



Review article

## Traditional use of plants against leprosy in India: a review of the recent literature

G. Ghosh\*

Department of Botany, Bejoy Narayan Mahavidyalaya, Itachuna, Hooghly – 712147, West Bengal, India.

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**\*Corresponding Author: G. Ghosh,** Deptt. of Botany, Bejoy Narayan Mahavidyalaya, Itachuna, Hooghly-712147, West Bengal, India.

### Abstract

Leprosy is an age-old disease. Throughout history the people afflicted have often been ostracized by their communities and families. The present review deals with the enormous amount of ethnobotanical work performed in the last few years involving use of different plants against leprosy in India. From a variety of literature sources the data has been compiled mentioning the scientific name of plants, their geographical locations, name of the user ethnic groups, mode of administration, parts used, dosage, etc. depending on availability of information. These traditional knowledge of plants in medicine was losing and it may preserved that should provide a base for its further phytochemical research and its conservation.

### Introduction

India with its great topography and climatic diversity has a very rich and diverse flora and fauna. It is one of the 12 mega diverse countries of the world with 16 agro climatic zones, 12 vegetative zones, 15 biotic provinces and 426 biomes with 15,000 medicinal plants, out of which 7,000 are used in *Ayurveda*, 700 in *Unani* and 600 in *Siddha* systems of medicine [1]. There are over 400 different tribal and other ethnic groups constituting about 7.5% of India's population [2]. World Health Organization estimates over 80% of the people in developing countries depend on traditional medicines for their primary health needs. In the developed countries, 25% of the medicinal drugs are based on plants and their derivatives [3, 4]. In India there are many ethnic groups with rich cultural heritage still using the traditional herbal medicine for treating various diseases [1, 5, 6, 7]. From the ancient times various types of skin diseases like leprosy, eczema, leucoderma, ringworm, and scabies are treated completely with plant origin medicines. Leprosy is an infectious disease that caused by bacillus bacteria, *Mycobacterium leprae* and has been known since biblical times. It is characterized by disfiguring skin sores, nerve damage, and progressive debilitation [8]. The total number of leprosy cases registered globally 171948 in March, 2017. The new cases of leprosy detected globally 214783 among these 135485 are from India in 2016. During the same year the number of leprosy cases with Grade- 2 disabilities detected globally 12819 and India alone contributes 5098 [9]. Though, leprosy is curable with treatment known as multidrug therapy (MDT).

Several drugs are used in combination in multidrug therapy. These drugs must never be used alone as monotherapy for leprosy. The World Health Organization system distinguishes "paucibacillary" and "multibacillary" based upon the proliferation of bacteria. MDT consists of 2 or 3 drugs: dapsone and rifampicin for all patients, with clofazimin added for multibacillary disease. This drug combination kills the pathogen and cures the patient. The Bacillus Calmette–Guerin (BCG) vaccine offers a variable amount of protection against leprosy in addition to tuberculosis [10, 11]. These few allopathic drugs are not enough to fight worldwide with this massive number of leprosy patients in poor countries like India. So alternative way should be search and plant medicine will be one of the best options for the treatments of leprosy in poor countries where easily available diverse medicinal plants that are cost effective and biologically safe. Therefore, herbal medicine has played the most important role in the treatment of leprosy in Africa [12]. In a study in Nigeria 59% of leprosy patients were found to first consult folk medicine [13]. Medicinal plants and plant based natural products have been reported to possess anti bacterial properties [14]. Gautam *et al.* highlight the enormous chemical diversity of plant kingdom and provide detailed information on 255 plant species that have demonstrated antimycobacterial activity, of these 35 have been reported in *Ayurveda* for use against leprosy [13, 15]. There is huge collection of Indian medicinal plants used for treating leprosy. This review therefore attempts to compile their traditional knowledge including preparations, doses, mode of administration etc. with proper management and