



ETHNOMEDICINAL PLANTS OF GANDHAMARDAN HILLS (ODISHA): A REVIEW

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ABSTRACT

The medico folklore use of such plants took an emerging trend of research due to ethnomedicinal potential use as a source for preparation of medicaments. The review was conducted during 2016 in the Gandhamardan hills regions encompassing Bargarh and Bolangir districts of Western Odisha. The data so collected from different books, Journal and interviews with tribals (informants) and people (practitioner) of the locality, were taken into account. Several species belonging to different families are focused with medico-folklore use amongst people. However, some of the enlisted plant found to be multifaceted use i.e. as food, aesthetic and ornamental, mythological iconic and somewhere as protection from reptiles etc. apart from their therapeutic uses. There is a need to focus on more ethnomedicinal research and documentation of traditional medicinal knowledge among local practitioner, tribals and people of the Gandhamardan hills.

KEY WORDS: Gandhamardan hills, Ethnomedicine, Medico-folklore use.

INTRODUCTION

From past to present scenario, majority of the people living in the countryside, the rural backward classes and the tribals inhabiting the forest areas depend on crude drugs of plants or plant products as effective remedies for enriching various diseases. Odisha, one of the largest producer states in India of medicinal herbs, lie between 17° 48'-22° 94'N latitude and 81°24' - 87°29' E longitude (Agarwal and Ghosh, 1985). It is commonly called the "Treasure house of healing herbs" that is being used in traditional Indian system of medicine like Ayurveda, Siddha and Unani. Based on complex geography and variety of microclimatic parameters, numerous life forms are not coming to the forefront of

common people, out of which the ethnomedicinal plant provide enormous therapeutic significance till date. In Odisha, there are several mountainous forest like Gandhamardan hill range, Barapahad hill range, Papangapahad hill, Deomali hills, Mahendragiri hills, Niyamagiri hill range, Malyagiri hills, Similipal Biosphere Reserve and coastal forests, which provides high degree of biological diversity as well as grand storehouse of prospective medicinal plants. Many of these areas are ethnomedicinal creative, where about 62 tribal groups depending on different forest area of the state and they are far away from the modern medical facility, which is why they use many locally available plant species for the treatment of various diseases, disorders, and ailments.



Out of which, Gandhamardan hills range is an unique forest ecosystem and it has been seen as a store-house of a rich variety of indigenous, medicinal and aromatic plants. In addition, this range is such a tropical moist deciduous system in Orissa, India. This hill is well known for medicinal plants, and the tribals as well as local people are preparing medicines from different species of plants, to treat various diseases and disorders of human and animal being (Misra, 2004).

Inspired by the unique forest ecosystem and abundance of ethnomedicinal plants, our review expands on the versatility and flexibility of various family of ethnomedicinal plants, and how such plants can be used for therapeutic purposes in modern eras. The purpose of this review will provide an overview of geographical structure of Gandhamardan hill range, its ethnomedicinal plant bio-diversity and the management of this sacred hill range.

Gandhamardan hills or Gandhamardan parbat is a very rich source of flora and fauna, which is located in between Bargarh and Bolangir district of Odisha. This hill is well known for medicinal plants and the tribals as well as local people are preparing medicines from different species of plants, to treat various diseases and disorders of human and animal being.

GEOGRAPHICAL STRUCTURE OF GANDHAMARDAN HILL RANGE

This Gandhamardan hill ranges situated in between Bargarh and Bolangir district of western Odisha, India which lies between 20°42' - 21°00' N latitude and 82°41' - 83°05' E longitude “figure 1”.

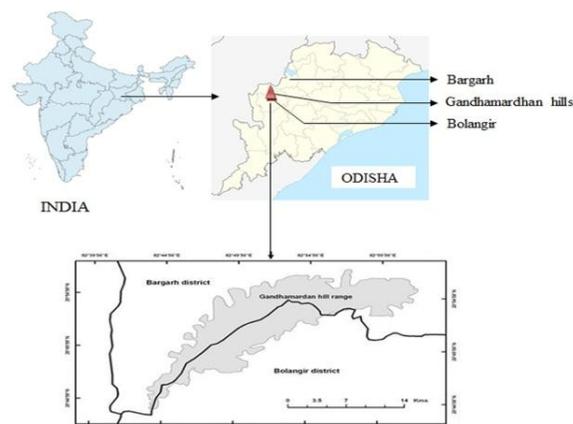


Figure 1: Map of Gandhamardan hills range

This hill range is well known for medicinal plants and the tribals as well as local people are preparing medicines from different species of plants, to treat various diseases and disorders of human and animal being. The hill range extends over several kilometers in NE-SW direction, which flanks Bargarh district in the north and Bolangir district in the south. This mountain range is delineated by Borasambar-Paikamal- Manbhang in the north and Amarkol- Batipathar- Brahmani-Harishankar in the south extending almost parallel to the Nawapara - Padampur road (Panigrahi, 1963).

