Ethno-medico-botanical knowledge of rural folk in Bhadravathi taluk of Shimoga district, Karnataka

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Traditional herbal drugs have recently been receiving greater importance all over the world, especially in the healthcare programme. Consequently, traditional information is being documented before it is lost forever. An ethno-medico-botanical field survey was conducted during December 2004 to January 2006 to collect, and document information from unexplored parts of Karnataka. The paper deals with the traditional herbal drugs used to treat various ailments by local castes and communities residing in certain selected villages of Bhadravathi taluk. Folk herbal healers in the study villages of Bhadravathi taluk have a fairly good knowledge about the medicinal values of locally available plants. A total of 40 plant species belonging to 26 families were used to treat 25 human diseases and disorders. The information about plant species, local name, parts used, mode of drug preparation, dosage and duration was also documented.

Keywords: Ethnomedicine, Folklore, Medicinal plants, Shimoga, Karnataka

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Medicinal plants have been playing an important role in the survival of the ethnic communities, who live in remote villages and forests. Traditional folk medicine, which is mostly undocumented, has been handed down orally from one generation to another. Large sections of the Indian population still rely on traditional herbal medicine. Medicinal plants have attracted considerable global interests in recent years. Due to various human activities such as deforestation, rapid industrialisation, urbanisation and other developmental activities, both natural vegetation as well as traditional culture in India is fast declining. There is an urgent need to document all ethnobotanical knowledge available with different ethnic and folklore communities before the traditional culture is completely lost. Ethnobotanical knowledge has been documented from various parts of Indian sub-continent. In Karnataka state, ethnomedicinal value of plants in possession of various tribal and rural folk communities for treating various diseases and disorders has been done to some extent. A perusal of these reports suggested that the ethnomedico-botanical survey in Karnataka is incomplete and traditional herbal healing knowledge of a large number of folk communities need documentation. There are no previous reports of the record of ethnobotanical knowledge from Bhadravathi taluk of Karnataka. An attempt has been made to collect and document the ethnomedicinal knowledge from local herbal healers and knowledgeable elder people of different castes and communities residing in certain villages of Bhadravathi taluk.

The study area, Bhadravathi, is one of the taluks of Shimoga district, situated in the midst of the Western Ghats region. Bhadravathi taluk is situated between 13°42’ and 14° 06’ N latitude and between 75° 35’ and 75° 52’ E longitude in about the mid Southwestern part of the Karnataka state at an altitude of 594 m from the sea level. It is bounded in the North by Honnali taluk of Davanagere district, West by Shimoga taluk and NR Pura taluk of Chikmagalur district, South by Tarikere taluk of Chikmagalur district and East by Channagiri taluk of Davangere district. Bhadravathi taluk is rich in natural vegetation and comprises mainly dry deciduous type of forest supporting a variety of medicinal plants and receives an annual rainfall ranging from 750-1900mm. The taluk constitutes 3 hoblis,

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90 villages and covers an area of 1,204 sq km. The population of the study region was about 3,38,989 consisting of 1,71,917 male and 1,67,072 female individuals. Agriculture is the major occupation in this area and Bhadra reservoir provides irrigation facilities to the taluk. Paddy, sugarcane, areca nut, sorghum and cotton are the main crops of the taluk.

**Methodology**

A preliminary survey of villages in Bhadravathi taluk revealed that local communities used herbal medicine for their healthcare extensively. Frequent field visits were paid to 20 select villages of Bhadravathi taluk during December 2004-January 2006. Each village was visited at least thrice in different seasons. The ethno-medico-botanical information was collected through interviews and discussion with herbal practitioners and elder people. During survey, the information collected on plant species, being used to treat various human diseases and disorders along with their local name, plant parts, method of drug preparation, mode of application, dosage and duration, were documented.

The data collected was confirmed by discussion with respondents and also individuals who received herbal treatments and also compared with the existing literature. Plants were identified, photographed, and herbarium specimens were deposited in the department of Applied Botany, Kuvempu University.

**Results and discussion**

Information gathered from herbal practitioners and elder people are presented along with plant name, local name, family, parts used, method of drug preparation, dosage, duration and diseases treated (Table 1). In Bhadravathi taluk, the local herbal healers and elder people rich in traditional knowledge are depended on the natural resources of the area. Most of them still consider their traditional herbal treatments and also compared with the existing literature. Plants were identified, photographed, and herbarium specimens were deposited in the department of Applied Botany, Kuvempu University.

