ETHNONOMEDICINAL STUDIES ON SOME PTERIDOPHYTES OF KANJAMALAI HILLS, SALEM DISTRICT OF TAMILNADU, INDIA

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ABSTRACT
The present study was undertaken during the year 2015 July to June 2016 for the noted of medicinal utilizes of Pteridophytes in Kanjamalai Hills of Salem district, Tamilnadu, India. The examine pointed to identifying the Pteridophytic plant species utilized for the popular health of the native populace of the investigation locality. The indigenous knowledge of the village dwellers, village herbalists, herbal practitioners, elder people and their traditional healers and the native plants used for medicinal uses were recorded through personal interviewed and questionnaire during field visits. The survey lead to documentation of 14 medicinal Pteridophyte plant species belonging to 7 different families. The research thus underlines the potential of ethnomedicinal investigation and the necessity for documentation of traditional information of these medicinal plants for further research. The present research is the first of its kind among the rural people in Kanjamalai Hills region.

KEYWORDS: Kanjamalai Hills, Ethnomedicine, Traditional healers, Pteridophytes, Tamilnadu.

INTRODUCTION
India has a wealthy population of Pteridophytes, most of the species grow richly in moist tropical and temperate forest and their occurrence in various eco-geographically threatened regions from sea level to the highest mountain are of much interest. A total of 12,000 plant
species of Pteridophytes that occur in the world flora. More than 1200 species of fern and fern allies have been reported from India\(^1\), though new genuine findings are made from time to time. Being a group of lower plants, they are always neglected and their useful aspects are extensively ignored. Very smaller attention has been given towards the value of Pteridophytes though they possess economic significance and medicinal utility as well. Out of 1200 species of Pteridophytes occurring in India, 170 species have been found to be utilized as medicine, food, bio-fertilizers, flavour, dye, fibre, oil and biogas production.\(^2\)

Though economic and medicinal worthiness of higher plants particularly the Angiosperms have been studied, Pteridophytes have been unfortunately ignored. Medicinal utilizes of some ferns and Pteridophytes of India have been reported.\(^3,4\)

Perumal\(^5\), Karthik, \textit{et al.},\(^6\) and Santhoskumar \textit{et al.},\(^7\) contributed to the ethnobotanical and medicinal uses of Pteridophytes. Gowrisankar \textit{et al.},\(^8\) has reported ferns and fern allies of Kolli hills, Tamilnadu. The ferns had an important role in ethnomedicine. These plants have been successfully utilized in the various Indian system of medicines such as Ayurveda, Homeopathy, Naturopathy, Siddha, Unani and Modern. Nadkarni\(^9\) recorded 11 species of Pteridophytes having medicinal significance. Singh\(^10\) reported 160 species of beneficial Pteridophytes in India on the basis of phytochemical, pharmacological and ethnobotanical studies.

There are very few reports on ethnomedicinal uses of plants found in this area.\(^11,12\) There is no previous report on ethnomedicinal uses of Pteridophytes in Kanjamalai Hills of Salem District. Therefore this investigation was undertaken in method to ascertain the elaborated information on Pteridophytes utilized by rural people in Kanjamalai Hills region, Salem district of Tamilnadu, India.

**MATERIALS AND METHODS**

**Study Area**

In the present study an intensive survey was made field survey in Kanjamalai Hills, Kanjamalai, the shrine of Lord Siddheswara Swamy is situated in the North Western foothill, sixteen kilometers away from the city of Salem. It lying in between 11°37’24” North latitude and 78°4’5” East longitude of Eastern Ghats. The climatic evidence of this hill expanse are as follow - annual mean rainfall: 70 mm; temperatures various between 25°C to 38°C and relative humidity 76 to 90% with an elevation range of 350-986 m from m.s.l. The trees in
this region are very small with stunted progress. The forests are mostly of a mixed deciduous and variable category of varying density.

Information Collection

The ethnobotanical knowledge was collected from the local populace, village herbalists, village dwellers, traditional healers and herbal practitioners, who live in the Kanjamalai Hills areas Salem district of Tamilnadu. Various field trips were also conducted in the rural people residing regions of the investigation to gather information on Pteridophytes medicinal plants familiarly utilized by them.

