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Ethnobotanical Survey of Folklore medicinal Plants from Dimapur District of Nagaland, India

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ABSTRACT

An Ethnobotanical (EBot) survey was undertaken to collect information from local people about the use of medicinal plants (MPs) in Dimapur district of Nagaland, and local people use certain folklore medicinal plants for the treatment of various ailments and diseases. The aboriginal Naga tribes have a rich knowledge, based on their natural resources, of indigenous folk medicine. Their beliefs and folk practices are based on past experience with various diseases and their cures. The significant of the study is that certain plants are believed to have multi-chemical properties in healing and curing as it differs from other neighbouring communities. This paper highlights the ethnomedicinal (EMed) uses of 63 different species of plants used by the different tribe.

Keywords: Ethnobotanical, medicinal plants, Ethnomedicinal

1. INTRODUCTION

Medicinal plants (MPs) are only source and an important contribution for primary healthcare during ancient times. Knowledge about use of medicinal plants for treating various diseases was highly valued among ancient civilizations. Until the mid-nineteenth century, plants were the main therapeutic agents used by humans and still have an important role in medicinal preparations (Camejo-Rodrigues *et al.*, 2003). MPs play a key role in providing

essential services in an ecosystem (Jamshidi-Kia *et al.*, 2018). Humanity has developed expertise for routine survival through humane plant interactions. Such knowledge is transmitted from one generation to another and has yielded practical discoveries and development of different cultures (Senanayake, 2006). Cultural diversity, therefore, depends on biological diversity to provide material for humans to create lifestyles in their societies (Padulosi *et al.*, 2002; Rahman *et al.*, 2019; Karnan *et al.*, 2017; Subhasis, 2019).

EBot is the study of the interactions and relationships between plants and people over time and space. This includes the uses, knowledge, beliefs, management systems, classification systems and language that both modern and traditional cultures have for plants and their associated terrestrial and aquatic ecosystems.

During the last few decades, there has been an increasing interest in the study of medicinal plants and their indigenous uses in different parts of the world. The ethnic people residing in different geographical belts of India depends on wild plants to meet their basic requirements and all the ethnic communities have their own pool of secret EMed and EPMC knowledge about the plants available in their surroundings (Shanley and Luz, 2003; Mukherjee and Wahile, 2006), which has been serving rural people with its superiority.

There are varieties of medicinal herbs and shrubs, eatables plants which are of great botanical value. Hence, the present study was aimed to explore and document of folk knowledge of local village people in Dimapur District of Nagaland, India.

2. MATERIALS AND METHODS

2. 1. Area of study

Dimapur is a city in Nagaland, India. It is the most populous city of Nagaland and also the most densely populated city in the state with an estimated population of about 2, 54,000. The city is the main gateway and commercial centre of Nagaland. Geographically (25°92'N to 25°85'N latitude and 93°73'E to 93°92'E longitude), and covers an area of 2,558/km² (6,630/sq mi) (Figure 1).

Tribes are also known for their knowledge about the use of herbal plants which are used as medicine, and also local traditional healers having practical knowledge on MPs, their usage and the types of diseases treated etc.

The aim of the study was to document the plants used by Nagas Tribal in Dimapur of Nagaland as medicines. The study was conducted during the month of December to January 2021.

The study was conducted in different villages. All the MPs, local name, part used and medicinal uses were collected and noted down through oral conversation. A total of 40 (forty) informants each from the different villages were interviewed which included herbalists, traditional healers, bonesetters, mid-wives, village elders and farmers. The age of the informants was above 40 years. Collection of data was carried out with the aid of in-depth interviews and Focus Group Discussions (FGDs).

The information provided by one person was cross checked with another so as to authenticate the information acquired. The purpose of the data collection was clearly disclosed to the respondents and their consents were taken for further research work.

