Ethnomedicinal Plants and Associated Traditional Knowledge of Jogimatti Forest, Chitradurga District, Karnataka, India

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Abstract

India has one of world’s richest medicinal plant heritages. The wealth is not only in terms of the number of unique species documented, but also in terms of the tremendous depth of traditional knowledge for the uses of human & livestock health and also for agriculture. The medicinal plant species are used by various ethnic communalities for human and veterinary health care, across the various ecosystems from Ladakh in the trans-Himalayas to the southern coastal tip of Kanyakumari and from the deserts of Rajasthan and Kachch to the hills of the Northeast. 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° 34’ and 15° 02’ North of Equator. The geographical area of the district is 8,388 square kilometers, which accounts for 4.37% of the State’s geographical area. As per the physio-agronomic classification of the areas within the state; Chitradurga belongs to South-Eastern Cool and equitable maidan zone. The terrain is not uniform throughout the district and is characterised by vast stretches of undulating
plains with chains of hills. General elevation of the district is between 500 m to 600 m above mean sea level. The forests of the division do not present a complex diversity either in their distribution or in composition. The forests are being retrogressed to various stages of degradation because of biotic influences like excessive grazing, lopping for fodder and fuel and unregulated felling, unscientific collection of medicinal plants by the health healers.

The present investigation is an attempt to an ethnomedicinal plants survey was carried out in Jogimatti Forest, Chitradurga district, Karnataka, for the exploration of medicinal plants used to cure various ailments. Information was gathered from the tribes and local health healers through questionnaire and personal interviews during study visits. The local health healers are routine use 50 medicinal plants under 36 families for the treatment of several diseases either in single [22 applications] or in combination with some other ingredients, [28 applications]. The study reveals that leaves, stem/bark were most frequently used [18 species], followed by seeds [13 species], Fl/fl/buds [09 species], roots [08 species], fruits [07 species], entire plant [04 species], and latex [03 species] for the treatment of various ailments like eye ailments, joint pains, paralysis, urinary infection, eczema, fever, rheumatic complaints, inflammations, leprocy, cough and cold, herpes, rheumatism, ring worms, asthma, wound/burns, renal pain etc. The study also showed that many people of Chitradurga district still continue to depend traditionally on medicinal plants for primary health care. Therefore, the present study is an attempt to present some interesting ethno-botanical observations in connection with Jogimatti forest of Chitradurga district.

**Key words:** Ethnomedicinal, Jogimatti forest, Chitradurga. Traditional knowledge.
Introduction

The value of medicinal plants to the mankind is very well proven. It is estimated that 70 to 80% of the people worldwide rely chiefly on traditional health care system and largely on herbal medicines [Farnsworth et al., 1985; Farnsworth and Soejarto, 1991; Pei Shengji, 2002; Shanley and Luz, 2003]. Nature has been a source of medicinal plants for thousands of years and an impressive number of modern drugs have been isolated from natural sources. Various medicinal plants have been used for years in daily life to treat disease all over the world. 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]. These plants are not only used for primary health care in rural areas in developing countries, but also in developed countries where modern medicines are predominantly used. Due to the side effects of modern allopathic drugs in the present days, people are attracted towards herbal medicines and their consumption. [Seth et al., 2004]. Several workers were reported the utility of plants for the treatment of various ailments [Goel and Bhattacharaya, 1981; Yaniv et al., 1987; Eddouks et al., 2002; Hebbar et al., 2004; Katz et al., 2007; Leach, 2007].

Methodology

The study area Chitradurga is one of the central districts of Karnataka state with much racial and socio-cultural diversity. Bedas, Besthas, Gollas, Lambanis, Hakki-pikki are the tribals who are intimately associated with the Jogimatti forest. The forests are dry deciduous with undulating chain of hills. Agriculture is the mainstay of economy. Local traditional healers having practical knowledge of medicinal plants either for self-medication or for treating others were often visiting the Jogimatti forest of the district to collect plant species. A total of 30 health healers were identified between the ages of 40 and 80 for the survey.
The present survey was conducted in villages around the Jogimatti forest of Chitradurga district, based on personal interviews between tribal and non-tribal peoples in normal discussion and observation using questionnaire during study visits. Ethnobotanical data viz., local name, mode of preparation, medicinal uses were collected through questionnaire, interviews and discussions among the tribal and health practitioners in their local language. Our questionnaire allowed descriptive responses on the plant prescribed, such as part of the plant used, medicinal uses, mode of preparations like decoction, paste or powder etc.

