

Ethnomedicinal Ferns Species used by Tribals of Gondia District, Vidarbha Region of Maharashtra

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Abstract

The study enumerates the Pteridophytes widely used by the local people and tribes in the treatment of various diseases in Gondia district of Vidarbha region of Maharashtra State. They grow in terrestrial, epiphytic or lithophytic habitats. The present study deals with the ethnomedicinal uses of available Pteridophytic plants which are prevalent in the study area, along with botanical name, family, habitat, plant part used and mode of uses. The present study focus specifically on the ethnomedicinal importance of 13 species of Pteridophytes, used by Gond, Gowari, Halba, Gawali, Pradhan and other aboriginal tribes occurring in the region. The botanical name, family name, vernacular name, and their ethno medicinal uses are provided. A field survey of the study area was carried out to document the medicinal utility of plants occurring in the area by tribe. Traditional uses of these plant species are described in this paper.

Introduction

Pteridophytes are the seedless vascular cryptogams which occupy a position between the lower non-seed bearing and higher seed bearing plants, generally much neglected group of plants. About 250 million years ago, they constituted the dominant vegetation on earth surface. However, they are now replaced by seed bearing plants in the modern day flora. Pteridophytes grow luxuriantly in moist tropical and temperate forest and their occurrence in different eco-geographically threatened regions from sea level to the highest mountain are of much interest. About 12, 000 species of Pteridophytes occur in the world floras of which about more than 1,000 species were reported from India. These species are grouped into 191 genera of 70 families (Dixit, 1984).

The ferns had an important role in folklore medicine. These plants have been successfully used in the different systems of medicines like Ayurvedic, Unani, Homeopathic and other systems of medicines. In a recent compilation, Singh (1999) reported 160 species of useful Pteridophytes in India on the basis of phytochemical, pharmacological and ethnobotanical studies.

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A systematic survey of the antibiotic activity of Pteridophytes, however has been scarcely undertaken. The antimicrobial potential of some ferns has been studied (Kumar and Kaushik, 1999; Parihar and Bohra, 2002a & b, 2003). With this background experiments were done to assess the antibacterial activities of certain ferns. Out of 1,000 species of Pteridophytes occurring in India, 170 species have been found to be used as food, flavor, dye, medicine, bio-fertilizers, and fiber. The medicinal value of Pteridophytes against bacteria, fungi, virus, cancer, rheumatism, diabetes, inflammation, fertility, diuretic, pesticides, hepatoprotective, and sedative had been reported. Besides sugar, starch, proteins and amino acids, ferns contain a variety of alkaloids, glycosides, flavonoids, terpenoids, sterols, phenols sesquiterpens etc. as potential components used in various industries (Kulandairaj and John de Britto, 2000). The ethnomedicinal uses of fern in Gondia district was described by Ramteke D. D (2007). Gondia district has Forest Area about 47.08 % and Forest Cover is 37.92 %. The forest is typical Southern mixed dry deciduous forest, a region of the Indian subcontinent long known for its extraordinary beauty and biodiversity and is bounded lofty hills, inhabited by Gond, Gowari, Halba, Gawali, Pradhan and other aboriginal tribes depend on nearby area to treat different ailments affecting human health. Small branches of the Satpura range make their way into the interior of the district. More than one-third of the district covered by jungle. In comparison to higher plants they have found 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 spore in various ways for the treatment of various ailments since ancient time. At

present a re-survey of the pteridophtic flora is required to study the distribution and ecology of the Pteridophytes in the region of Gondia District of Vidarbha.

Materials and Methods

The present data is outcome of field research carried out as part of floristic and ethnomedicinal study. Ethnomedicinal data was collected from elderly tribal people, who practice herbal medicine. In the present study an intensive field survey was made in various places of Forest ranges of Nawegaon Bandh National Park and Nagzira Wildlife Sanctuary namely, Pitezari, Chorkhamara, Nawegaon, Keshori, Siregaon, Dewalgaon, Gothangaon. Elderly people of the village were interviewed to find how they use the Ferns for their day to day life. During the course of survey ferns and fern allies were collected and the herbarium was made. All the specimens were compared and identified with the standard herbarium available in Department of Botany Hislop College, Nagpur. Specimens were collected for reference.

