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Uses of ethnomedicinal plants by the people living around Kitam Bird Wildlife Sanctuary, South Sikkim, India

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ABSTRACT

The utilization of wild medicinal plants in primary healthcare system is still vital for mankind, particularly for people residing nearby the protected area. However, ethnobiological knowledge of indigenous people on plant usage is diminishing. The present study aimed at documenting the wild ethnomedicinal plants and to evaluate their importance in the healthcare among the local inhabitants in the fringe villages of Kitam Bird Sanctuary, South Sikkim, India. The methodology comprised interviews and questionnaire-based household surveys focusing on the informant's knowledge and experience in the use of wild medicinal plants against several diseases and ailments. Data was analysed using relative frequency citation (RFC), use value (UV), informant consensus factor (ICF) and fidelity level (FL%). A total of 23 ethnomedicinal plant species belonging to 20 families were recorded from the study area. Among the growth forms, herbs accounted the highest number of species (39%), followed by trees (30%), climbers (13%), ferns and shrubs with 9% each. Fruits have shown the highest use (20%), followed by leaves (16%) and whole plant. *Terminalia chebula* had the highest RFC (0.91) and UV (0.99), followed by *Terminalia bellirica* (RFC = 0.89, UV = 0.96) and *Phyllanthus emblica* (RFC = 0.84, UV = 0.91). Results indicate that the locals in the area had good ethnobotanical knowledge of medicinal plants which indicates their dependency on plants for treating several ailments and diseases. Some unexplored species such as *Calamus erectus, Laportea bulbifera, Pteris biaurita* and *Solanum viarum* possessing high fidelity level have scope for further pharmacological investigation.

1. Introduction

The Indian Himalayan Region (IHR), well recognised for repository of floral and ethnic diversity, is vital for ecological and economic security of India. In the IHR around 171 ethnic groups (30% of the total ethnic group of India) inhabit in remote areas, and they are highly reliant on the forest resources for their basic requirements, particularly for primary health care needs [1]. Owing to the close association with nature, the tribal and local communities of the IHR have developed the traditional knowledge system that incorporates the use of locally available plants and its products for the treatments of several ailments and diseases [2]. But with the impact of urbanization, industrialization, migration from rural to urban areas, rapid loss of natural habitats and changes in life style, the wealth of knowledge on ethnomedicinal plants from many cultures are gradually diminishing [3,4]. The fading of traditional knowledge in today's world suggests that the chain of oral transmission between generations is breaking [5]. Realizing the dire need of integration of ethnomedicinal plant based traditional medicine into health sector, the WHO has launched traditional medicine strategy 2014–2023 so that reliable field-based information and data can be obtained [6]. Field based exploration and documentation of medicinal plant will fill in the gap of traditional knowledge and build up human understanding on plants and help to identify important species for conservation and management. The documentation and prioritization of ethnomedicinal plants will also form a baseline for conducting studies on bioactive components and plant-based drug discovery programme. Recently, Kumar et al. suggested that traditional ethnobotanical knowledge and indigenous communities are associated with at least 7 sustainable development goals (SDGs) out of 17 goals adopted by United Nations General Assembly [7].

Sikkim has diverse ecological zones ranging from tropical to alpine that harbours different floral and faunal diversity. In Sikkim, many

Abbreviations: KBS, Kitam Bird Sanctuary; RFC, Relative Frequency Citation; UV, Use Value; ICF, Informant Consensus Factor; FL, Fidelity Level.

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