Beneficial usage of weeds in the tea fields of Pandalur village, Nilgiris District, Tamil Nadu

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Abstract
An ethnobotanical survey was undertaken to collect the information from traditional healers based on the uses of medicinal plants among the people living in and around the tea fields of Pandalur village of Gudalur Taluk, The Nilgiris District, Tamil Nadu during various seasons between 2010-2011. The investigation reveals that the traditional healers used for 19 plant species against various human disorders. The documented medicinal plants were mostly used to cure the human pathogenic diseases. In this study shows that many people in the study region still used and depended on medicinal plants at least for the treatment of their primary healthcare. But the traditional system has decreased and the traditional knowledge has disappeared since the younger generations are not interested to carry on this tradition. The proper documentation of traditional knowledge from the old people may be helpful to promote further research in the field of ethnobotany.

Key words: Ethnobotany, Nilgiris, traditional medicine, survey

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Introduction
Plants are vital for existence of life on earth. The plants around the habitats of the rural populations not only provide for living organisms, but also provide different chemicals necessary for human health. These plants may be used both for medicines and food. It is difficult to draw a line between these two groups. Food may be medicine and vice versa (Pieroni et al., 2002a). Since time immemorial, the human society has developed in a close association with the plant life (De, 1980). The relationship between the indigenous people and their surrounding plants forms the subject of ethno botany, a science (De, 1968) which includes a study of the plants used by the tribals for food, medicine and cloths (Jain and De, 1966). This science showed healthy relationship between humans and nature, it provides possibilities of finding new uses for medicinal plants and can be used to discover new medicines derived from plants (Heinrich, 2000).

In recent years researchers in the field of ethno botany in India especially in Tamil Nadu have shifted their focus merely documenting locally used medicinal, food and other valuable plants to be more
comparative and for quantitative analysis, which were aimed to understand how traditional plant knowledge (TPK) changes over time and space (Pandi Kumar et al., 2011; Ayyanar and Ignacimuthu, 2011; Jeeva et al., 2006 and Sankarasivaraman, 2001). According to World Health Organization (WHO) about 65-80% of the world’s population in developing countries depends essentially on plants for their primary healthcare due to poverty and lack of access to modern medicine (Calixto, 2005). Weeds are defined as plants found growing in unwanted agricultural lands, gardens, road sides and mainly distributed areas where they do not depend on human intervention for their reproduction and survival (Ngugi et al., 1978; Cassas et al., 1996). More than 80% of the developing countries rely on traditional medicines predominantly plants for primary health care (Fransworth and Soejarto, 1991; Pei Shengli, 2002), while weeds have been found to represent a very important component of indigenous pharmacopoeias (Stepp and Moerman, 2001) the consumption of weedy greens has often been perceived to have a medicinal character (Peironi, 2000; Peironi et al., 2002 b).

This study was undertaken and aimed to record the knowledge and usage of traditional weeds, which grow in the working area and its association with their perception, cultural practices, gathering, processing and consumption of plants and their parts in their daily diet in the Pandalur village.

Study Area
In Southern India, tea is grown in Western Ghats at a elevations ranging between 600-2300 m MSL having typical tropical to sub-tropical climatic conditions with an annual precipitation of 1150-8000 mm and temperature ranging between 8°C - 35°C. Soil pH ranges between 4.0 and 6.0 (Victor and Sharma, 2008).

Tamil Nadu is situated in Southern end of India, east of Kerala and north of Andhra Pradesh and Karnataka. Several folds or parts of Western Ghats separate the states of Tamil Nadu and Kerala. The area of investigation of Pandalur (Fig.1) is located in the Gudalur region of Nilgiri District.

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Fig 1: Map showing the Nilgiri District and The study area
district, this area is a boundary of Tamil Nadu, Kerala and Karnataka states.

The Pandalur village of Gudalur taluk and its surrounding area had more tea plantation and it contributes major economic earning crop rather than coffee, cardamom and pepper. Present investigation about the tea weeds, reveals that they are denatured or disturbed by the encroaching of forest land/enlarging for major crop cultivation purposes, and also by applying the concentrated chemicals. This report contains the list of tea weeds mainly herbs and grasses which occupy the tea fields. The creepers and shrubs are struggling to dominate others.