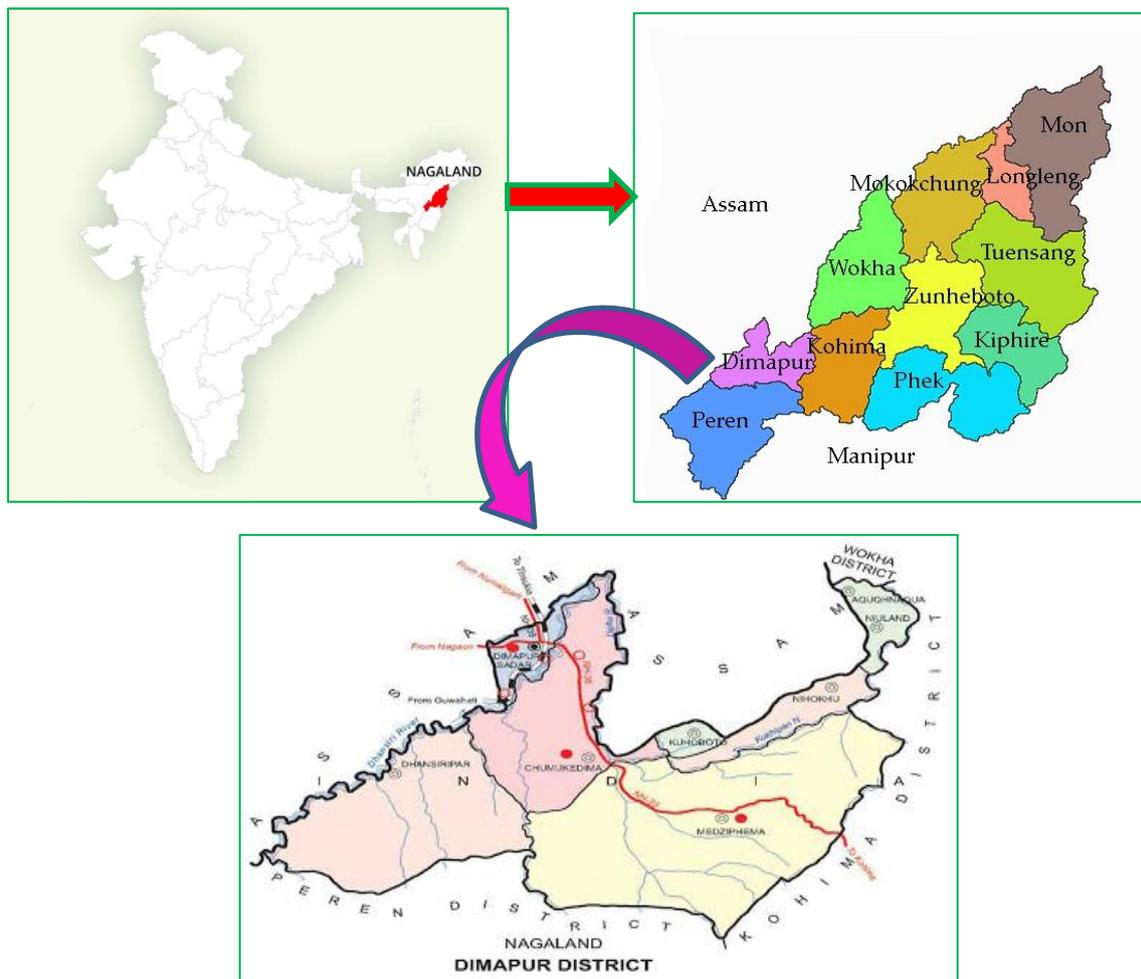


Figure 1. Map location of the study area

3. RESULT

The present study focused on the uses of plants for medicinal purposes by the Naga tribes of Nagaland. It was discovered that a large number of plants were used by the tribals for treating various ailments. The research revealed that a total of 63 different plants species belonging to 31 families were used by the naga people. The conducted survey plant species along with the description like botanical name, family, local name, common name, distribution, medicinal system, part used and their medicinal uses were summarized in Figure 2 & 3. Among the 31 families, *Asteraceae* was found to be dominant with 7 species. *Fabaceae* and *Lamiaceae* were represented by 6 species each.

Araceae was found to be with 3 species. The family *Amaryllidaceae*, *Cannabaceae*, *Euphorbiaceae*, *Malvaceae* and *Moraceae* were represented by two species each. Family *Acoraceae*, *Amaranthaceae*, *Anacardiaceae*, *Apiaceae*, *Asteraceae*, *Boraginaceae*, *Brassicaceae*, *Caryophyllaceae*, *Commelinaceae*, *Costaceae*, *Hypoxidaceae*, *Marantaceae*, *Mimosaceae*, *Myrtaceae*, *Passifloraceae*, *Phyllanthaceae*, *Poaceae*, *Polygonaceae*, *Portupaceae*, *Rosaceae*, *Rutaceae* and *Sapindaceae* were represented by only one species each.

According to the research, the most medicinal used part of the plant is leaves. Due to anthropogenic activities like deforestation, cultivation and forest burning EMed plants are in grave danger of extinction. Community awareness on the preservation of forest among the villagers becomes a necessary measure to conserve EMedPs. Therefore, it is now felt that conservation and preservation of these species, creating awareness, developing proper protocol on the agronomics for cultivation of these medicinal plants and pharmacological studies is the need of the hour.

