

Ethnomedicinal uses of Pteridophytes of Chotanagpur Plateau, Jharkhand

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ABSTRACT

The present communication deals with the ethnomedicinal uses of pteridophytes in the treatment of various diseases. These pteridophytes are widely used by the local tribes and the plant material is sold in the local market of Chotanagpur Plateau. They grow naturally in rock crevices and boulders near water stream in shady and moist places. The present study documents ethnomedicinal usage of eight pteridophytic plants, which are prevalent in study area along with botanical name, family, vernacular name, distribution, plant parts used and mode of use.

Keywords: Traditional Medicine, Ethnomedicine, Pteridophytes, Chotanagpur, Tribes

INTRODUCTION

Pteridophytes are primitive vascular plants. These fascinating groups of plant are always attracting the botanist and naturalist all over the globe not only because of its beautiful and unique foliage but also because of their useful aspects. They grow luxuriantly in moist tropical and temperate forests and their occurrence in different eco-geographically threatened region from sea level to the higher mountains are of much interest. In comparison to higher plants they have found very little applications in medicine. The tribal communities, ethnic groups and folklore throughout the world are utilizing their plant parts like rhizome, stem, fronds, pinnae and spores in various ways for the treatment of various ailments since ancient time. According to a recent survey in member states of the European Union, the herbal medicinal preparations from the plants including pteridophytes are widely used by local population in Europe. Herbal preparations have been found to be highly popular in primary healthcare in China, Malaya, Nepal, Myanmar, Belgium, France, Germany and Netherlands. Of late, developed countries too are turning towards traditional medicinal systems that involve the use of herbal drugs. The numbers of contribution about the taxonomy, ecology and

distribution of pteridophytes have been published from time to time but enough attention has not been paid towards their useful aspects. An attempt has been made to explore indigenous and ethnomedicinally important pteridophytes and properly document their useful aspects.

Nature has blessed Chotanagpur Plateau with very rich ethno-botanical as well as ethno-medicinal plant-wealth that has been continuously exploited by various factors since long. The area has a very good population of more than 20 different ethnic- tribes. Important among them are the Munda, Oraon, Kharia, Santhal, Bhumij, Kurmali, Gorait, Mahali etc. They prefer to live either in forests or near by it and are nature loving, dependent of forest produces for their livelihood and are termed as Adivasis, i.e. the original settlers(Jain 1973).

The district also enjoys good indigenous population, known as Sadans. The adivasis as well as the sadans of the district have very similar lifestyle and majority that lives in remote villages are still dependent on forest produces both major & minor, not only for their subsistence and livelihood, but they also depends on indigenous herbal drugs for the treatment of their different ailments. The climate of the study area is cool and pleasant. The general elevation of 2,180 feet above sea level gives it a uniformly lower range of

temperature than the plains. The plateau usually receives rainfall almost throughout the year, though the concentration is during the monsoon months from June to September. During the monsoon months, the area receives about 82% of the annual rainfall.

During the survey, it was observed that eight species of pteridophytes i.e. *Selaginella bryopteris* (L.) Baker, *Equisetum ramosissimum* Desf. Subsp. *debile* (Roxb.) ex Vauch.) Hauke, *Lygodium flexuosum* (L.) Sw., *Cheilsathes farinose* (Forsk.) Kaulf., *C. tenuifolia* (Burm.) Sw., *Adiantum philippense* L. *Dryopteris cochleata* (Ham. Ex D. Don) C. Chr. and *Tectaria cochleata* (Wall. Ex Hook. et Grev.) C. Chr. are widely used and sold by local tribal communities for the various treatments like fever, epilepsy, leprosy, stomach pain, gastro-intestinal disorders, eradication of worm in children and venereal diseases in the local market. These pteridophytes grow naturally in rock crevices and boulders near water stream in shady and moist places.

MATERIALS AND METHODS

Extensive survey cum collection practices was made in the rural and tribal pockets of Chotanagpur Plateau. The data presented are based on the first hand information collected during the during the years 2009-2013. This information collected was verified by cross-checking with tribal living herbal medicine practitioners of various ethnic groups through interviews, discussions, personal contacts and taken observation. The herbarium specimens have been deposited in the ethnobotanical lab, University Department of Botany, Ranchi University, Ranchi.

RESULTS

All known eight species of pteridophytes from the area are enumerated in alphabetical order. The nomenclature is followed by the family name in parenthesis, followed with local names of the plants, the name of the tribal groups who use such practices, and lastly the ethno-medicinal uses is presented.

