Indigenous Traditional Knowledge on Tree Species Survey of Jogimatti Forest, Chitradurga District, Karnataka, India

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1. Introduction

Indigenous Traditional Knowledge (ITK) is an integral part of the culture and history of a local community. It is evolved through years of regular experimentation on the day to day life and available resources surrounded by the community. It is the unique, traditional, local knowledge existing within and developed around specific condition of men and women indigenous to a particular geographical area. Besides monitoring their cultural liveliness, this knowledge system is vital for their wellbeing and for sustainable development. World Health Organization (WHO) has stated that 80% of the world’s population depends on traditional medicine for its primary health care and is indispensable for its survival. The community has developed the indigenous knowledge system to conserve and utilize the biological diversity of their surroundings. The recognition of the creativity of the traditional communities is essential for the conservation of biodiversity as well as conservation of intellectual diversity. Economic, social and political factors are gradually uprooting many such untapped resources from their native habitats resulting in loss and erosion of very rich indigenous knowledge. It provides useful clue for planning projects for conservation of biological diversity, sustainable uses of natural resources, indigenous health practices etc. Medicinal plants are main ingredients of local medicine and thus of vital importance in Traditional Health Care System. The medical traditions in the traditional system are diverse in their historical background, theoretical logic and practices, their contemporary social realities and their dynamics (Bhasin, 2007). Higher plants as source of medicinal compounds have continued to play a dominant role in the maintenance of human health since ancient times (Farombi, 2003). Man has acquired methods of treating sickness using his local bio cultural environment. Due to the side effects of modern allopathic drugs in the present days, people are attracted towards herbal medicines and their consumption (Seth
Various works have been undertaken to document different types of medicinal plants used by various ethnic groups in all over India (Negi et al.,2002; Patil and Bhaskar,2006; Prakash and Krishnappa, 2006; Varaprasad and Gangadharam, 2006; Dutta and Dutta, 2005; Bhardwaj and Gakhar, 2005; Kala, 2005; Das and Tag, 2006; Eddouks et. al., 2002; Katz et al., 2007; Leach, 2007; Hebbar et.al., 2004; Siva and Muthuchelian, 2004; Hiremath et.al. 2009 & 2010. The beliefs, practices and treatment of various diseases by different communities inhabiting in this part of India help to understand the human nature relationship from its long past. The present study is thus an attempt to document different tree species of Jogimatti forest used by the local health healers to cure different ailments.

1.1 Objective of Research:
Jogimatti forest of Chitradurga is being retrogressed to various stages of degradation because of biotic influences like excessive grazing, looping for fodder and fuel and unregulated felling, unscientific collection of medicinal plants by the health healers. Bedas, besthas, Gollas, Jenu kurubas, Hakki-pikki and Lambani’s are the tribal’s who are intimately associated with the plant wealth of Jogimatti forest. Local traditional healers for treating others were often visiting the Jogimatti forest to collect plant species. The unscientific collection of ethnobotanical plants, poses greater pressure on the depletion of diversity of the local region. Hence there is an urgent need to assess the biodiversity of the local forest, and conserve the biodiversity as well as the traditional knowledge by proper documentation and conservation strategies.

2. Materials and methods:
Chitradurga district at its extreme limits is situated between longitudinal parallels of 76° 01 and 77° 01' east of Greenwich and latitudinal parallels of 13° 03’ and 15° 02’ North of equator in India. The geographical area of the district is 8,388 square kilometers, which accounts for 4.37% of the state’s geographical area. Chitradurga belongs to South-Eastern cool and equitable maiden zone with an elevation between 500 m to 600 m above mean sea level. The forests are being retrogressed to various stages of degradation because of biotic influences like excessive grazing, looping for fodder and fuel and unregulated felling, unscientific collection of medicinal plants by the health healers.

The Jogimatti forest is located 13 kms away from the Chitradurga revenue district at an altitude of 3,800 ft. It mainly comprises mixed and dry deciduous forests with undulating chain of hills. Periodic field surveys were carried, during December 2009 to June 2010. Data was collected through tribal people, local traditional health practitioners and village elders through questionnaire/personal communication. Questionnaire containing information on health practices, disease, name of the plant, family, part used and therapeutic use. Voucher specimens were collected and identified by referring standard flora (Hooker, 1884, Gamble, 1936; Saldhana, 1984).