Standard methods were followed for the collection of plant materials, mounting, preparation and preservation of plant species. Voucher specimens were collected identified, by referring standard flora (Hooker, 1884; Gamble 1936; Karnataka Flora by H J. Saldhana(1984). All the preserved specimens were deposited in the department of botany, SJM College, Chitradurga, Karnataka.

Results

The results of the investigation are presented in Table.1, based on the plants and parts used for the treatment of various ailments. The present study comprises 50 plant species of ethno-botanical uses belonging to 34 families. For each plant species, botanical name, family, local name, part used, methods of preparation is provided. Among the plants used by the health healers, trees constitute [25 species], Shrubs [10], Herbs [11], Climbers [03] followed by the epiphytes with one species (Fig.2). The top 05 plant families used in the treatment are Fabaceae, Mimosaceae, Caesalpinaceae, Euphorbiaceae, Lamiaceae, followed by Combretaceae, Amaranthaceae, Papavaeraceae, Meliaceae, Bambucaceae etc. (Fig.1.)
Discussion

The ethnobotanical survey reveals that among the different plant parts used by the local health healers/tribals for the treatment of various ailments, leaves were most frequently used [18 plants], followed by seeds [13 plants], Fl/flower buds [09 plants], roots [08 plants], fruits [07 plants], entire plant [04 plants], and latex [03 plants] for the treatment of various ailments like eye problems, joint pains, paralysis, urinary infections etc., under single/multiple plant
applications (Fig. 3). It is observed that majority of the formulations were multiple applications [28], when compared to single applications [22].

![Fig. 3. Plant partwise ethnomedicinal uses](image)

Conclusion

The survey indicated that, the study area has magnificent plant diversity with plenty of medicinal plants to treat a wide spectrum of human ailments. It is evident from the interviews conducted in different villages; knowledge of medicinal plants is limited to traditional healers, herbalists who are living in rural areas and collecting the medicinal plants from the Jogimatti forest unscientifically. The investigation concluded that the unscientific collection of ethnomedicinal plants from the Jogimatti forest 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.
Acknowledgements

The authors are grateful to the local traditional health healers in the district for sharing their knowledge on herbal medicine. We also thank the Chitradurga Forest Department for providing facilities to document the medicinal plants available in Jogimatti forest. Authors also gratefully acknowledge the financial assistance given by the UGC, New Delhi.

References


Traditional Phytotherapy for Snake bites by Tribes of Chitradurga District, Karnataka, India

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Abstract

Chitradurga is one of the central districts of Karnataka state and is flanked by Davangere, Tumkur, Chikmagalur and Bellary districts of Karnataka and Anantapur district of Andhra Pradesh with much racial and socio-cultural diversity resulting in a cultural mosaic. Bedas, Besthas, Gollas, idigas, Kurubas and tribes such as Lambanis, Hakki-pikki, Jenukurubas, and Fruligas are the communities who are intimately associated with the local forests. The district at its extreme limits is situated between longitudinal parallels of 76° 01' and 77° 01' east of Greenwich and latitudinal parallels of 13° 34' and 15° 02' north of equator. The geographical area of the district is 8388 square kilometers. The terrain is not uniform throughout the district and is characterised by vast stretches of undulating plains with intermittent parallel chains of hills. The district is characterised in having mixed and dry deciduous forests. An ethno-medicinal survey was undertaken in the district to collect information from traditional health healers/tribals on the use of medicinal plants for snake bites through questionnaire and personal interviews during study visits.

The investigation reveals that the local health healers/tribals used 15 plants belonging to 11 families with 12 formulations (02 multiple applications and 10 single plant applications. The study reveals that roots were most frequently used (09 species), followed by leaf extract (04...
species), latex and gum with one (01) species each. The study also reveals that many people of the district still continue to rely on traditional medicine for their primary healthcare. Recent trend shows a decline in the number of traditional health practitioners in the region since the younger generation is not interested to continue this tradition.

There is little documentation of the ethnomedicinal knowledge was carried out in the district. In addition, several wild medicinal plants are declining in number due to the destruction and unscientific collection of plants from forests. Hence there is an urgent need for exploration and documentation of the traditional knowledge in order to ascertain the local ethnomedicinal plants. Therefore present study is an attempt to present ethnomedicinal observations recorded with respect to snake bites.

Key words: Phytotherapy, Ethnomedicine, Hakki-pikki, Snake bite.

