

A STUDY OF THE FERNS USED AS TRADITIONAL MEDICINE BY INDIGENOUS PEOPLES IN DARJEELING WEST BENGAL, INDIA

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ABSTRACT

The Pteridophytes, consisting of the ferns and ferns –allies are one of the oldest land plant groups on earth and constitute vast groups of vascular Cryptogams. In their distribution and diversity, they are considered next to Angiosperms. Plants are very much significant for the survival of human being as they are the source of food, timber and fuel however they have also been used traditionally/ ethno medicinally as curative tools in the Indian System of Medicine. An exploration of Traditional medicine of pteridophytic plants occurring in and around areas of Darjeeling was conducted. This exploration was aimed to assess the potentiality of plant resources used for traditional treatment by the local people of Darjeeling area. The information on medicinal uses of plants is based on the exhaustive interviews with local physicians practicing indigenous system of medicine, village headmen and tribal folks.

Key words: Traditional medicine, Diversity, Pteridophytes, Darjeeling, West Bengal.

INTRODUCTION

Plants are one of the most important sources of medicines. The relevance of plants as medicines dates back to prehistoric period. The medicinal plants are extensively utilized throughout the world basically by two means of health care system management which are traditional and modern. The World Health Organization (WHO) reported that as many as 80% of the world population depend upon traditional medicines for their primary health care (Singh et al., 2010; Dubey, 2004). Darjeeling District is the northern most district of the state of West Bengal in eastern India in the foothills of the Himalayas which is situated between 87°59' - 88°53' E and 28°31’ - 27°13’ N in the northern part of West Bengal State of India. It has an area of 3,149 sq km. Darjeeling hill areas is distinctive from environmental Eco-perception. There are different climatic zones with distinctive attributes and there are endangered animals like red panda etc along with orchids and medicinal plants are available in this hilly region. The district is surrounded by Bhutan in the east, Nepal in the west and Sikkim of India in the north.
Due to similar environmental and cultural conditions, the major inhabitants of Darjeeling hills and its surrounding areas are bonded together by Nepali language, the medium of communication among the different ethnic groups, viz. Lepchas, Bhutias, Rai, Sherpa, Tamang, Mangar, Gurung and Kagatay of the Nepali communities (Rai and Bhujel, 1999). Traditionally, chief occupation of the people of Darjeeling had been agriculture, agro forestry, horticulture and animal husbandry. A large number of plant species found here which have significant role to sustain the lifestyle of Darjeeling peoples in a need based way by different mode. The pteridophytes (Ferns and fern allies) represented by over 1200 taxa belonging to 204 genera (ca10,000) species of the world, grow in varied climatic zones of different phytogeographical regions of India. Chandra Subhash in his ferns of India has enumerated 1100 species belonging to 144 genera under 34 families from the Indian regions. Chowdhary (1973) published an account of pteridophytes from Upper Gangetic plains, which include parts of Uttarakhand, plains of Uttar Pradesh, Bihar and part of West Bengal. Khullar (1994, 2000) in his illustrated fern flora of Western Himalaya included 360 species of ferns. Mehra & Bir (1964) in his pteridophytic flora of Darjeeling and Sikkim Himalayas included 362 members of Pteridophytes.

MATERIALS AND METHODS

The present study is the outcome of the field survey in the different parts of Darjeeling. Ethno-medicinal/ Traditional medicine information was collected by the local and tribal people and interviewed the local people. The plants were properly processed, poisoned, preserved with number and herbarium was deposited in the Department of Biotechnology, Deen Dayal Upadhyaya Gorakhpur University Gorakhpur for future reference. Descriptions of species and identification were done with the help of literature Mehra & Bir (1964), Khullar, S.P. (1994 and 2000), Khullar et al 1991, Beddome, 1883; Manickam & Irudayaraj, 1992 and Pande and Pande, 2002.
## RESULTS