Many medicinal plant species like *Clerodendron serratum*, *Ichnocarpus frutescens*, *Emblica officinalis*, which were once available in amply, have become scarce. A study recorded 2,700 angiosperms and 125 species of important medicinal plants, out of a total of 220 species of medicinal and quasi-medicinal, and economically vital plants (Pattanaik and Reddy, 2007). In this hill region, the rainfall and moderate weather expedite tropical deciduous forest with a good number of ethnomedicinal plant species. Normally, in summer season (April-May) the maximum temperature goes up to 37 °C, whereas in



winter season (December-January), the minimum falls to 12 °C. The rock formation is archaic metamorphic called 'Khondalite' to high-level laterite (Pandey and Chatterjee, 1984).

ETHNOMEDICINAL PLANT BIODIVERSITY

The Gandhamardan mountain ranges are a rich source of diversity for medicinal plants. The native people in Gandhamardan hills have been largely responsible for preserving the rich biodiversity of the region. About more than 500 species of medicinal plants are used in the traditional healthcare systems of different tribes and practitioner of the region, but Botanical Survey of India has reported the existence of 220 plant species

of medicinal value. In addition, about 2,700 angiosperms and 125 species of vital medicinal plants have been recorded. The garden as a whole represents the medicinal flora of the Bargarh and Bolangir district of Odisha and it will serve both as a repository of genetic stocks of the region's ethnomedicinal plants and as a living gene bank for the tribal families- of immense value for the present generation and those to come (Reddy and Pattanaik, 2009). The local communities and folklore people of Gandhamardan hills are frequently using medicinal plants for treatment of various diseases and disorders (Mishra, 2003, Panda and Das, 2004, Mishra, 2011) which are tabulated in table 1.

Table 1: Ethnomedicinal plants of Gandhamardan hills (Odisha)

Sl. No.	Local Names	Scientific Names	Family	Parts Used	Medicinal Uses
1	Gunj, Kaincha	<i>Abrus precatorius</i>	Papilionaceae	Seeds	Seeds are applied in skin disease. It is used for abortification.
2	Kuthelchitra, Pedipedika	<i>Abutilon indicum</i>	Malvaceae	Leaves	7 leaves and 7 black piper paste is used for the treatment of jaundice.
3	Kafgajari, Indramarish	<i>Acalypha indica</i>	Euphorbiaceae	Leaves	5ml of infusion along with one cup of water is used to remove cough immediately by vomiting.
4	Kukurdanti, Tabatakhanda	<i>Achyranthes aspera</i>	Amaranthaceae	Whole plant (Panchanga)	20 ml of decoction (4-5 times in a day) is used to remove cough. Leaves Paste is used to treat skin diseases.
5	Mahalim, Mahalimba	<i>Ailanthus excelsa</i>	Simaroubaceae	Leaves, bark	Leaf paste is used for skin disease. Barks are used for fever and skin disease.
6	Kantabhaji, Kantamarisa	<i>Amaranthus spinosus</i>	Amaranthaceae	Whole plants	Decoction of plants is used as galactagogue.
7	Panaire, Hanslata	<i>Aristolochia indica</i>	Aristolochiaceae	Roots	2 grams of root powder with black piper (twice in a day in empty stomach) is used to treat



					menstrual disorders.
8	Poe	<i>Basella alba</i>	Basellaceae	Roots	About 10 gram of root and rice water paste is taken in empty stomach every day that cure menstrual disorders.
9	Kantamalati, Dasjerenta	<i>Barleria prionitis</i>	Acanthaceae	Leaves	Leaf paste and leaf juice is used for toothache, skin disease and urinary disorder.
10	Palsa, Palas	<i>Butea monosperma</i>	Fabaceae	Leaves, flowers, and gums	Flower and gum are used for joining of bone. Leaves and gums are useful in swelling.
11	Sale, Sallaki	<i>Bowswellia serrata</i>	Burseraceae	Bark	Local healers use its bark both internally and externally to heal obstinate sore.
12	Kanjer, Safed Musali	<i>Chlophytum arundinaceum</i>	Liliaceae	Rhizomes	Rhizomes powder is used as aphrodisiac. Local people consume its leaves as vegetable, and are popular in the local market as Kanger Sag.
13	Ping, Jyotismati	<i>Celastrus paniculata</i>	Celastraceae	Root bark	Local healers mainly use its root bark for menstrual irregularity, leucorrhoea, urinary tract infection and skin diseases.
14	Bhramarmal, Bhargi	<i>Clerodendrum Serratum</i>	Verbenaceae	Root bark	Root bark is used to treat asthma, bronchitis, irregular menstruation and cervical spondylitis.
15	Gopkanhu, Dudhi	<i>Cryptolepis buchanani</i>	Asclepiadaceae (Periplocaceae)	Aerial, root, and whole plant	This plant is used to treat paralysis, snake bite, cholera. It is also used galactagogue.
16	Keu, Gaigendalia	<i>Costus speciosus</i>	Zingiberaceae	Rhizome	The rhizome of the plant covered with mud is put to fire and given to patients suffering from obstructive jaundice. In chronic bronchitis the rhizome is pulped with half quantity of garlic and a little tamarind and given with diet regularly for about a week.
17	Dahidahia, Musakani	<i>Cocculus hirsutus</i>	Menispermaceae	Leaves	Leaves paste is used for skin diseases and joint pain. It has cooling effect.
18	Ainla, Amla	<i>Emblica officinalis</i>	Euphorbiaceae	Fruits	Fruits are rich in vitamin C and are used for the treatment of stomach disorder.



