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MEDICO-POTENTIAL FERNS OF ANGAMALY REGION, ERNAKULAM DISTRICT, KERALA, INDIA

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ABSTRACT

The present study on some medico-potential ferns, which are distributed in the Angamaly region of Ernakulam district, Kerala reveals that, there are about 26 medicinal Pteridophytes belonging to 19 families and 21 genera. These potential plants are utilized for the treatment of various ailments by local inhabitants of the study area. Therefore the conservation of such valuable group of plants is an urgent necessity for future generation.

Key words: Medico-Potential Ferns, Angamaly, Ernakulam, Kerala, India.

INTRODUCTION

Pteridophytes are one of the oldest plant groups on earth. These represent over 1200 taxa, belonging to 204 genera in the world. They make an important contribution to earth's plant diversity and form a significant dominant component of many plant communities especially in the tropical and temperate regions [1]. Pteridophytes are seedless spore bearing vascular cryptogams and form a generally much neglected group of plants [2]. The knowledge about the use of medicinal plants has been acquired through century and such plants are still valued even today. The traditional system of medicine plays an important role in health care of rural and tribal people for all types of ailments. The medicinal plants also served as man's most important weapon against pathogen [3]. Pteridophytes have been poorly studied and considered economically less important group of plants in the plant kingdom. The pteridophytes are known to man for more than 2000 years for their medicinal values. Some of the pteridophytes are also referred in Homeopathic, Ayurvedic and Unani systems of medicines as antibiotics, insecticides, antimicrobials, food and ornamentations. But due to habitat destruction by man more than ten percentages of 1200 fern species has become endangered [4]. The success of aboriginal, primitive or rural societies in understanding plants and their medicinal virtues is a result of long-standing and intimate association with the flora and their dependence on them. Several wild and cultivated plant species play a very important and vital role among their cultures. Their relationships with the plant world have evolved over generations of experiences, practices, experimentation, trials and errors [5].

MATERIALS AND METHODS

Study Area

Angamaly is a Block panchayath in the Ernakulam district of the state of Kerala, India. It is Situated 33 kilometres north of Ernakulam, the area is the northern gateway to the commercial capital of Kerala. Angamaly is also enriched with cultural and devotional centers. The Malayattoor Kurisumudy is the most famous International Pilgrim center. In addition to these, there are many old churches which are of centuries old with well-defined frescoes and other murals are the attractive attention to the area. The phytodiversity of the area is mainly depends on the climatic conditions like rain fall, temperature, humidity etc., Earlier the study area is well known for the cultivation of many crops, now it become gradually reduced due to many anthropogenic activities, urbanization, habitat destruction of many native species, invasion of some exotic weeds etc.

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The present study was conducted in the different regions of Angamaly Block panchayath of Ernakulam district, Kerala to find out the diversity of medicinal pteridophytes (Fig. 1).

Documentation

Anextensive and intensive field trips were conducted during the year 2014 – 2015. During the field visits, the medico-potentiality of some pteridophytes was known through the discussion with local inhabitants as well as available literature. In addition to this, the field characters such as habit, habitat and the occurrence of the plant species were also observed and entered in the field note book. The collected specimens were identified taxonomically with the help of available floras [6]. The specimens were poisoned, pressed and the herbarium specimens were prepared. The voucher specimens were deposited in the Herbaria of PG Department of Botany, Deva Matha College, Kuravilangad, Kerala for future reference.

Table 1. List of potential medicinal ferns from the study area

Sl.No.	Botanical Name	Family	Medicinal uses
1	***Acrostichum aureum*** L. (Pl-1A)	Pteridaceae	Rhizome is used to heal wounds and boils. Fertile fronds are used for syphilitic ulcers.
2	***Adiantum Caudatum*** L. Mant. (Pl-1B)	Adiantaceae	Leaf paste is applied over wounds.
3	***Adiantum incisum*** Forssk.	Adiantaceae	The leaf powder is mixed with butter and used for controlling the internal burning of the body, also used in cough, fever and skin diseases.
4	***Adiantum latifolium*** Lam. (Pl-1C)	Adiantaceae	The fronds are also used for anti-inflammatory.
5	***Adiantum lunulatum*** Burm.	Adiantaceae	The rhizome powder is used as Anti-dote against snake bite. Leaf and root decoction is also used for treatment of chest pain.
6	***Azolla pinnata*** R.Br.	Azollaceae	Antifungal agent
7	***Blechnum orientale*** L. (Pl-1D)	Blechnaceae	Rhizome is used as anthelmintic. It also used to cure intestinal worms, bladder complaints and typhoid fever.
8	***Ceratopteris thalictroides*** (L.)Brongn.	Parkeriaceae	Fronds are used as poultice in skin diseases.
9	***Cheilanthes tenuifolia*** (Burm. f) Sw. (Pl-1E)	Cheilanthaceae	The juice obtained from the leaves is mixed with hot water and taken orally along with honey to treat throat pain.
10	***Christella dentata*** (Forsk.) Brown. (Pl-1F)	Thelypteridaceae	Plant is used for the treatment of rheumatism.
11	***Cyclosorus interruptus*** Link. (Pl-2A)	Thelypteridaceae	The plants are used for antibacterial activity.
12	***Diplazium esculentum*** (Retz.)Sw. (Pl-2B)	Athyriaceae	The Rhizomes are kept in the granaries to check insects and pests.
13	***Drynaria quercifolia*** (L.) J.Sm.	Drynariaceae	Fronds used for hectic faces and cough. The decoction of the plant is also used in typhoid fever. Fronds are useful in body swellings.
14	***Lygodium flexuosum*** (L.) Sw. (Pl-2C)	Lygodiaceae	The paste of rhizome is applied on piles. Leaf powder is mixed with milk and given orally for children to improve memory. Rhizome boiled with mustard oil. It is applied for eczema and gonorrhoea.
15	***Microlepia speluncae*** L. (Pl-2D)	Dennstaedtiaceae	Leaf paste is applied over wounds.
16	***Nephrolepis auriculata*** (L.) Trimen.	Nephrolepidaceae	A decoction of the fresh fronds is given for cough.
17	***Parahemionitis cordata*** (Roxb. *ex* Hook.	Hemionitadaceae	Leaf extract is applied to centipede bite and wounds.
18	***Pityrogramma calamelanos*** (L.) Link	Hemionitadaceae	Plant decoction is used for kidney trouble, also for boils in mouth. Fronds are used for asthma, cold etc.
19	***Pteris biaurita*** L.	Pteridaceae	The rhizome is ground into paste and applied over the

