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MEDICINAL PLANT IN JHARKHAND STATE: AN OVERVIEW OF CURRENT SCENARIO

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ABSTRACT

Naturally plant-derived drugs have an important place in both traditional and modern medicine. Jharkhand is rich in biodiversity of medicinal plants. The forest area covers about 40% of the total area of Jharkhand. About 32 tribal communities found in which Munda, Santhal, Oraon, Kharia, Gond, Kol, Kanwar, & Savar are dominating in different regions of Jharkhand. They are using medicinal plants by traditional knowledge. More than 160 species of plants having their medicinal value are used by such tribal communities which have lack of modern medical facilities. Still the knowledge is inadequate and needs further knowledge in full spectrum. For this reason a special effort to maintain the great diversity of plant species would undoubtedly help to improve human suffering in the long run. Hence, more effort should be given in cultivation and processing of such medicinal plants which are in the level of extinction. The extensive use of such medicinal plants is nowadays being adopted by almost all the developing and developed countries in order to enhance the immune system with zero side effects. The objective of the current study is to collect document information and review the value addition of such medicinal plants and their applications in therapeutic use for different diseases.

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Keywords- *Eczema, Migraine, Medicinal plant, Centella asiatica (L.) Urban (Brahmi), Datura metel L. (Dhatura), Leucas aspera Spr (Guma) & Jharkhand*

I. INTRODUCTION

Medicinal plants, since ancient times immemorial, have been used in virtually all cultures as a source of medicine. The widespread use of herbal remedies and healthcare preparations, as those described in ancient texts such as the Vedas and the Bible, and obtained from commonly used traditional herbs and medicinal plants, has been traced to the occurrence of natural products with medicinal properties. World wide it is observed that more than 35,000 plant species are being used around the world for medicinal purposes (Sukumaran & ADS, 2010). Plants are an enormous source of medicines, especially in traditional medicine, which are useful in the treatment of various diseases (Bako et al., 2005). Table 1 shows the number of species of medicinal plants used by different nations around the globe.

India covers in forest is only 67.83 M ha (20.68% of the geographical area) and other tree cover is estimated at 9.99 M ha (3.04% of the geographic area), thus the total forest and other tree cover is computed as 77.82 M ha, which is 23.68 per cent of its geographical area (FSI), 2003. In addition to this, about 25.72 M ha area is under various types of tree plantations such as agro forestry, social forestry and farm forestry. In Indian civilization by means of medicinal plants and herbal medicines for curing human illness was very popular. Medicinal plants form the only easily accessible health care alternative for the most of our population in rural and tribal areas. The life, tradition and culture of tribal have remained almost static since last several hundreds of years. The knowledge accrued by the tribal's through generation's shows the in-depth understanding of the forest resources (Choudhary et.al, 2011). The Indian sub-continent has a very rich diversity of plants species with wide range of ecosystems. The Indian sub-continent approximately 8,000 species are considered for medicinal and used for human and veterinary care across the country by village communities, particularly tribal communities, or in traditional medicinal systems, such as the Ayurveda (Pei, 2001).

Jharkhand is one of the most prolific mineral states of India. Since time immemorial, the Jharkhand state being the land of Lord Baidynath; known as natural sanctuary of spiritual, cultural and herbal heritage in India. The state of Jharkhand lies between latitude 22º 00′ - 24º 37′N and longitude 83º 15′-87º 01′E. and well known due to tribal populations, mineral rich region, tropical dry deciduous forests etc. According to satellite data of Oct.-Dec. 2006, the forests cover is 28.72% of state's geographic area. Jharkhand has a tropical climate with annual rainfall of about 900 mm and the temperature varies between 4 ºC to 47 ºC. The total population of the state is 26.91 million of which the rural population constituted 77.80% while the schedule tribe constituting 22.50 % (Kaushal & Abbas, 2012). Jharkhand has forest and plenty of ethno- medical plants and forest produce. It comes under agro-climatic zone and it is best suited for the cultivation of ethno medical plants. Since time immemorial people had been using ethno-medicine. Due to the side effects of chemical medicine, people are turning towards the ethno-medicine because such medicinal plants are

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found in ample amount in the state. More than 1500 ethno- medicine plants are found in Jharkhand (Barla & Jharkhand, 2006).

Table.1. No. of species of medicinal plants used by different nations

S. No.	Country	No. of Species of Medicinal Plants	Total No of Species In Flora	% of Flora Used as Medicinal	References
1.	India	7500	17 000	44	Shiva (1996)
2.	China	11 146	27 100	41	Pei (2001)
3.	North America	2572	20 000	13	Moerman(1998)
4.	Mexico	2237	30 000	7	Toledo (1995)
5.	World	52 885	297 000–510 000	10–18	Schippmann et al. (2002)

