal study. The peoples who can provide information about medicinal plants were consulted and includes for authenticity about medicinal properties of plants the information collected during field work were verified at different places through different informants and in different seasons.

Each of the plant species recorded have been collected with the help of the informants and photographs were taken. The selected medicinal plant species growing in Dhamtari district and their voucher specimen was deposited in the herbarium of PG Department.

The name of plant its family, local name, habitat, morphological characteristics flowering and fruiting, phytochemical as well as ethno- medicinal aspects have been described.

S.no	Common Name	Botanical Name	Family	Medicinal Uses
1.	Charmoli	**Abrusprecatorius Linn.**	Fabaceae	Mouth blisters, convulsion in children ringworm and also takenorally in snake bite, antifertility drug both by male as well as female. Seed powder is also taken orally in urinary complaints,eruptions pulmonary disease.
2.	Char	**Buchananialanzan**	Anacardiaceae	Intrinsic haemorrhage, diarrhoea with blood and as tonic,aphrodisiac and in case of fever and burning sensation, useful in blood dysentery.
3.	Bad	**Ficus bengalensis Linn**	Moraceae	Sexual debility and spermatorrhoea, rheumatism and lumbago and also poured in eyes as eye tonic, diarrhea, cough and anemia.Infusion of stem bark is considered useful in diabetes. The tribal use the decoction of stem-bark for gargling against bleeding and spongy gums.
4.	Jamun	**Syzygiumcumini(Linn.)Skeels**	Myrtaceae	Digestive, astringent and anthelmintic. It is good for sore throat bronchitis, asthma, thirst, biliousness, dysentery, blood impurities and ulcers, strengthening gums and teeth. The seeds are useful diabetes and are widely used to treat diabetes alone as well as in combination with some other medicines of its class, also diuretic and stop urinary discharges.
5.	Sal	**Shorearobusta**	Dipterocarpaceae	Used to treat wounds, ulcers, leprosy, cough, gonorrhoea, earache and headache, diarrhoea, dysentery and vaginal discharges. The fruits are useful in tubercular ulcers, seminal weakness, burning sensation and dermopathy. Theoleoresin exuded from the plant has astringent, carminative and stomachic properties.
6.	Aam	**Mangifera indica**	Anacardiaceae	Used for the treatment of Diarrhoea, gastric disorders, asthma, mouth sores, liver diseases, urinary tract infections, diabetes, rheumatism, leucorrhea, bleeding hemorrhoids, lung hemorrhage, nerve disorders, syphilis, cough, and jaundice. Resins of the mango bark have been used for the treatment of cracked skin and feet.
7.	Amla	**Emblicaoffincinalis**	Euphorbiaceae	Fruits are traditionally used as an expectorant, antipyretic, diuretic, antidiarrhoeal and antiscorbutic. The sour fruits are oneof the ingredients of 'triphala'.
8.	Dhawda	**Anogeissus latifolia (Roxb.)Wall**	Combretaceae	The gum collected from the stem is used widely as glue by the tribals. It is also used as an ingredient of "laddoos" a sweet which forms the nourishing diet for ladies during pregnancy.Tribal collect and store it during summers. The gum gives stable oil - in - water emulsion and patented for incorporating oil-sol, vitamin preparation, has excellent

				emulsifying properties.
9.	Bija	**Pterocarpus marsupium**	Fabaceae	The conditions commonly treated by pterocarpus in the Ayurveda system include diabetes, inflammation and bleeding. The bark is also used for bleeding, toothaches and skin diseases
8.	Tendu	**Diospyros melanoxylon**	Ebenaceae	Next to the commercial use of tendu leaves for beedi rolling, the tendu tree is also used for domestic purposes. Traditional medical practitioners use the dried flowers to treat urinary, skin and blood diseases, while the bark has astringent properties and its decoction has been used in the treatment of diarrhoea and dyspepsia. Recent findings revealed that tendu seeds may have great medicinal use in the treatment of cancer. The seed is now starting to be traded by some pharmaceutical companies in north India, but its use is still in the experimental stage.