			affected places to get relief from body pain.
20	***Pteris vittata*** L. (Pl-2E)	Pteridaceae	The whole plant parts are ground into paste and applied over the affected places for wound healing. It also used for diarrhoea and dysentery.
21	***Pteris quadiaurita*** Retz.	Pteridaceae	Rhizome paste is applied to take out the pus and hasten for the healing of boils.
22	***Pyrrosia porosa*** (C. Presl) Hovenkmp.	Polypodiaceae	The whole plant paste is applied over cuts made through knives.
23	***Salvinia molesta*** Mitch.Br.	Salviniaceae	Plants used as antifungal agent.
24	***Selaginella delicatula*** (Desv.) Alston	Selaginellaceae	Plant juice is antibacterial and used for healing of wounds.
25	***Stenochlaena palustris*** **(**Burm.) Bedd. (Pl-2F)	Stenochlaenaceae	Leaves juice is used to cures fever.
26	***Tectaria coadunata*** Wall.	Dryopteridaceae	Decoction of rhizome is given to children for curing stomach-ache and diarrhoea.

RESULTS AND DISCUSSION

The present study on some medico-potential ferns, which are distributed in the Angamaly region of Ernakulam district, Kerala reveals that, there are about 26 medicinal Pteridophytes belonging to 19 families and 21 genera (Table-1). Among the 19 families represented Pteridaceae and Adiantaceae are the dominant families with 4 species each followed by Thelypteridaceae and Hemionitidaceae with 2 species each. All others possess single species each. The major plant parts like rhizome, fronds, stem and whole plants are used for the preparation various medicinal formulations to cure different ailments like bronchitis, fever, cough and cold, poisonous bites, diarrhoea, asthma, stomach problems, skin diseases etc.,

These different medicinal formulations are to be used either externally or internally. Similar studies like Medico potential ferns of Adimali region, Idukki district, Kerala was studied by Priya et al. According to them, the knowledge about the use of medicinal plants has been acquired through centuries and such plants are still valued even today. The traditional system of medicine plays an important role in health care of rural and tribal people for the treatment of different ailments [7].

Similarly the medicinal uses of 61 species of fern and fern allies belongs to 31 families were used by tribes of Western Ghats region of India was studied by Benjamin and Manickam [8].

Figure 1. Map of the Study Area (*India-Kerala-Ernakulam-Angamali*)

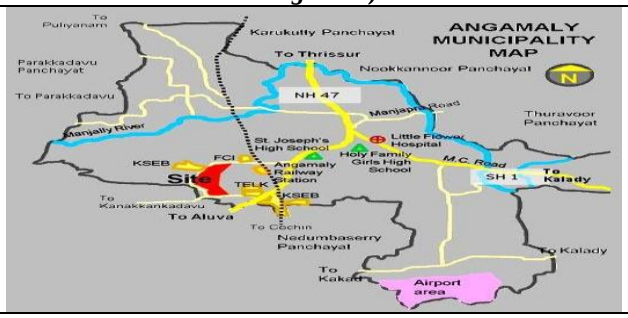

PLATE-1

A) ***Acrostichum aureum*** L

B) ***Adiantum caudatum*** L. Mant.

C) ***Adiantum latifolium*** Lam.

D) ***Blechnum orientale*** L.

E) ***Cheilanthes tenuifolia*** (Burm. f) Sw.

F) ***Christella dentata*** Forsk. Brown.

PLATE-2

A) ***Cyclosorus interruptus*** Link

B) ***Diplazium esculentum*** (Retz.)Sw.

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

D) ***Microlepia speluncae*** L.

E) ***Pteris vittata*** L.

F) ***Stenochlaena palustris*** (Burm.) Bedd.

CONCLUSION

Fern and fern allies are much neglected group of plants, even though it is used for various purposes such as medicine, food, shelter and ornamentals. The present study highlights the medico-potentiality of ferns, which are distributed in the study area. There are some threatened factors are adversely affect the growth and survival of such ferns. These are habitat destruction, different anthropogenic activities, over exploitation natural resources in the name of various economic utilities. Therefore a proper conservation and sustainable utilization of natural resources are very urgent need for future generation.

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