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Ethno-medicinal application of plants in the eastern region of Shimoga district, Karnataka, India

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ABSTRACT

Aim of the study: The present paper aimed to document and study the role of traditional herbal drugs in the treatment of human and veterinary ailments by communities residing in the eastern part of Shimoga district of Karnataka in India and to determine the consensus of informant's knowledge on different category of ailments and fidelity level of plant species in treating particular disease.
Methodology: The ethno-medico-botanical information was collected from herbal healers and knowledgeable elder people residing in 15 randomly selected villages using semi-structured interviews. The data were subjected to informant consensus factor (ICF) and fidelity level (FL) analyses.
Results: Eighty-five plant species of 41 families used to treat 31 human and 10 veterinary ailments were documented. Those medicinal plants which are effective in the treatment of liver complaints category had high ICF (0.77) and the skin diseases and disorders category attracted low ICF (0.12). Certain medicinal plants like *Cyclea peltata*, *Justicia adhatoda*, *Memecylon umbellatum*, *Phyllanthus amarus* and *Tabernaemontana alternifolia* were assigned with high degree of FL (100%) value and certain species like *Cassia fistula* was assigned with very low FL (25%). Some of the noteworthy medicinal uses of plant species in the study area were not reported for such purposes in the previously published literature on ethnobotany.
Conclusion: The local communities residing in eastern part of Shimoga district depended on herbal formulations for the treatment of diseases and disorders that affected them and their animals, as well. A high ICF and FL values indicated the possible occurrence of valuable bioactive compounds in certain plants and such of these plants need scientific evaluation for their pharmacological activities.

1. Introduction

Plants are important sources of therapeutic drugs and play a significant role in the survival of the tribal and ethnic communities. India is rich in cultural and floristic diversity and also a store house of ethno-botanical knowledge. Large sections of Indian population still rely on plant-based medicines as they are abundantly available, economical, and have little or no side-effects (Sinha, 1996; Dubey et al., 2004) in addition to their cultural acceptability (Pal and Shukla, 2003). Of late, medicinal plants have gained global importance in alternative health-care system, for their proven and effective curative properties. Certain plant drugs used in modern medicine have ethno-botanical background (Dev, 1997; Fabricant and Farnsworth, 2001). Certain important scientific evaluations of plant species include bioactive compounds like artemisinin from *Artemisia annua*, vincristine and vinblastine both isolated from *Catharanthus roseus* and shatavarin-I from roots of *Asparagus racemosus* and curcumin from *Curcuma longa* (Dev, 1997). Globalisation and changes in human life style have tremendous ill-effects on traditional culture in India. Hence, medico-botanical knowledge of different ethnic and folklore communities and tribals need urgent documentation, before it is completely lost.

The wealth of ethno-botanical knowledge has been documented from various parts of India (Jana and Chauhan, 2000; Katewa and Galav, 2005; Udayan et al., 2005; Das and Tag, 2006; Dabagar, 2006; Tiwari and Pande, 2006; Samy et al., 2008). In Karnataka state, the knowledge of ethno-medicinal value of plants with various tribal and rural folk communities for treating various diseases and disorders has been documented to some extent (Bhandary et al., 1995, 1996; Harsha et al., 2002; Parinitha et al., 2004, 2005). A perusal of these reports suggest that documentation of this knowledge in Karnataka is incomplete, and particularly, it is so in the Shimoga district of Karnataka. In this paper, an attempt has been made to collect and document the traditional medicinal plant knowledge of local herbal healers of different castes and communities residing in the eastern part of Shimoga district.

2. Methodology

Shimoga district of Karnataka state is situated in the heart of the Western Ghats region, which is one of the 'hot-spots of bio-