<table>
<thead>
<tr>
<th>Species</th>
<th>Use</th>
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<tbody>
<tr>
<td><strong>Adiantum capillus-veneris</strong> L., Adiantaceae</td>
<td>Fronds extract mixed with honey is used as an eye ointment. It is used as a stimulant, expectorant, purgative, demulcent and hair tonic. The decoction of leaves is taken for acute bronchitis and fever and also chewed for the treatment of mouth blisters. It has anti-cancerous, hypoglycaemic, aphrodisiac, antibacterial, antifungal and antiviral properties.</td>
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<tr>
<td>Hansraj, Hanspadi</td>
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<tr>
<td><strong>Adiantum lunulatum</strong> Burm. Adiantaceae</td>
<td>The plant is useful in Dysentery, leprosy and fever. The paste of fronds and rhizomes is applied for centipede-bite. It is used in blood related diseases, in epileptic fits and in rabies, rhizomes prescribed for strangery and in fever due to elephantiasis.</td>
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<tr>
<td>Chitrappada</td>
<td></td>
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<tr>
<td><strong>Asplenium nidus</strong> L. A bird's nest fern</td>
<td>People can use this fern as ornamental plant in their houses but it needs intensive care. A lotion can be extracted from the leaf which is used to treat fever, or uses infusion of leaves to treat labour pain also a decoction is used to ease labour in childbirth. In addition, the young fronds can be used to make tea taken in the morning to relieve general weakness.</td>
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<tr>
<td>Aspleniaceae</td>
<td></td>
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<tr>
<td><strong>Arthromeris wallichiana</strong> (Spreng) Ching Polypodiaceae</td>
<td>Paste obtained by crushing pinnae applied externally in the form of poultice on fractured bones after setting up the bones. Extract of rhizome along with rice is effective in Dysentery. Fronds used as fodder</td>
</tr>
<tr>
<td><strong>Dicranopteris linearis</strong> (Burm.f) Underw. Gleichinaceae</td>
<td>Freshly extracted fronds juice is slightly heated and the decoction is taken internally during throat pain. Fronds are used for thatching the roofs and house walls. Decoction is given to improve fertility in sterile women. For treatment of Sore – eyes juice from fresh young shoot is squeezed in to the eyes. Fronds are used in asthma and aqueous extract of fronds possesses antibacterial activity. The plants are used as cushion for cattle shed. Used as an anthelmintic.</td>
</tr>
<tr>
<td><strong>Equisetum diffusum</strong> D.Don. Kurkure Jhar Equisetaceae</td>
<td>Boiled Concoction of roots and rhizome is taken on empty stomach for the treatment of UTI. Juice of crushed rhizome is applied to treat skin infection.</td>
</tr>
<tr>
<td><strong>Pteris wallichiana</strong> Agardh, Recens. Pteridaceae</td>
<td>Decoction is given in dysentery and applied to glandular swellings. A roasted frond made into a paste with sesame oil is applied to skin affections of infants. Young fronds are steamed and eaten as a flavoring material. Juice is stated to possess astringent properties.</td>
</tr>
<tr>
<td><strong>Cyathea spinulosa</strong> Wall. Ex Hook. Cyatheaceae</td>
<td>Soft pith and roots are used in preparation of local drinks fronds are used as fodder as well as thatching the huts. The whole part of the plant is used. It is used for graying of hair. It is also used as general hair tonic, powder of fronds are used as sudorific and aphrodisiac.</td>
</tr>
<tr>
<td><strong>Lygodium flexuosum</strong> (L.) Sw. Lycopodiaceae</td>
<td>The rhizome and leaf are used. Rhizome powder is used in skin diseases. Plants are used as expectorant, rheumatism, sprains, scabies, eczema and cut wounds. Fresh roots boiled with mustered oil are used in rheumatism.</td>
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Traditional Indian Medicine or Ayurveda is among the well known global traditional systems of medicine and it is becoming increasingly popular. Ayurvedic drugs are used as food supplements in US, Europe, and Japan. This paper provides an overview of Ayurveda, the traditional Indian medicine.

Caralluma lasiantha is used as a traditional medicine in India to heal body heat and inflammations. In order to find out a scientific validation for the Indian traditional knowledge, antibacterial activity of Caralluma lasiantha extracts more.

Caralluma lasiantha is used as a traditional medicine in India to heal body heat and inflammations. Traditional medicinal systems of the Indian subcontinent countries as well as tribal practitioners consider the plant to have diverse medicinal values and use it commonly for treatment of gastrointestinal disorders, respiratory tract disorders (including asthma), fever, hair loss and graying of hair, liver disorders (including jaundice), skin disorders, spleen enlargement, and cuts and wounds. To study the distribution pattern, eco-physiology, biology and management of Echinochloa spp. in dry season rice in West Bengal.

The Indigenous knowledge of herbal medicine remains an integral part of the health care system among Lepcha community. 90 plant species were recorded for their uses for curing various ailments of 12 categories.

1. Traditional and indigenous peoples in global climate change policy.
2. Vulnerability of traditional and indigenous peoples to global climate change.
3. Areas of 'high cultural risk'.

53 Case Study 1: Indigenous and traditional peoples in Honduras. Using traditional techniques to protect watersheds. The scope of the following chapter is to reveal how issues of traditional and indigenous peoples and their traditional knowledge systems are approached by global climate change policies and mechanisms including the UNFCCC; the Kyoto Protocol and the Clean Development Mechanism (CDM); the assessment reports of the Intergovernmental Panel on Climate Change (IPCC); and others.