<table>
<thead>
<tr>
<th>Plant name/Family</th>
<th>Local name</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abutilon indicum G. Don Malvaceae</td>
<td>Madre gida (Indian mallow)</td>
<td>During piles, leaf decoction is taken orally with a cup of fresh cow’s milk early in the morning till cure.</td>
</tr>
<tr>
<td>Adhatoda zeylanica Medic. Acanthaceae</td>
<td>Aadhusoge (Malabar nut)</td>
<td>During asthma, root paste with garlic and pepper paste is taken orally with breast milk early morning. For cough &amp; cold, Leaf paste made into pills are taken orally daily.</td>
</tr>
<tr>
<td>Andrographis paniculata Wall. ex Nees. Acanthaceae</td>
<td>Nela bevu (Creat)</td>
<td>For curing itching, leaf juice is taken orally with a cup of fresh cow’s milk early in the morning.</td>
</tr>
<tr>
<td>Caesalpinia cristata L. Caesalpiniaceae</td>
<td>Gujjuga (Bonduc nut)</td>
<td>For hydrocele, paste of Caesalpinia cristata seeds, and rhizomes of Zingiber officinale (Shunti) and Curcuma longa is taken orally with a cup of water, twice a day.</td>
</tr>
<tr>
<td>Cassia fistula L. Caesalpiniaceae</td>
<td>Kasamarda (Negro coffee)</td>
<td>For curing cough &amp; cold, leaf juice is taken orally with a cup of fresh goat’s milk.</td>
</tr>
<tr>
<td>Capparis zeylanica L. Capparaceae</td>
<td>Kurutigana soppu (Karambha)</td>
<td>During jaundice, bark juice along with pepper and onion is taken orally with water daily. For wounds, leaf paste in lemon juice is applied externally daily until cured.</td>
</tr>
<tr>
<td>Capparis zeylanica L. Capparaceae</td>
<td>Kakke (Indian laburnum)</td>
<td>For nerve problems, leaf paste is applied externally on affected area and also one teaspoonful of paste is taken orally with a cup of water early in the morning.</td>
</tr>
<tr>
<td>Cassia occidentalis L. Caesalpiniaceae</td>
<td>Ondelega (Indian Pennywort)</td>
<td>In case of blood pressure, leaf juice is taken early morning.</td>
</tr>
<tr>
<td>Catharanthus roseus (L.) G. Don Apocynaceae</td>
<td>Nitya kannagale (Periwinkle)</td>
<td>For cardiac problems, leaf extract of C. asiatica and Aegle marmelos is taken with a cup of hot water early in the morning.</td>
</tr>
<tr>
<td>Centella asiatica (L.) Urban Apioaceae</td>
<td>Ondelega (Indian Pennywort)</td>
<td>In case of body heat, seeds crushed with sugar candy kept in coconut milk overnight are taken next day morning.</td>
</tr>
<tr>
<td>Cuminum cyminum L. Apiaceae</td>
<td>Jirige (Cumin)</td>
<td>During scabies, paste of rhizome and cumin seeds is applied externally.</td>
</tr>
<tr>
<td>Curcuma longa L. Zingiberaceae</td>
<td>Garike (Turmeric)</td>
<td>For dandruff, leaf paste with water is applied externally over the head biweekly.</td>
</tr>
<tr>
<td>Cynodon dactylon (L.) Persoon Poaceae</td>
<td>Vayavilanga (Vidanga)</td>
<td>During paralysis, paste of E. ribes leaves, and roots of Withania somnifera and Asparagus racemosus is taken orally with a cup of hot water twice a day.</td>
</tr>
<tr>
<td>Embelia ribes Burm.f. Myrsinaceae</td>
<td>Jhestamadhu (Liquorice)</td>
<td>For curing asthma, dried root powder is taken orally with a cup of water twice a day.</td>
</tr>
</tbody>
</table>

Contd —
knowledge as traditional secrets. But upon repeated contacts, persuasions and discussions, most herbal healers parted their traditional herbal knowledge. In the study area, local practitioners belonged to different castes and communities such as Adikarnataka, Brahmin, Lambani, Lingayatha, Nayaka, Vokkaliga and Muslims, who are popular among the resident people.

The work accounts for 40 plant species of 26 families to cure 25 human ailments. Among them, 19 plants were herbs, 11 tree species, 6 shrubs and 4 climber species. Most plant species belonged to the family Leguminosae (23.07%), followed by Malvaceae (11.53%), Zingiberaceae (11.53%), Rutaceae (7.6%), Lamiaceae (7.6%) and Acanthaceae (7.6%). In most of the cases, leaves (58.49%) were used predominantly for drug preparation followed by flowers (23.07%), seeds (5.66%), fruits (3.77%), flowers (1.88%) and in some cases, latex (1.88%) was also utilized. Generally, fresh plant parts were preferred to the dried ones for the preparation of drug. Among the drug formulations, paste (40.54%) and juice (32.43%) formulations were commonly used over the powder.
(13.51%), pills (5.4%), massage oil (5.4%) and decoction (2.7%) forms. Folk people used 30% of plants (maximum) to cure skin diseases, while 15% of plants for menstrual problems, 12.5% remedies to treat respiratory tract problems, 12.5% for cardiovascular disorders, 10% for healing wound, 7.5% each for paralysis and hydrocele and a few plants to treat jaundice, diabetes, toothache, piles, typhoid, scorpion sting, rheumatism or dysentery.