3. Results
In the present investigation 27 tree species of medicinal plants belongs to 19 families, 25 genera were used for the treatment of 25 diseases with 47 formulations. The major plant families used in the treatment are Mimosaceae (04 species), followed by Euphorbiaceae and Moraceae with (03 species), Moringaceae, Myrtaceae, Rutaceae, Fabaceae, Arecaceae with two species, while Meliaceae, Santalaceae with a single species (Fig.1).

The different plants which have been documented during the present investigation along with their mode of use in different health treatment by the local health healers are given in the table, 1. Among the different plant parts, bark (14 uses), were most frequently used for the treatment of diseases followed by, leaves
and fruits/seeds (10 uses), roots and stem (04 uses), meristem (03 uses), and flowers with two uses (Fig.2). The medicinal plants are mainly used for Dandruff, Epilepsy, Jaundice, Dental problems, Worm infection, Vomit, Snakebite, White discharge in women, against bleeding, Asthma, Scabies, Piles, Stomach pain, Sankadala, Enhancement of lactation, Improper menstrual cycle, skin diseases, Small pox, Deep wounds, Antifertility and Dysentery. Medicinal plants studied are enumerated, arranged alphabetically with their botanical name, family, and parts used (Table.1).

Table 1: Tree species used in ethnomedicine

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Plant species</th>
<th>Family</th>
<th>Part used</th>
<th>Diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mangifera indica</td>
<td>Anacardiaceae</td>
<td>Bark</td>
<td>Dandruff</td>
</tr>
<tr>
<td>2</td>
<td>Annona squamosa</td>
<td>Annonaceae</td>
<td>Seed</td>
<td>Epilepsy</td>
</tr>
<tr>
<td>3</td>
<td>Wrightia tinctoria</td>
<td>Apocynaceae</td>
<td>Leaf</td>
<td>Jaundice</td>
</tr>
<tr>
<td>4</td>
<td>Areca catechu</td>
<td>Arecaceae</td>
<td>Seeds</td>
<td>Dental problem/Worm infection</td>
</tr>
<tr>
<td>5</td>
<td>Cocos nucifera</td>
<td></td>
<td>Root</td>
<td>Worm infection</td>
</tr>
<tr>
<td>6</td>
<td>Grangea maderaspatensis</td>
<td>Astraceae</td>
<td>Leaf</td>
<td>Jaundice</td>
</tr>
<tr>
<td>7</td>
<td>Terminalia chebula</td>
<td>Combretaceae</td>
<td>Fruit</td>
<td>Vomit</td>
</tr>
<tr>
<td>8</td>
<td>Ricinus communis</td>
<td>Euphorbiaceae</td>
<td>Root</td>
<td>Snake bite, Jaundice</td>
</tr>
<tr>
<td>9</td>
<td>Jatropha curcas</td>
<td></td>
<td>Bark</td>
<td>White discharge in women</td>
</tr>
<tr>
<td>10</td>
<td>Phyllanthus emblica</td>
<td>Moraceae</td>
<td>Bark</td>
<td>Against bleeding</td>
</tr>
<tr>
<td>11</td>
<td>Pongamia pinnata</td>
<td>Fabaceae</td>
<td>Seeds</td>
<td>Asthma</td>
</tr>
<tr>
<td>12</td>
<td>Butea monosperma</td>
<td></td>
<td>Seeds</td>
<td>Scabies</td>
</tr>
<tr>
<td>13</td>
<td>Bambusa arundinacea</td>
<td>Poaceae</td>
<td>Leaf</td>
<td>Piles</td>
</tr>
<tr>
<td>14</td>
<td>Michelia champaka</td>
<td>Magnoliaceae</td>
<td>Bark</td>
<td>Stomach ache, White discharge</td>
</tr>
<tr>
<td>15</td>
<td>Melia azadirachta</td>
<td>Meliaceae</td>
<td>Meristem</td>
<td>Stomach ache</td>
</tr>
<tr>
<td>16</td>
<td>Ficus religiosa</td>
<td>Moraceae</td>
<td>Bark</td>
<td>Menstrual cycle, Skin disease,</td>
</tr>
<tr>
<td>17</td>
<td>Ficus bengalensis</td>
<td></td>
<td>Meristem</td>
<td>Small pox</td>
</tr>
<tr>
<td>18</td>
<td>Moringa pterygosperma</td>
<td>Moringaceae</td>
<td>Gum</td>
<td>Snake bite</td>
</tr>
<tr>
<td>19</td>
<td>Acacia arabica</td>
<td>Mimosaceae</td>
<td>Leaf</td>
<td>Snake bite</td>
</tr>
<tr>
<td>20</td>
<td>Acacia feruginea</td>
<td></td>
<td>Meristem</td>
<td>Stomach ache</td>
</tr>
<tr>
<td>21</td>
<td>Emblica officinalis</td>
<td></td>
<td>Fruit</td>
<td>Stomach ache</td>
</tr>
<tr>
<td>22</td>
<td>Acacia nilotica</td>
<td></td>
<td>Flowers</td>
<td>Antifertility</td>
</tr>
<tr>
<td>23</td>
<td>Eugenia jambolana</td>
<td>Myrtaceae</td>
<td>Bark</td>
<td>Menstrual cycle, Stomach ache, Bleeding</td>
</tr>
<tr>
<td>24</td>
<td>Aegle marmeldos</td>
<td>Rutaceae</td>
<td>Leaf</td>
<td>Blood pressure,</td>
</tr>
<tr>
<td>25</td>
<td>Santalum album</td>
<td>Santalaceae</td>
<td>Stem</td>
<td>Jaundice</td>
</tr>
<tr>
<td>26</td>
<td>Ailanthus excelsa</td>
<td>Simoroubiaceae</td>
<td>Bark</td>
<td>Stomach ache in animals</td>
</tr>
<tr>
<td>27</td>
<td>Withania somnifera</td>
<td>Solanaceae</td>
<td>Root</td>
<td>Stomach ache in animals</td>
</tr>
</tbody>
</table>