The observations gathered during field trips were put into personal interviewed and questionnaire. Each of the plant material was assigned field book number and reported as to family, scientific name of species, local name (Tamil), part utilized, mode of drug preparation, method of application, dosage and duration were noted and medicinal worthiness, plant parts that were identified as having utilize in ethnobotany were collected and compressed plant species collected were identified with the help of flora books. The voucher specimens were deposited in the herbarium of Department of Botany, Government Arts College (Autonomous), Salem, Tamilnadu for future reference.

RESULTS AND DISCUSSION

In the present study, it was found that 14 Pteridophytic plant species are utilized to treatment of various diseases of 7 genera and 7 families Pteridophytes, utilized by the local / rustic populace were noted. In collected 14 ethnomedicinal plant parts, leaf is utilized in (64.28%) followed by whole plant (14.28%), rhizome (14.28%) and stem (7.14%) by local - rustic populace for several illness like fever, skin diseases, cough, throat pain, dyspepsia, stomachache problems, diuretic, headache and body pain. The elaborated information about plant scientific name, family, local name and their mode of administration were presented in Table 1. Plants of families Pteridaceae was largely represented (6 species) followed by, Margilaceae (2 species), Selaginellaceae (2 species) and followed by the other families such as Actinopteridaceae (1 species) Polypodiaceae (1 species), Cheillanthaceae (1 species) and Davalliaceae (1 species). The local people utilized these ethnomedicinal plant species to manage fever, skin disorders, cuts and wounds, body pain, knee pain, joint pain, headache, swellings, cough, heal wounds, throat pain, and stomachache problems.
Five species are used for skin disease. Species such as *Adiantum caudatum*, *Actinoptris radiata* and *Pteris longifolia* are used to treat fever. Plants like *Drynaria quercifolia*, *Selaginella tenera* and *Pteris biaurita* are used to cure body pain. People also make use of *Adiantum capillus - veneris* to treat cuts and wounds. Five species namely *Adiantum caudatum*, *Adiantum lunulatum*, *Selaginella ciliaris*, *Marsilea quadrifolia* and *Marsilea minuta* are used to treat various kinds of skin diseases. Some medicinal plants like *Nephrolepis auriculata*, *Drynaria quercifolia*, *Pteris longifolia* and *Marsilea minuta* are used to treat cough. Several plants are appreciably serviceable in curing diuretic, knee pain, joint pain, dyspepsia, headache, swellings, throat pain, heal wounds, bronchitis and stomachache problems. Due to more demand of ethnomedicinal plants and more earning, local people have been motivated for conservation and utilization of biological resources.

Benjamin and Manickam[14] noted that there 61 species of Pteridophytes have been noted to have medicinal utilizes among the different tribal and non tribal people in the Western Ghates and these plants were commonly utilized to manage fever, poisonous bites, diabetes, asthma, stomach problems, nervous diseases and cough.

Accounting the indigenous knowledge through ethnobotanical investigation is significant for the conservation and utilization of biological resources. Indigenous populace utilize various of the Pteridophytic medicinal plants traditionally for curing their familiar disorders like snake bite, dysentery, diarrhoea, stomachache problems, scabies, urinary problems and wounds.[15] In our study leaf paste of *Adiantum caudatum* utilized skin diseases and itches. Karthik *et al.*, [6] was reported that ethnomedicinal uses of 30 species of Pteridophytes of Kolli Hills, Eastern Ghats of Tamil Nadu. Shrma[16] was noted that the ethnomedicinal uses of 11 species of ferns and fern allies of Hadot plateau, Rajsthan.

Singh and Upadhyay[17] reported that the ethno-botanical significance of some Pteridophytic plant species such as *Selaginella bryopteris* (L.) Baker, *Adiantum capillus - veneris* L., *Dicranopteris linearis* Underwood, *Actinoptris radiata* Link utilized by Pachamarhi tribals. Alagesaboopathi[12] reported that the ethnobotanical study was 44 species 39 genera and 24 families of angiosperms Kanjamalai Hills of Salem district. Similarly the present determination that the 14 Pteridophytic plant species 7 families in 7 genera were collected from Kanjamalai Hills, Eastern Ghats, Salem District of Tamilnadu.
Revathi et al.,[18] recently noted that the ethnomedicinal utilizes of 50 Pteridophytic plant species belong to 27 families and 35 genera were used by Malayali tribals in Kolli Hills, Eastern Ghats, Tamilnadu. Similarly the current result noted that the ethnomedicinal uses of 14 plant species belong to 7 families were documented in the area of Kanjamalai Hills, Eastern Ghats of Tamil Nadu.