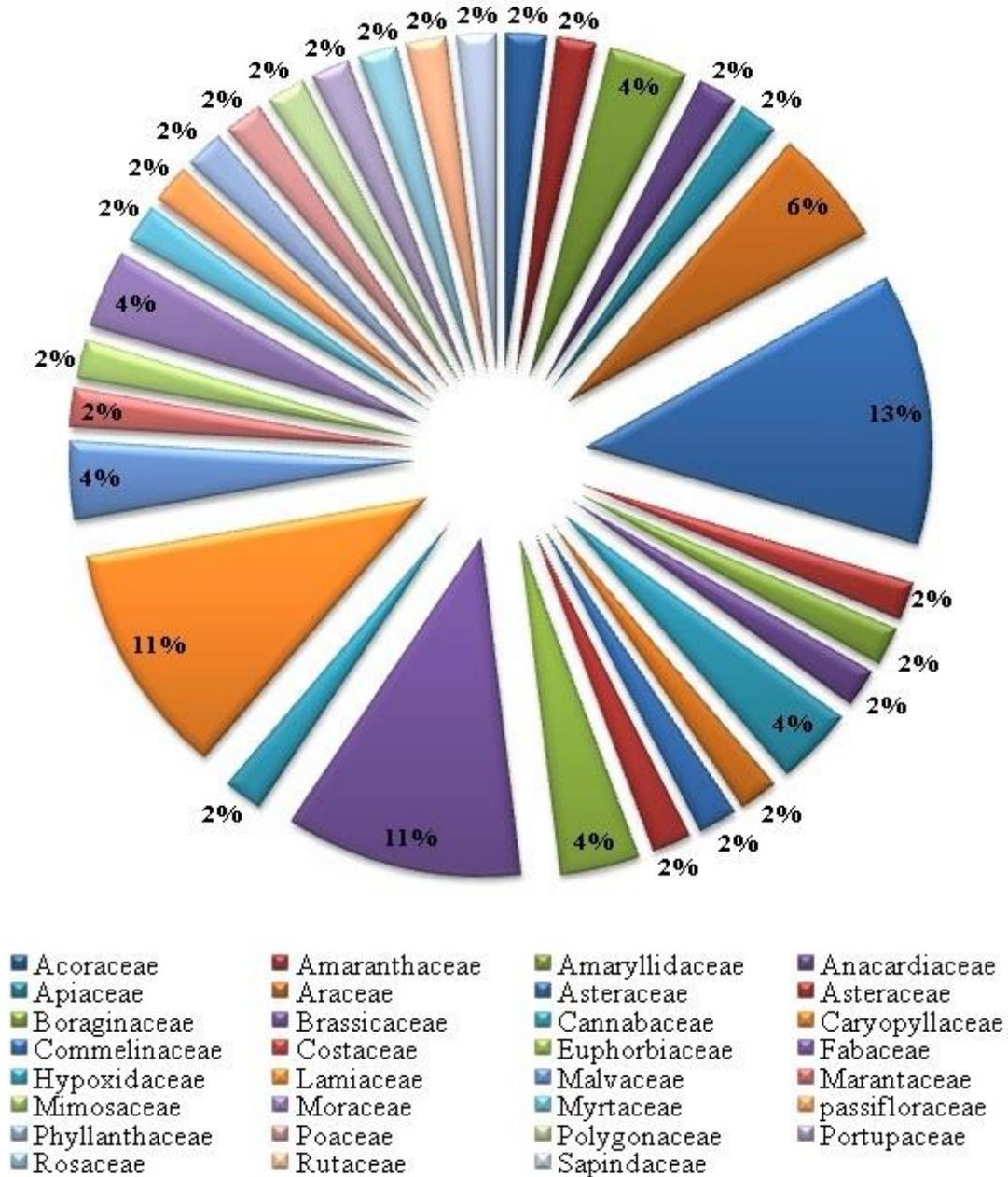


Figure 2. The percentage of plants family used for various types of diseases in the traditional methods of the study area