Introduction

The vast diversity of flora and fauna is the outcome of millions years of organic evolution on the earth. They are interdependent, interrelated and interacting with the physico-chemical environment facilitating the flow of energy and material cycling. Since ages man relied on plants as a sole source of medicine. The knowledge has been transmitted from generation to generation. Out of 250,000 flowering plant species only 1.2% have been analysed for medicinal value.

The art of herbal healing has very deep roots in Indian culture and folklore. Even today in most of the rural areas, people are depending on local traditional healing systems for their primary health care. Documentation of indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources. Today 80% of the world’s population depends on traditional medicine for their primary health care needs (WHO). Medicinal plants are the backbone of the traditional medicine, this means that, 3300 million people in the underdeveloped countries utilize medicinal plants on a regular basis (Dobriyal and Narayana 1998). The objective of the present study was to document the richness of ethnomedicinal plant species used by the tribal and traditional health healers of Chitradurga district and the practices of the people towards the conservation and sustainable utilization of biological resources of the said region. Similar type of studies has been carried out by several workers in

Methodology

Periodic field surveys were carried out in different villages of Chitradurga district. Data were collected from the tribals, local vaidyas, village elders through personal communication and questionnaire. The data include the plant name, local name, part used and therapeutic uses and the frequency of collection of plants etc. Voucher specimens were collected and identified by referring standard flora (Hooker, 1884; Gamble 1936, Saldhana, 1984). All the voucher specimens were maintained in the herbarium at SJM College of Arts, Science & Commerce, Chitradurga, Karnataka (India). It was found that some of the present information has not so far been available in literature.

Results and Discussion

The present investigation reveals that the plants used to treat snake bite are commonly available in the local forests. The method of preparation and mode of action is also simple and convenient. Hence most of the local people can afford the traditional treatment and having personal faith and believe gave encouraging results in the treatment of snake bites. The present paper gives a detailed account of 12 plants (Table 1) as herbal remedies for snake bite by the tribal and traditional health healers of Chitradurga region. The date indicates that tribal people used 15 plants for the treatment of snake bite under 12 formulations. (Fig.1.)
Table 1. Showing plant parts used for curing Snake bites by the tribes of Chitradurga district, Karnataka State.

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Family</th>
<th>Local Name</th>
<th>Plant parts used / Formulations</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Tinospora cordifolia</em></td>
<td>Minispermaceae</td>
<td>Amrutha balli</td>
<td>Leaf juice along with garlic paste is applied on the spot and also taken orally.</td>
</tr>
<tr>
<td>(Willd.) Hook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Acacia arabica</em> Benth.</td>
<td>Mimosaceae</td>
<td>Jali mara</td>
<td>Leaf and areca nut with betel leaf paste is applied.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Urtica dioica</em> L.</td>
<td>Urticaceae</td>
<td>Thurse gida</td>
<td>Root extract along with cow urine, pepper and garlic applied on spot.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Tylophora asthmatica</em></td>
<td>Asclepiadaceae</td>
<td>Adumuttada gida</td>
<td>Root extract with pepper and garlic or onion juice is taken orally.</td>
</tr>
<tr>
<td>(L.f) Wright &amp; Arn.,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Ophiorrhiza mungos</em> L.</td>
<td>Rubiaceae</td>
<td>Havina gedde</td>
<td>Root extract with powder of gulaganji (white) to make paste and apply and also given orally.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Achyranthus aspera</em> L.</td>
<td>Acanthaceae</td>
<td>Kempu Uttarani</td>
<td>Root extract is applied on the spot and taken orally also.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Aristolochia indica</em> L.</td>
<td>Aristolocaceae</td>
<td>Eshwari gida</td>
<td>Fresh root extract along with pepper is</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Moringa pterygosperma non Lam.

Calotropis gigantia (L.) Asclepiadaceae

Adathoda vasaka Nees. Acanthaceae

Canthium parvisporum Lam. Rubiaceae

Aristolochia indica L. Aristolocaceae

Castor

Euphorbiaceae

Todalia asiatica (L.) Lam. Rutaceae

Azima tetracantha Lam. Salvadoraceae

Nugge

Ekke

Adusoge

Kare

Kare

Eshwari gida

Adavi oudala

Kadu menasu

Uppi mullu

Gum extract is applied on the affected area.

Plant latex is mixed with asafoetida (ingu) grind well and applied on the spot.

The root paste along with goat milk is given orally.

The root mixtures of these plants along with goat milk give orally and the paste is applied on the spot.

Acknowledgement

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