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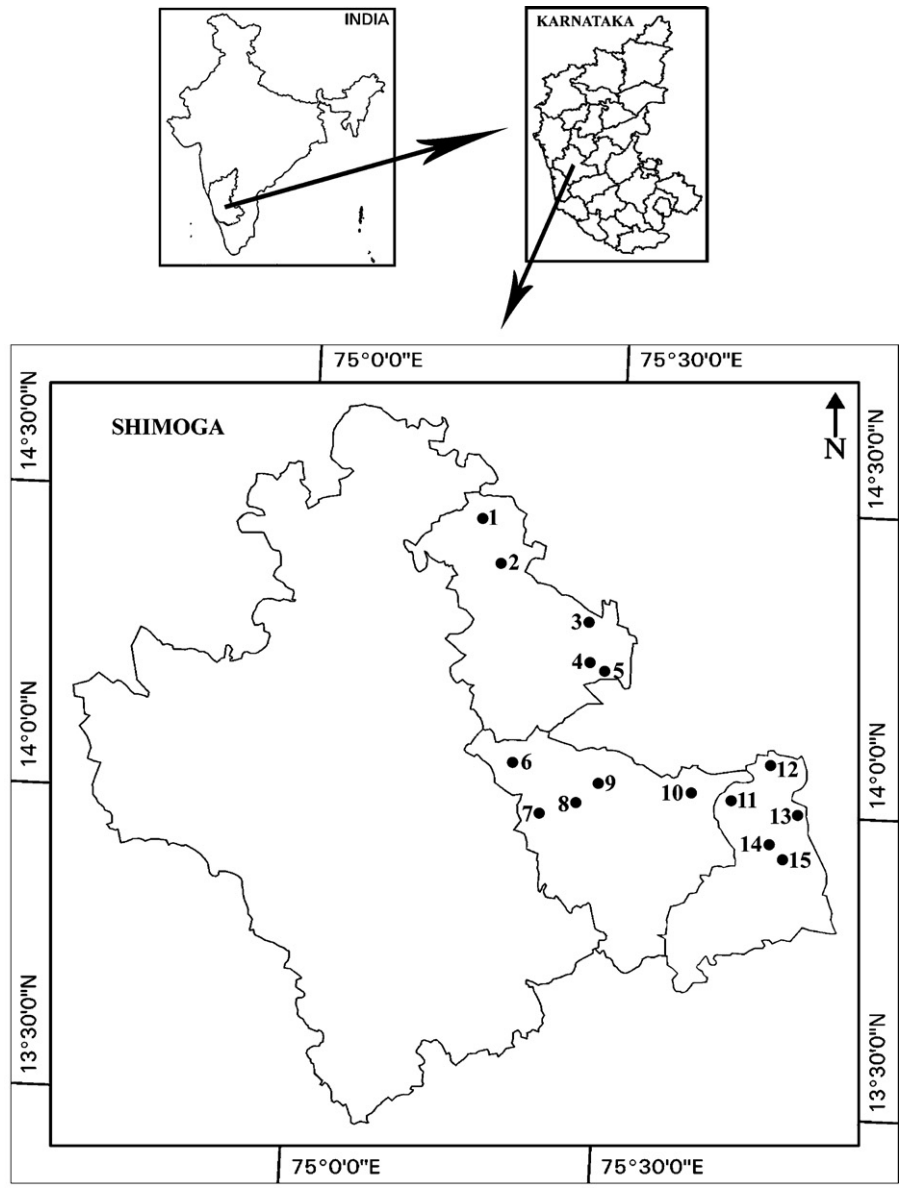

1. Narasapura
2. Huliginakoppa
3. Maravalli
4. Hosur
5. Nallinakoppa
6. Choradi
7. Mandaghatta
8. Ayanuru
9. Haranahalli
10. Haramaghatta
11. Sanyasikodamagge
12. Sydarakallalli
13. Hanchinasiddapura
14. Kallihalu
15. Arakere

Fig. 1. Map showing study sites of Shimoga district.

diversity' in India. Shimoga district is situated between 13°27′ and 14°39′ N latitude and between 74°37′ and 75°52′ E longitude in about the mid-southwestern part of the Karnataka State (Fig. 1). The study area, the eastern part of Shimoga district, is rich in natural vegetation and comprises mainly of moist and dry deciduous types of forest supporting a variety of medicinal plants and receives an average annual rainfall of 1812 mm. The eastern part of the district include three taluks—Bhadravathi, Shimoga and Shikaripura, covering a total area of 2707 km^2. Agriculture is the major occupation in this area and Bhadra, Tunga and Anjanapura reservoirs provide irrigation facilities. Paddy, sugarcane, areca nut, sorghum, maize and cotton are the main crops.

A preliminary survey of villages (study sites) in the eastern part of Shimoga district revealed that local communities used herbal medicine extensively in their health-care system. Twelve villages were in proximity to forests, and rivers, while three to towns (N. Rajakumar, personal observation). Frequent ethno-botanical field visits were paid to 15 selected study sites during December 2005–January 2007. Each village was visited atleast three times during the study period. The ethno-medico-botanical information was collected and documented through casual conversations and semi-structured interview technique (Martin, 1995) with local herbal practitioners and knowledgeable residents of the study area. During the field survey, the information collected on plant species used to treat various human and veterinary diseases and