9.	Mahua	**Madhuca indica**	Sapotaceae	Leaf extract is used in Eczyma, Wound Healing, Anti Burns, Bone Fracture. The oil is used as emollient, for treatment of skin diseases, Rheumatism, Headache, laxative, Piles, Hemorrhoids, Emetics, Anti Earthworm etc. The fruit is sweet and is used as Refrigerant, Aphrodisic, Tonic, Dipsica, Bronchitis, Astringent, Anti-Ulcer, Acute and in Chronic Tonsillitis and Pharyngitis. Bark is used in powdered form for the treatment of Rheumatism, Ulcer, Inflammation, Bleeding.
10.	Haldu	**Adina cordifolia**	Rubiaceae	Stomach ache, cholera, cold cough, fever, headache, Scars and skin yellowish of body, urine complaints, rheumatism and fever. Latex is applied on aching tooth. Bark is used as an antibacterial, Bark paste is applied to eczema, Scabies, or bacterial infections on the skin. Stem bark powder is used to prevent miscarriages.
11.	Neem	**Azadirecta indica**	Meliaceae	The whole plant is used for medicinal talents due to the reality neem hasantimicro-organism, anti-fungal, anti-inflammatory, antiarthritic,antipyretic, antifungal, houses.Almost all additives of the neem tree are useful, and plenty of its medicinal and cosmetics uses are based totally on its antibacterial and antifungal properties.Eating leaves is beneficial for hair nourishment, right eyes, boosting immune device, decorating digestive device, and oral fitness. The timber of the neem tree is used to make furnishings.
12	Haritaki	**Terminalia chebula**	Combretaceae	It is also used for treating candidiasis, parasites, malabsorption syndrome, hepatomegaly, vesicular and renal calculi, urinary discharges, tumors, skin diseases, leprosy, intermittent fever, rheumatism, arthritis, gout, neuropathy, paralysis, memory loss, epilepsy, depression, diabetes, cardiovascular diseases, anorexia, wounds. TC is reported to be antimicrobial hepatoprotective, anti- inflammatory immunomudulatory , antioxidant and adaptogenic. It is also used for heart disease, inflammation, brain dysfunction. This plant is also used for treating piles, dropsy, diarrhoea, biliousness, headaches, dyspepsia and ascites.
13.	Bahera	Combiteraceae	**Termina lia bellerica**	T. belerica fruits exhibit medicinal activity. These are used as laxative, astringent, anthelmintic and antipyretic.Fruits are useful in treatment of hepatitis, bronchitis, asthma, dyspepsia, piles, diarrhoea, coughs,hoarseness of voice, eye diseases, scorpion-sting and also used as a hair tonic. Decoction of the green fruit is used for cough.Pulp of the fruit is useful in dysenteric-diarrhoea, dropsy, piles and leprosy. Half ripe fruit is used as purgative. Kernel of the fruit is narcotic.

DISCUSSION AND CONCLUSION

The study reveals Dhamtari district is fairly rich in plant diversity.495 species and 387 generaunder 106 families were recorded from various regions of the district. A total of 14 types of plant parts such as leaves (29%), roots (13%), bark (12%), flowers (11%), fruits and seeds each treated (8%), whole plant (7%), latex (5%), gum (1%), nuts (1%), pods (1%), stem (%), tubers (1%) and pulp (0.1%) used to treat various (Table-17 & Fig-15) human

diseases suchas anemia, anxiety, arthritis, asthma, bleeding piles , boils, bronchitis, cataracts, chickenpox, cholera, cough and cold, conjunctivitis, constipation, diabetes, diarrhoea, dropsy, dyspepsia, earache, eczema, epilepsy, hair fall, fevers, flu, gastric troubles, gonorrhoea, goutier, gum diseases, headache, healing cracks, hypertension, inflammation, insect bites, insomnia, intestinal worms, jaundice , kidney stones, leprosy, leucorrhoea, liver disorders, malaria, measles, menstrual disorders, nausea, neurological diseases, nose diseases, paralysis, pneumonia, rheumatism, ringworm, scabies, sciatica, scorpion sting, sexual diseases, skin diseases, smallpox, snake bite, sore throat, spleen enlargement, stomach trouble, tooth carries,tumours, ulcers, urinary diseases, vertigo and warts. In addition to this, 45 plant species are also noted used as Ethno-medicinally by local people of Dhamtari district.

The tribal communities have been using the plants for remedies to cure health for generations and they have strong belief in their own practices of using plants in medicinal formulations. These herbal medicines are used after some kind of processing. Indiscriminate harvesting by villagers for religious and medicinal purpose lead many plant species have been brought on the verge of extinction. Therefore, there is urgent need to cultivate rare and threatened plant species in private gardens or educational institutes for their conservation. Over exploitation of medicinal plants can be stopped by creating awareness among people through group meetings.

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CONFLICT OF INTEREST

The authors declare none.

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