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Review

Ethnobotanical approaches of traditional medicine studies in Southwest China: A literature review

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ABSTRACT

Ethnopharmacological relevance: The ethnopharmacology of Southwest China is extremely interesting because of the region's high level of cultural and medicinal plant diversity. Little work has been done to document the traditional medicinal practices in this area. This review aims to provide an overview of the current knowledge of how medicinal plants in this area are utilized, and conserved, in order to better understand the medicinal flora, identify research gaps, and suggest directions for further research.

Material and methods: A literature review was conducted that included peer reviewed journals, website, books, theses and scientific reports from 1979 to 2014. The distribution and characteristics of medicinal plant knowledge in each province, methods applied in research, and the fluctuations of literature in 5 year intervals were analyzed. The distribution research on different plant groups including fungi, ferns, mosses, and vascular plants were also analyzed.

Results and discussion: A total of 436 publications from 1979 to 2014 were selected for analysis. References were classified into three stages: discovery stage, utilization stage and conservation stage. Detailed results about the focus of the references, the methods applied, the development and relationship among all folk medicine in Southwest China, Daodi ethnomedicinal resources, Pharmacological studies and Toxicology studies were discussed. While, compared to the rich medicinal flora, the complex demographics and cultural diversity, a large gap still exist to fully understand and document the medicinal flora.

Conclusions: Based on the review results, most research efforts in Southwest China focused on the first step: discovery of traditional usage, geographical distribution, and taxonomy of medicinal species. Only a small percentage of traditional uses or treatments have been tested by modern ethnobotanical approaches. Further research needs to put more emphasis on identifying adulterations, evaluating of Daodi medicine, and elucidating effective compounds from traditional drugs, using molecular and phytochemical approaches. Knowledge on ethnic and cultural aspects of medicinal plant species, to develop effective conservation and sustainable use protocols is lacking.

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1. Introduction

Southwest China is generally defined as the area that includes the provinces of Sichuan, Yunnan and Guizhou, and Tibet Autonomous Region, and the municipality of Chongqing, (Ministry of Civil Affairs of the People's Republic of China, 2005). This area occupies 2,351,000 square kilometers, with a population of 195 million (Census 2012). The region is bordered by Pakistan, India, Nepal, Bhutan, Myanmar, Laos, and Vietnam.

The area represents a global biodiversity hotspot (Mittermeier et al., 1998; Myers et al., 2000). Its complex and diverse topography, and varying climates, provide a partial explanation for the high biodiversity. The lower elevations in South Yunnan (e.g. Yuanjiang River Valley) are characterized by a dry valley climate, while the Tibetan Plateau with an average elevation of above 4000 m is characterized by an alpine cold climate. While the Sichuan Basin and Yunnan-Guizhou Plateau have a humid subtropical monsoon climate, the southern end of the region shows a tropical monsoon forest climate, and distinct wet and dry seasons Fig. 1.

This area is known as the "kingdom of plants". So far, 25,998 species and intraspecific taxa have been recorded (Fu et al., 2001). Of these 9190 are endemic. The medicinal flora of Southwest China is composed of approximately 5751 species, representing 80% of China's medicinal flora (Chen, 1994).

The area is also famous for its large diversity of ethnic groups with very distinct traditional cultures. People from 33 ethnicities have been using plants as traditional medicine for thousands of years, including Achang, Bai, Bulang, Buyi, Tibeten, Dai, De'ang, Dong, Dulong, Hani, Han, Hui, Jinuo, Jingpo, Lahu, Lisu, Luoba, Maonan, Menba, Miao, Molao, Naxi, Nu, Pumi, Qiang, She, Shui, Tujia, Wa, Yao, Yi, Gelao, Zhuang people (Yang et al., 2011). Twelve of these groups are unique to the region and the other 21 have more than 80% of their population here (Yang et al., 2011).

Fig. 1. Map of Southwest China (Marked patch).
Source: (DIVA-GIS).