



## Research paper

## Traditional herbal medicines practiced by the ethnic people in Sathyamangalam forests of Western Ghats, India



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## ABSTRACT

**Introduction:** Traditional medicine plays an important role in the primary healthcare of people residing in forest areas and selling raw herbal products provides livelihood opportunities. In view of this, an extensive survey was undertaken among local people and herbalists in Sathyamangalam forests of Western Ghats, India in order to conduct a quantitative analysis of traditional knowledge about herbal medicines practiced along with their market potential.

**Methods:** Data associated with the information collected from ethnic people were analysed using the frequency of citations. During the survey period, 45 informants were identified who had much knowledge on practicing herbal medicines.

**Results:** A total of 78 plants representing 41 families and 68 genera were recorded to treat 40 types of ailments. Of these 64 species were sold by traders, local people and herbalists in herbal markets. Also 71 species of documented plants were included in the list of traded Indian plants.

**Conclusion:** Our study exhibited the importance of plant sources to human welfare which can serve as a key for discovery of potential new drugs. Through the results of our explorative field survey and previous reports, *Andrographis alata*, *Aristolochia bracteolata*, *Aristolochia tagala*, *Bulbophyllum fuscopurpureum*, *Canarium strictum*, *Cinnamomum tamala*, *Curculigo orchioides*, *Ipomoea obscura*, *Mucuna pruriens*, *Pandanus odoardii* and *Tylophora asthmatica* were investigated pharmacologically, as these plants were frequently used by studied ethnic people. So we suggest that there is a need for more future scientific research on these plants to determine their efficacy and safety based on their associated ethnomedicinal uses documented in the present study.

### 1. Introduction

Plants have been used as a source of medicine since earliest times to treat various diseases. Ethnobiology and ethnopharmacology field studies aim at collecting information on local and traditional uses of plants and other natural substances and approaches used for such surveys involved different methods [1]. About 70–95% of population in Asia, Africa, Latin America and Middle East countries depend on traditional medicine for primary health care [2]. It was reported that, numerous biomolecules were developed from traditional medicinal plants in support of their utility among ethnic people [3]. Ethnomedicinal explorations are essential to identify significant indigenous plant species in investigation of new drugs [4]. Thus, it is important to document traditional knowledge about medicinal plants used by ethnic people since such information can help in obtaining maximum benefits and increases the possibility of their safe and efficient use in future [5].

The use of herbal remedies as an alternative to conventional medicine is becoming increasingly popular due to their lesser side effects [6]. During the last few decades, lot of facts about traditional knowledge has been recorded all over the World by qualitative and quantitative approaches with regard to relationship between human and plants [7–11]. However criticisms were raised over paternalistic and simplistic nature of these studies and credibility to uphold biomedical assessment and natural resource management is doubted [12]. Ethnic people rely on plants which are mostly collected from wild habitats for their food and primary healthcare.

The well-known Indian systems of medicine include ayurveda, siddha, unani and folk medicines. Siddha and ayurvedic medicines are considered as oldest medical systems having information about natural remedies and well established from ancient period with the basis of folk medicinal practices. Siddha medicine was invented by Dravidian culture, full-fledged during Indus valley civilization and believed to be a

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**Fig. 1.** Location map of study areas in Sathyamangalam forests of Tamil Nadu, India.

brilliant attainment in Tamil culture in the state of Tamil Nadu. Unani is modern medical system in Egypt, Syria, Iran, Iraq, China, India and in some Eastern countries. Persian and Arab settlers introduced Unani system of medicine to India during 11th century and it acclaimed and well developed in Mughal period. Folk medicine is an uncoded system of medicine and plays an important role in healthcare of ethnic people mostly those who are dependent on forest resources [13].

Documenting folk practices about plants used by ethnic people is necessary for conserving traditional knowledge which have to be developed as searchable databases which ensure protection of related resources and knowledge. In view of this, Council for Scientific and Industrial Research (CSIR, Govt. of India) has developed Traditional Knowledge Digital Library (TKDL), a unique database project ([www.tkdl.res.in](http://www.tkdl.res.in)) with the aim of documenting ethnic knowledge and recorded over 25,000 information related to medicinal plants, minerals, animal resources, their therapeutic uses, clinical applications, etc. [2].

There has been an increasing interest in study of medicinal plants and their traditional use in different parts of India in recent times. Moreover, none of the previous studies discussed the trade value of plants used by ethnic communities, since marketing of herbal drugs exemplifies the culture and trade value of ethnomedicines and offer commercialization of folk medicinal products [12,14,15]. Existing publications on plants used by ethnic people in and around the study area were not conducted in a comprehensive way [16–21] and were conducted qualitatively with a lacuna in data analysis. Based on these facets, present study was undertaken to document ethnomedicinal knowledge of traditional healers and local people residing in the forests of Sathyamangalam region in Western Ghats, southern India. The main objective of this study is to analyse the documented medicinal

information through quantitative indicators along with their market potential and the extent of current knowledge of traditional healers on plants in the study area.

## 2. Methods

### 2.1. Study area

Sathyamangalam hills are one of the unexplored and most significant forests in Erode district of southern India covering an area of 1411.6 km<sup>2</sup>. These hills are situated in border of two south Indian states, Tamil Nadu and Karnataka. It is also a significant wildlife corridor to link two major zones of Western Ghats and Eastern Ghats with rich diversity of forest resources. The floristic diversity is very rich in these hills due to restricted entry of public after declaration of this area as “Sathyamangalam wildlife sanctuary & Tiger Reserve” in 2008 and considered as one of the largest wildlife sanctuaries in Tamil Nadu (“Declaration of Sathyamangalam Forest Division as Wild Life Sanctuary under the Wild Life (Protection) Act” by Government of Tamil Nadu: 390 dated 03-12-2008). These forests were also familiar for diversity of commercially valuable trees such as teak, sandalwood and rosewood. The present study was conducted in villages such as *Sathyamangalam*, *Bannari*, *Bhavanisagar*, *Thalavadi* and *Kadambur* which are situated in the foot hills of Western Ghats (Fig. 1).

### 2.2. Data collection

In order to document the utilization of plants, a methodical survey was carried out during July 2016 to June 2017. We have obtained

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