Some of the data are not reported earlier by workers for such purposes. For example, fruits of *Salacia laurifolia* were used to treat eczema, leaves of *Tridax procumbens* for toothache, leaves of *Tinospora cordifolia* and *Catharanthus roseus* for boils and reducing blood pressure, respectively, and roots of *Mimosa pudica* for the treatment of partial headache, leaves of *Embelia ribes* and *Withania somnifera* for paralysis, leaf paste of *Cassia occidentalis* for nerve disorders, bark of *Holarrhena pubescens* to cure ring worm, leaf powder of *Ruta graveolens* against typhoid, leaf extract of *Centella asiatica* and *Aegle marmelos* for the treatment of cardiac problems, *Capparis zeylanica* for relieving cough and cold and leaves of *Melia azedarach* to cure menstrual problems. Apart from this, information of certain plant species used by the herbal healers of Bhadravathi taluk also find mention in traditional system of medicine like Ayurveda, Unani or *Siddha* [21,22]. For example, *Hibiscus rosa-sinensis* is used to treat leucorrhoea, *Caesalpinia cristata* to cure hydrocele, *Mesua ferrea* to treat menstrual problems, *Syzygium cumini* to dysentery, *Cassia fistula* to jaundice, *Plumbago zeylanica* to wounds and *Adhatoda zeylanica* to asthma.

Local herbal healers in the study area use plants in combinations to successfully treat chronic human diseases and disorders. Roots of *Withania somnifera* and *Asparagus racemosus* and *Embelia ribes* leaves are used in combination for the treatment of paralysis, while in the treatment of rheumatic pain, leaves of *Vitex negundo*, *Pongamia pinnata* and *Eucalyptus globulus* in combination are used. Likewise, leaves of *Salacia chinensis* and *Catharanthus roseus* are used to treat diabetes. For relieving cardiac problems, leaves of *Aegle marmelos* and *Centella asiatica* are used in combination and for the treatment of hydrocele, seeds of *Caesalpinia cristata*, rhizome of *Zingiber officinale* and *Curcuma longa* are used. Generally, plants have different active principles which exhibit different therapeutic activity, but it is very interesting to note that the combination of active compounds of these herbs have been helpful to cure such chronic diseases. In contrast to this, the herbal practitioners in Bhadravathi taluk also used individual plant species to treat multiple ailments. For example, *Tinospora cordifolia* was used to treat boils, itching and reducing blood pressure, *Leucas aspera* was used to treat eczema and wound, *Catharanthus roseus* for the treatment of diabetes and blood pressure and *Ruta graveolens* to treat typhoid, cough and cold.

The therapeutic uses of herbal drugs and drug preparations differed from one region to the other. For example, people in different villages in India exclusively used *Andrographis paniculata* for curing malarial fever and snakebite, headache, dysentery, diarrhoea, ulcer and fever [4,21,24]. However, healers of Bhadravathi taluk used *Andrographis paniculata* to treat skin allergies. Tribal people of Chhattisgarh use *Sida acuta* for colic pain, while Chellipale community of Tamil Nadu use it for headache, however, herbal healers of Bhadravathi region use this plant for treating boils and ringworm [3,6]. Similarly, leaves of *Tinospora cordifolia* was used for asthma by tribals of Uttar Kannada district of Karnataka, while tribal and local people of Sunderbans in West Bengal use *Tinospora cordifolia* to cure herpes, malarial fever and venereal diseases [5,7]. But in the study area, this plant was used for boil, itching and reducing blood pressure. Phytochemical and pharmacological effects of certain traditional medicinal plants like *Sida cordifolia*, *Evolvulus alsinoides*, *Achyranthes aspera*, *Cassia fistula*, *Cynodon dactylon*, *Mimosa pudica*, *Strychnos nux-vomica* and *Terminalia cuneata* have been reported in the literature [25-27].

The traditional knowledge about utilization of local plant species is vital in alternate healthcare system as well as for the self sustainance of local population. High costs coupled with numerous side effects of synthetic drugs are forcing people to depend on the locally available herbal medicine for their healthcare needs. Methods of medical treatment used by knowledgeable elder people and local herbal healers in Bhadravathi taluk were totally traditional, very effective and acquired through their ancestors orally. It is high time that these herbal species are scientifically evaluated and conserved for the well being of mankind. These traditional herbal formulations need further pharmacological investigations to prove their efficacy and also develop
new drugs for the effective treatment of chronic diseases in both human and veterinary species.

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