Study Area

Gondia District is well known for its rich biological diversity. In the present study extensive survey of the region was made in various places of Forest ranges of Nawegaon Bandh National Park and Nagzira Wildlife Sanctuary were carried out in different phases. Later on, collections of ethnomedicinal information were obtained from Vaidus, Mukhiya, and Pradhan of villagers are selected for the collection of data. Ethnomedicinal survey was carried out, by visiting such tribal area where local people mostly used medicinal plants for healing various diseases. The different villages Pitezari, Chorkhamara, Nawegaon, Keshori,

Siregaon, Dewalgaon, and Gothangaon were surveyed.

Gondia district has Forest Area about 47.08 % and Forest Cover is 37.92 % the forest is typical Southern mixed dry deciduous forest, a region of the Indian subcontinent long known for its extraordinary beauty and biodiversity and is bounded lofty hills, inhabited by Gond, Gowari, Halba, Gawali, Pradhan and other aboriginal tribes depend on nearby area to treat different ailments affecting human health. Small branches of the Satpura range make their way into the interior of the district. More than one-third of the district was covered by jungle.

Results and Discussion

This survey observed species of Pteridophytes from the area are enumerated with botanical name, family, popular name, parts used and medicinal uses are provided, which includes 13 species of Pteridophytes used in ethnic herbal practices.

***Angiopteris evecta* (Forst) Hoff.**

Family: Marattiaceae.

Local Name: Morpankhi

Parts used: whole Plant

Medicinal Properties: Astringent and antihelmintic

***Adiantum caudatum* L.**

Family: Pteridaceae.

Local Name: Mayurshikha

Parts used: Plants, Rhizomes

Medicinal Properties: Cough and fever., Antihelmintic

***Marsilea Quadrifolia* L.**

Family: Marsileaceae

Local Name: Chaupatti

Parts used: Leaves, Rhizome

Medicinal Properties: Cough and bronchitis

***Selaginella tenera* (Hook & Grev.)**

Family: Selaginellaceae

Local Name: Sanjeevni

Parts used: Plant

Medicinal Properties: Diuretic gonorrhoea and hallucination

***Dryopteris cochleata* (Buch.Ham.Ex D.Don)**

Family: Dryopteridaceae

Local Name: Kakolisag

Parts used: Rhizome

Medicinal Properties: Leprosy, antifungal, Swellings, ulcers and pains

***Equisetum debile* Roxb**

Family: Equisetaceae

Local Name: Horsetails

Parts used: Whole Plant

Medicinal Properties: Diuretic and given in gonorrhoea, Bone Fracture, Fever etc.

***Ophioglossum reticulatum* L.**

Family: Ophioglossaceae

Local Name: Banpalak

Parts Used: Rhizome

Medicinal Properties: used in headache, inflammation, wound healing.

***Pteridium aquilinum* (L.) Kuhn,**

Family: Dennstaedtiaceae

Local Name: Bracken Fern

Parts used: Rhizome and fronds

Medicinal Properties: Antihelmintic and astringent. Chronic disorders

***Lygodium flexuosum* (L.) Sw.**

Family: Lygodiaceae.

Local Name: daria paya,

Parts Used:Leaves

Uses: improve memory.

***Nephrolepis cordifolia* (L.) Presl.**

Family: Dryopteridaceae.

Local Name:Nech

Parts uses: Leaves, Rhizome

Uses: Herb is used against cough and skin diseases.

***Pteris vittata* L.**

Family: Pteridaceae

Local Name:Jassumba

Parts uses: Plant

Uses: Herb juice used for diarrhea and dysentery.

***Tectaria macrodonta* (Fee). C. Christensen**

Family: Tectariaceae

Local Name. Aski.

Parts Used: Plant

Uses: plant decoction taken orally, for stomach-ache.

Isoetes coromandeliana

Family:Isoetaceae

Local Name:

Parts used: Corm

Uses: Spleen and liver diseases

Sr. No.	Botanical Name	Family	Local Name	Parts used	Medicinal Properties
1	<i>Angiopteris evecta</i> (Forst) Hoff.	Marattiaceae.	Morpankhi	whole Plant	Astringent and antihelmintic
2	<i>Adiantum caudatum</i> L.	Pteridaceae	Mayurshikha	Plants, Rhizomes	Cough and fever., Antihelmintic
3	<i>Marsilea Quadrifolia</i> L.	Marsileaceae	Chaupatti	Leaves, Rhizome	Cough and bronchitis
4	<i>Selaginella tenera</i> (Hook & Grev.)	Selaginellaceae	Sanjeevni	Plant	Diuretic gonorrhoea and hallucination
5	<i>Dryopteris cochleata</i> (Buch.Ham.Ex D.Don	Dryopteridaceae	Kakolisag	Rhizome	Leprosy, antifungal, Swellings , ulcers and pains
6	<i>Equisetum debile</i> Roxb	Equisetaceae	Horsetails	Whole Plant	Diuretic and given in gonorrhea, Bone Fracture, Fever etc.
7	<i>Ophioglossum reticulatum</i> L.	Ophioglossaceae	Banpalak	Rhizome	used in headache, inflammation, wound haeling.
8	<i>Pteridium aquilinum</i> (L.) Kuhn,	Dennstaedtiaceae	Bracken Fern	Rhizome and fronds	Antihelmintic and astringent. Chronic disorders
9	<i>Lygodium flexuosum</i> (L.) Sw.	Lygodiaceae	Daria paya	Leaves	Improve memory.
10	<i>Nephrolepis cordifolia</i> (L.) Presl.	Dryopteridaceae	Nech	Leaves, Rhizome	Herb is used against cough and skin diseases.
11	<i>Pteris vittata</i> L.	Pteridaceae	Jassumba	Plant	Herb juice used for diarrhea and dysentery.
12	<i>Tectaria macrodonta</i> (Fee). C. Christensen	Tectariaceae	Aski	Plant	Plant decoction taken orally, for stomach-ache.
13	<i>Isoetes coromandeliana</i>	Isoetaceae		Corm	Spleen and liver diseases

Discussion

This study provides evidence that the tribal people and other villagers residing area in the vicinity of the Nawegaon Bandh national park and Nagzira wildlife sanctuary uses plant species for the treatment of various ailments

and household uses. The tribal people depend mostly on herbal medicines as there are no clinics in the villages. Pteridophytes, fern and fern allies are known for great medicinal values. The Gondia district of Vidarbha region is a natural reservoir of Medicinal plants. The important Fern species are discussed in this

paper are collected and its herbarium. The tribes have specific culture, rituals and living habits. They practice herbal medication which is easily available. The data were gathered by enquiry, personal observation in their colonies and holding frequent discussion. Interview with the tribal community was more reliable for easy asses of information.

Reference

- Dixit, R.D. 1984. *A Gensus of the Indian Pteridophytes*. Flora of India. Series 4, Botanical Survey of India, department of Environment & forest, Government of India, Howrah.
- Kholia, B.S. and Punetha, N.N. 2005. Useful Pteriophytes of kumaon central Himalaya, India. *Indian Fern Journal* 22: 1-6.
- Kirtikar, K.R., Basu, B.O. and An I.C.S. 1935. *Indian medicinal plants*. 4 vols. (2nd ed.), Bishen Singh Mahendra Pal Singh, Dehra Dun.
- Kumar, A. and Kaushik, P. 1999. Antibacterial effect of *Adiantum capillus veneris* Linn. *Indian Fern J.* 16: 72-74.
- May, L.W. 1978. The economic uses and associated folklore of ferns and fern allies. *Bot Rev.* 44 (4): 191-528.
- Nadkarni, B.K. 1954. *Indian Materia Medica with Ayurvedic, Unantibii, Siddha, Allopathic, Homeopathic, Naturopathic and home remedies*, Popular book depot, Bombay.
- Parihar, P and Bohra, A. 2002a. Effect of some pteridophytic plant part extracts on human pathogenic bacteria *Salmonella typhi*. *Advances in Plant Sciences* 15(2): 365-367.
- Parihar, P. and Bohra, A. 2002b. Antifungal efficacy of various Pteridophytic plant parts: a study *in vitro*. *Advances in Plant Sciences* 15(1): 35-38.
- Parihar, P. and Bohra, A. 2004. Antibacterial activity of *Actineopteris radiata* (Swartz.) Link. *Ad. plant Sci.* 17 (11): 567-570.
- Parihar, P., Daswani, L. and Bohra, A. 2003. Toxic effect of plant extracts of *Marsilea minuta L.* on the growth of *Staphylococcus aureus*. *Indian Fern J.* 20: 48-50.
- Ramteke; D.D., Ethnomedicinal uses of Equisetum sp. A fern by tribal peoples of Bhandara and Gondia District of Maharashtra; Proc. Emerging trends in Medicinal Plants and their Biotechnological advances; 2007.
- Ramteke; D.D, (2007) Conservation Practices and utilization Strategies of Medicinal Plants in Bhandara District of Vidarbhar Region M.S. India.; Environment conservation journal; vol. 8(3).
- Singh, H.B. 1999. Potential medicinal pteridophytes of India and their chemical constituents. *J. of Economic and Taxonomic Botany* 23(1): 63-78.