The weed diversity has powerful folk medicine in tea plantation labour of Pandalur village. The local people of pandalur and its surrounding villages use the tea weeds that are commonly distributed in natural climatic condition. These people have a sound knowledge on practices and usage of folk medicine through tribes and old peoples through evolutionary trends.

Methodology

The study was conducted in the Pandalur village of Gudalur region, Nilgiris district. Frequent field surveys were made in Pandalur during different seasons in 2010-2011. The ethnobotanical data (Local name, Mode of Preparation, Medicinal uses) were collected through interviews and discussions among the tribal practitioners in and around the study area. A preliminary survey was carried out through field visit with the help of local people before the selection of informants in the early morning (at the time of tea plucking). Totally 21 informants were selected based on information obtained during the preliminary survey. These include 8 traditional healers and 13 villagers from both the sex between various age groups.

Data were also collected with the help of two approaches Viz: Interviews and questionnaires in their local language (Tamil). The questionnaires contained the details of informants, plant description, parts used, uses, mode of preparation, form of usage (fresh/dried) and ingredients of the medicine, the fresh plant specimens were also collected during the field collection. After field collection, the plant specimens were collected and identified with the help of different healers to confirm the accuracy of information about the plants and their therapeutic actions.

The collected plant specimens were identified taxonomically with the help of experts (Dr.K.Sankarasivaraman, ANJA College, Sivakasi) and Standard literatures (Gamble, 1935; Matthew, 1983). The identified specimens were preserved in the herbarium of Department of Plant Biology and Plant Biotechnology, G.V.N.College, Kovilpatti for future references.

Results and Discussion

The traditional knowledge system in India is fast disappearing. So there is an urgent need for inventorying and recording all ethnobotanical information among all the ethnic communities (Chaudry et al., 2008). This study revealed that the ethnobotanical usage of plants belonging to the tea field of Pandalur village has been documented for their food value and interesting therapeutic properties for various ailments. There are 26 plant species belonging to 17 families which were reported (Table 1) for their medicinal purposes. Among these many plants like Achyranthus aspera L., Acalypha indica L., Leucas aspera L. were also reported by many authors in other parts of Tamil Nadu (Pandiarajan et al., 2011; Ignacimuthu et al., 1998 and 2008). We learned through the survey that local people especially old age are still dependent on plant resources for treatment of various ailments, but this kind of dependence has decreased in younger generation. This is likely due to lack of belief on traditional medicine and the increasing usage of allopathic medicines due to their
availability and efficacy. This study should not only to document the traditional knowledge of the people of Pandalur village, but also to device a modern biomedical system to meet the ever increasing clinical requirements of modern living.

Conclusion

Thus the results ascertain the value of plants used by the people of Pandalur village for their various ailments, which could be of considerable interest to the younger generation to use the traditional medicine. Generally weeds are the plants grown unnecessarily with harmful value. However, this study may conclude that the people of Pandalur village used weeds for medicinal and other purposes.

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References:


**Table 1** List of Beneficial weeds used by the people of Pandalur village, The Nilgiris

<table>
<thead>
<tr>
<th>Botanical name</th>
<th>Family</th>
<th>Local name</th>
<th>Plant part</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ageratum conyzoides</em> L.</td>
<td>Asteraceae</td>
<td>Vaadaichedi</td>
<td>Leaves</td>
<td>The leaf extract used as wound healing activity and Insect repellent</td>
</tr>
<tr>
<td><em>Achyranthes aspera</em> L.</td>
<td>Amaranthaceae</td>
<td>Naaiyuruvi</td>
<td>Leaf and Root</td>
<td>Leaf extract used to cure ear problems, drowsiness, and digestive problems. The root of this plant is main source of tooth brush</td>
</tr>
<tr>
<td><em>Acalypha indica</em> L.</td>
<td>Euphorbiaceae</td>
<td>Kuppaimeni</td>
<td>Leaves</td>
<td>The paste of this leaf is used to cure skin disorders, insect bite and allergy, etc.,</td>
</tr>
<tr>
<td><em>Bidens pilosa</em> L.</td>
<td>Asteraceae</td>
<td>Mukkutthi</td>
<td>Leaves</td>
<td>Wound healing purpose</td>
</tr>
<tr>
<td><em>Borreria latifolia</em> Aubl.</td>
<td>Rubiaceae</td>
<td>Kudalirakki</td>
<td>Whole plant</td>
<td>Extracts used to cure the intestinal and appendages problems.</td>
</tr>
<tr>
<td><em>Cardiospermum halicacabum</em> L.</td>
<td>Sapindaceae</td>
<td>Mudakkathan</td>
<td>Leaves</td>
<td>Leaf is used to cure cold, cough, fever, head ache and other minor diseases</td>
</tr>
<tr>
<td><em>Crassocephalum crepidoide</em> (Benth.) S.Moore</td>
<td>Asteraceae</td>
<td>Muyal kalai/Muyalkadhu</td>
<td>Leaves</td>
<td>Broad leaf extracts are used to cure cut wounds and other inflammation.</td>
</tr>
<tr>
<td><strong>Chromolaena odorata</strong> (L.) R.King &amp; H.Robinson</td>
<td>Asteraceae</td>
<td>Communist</td>
<td>Leaves</td>
<td>Mature leaves used to cure wound healing, leaf extracts used to control mosquito bite and prevent insect bite</td>
</tr>
<tr>
<td><strong>Leucas aspera</strong> (Wild.)</td>
<td>Lamiaceae</td>
<td>Thumbai</td>
<td>Leaves</td>
<td>The leaf decoction used as to cure cold, cough, and skin disorders. Healthy leaves are used for the curry preparation.</td>
</tr>
<tr>
<td><strong>Lantana camara</strong> L.</td>
<td>Verbinaceae</td>
<td>Unni chedi</td>
<td>Leaves</td>
<td>The leaf extract odor is used as insect repellent and the extracts are used to cure the cut wounds</td>
</tr>
<tr>
<td><strong>Oxalis corniculata</strong> L.</td>
<td>Oxalidaceae</td>
<td>Puliya keerai / Puliyarai</td>
<td>Leaves</td>
<td>The leaves are inducing the hungriness, secrets more saliva and digestive problems are recovered. The leaves extracts used as bang removers.</td>
</tr>
<tr>
<td><strong>Phyllanthus amarus</strong></td>
<td>Euphorbiaceae</td>
<td>Kizhaa nelli</td>
<td>Whole plant</td>
<td>Whole plant extracts used to cure Jaundice in 5-6 days interval.</td>
</tr>
<tr>
<td><strong>Solanum nigrum</strong> L.</td>
<td>Solanaceae</td>
<td>Manathakkali</td>
<td>Leaf and Fruits</td>
<td>Leaves used for curry preparation and cure ulcer problems. Fruits used to cure low pressure and sugar problems.</td>
</tr>
<tr>
<td><strong>Solanum surattense</strong> Burm.f.</td>
<td>Solanaceae</td>
<td>Kandankathiri / Perusundat</td>
<td>Fruits</td>
<td>Fruit extracts used to cure leach bite, worms killer and cold, throat infections are overcome.</td>
</tr>
<tr>
<td><strong>Sida acuta</strong> Burm.f.</td>
<td>Malvaceae</td>
<td>Pazhampasi</td>
<td>Whole plant</td>
<td>The shade dried leaves are mixed with coconut oil and cure hair problems.</td>
</tr>
<tr>
<td><strong>Cynodon dactylon</strong> (L.) Pers.</td>
<td>Poaceae</td>
<td>Arugampul</td>
<td>Whole plant</td>
<td>Juice extracted from the stolen and leaf sheath used to cure diabetics and digestive problems. In cattle’s milk secretion and production is induced.</td>
</tr>
<tr>
<td><strong>Eleusine indica</strong> (L.) Gaertner</td>
<td>Poaceae</td>
<td>Kelvaragu / Keppai</td>
<td>Millets, leaf</td>
<td>Powder of millet used to prepare foods. Leaves are used as fodder in cattle and improve milk secretion.</td>
</tr>
<tr>
<td><strong>Asparagus racemosus</strong> Wild.</td>
<td>Liliaceae</td>
<td>Thanneervittan kilangu / Sadaiver</td>
<td>Needle leaf and roots</td>
<td>Leaf extracts used to cure stomach ulcer and induce the sexual hormones.</td>
</tr>
<tr>
<td><strong>Commelina benghalensis</strong> L.</td>
<td>Commelinaeae</td>
<td>Paalpul/ Kanavaazhai</td>
<td>Whole plant</td>
<td>Used as milk secreting agent for cattle and cure the diuretic problems in human being.</td>
</tr>
</tbody>
</table>