Table 1: Details of ethnomedcinally important Pteridophytes in Kanjamalai Hills, Salem District of Tamilnadu.

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Family</th>
<th>Local Name</th>
<th>Mode of Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Actinoiptris radiata</em> (Sw.) Link</td>
<td>Actinopteridaceae</td>
<td>Korai Panai</td>
<td>The stem juice is mixed with common salt and black pepper three times a day for two days to cure fever.</td>
</tr>
<tr>
<td><em>Adiantum capillus - veneris</em> L.</td>
<td>Pteridaceae</td>
<td>Roaddu Keerai</td>
<td>The leaf paste is applied on cuts and wounds</td>
</tr>
<tr>
<td><em>Adiantum caudatum</em> L.</td>
<td>Pteridaceae</td>
<td>Trailing Maiden Hair</td>
<td>The leaf paste is applied on skin diseases and itches. Decoction of the leaves is used to treat fever and cough.</td>
</tr>
<tr>
<td><em>Adiantum lunulatum</em> Burm.f.</td>
<td>Pteridaceae</td>
<td>Pachai Keerai</td>
<td>Fresh leaf juice is given orally twice a day for one week to treat diuretic. Leaves paste mixed with coconut oil is applied externally to cure skin diseas.</td>
</tr>
<tr>
<td><em>Chilanthes mysorensis</em> Wall ex Beddome</td>
<td>Cheilantheaceae</td>
<td>Pachai</td>
<td>Leaf juice is used to treat throat pain.</td>
</tr>
<tr>
<td><em>Drynaria quercifolia</em> (L.) J.Sm.</td>
<td>Polypodiaceae</td>
<td>Aattukal Kizahangu</td>
<td>Rhizome paste is used for cough, dyspepsia, astringent swellings body pain, knee pain and joint pain.</td>
</tr>
<tr>
<td><em>Marsilea minuta</em> L.</td>
<td>Marsileaceae</td>
<td>Water clover</td>
<td>Leaf juice is given to cough and bronchitis. Leaf paste is used to treat skin diseases.</td>
</tr>
<tr>
<td><em>Marsilea quadrifolia</em> L.</td>
<td>Marsileaceae</td>
<td>Aarakkeerai</td>
<td>Leaf paste mixed with turmeric is applied on skin diseases.</td>
</tr>
<tr>
<td><em>Nephrolepis auriculata</em> (L.) Trimen</td>
<td>Davalliaeceae</td>
<td></td>
<td>Leaf juice mixed with black pepper is given orally twice a day for 3 days in cough and stomachache problems.</td>
</tr>
<tr>
<td><em>Pteris biouriia</em> L.</td>
<td>Pteridaceae</td>
<td>Nandukuddhi</td>
<td>Paste of rhizome is applied on affected part in body pain.</td>
</tr>
<tr>
<td><em>Pteris cretica</em> L.</td>
<td>Pteridaceae</td>
<td>Nandukuddhi</td>
<td>Leaf paste is applied on affected part in heal wound.</td>
</tr>
<tr>
<td><em>Pteris longifolia</em> L.</td>
<td>Pteridaceae</td>
<td></td>
<td>Leaf juice is used for fever and cough.</td>
</tr>
<tr>
<td><em>Selaginella ciliaris</em> Spring</td>
<td>Selaginellaceae</td>
<td>Chhotisanjeevan</td>
<td>Whole plant paste mixed with coconut oil is applied on skin diseases and headache.</td>
</tr>
<tr>
<td><em>Selaginella tenera</em> Spring</td>
<td>Selaginellaceae</td>
<td></td>
<td>The whole plant paste mixed with coconut oil is applied externally in swellings and body pain.</td>
</tr>
</tbody>
</table>
CONCLUSION

The information of the study envisage that the herbal medicine have wonderful possibility to manage several disorders. Rural people mainly need on the medicinal Pteridophytic plant for all diseases. They are perceptive of the Pteridophytic plant medicines for popular ailments such as skin disorders, body pain, headache, cough, throat pain and stomachache problems. They are also extremely familiar with the fever and swellings. Pharmacological and clinical traits will evidence in the authorized of the efficiency of the support plants. Their procedure of preparation and method of administration are also simple and acceptable and the treatments are without any side causes. For the assist of the rural populace the documented species of Pteridophytes should be taken attend of and also steps be taken for conservation of notable plant species of the region and also to secure genetic diversity.

REFERENCES