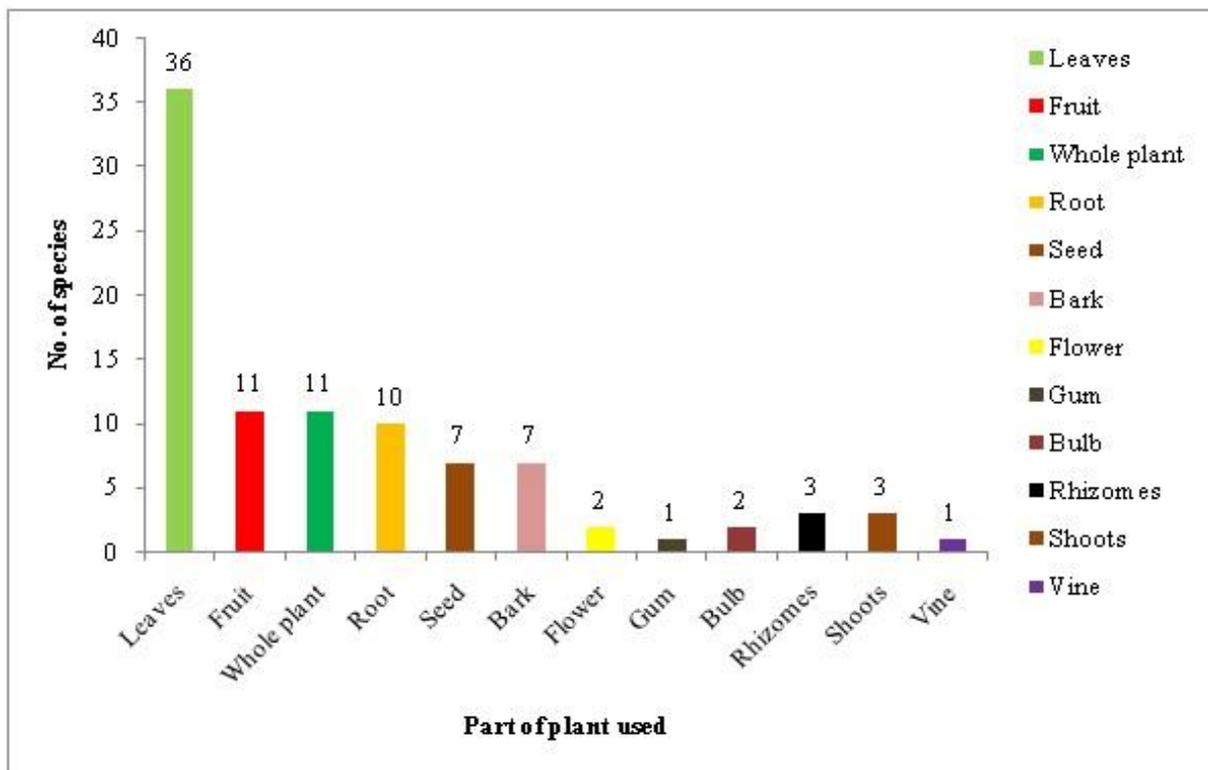


Figure 3. Bar diagram showing different parts used for medicinal purpose from of medicinal plants

4. DISCUSSION & CONSLUSIONS

The MPs uses of species namely, *A. chinense*, *C. asiatica*, *C. esculenta*, *H. cordata*, *O. indicum* and *Z. armatum* by different Naga tribes have also been reported (Changkija, 1999; Jamir, 2006; Deorani and Sharma, 2007), and the tribe has aged old unique food habits for their nutritional support and health care (Premkumar *et al.*, 2015). Some MPs and status in wild also discusses on the need for harnessing the rich bio-resources and translating it to economic products (Mao *et al.*, 2009), further many MPs present in the study have also been reported by several authors (Temsutola *et al.*, 2017; Jamir and Tsurho, 2017), used similar purposes in Nagaland (Lanunla, 2021). A total of 59 medicinal plants were documented and further the scientific names, common names, local names, family, habitat and medicinal uses.

The younger generation do not favour the value placed by their ancestors about the herbal use in lesser common diseases like fever, stomach ache, sprains, minor injuries etc., (Hanako *et al.*, 2015), and conducted during November 2019 to December 2019, documenting a total of 32 MPs, further study indicates that there is an immense potential for research of EMed in Longiang village of Mokokchung district and also ensuring the maintenance of the valuable indigenous knowledge associated with MPs (Lanuinla, 2021). Some MPs such as *P. murex*, *P. granatum*, *E. variagata*, *C. aromaticus*, *F. racemosa*, *L. angustifolia*, *C. limetta*, *P. pinnata*, *J. repens*, *H. auriculata* their bioactivity have been studied several authors in Tamil Nadu (Baranitharan *et al.*, 2016; 2017; 2018; 2019; 2020; 2021; Jebanesan *et al.*, 2021; Krishnappa

et al., 2020). EBot and its relevance in contemporary research (Pandey and Tripathi, 2017), and MPs and uses in upper Assam (Saikai and Khan, 2011). Ensuring to unearth the information of EBot value before some of the plants having medicinal/agricultural value become extinct is necessary for the benefit of mankind at large (Dutta and Dutta, 2005).

The result also reveals that many wild species are under growing pressures from various anthropogenic factors. However, from the EMed study, it is concluded that the tribal community of the study area use weeds in their daily life.

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