1. *Adiantum cappillus-veneris* L. "Adiantaceae" Hansraj, Santhal, Kharia, Oraon and Munda.
Whole plant about 100-150 gms crushed & mixed with about 50ml mustard oil and applied externally for 5-7 days to cure skin diseases of domestic animals.
2. *Lygodium flexuosum* (L.) Sw. "Lygodiaceae" Kalajari, Santhal, Oraon, and Pharia. Fronds boiled with mustard oil is used as local application for carbuncles, rheumatism, sprains, scabies, ulcers and cut wounds. Extract of stems and rhizome is taken orally twice a day for a week for curing sexual diseases like gonorrhoea and spermatorrhoea.
The paste of fresh leaves is applied on the piles. An infusion of plant is used in menorrhagia. Plant is considered to have antibacterial properties. Spores cure high fever. 10 gm Root mixed with 10 gm Black pepper made into paste and given twice a day for a week against dysmenorrhoea. Root ground with *Madhuca indica* oil or *Guizotia abyssinica* oil & applied all over the body of children to cure black patches disease.
3. *Cheilsathes farinosa* (Forsk.) Kaulf. "Cheilanthaceae" Nanua, Santhal, Munda, and Kharia.
Extract of rhizomes and leaves is given twice a day for five days to cure urine problems and epilepsy.
4. *Cheilsathes tenuifolia* (Burm.) Sw. "Cheilanthaceae" Dodhari, Santhal, Kharia, Oraon and Munda.
Preparation made from roots is given for sickness attributed to evil eye or witchcraft. It is used as tonic and the paste of roots with 'Karanj oil' is applied on wounds for a week.
5. *Adiantum philippense* L. "Adiantaceae" Hansraj, Munda, and Kharia.
Full teaspoon of fronds extract is used in fever, asthma, bronchitis, dysentery, epileptic fits, leprosy, ulcers and erysipelas. Powder of

rhizomes is given as an antidote against dog bite and snakebite. The extract of leaves is taken orally and paste of leaves is applied in the lower portion of stomach for clear and early release of urine. Dried rhizome mixed with water is given to women orally once during menstrual period for sterility. Root paste applied locally and bandaged for 10-15 days for bone fracture. 100-150 gms of root boiled in 500ml water till it becomes one fourth (125-150 ml). The decoction is inhaled orally to cure blood discharge in urine.

6. *Dryopteris cochleata* (Ham. Ex D. Don) C. Chr. "Dryopteridaceae" Jatashankari, Oraon, Pharia, Bhumij, Munda and Santhal.

Rhizome has antifungal property and is used as antidote. Juice/ extract of the dried rhizome is given in epilepsy and leprosy. The paste of fresh rhizome, stem and stripe is externally applied on cuts, wounds, ulcers, swelling and pains. Fresh paste of rhizome and fronds is externally applied in snake and dog bites. The decoction of dried rhizome, stem and stripe is used for blood purification and as tonic for strength.

7. *Tectaria coadunata* (Wall. Ex Hook. et Grev.) C. Chr. "Tectariaceae" Jatamansi. Oraon, Pharia, Bhumij, Munda and Santhal.

Rhizome are anthelmintic. The decoction of fresh rhizome and stripe is given in stomach pain, gastro-intestinal disorders and eradication of worm in children. Extraction of dried rhizome, stem and stripe.

8. *Equisetum ramossissimum* Desf. Subsp. debile (Roxb. Ex Vauch.) Hauke

"Equisetaceae" Kukrisgri, Munda, and Kharia Whole plant powder mixed with mustard oil is used in the treatment of bone fracture, backache and in muscular pain.

This powder is also used as one of the ingredient for the preparation of indigenous medicine to increase sexual strength in men.

DISCUSSION AND CONCLUSION

The present work is the result of intensive systematic ethnobotanical survey conducted in Chotanagpur plateau of Jharkhand. All the eight species of pteridophytes of traditional and ethnomedicinal interest are recorded after critical screening with the available literature. These are recommended for further phytochemical/ pharmacological investigation and nutritional analysis, which might result in the discovery of new drug molecules for human welfare.

Since these plant species are being exploited from the forest area of the study area, there is an urgent need for their conservation before they get extinct. Traditional and folklore medicine handed over from generation to generation is rich in domestic recipes and communal practice. In India of about 1200 species of pteridophytes distributed throughout, numerous species are ethnomedicinally used by the local tribals. They may be lost their ethnomedicinal knowledge is not properly documented.

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