II. MEDICINAL PLANTS, HERBS AND SHRUBS DOMINANT IN JHARKHAND

Medicinal plants such as *Mucuna monosperma, Argemone mexicana, Acalypha indica, Datura metel, Fritillaria cirrhosa* and *Hyoscyamus niger* used for asthma were reported by Jha (2001), available at Chhotanagpur, Jharkhand. Bondya and Sharma (2005) reported that many medicinal plants were depleted and 4 plants had completely lost in the region of Bharagora block of Jharkhand and its adjoining border areas of West Bengal and Orissa. Suresh and Kujur (2009) studied the therapeutic use of some medicinal plants of Jamshedpur, Jharkhand, India such as *Abutilon indicum* for fever, *Oxalis corniculata* 9 for indigestion, *Clitoria ternatea* for constipation, *Rauwolfia serpentina* for blood pressure, *Tinospora cordifolia* for cancer and *Commelina benghalensis* for leprosy. Mondal and Rahaman, (2012) has recorded a total of 28 ethno-medicinal plants and their formulation pattern for curing 10 types of different diseases in Birbhum district of West Bengal and Dumka district of Jharkhand in India by tribal people. Table 2 gives the plants along with their use by the tribals of wildlife sanctuary Topchanchi, Dhanbad. Table 3 list out 23 medicinal plants, herbs and shrubs that are dominant in the state of Jharkhand along with their varied uses.

Table 2: List of Plants Used by Tribals for Skin Diseases in Wild Life Sanctuary, Topchanchi, Dhanbad, (Anamika & Kamini (2016)

Sl. No	Local name	Botanical name	Family	Parts used
1.	Kanout	*Kickxia ramosissima* (Wall.) Janch	Scrophulariaceae	Roots
2.	Aloe	*Aloe vera* (L.) Brum F.	Liliaceae (B & H) Xanthorrhoeaceae(APG III)	Whole Plant
3.	Kochila	*Strychnos nuxvomica L.*	Loganiaceae (B & H, APG III)	Leaf
4.	Gokhura Kanta	*Tribulus terrestris L.*	Zygophyllaceae (B & H, APG III)	Whole Plant
5.	Semal	*Bombax ceiba L.*	Malvaceae (B & H, APG III)	Bark
6.	Palash	*Butea monosperma* (Lamb.) Taub.	Fabaceae (B & H, APG III)	Bark
7.	Brahmi	*Bacopa monnieri* (L) Wett st *Centella asiatica* (L) Urb	Plantaginaceae (B & H, APG III) Apiaceae (B & H, APG III)	Leaf
8.	Karanj	*Pongamia pinnata* (L) Pierse	Fabaceae (B & H, APG III)	Bark, Extract Oil
9.	Neem	*Azadiracta indica* A. Juss.	Meliaceae (B & H, APG III)	Bark, Extract
10.	Dhatura	*Datura stramonium L.*	Solanaceae (B & H, APG III)	Whole Plant
11.	Aak	*Calotropis procera*	Asclepidiaceae	Latex And Leaf
12.	Haridra	*Curcuma longa*	Zingiberaceae (B & H, APG III)	Bark

Figure 1 and Figure 2 are the pictorial view of various medicinal plants, herbs and shrubs found in the Jharkhand and commonly used by the tribals for curing of various ailments..

Table 3: Some Selected Medicinal Plants, Herbs and Shrubs Dominant in Jharkhand State.

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Sl. No	Local Name	Botanical Name	Family	Parts Used	Medicinal Use
1.	Tulsi	*Ocimumsanclum*	Lamiaccac	Leaves/Seed	Cough, Cold, Bronchitis,Expectorand
2.	Amla	Emblicaofficinalis	euphorbiaceac	Fruit	Vitamin-C, Cough, Diabetes, Cold, Laxative, Hyper Acidity.
3.	Ashok	*Saraca Asoca*	Caesalpinanceac	Bark Flower	Menstrual Pain, Uterine, Disorder, Deiabetes.
4.	Aswagandha	Withania Somnifera	Solanaccac	Root, Leafs	Restorative Tonic, Stress, Nerves Disorder, Aphrodiasiac.
5.	Bael / Bilva	Aegle marmelous	Rutaccac	Fruit, Bark	Diarrrhoea, Dysentry, Constipation.
6.	Guluchi / Giloe	Tinospora Cordifolia	Menispermaceae	Stem	Gout, Pile, General Debility, Fever, Jaundice
7.	Calihari / panchanguliaGlori	Gloriosa superba	Liliaccac	Seed, tuber	Skin Disease, Labour Pain, Abortion, General Debility.
8.	Makoi/Kakamachi	Solanum nigrum	Solanaccac	Fruit/whole plant	Dropsy, General Debility, Diuretic, Anti Dysenteric.
9.	Sarpa Gandha	Ranwolfia Serpentina	apocynaccac	Root	Hypertension, Insomnia High Blood Pressure, Insanity, Hyesteria.
10.	Satavari	Asparagus Racemosus	liliaccac	Tuber, root	Enhance Lactation, General Weakness, Fatigue, And Cough.
11.	Gritkumari	AloeVerra	Liliaceae	Leaves	Laxative, Wound Healing, Skin Burns,Ulcer.
12.	Vringraj	Ecliptaalba	Compositae	Seed/whole	Anti-Inflammatory, Digestive, Hair Tonic.
13.	Rakta Chitrak	Plumbago Indica	plumbaginaceae	Root, Root bar	Indyspeipsia, Colic, Inflammation, Cough.
14.	Kochila	Strychinos nuxvomica	loganiaceae	Seed	Nervous, Paralysis, Healing Wound.
15.	Neem	Azardirchata - indica	Mahaceae	Rhizome	Sedatives,Analgesic,Epilepsy, Hypertensive
16.	Benachar/ Khus/khus	Vetiveria Ziziinoides	Toaceae / Graminae	Root	Burning, Ulcer, Skin, Vomiting.
17.	Mandukparni	Centella asiatica	Umdelliferae	Whole plant	Anti-Inflammatory, Jaundice, Diuretic, Diarrhea.
18.	Kaincha/Baidanka	MucunaTruriens	Fabaceae	Root, Hair, Seed, Leaf	Nervous, Disorder, Constipation, Nephropathy, Dropsy.
19.	Dalchini	Cinnamomum Zeylanicum	Lauraceae	Bark, Oil	Bronchitis, Asthma, Cardiac, Disorder, Fever.
20.	Kariyasem	*Mucuna monosperma*	Fabaceae	Stem, leaf	Asthma, Blood Purity, Menstrual Disorder, Urinary Problem, Immunity Booster.
21.	Mexican poppy	*Argemone mexicana*	Papaveraceae	Whole plant; Seeds; Seed oil, Flowers; Latex Roots; Leaves	Infestation, Skin Diseases, Leprosy, Inflammations, Colic, Malarial Fever Wounds, Ulcers. Asthma, Constipation, In Dropsy, Jaundice, , Leprosy,
22.	Khokali	*Acalyphaindica Linn.*	Euphorbiaceae	Whole plant,roots,leaf	Anthelmintic, Expectorant, Emetic, Hypnotic, Asthma, Pneumonia
23.	Sada Dhatura	*Datura metel*	Solanaceae	seeds flowers and leaves	Dangerous Level Of Poison Likes Tropane Alkaloids Atropine, Hyoscyamine, Scopolamine, Which Are Considered As Deliriants Or Anticholinergics.