4. Discussion

It is apparent that the Chitradurga district is rich in ethnomedicinal knowledge and this knowledge is transferred from generation to generation. It has been found that some individuals have become specialized to prepare the medicines from these plants owing to prolong practical experience. As the economy of the district is not well enough, so the people prefer herbal treatment in compariison to allopathic treatment. The herbal treatment is said to be very much
effective by them and the extraction of the medicinal plants from Jogimatti forest is an indicative of their dependence on wild plants from their age old interaction. There is growing pressure on the natural habitats of medicinal plants all over the world. This is mainly due to the rapidly growing global demand for herbal medicine as people feel safer with indigenous
cure and cost is much less than modern drugs. Most of the medicinal plant species are threatened with extinction due to unsustainable harvesting. To maintain the ecosystem equilibrium awareness of the sustainable utilization of medicinal plant species is important and their conservation in sustainable environment is urgently needed. Keeping in view the demand among the Indigenous Knowledge survey associated with Jogimatti forest indicated that, the study area has magnificent medicinal plant diversity to treat a wide spectrum of human ailments. Some important medicinal plants needs immediate conservation and their cultivation should be encouraged through which their extinction can be prevented and local village people may also get low-cost cure and treatment of live stock diseases. As the tribal population is gradually adapting modern ways of living, their traditional knowledge on plants will soon be lost forever. At present these valuable medicinal tree species diversity are under serious threat due to their habitat destruction, overexploitation, shifting cultivation and other anthropogenic activities. Due to lack of interest among the younger generation as well as their tendency to migrate to cities for jobs, there is a possibility of losing this wealth of knowledge in the near future. Hence there is an urgent need to assess the biodiversity of the local forest, the medicinal plants and their associated traditional knowledge by proper documentation and conservation strategies. 

Conclusion

The study area is rich in medicinal plant resources. More information may be explored from the peoples residing in the remote villages of the block. In view of the importance of traditional medicine which provides health services to 80% of the world population, demand of herbal drugs by the pharmaceutical and depleting natural plant resources is increasing. Present study will be helpful to document the medicinal utility of less known plants available in remote areas of the country and will be helpful to conserve the heritable knowledge in the field of herbal treatment and general uses of plants in village ecosystems.

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References


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