19	Puraphula, Meriakanda	<i>Gloriosa superba L.</i>	Liliaceae	Tubers	Tuber is used for conducting illegal abortion, and accelerating delivery process.
20	Bas khapri, anantamul	<i>Hemidesmus indicus</i>	Asclepiadaceae (Periplocaceae)	Roots	Half spoon of roots powder is taken every day for purification of blood and removes skin disease. It is also used by tribal people as immunomodulatory.
21	Thapa laha, Kheleelaii	<i>Ichnocarpus frutescens</i>	Apocynaceae	Leaves, stems, roots, and flowers	Flowers and leaves are used as antidiabetic. This plant is used to treat paralysis, snake bite, jaundice and skin infections.
22	Baikhujen, Baidanka	<i>Mucuna pruriens</i>	Fabaceae	Seeds and fruits hairs	Seeds powder is used as aphrodisiac, and also for cervical spondylitis. The tingling hairs on the fruit is mixed with sugar and administered in case of abdominal worms.
23	Patalagarud, Sarpagandha	<i>Rauwolfia serpentina</i>	Apocynaceae	Roots	The root is also used as an antidote to snake poison. It is also a valuable remedy for malaria fever and mental disorders, hypertension.
24	Guder, Bhuin kadamba	<i>Sphaeranthus indicus</i>	Asteraceae	Fruits and whole plant	Fruit and whole plant is used in indigestion and piles. It is useful in gastric disorder.
25	Kaa, Arjun	<i>Terminalia arjuna</i>	Combretaceae	Bark	Decoction of bark is used in heart disease and as expectorant, and bark powder is used in broken bone.
26	Harda	<i>Terminallia chebula</i>	Combretaceae	Fruits	Fruits are used for the treatment of stomach related diseases.
27	Turki, Andhapuspi	<i>Trichodesma indicum</i>	Boraginaceae	Roots	Root is used for snake bite. It is useful in skin disease and joint pain.
28	Nirgundi, Begunia	<i>Vitex negundo</i>	Verbenaceae	Leaves	Leaves are used in headache and rheumatism. Oil is useful for swelling as ointment.
29	Gunchi, Guluchi	<i>Tinospora cordifolia</i>	Menispermaceae	Leaves	Leaves are used as antidiabetic.
30	Palas, Palsa	<i>Butea monosperma</i>	Fabaceae	Bark	Its bark was used as anticancer agent.
31	Gudmari, Meshashringi	<i>Gymnema sylvestre.</i>	Asclepiadaceae	Leaves	Local healers are used as antidiabetic, antidote to snake poison. The plant is believed to have snake-repelling properties.



CONCLUSION

Traditional knowledge is restricted and acquiescent only to a specified locality. Ethnomedicinal surveys not only attempts to gather information regarding utilities of plants but also bring it to the lime light. It is highly significant when medico folklore data so collected, complements in discovering novel drugs. It also provides information for biodiversity conservation and other biological utilizations of the species as well. The collected herbals were claimed to be with high efficacy; however, it entails detail clinical evaluation for establishing better acquiescent of such ethno therapeutic reports. In this locality local health tradition exists due to regular practice of quacks; mostly use these plants for treatment of stomach ache, peptic ulcers, diarrhea and dysentery like gastro-intestinal disorders; wound, abscess, eczema and scabies like skin problems; cold, fever, cough, jaundice, snake bite, urinary complaints, fracture of bones, hypertension, diabetic, cancer etc. As mentioned above, patients were advised to take these plants as decoction, juice extract, paste and powdered forms either drawn of single plant or preparing mixtures taking other ingredients in the formulation.

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