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(A) CALOTROPIS PROCERA | (B) ALOE VERA | (C) STRYCHNOS NUXVOMICA

(D) BOMBAX CEIBA | (E) BUTEA MONOSPERMA | (F) BACOPA MONNIERI

G) PONGAMIA PINNATA | (H) DATURA STRAMONIUM | (I) CURCUMA LONGA,

FIGURE 1: SOME SELECTED PLANTS USED FOR MEDICINAL PURPOSES BY TRIBALS OF JHARKHAND

III. ROLES FOR MEDICINAL PLANTS IN CONSERVATION

The extraordinary implication of medicinal plants in conservation stems from the major cultural, livelihood or economic roles that they play in many people's lives. Various sets of recommendations have been compiled relating to the conservation of medicinal plants, such as those associated with international conferences at Chiang Mai, Thailand, in 1988 and Bangalore, India, in 1998, (**Akerele et al. 1991; Bodeker 2002**). They include, the need for co-ordinate conservation action, based on both in situ and ex situ strategies inclusion of community and gender perspectives in the development of policies and programmes; the need for more information on the medicinal plant trade; the establishment of systems for inventorying and monitoring the status of medicinal plants; the development of sustainable harvesting practices; encouragement for microenterprise development by indigenous and rural communities; and the protection of traditional resource and intellectual property rights. Most likely, the single most important 'role' for medicinal plants in biological and ecological conservation stems from the foundations that they can provide for the involvement of people in conservation of natural habitats (**Schopp-Guth and Fremuth 2001).** In other words, the implication of medicinal plants to people can be sufficiently great that arrangements made for the conservation and sustainable use of medicinal plants can lay important foundations for the conservation of natural habitats and ecological services more generally. Therefore the 'biological beneficiaries' of 'medicinal plant conservation' are not necessarily only the medicinal plants themselves. This is nowhere more so than in those remoter parts of the world.

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(J) EMBLICAOFFICINALIS

(K) AEGLE MARMELOUS

(L) TINOSPORA CORDIFOLIA

(M)AZARDIRCHATAINDICA

(N)OCIMUM SANCLUM

(O) MORINGA OLEIFERA.

(P) TERMINALIA ARJUNA

(Q) RANWOLFIA SERPENTINA

(R) MUCUNA MONOSPERMA

FIGURE 2: SOME OF SELECTED PLANTS USED AS MEDICINAL PURPOSES BY TRIBALS OF JHARKHAND

IV. CONCLUSION

Medicinal plants play an important role in providing knowledge to the researchers in the field of ethno-botany and ethno-pharmacology, so this article will attract the attention of ethno-botanists, phytochemists and pharmacologists for further critical investigation of medicinal plants present in Jharkhand state, India. More emphasis should be given for the implementation in conservation of such valuable medicinal plants. Further, it is concluded that the above findings of medicinal plants, herbs, and shrubs are the source of diversified flora. Since the situation is alarming, it needs further extensive and intensive investigation to suggest method of conservation as well as preservation of not only the medicinal plant but also the forest and environment as a whole. Conservation of medicinal plants can be done by extending cultivation of precious and valuable species on the basis of sustainable utilization of biodiversity.

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