

## The importance of biodiversity in therapeutically promising plant species native to North East India.

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### Editorial

The North East region of India, with a total size of 262, 179 square kilometres and latitudes ranging from 87°E to 97°E and longitudes ranging from 21°N to 29°N, is an important portion of the Indo-Burma biodiversity hotspot, often known as the "Cradle of Flowering Plants." Northeast India is a crossroads for the Indian, Indo-Malayan, and Indo-Chinese bioregions, as well as a meeting point for the Himalayan Mountains and Peninsular India.

Northeast India is thus the physical "gateway" to most of India's flora and fauna, and as a result, the region is one of the most biologically diverse, with around 8000 of India's 15000 varieties of flowering plants. It contains 40 gymnosperm species out of 54, 500 pteridophyte species out of 1012, 825 orchid species out of 1145, 80 Rhododendron species out of 90, 60 bamboo species out of 110, and 25 cane species out of 56. Medicinal and aromatic plants, as well as many other rare and endangered taxa, abound in the region. In this region, 51, 95, and 18 medicinal plant species have been classified as Endangered, Rare, and Vulnerable, respectively.

Medicinal characteristics have been discovered in about 12.5 percent of the 4, 22,000 plant species reported around the world. This region is home to more than 200 tribes from North East India that have a wealth of traditional herbal medical expertise. A sizable portion of the population in this region of the country remains reliant on traditional health care systems, employing a variety of indigenous methods and materials to cure personal and cattle illnesses.

Local people have been documented to have employed 152, 77, 81, 19, and 37 herbs in the treatment of Malaria, Stomach Trouble, Diabetes, Gynecological Disorder, and Childcare Disease, respectively. This record, however, is insufficient in light of the region's considerable ethnic diversity, challenging terrains, and ecological complexity. People who have access to modern allopathic medication nonetheless choose herbal remedies since they are easier to obtain, have fewer side effects, and are less expensive.

However, there is a scarcity of information about the diversity, usage, and cultivation of these species. Furthermore, medicinal plant conservation and sustainable utilisation are critical for improved resource management. Several of these medicinal plant species have low population densities, moderate growth rates, and limited geographic ranges, making them more vulnerable to extinction. In contrast, because information on the use of plant species for therapeutic purposes has been passed down through oral tradition from generation to generation, this knowledge of therapeutic plants has begun to dwindle and become obsolete as a result of a shift in attitude and ongoing socioeconomic changes.

The necessity to examine valuable knowledge with the hope of developing the medicinal plants sector comes as a result of the ongoing erosion of traditional knowledge of many important plants for medicine in the past and the renewed interest presently.

With this in mind, an attempt was made to concentrate on a significant amount of this diversity, which includes a number of therapeutically important indigenous plant species native to this region. So far, two years of collecting medicinal plants throughout the area has yielded a collection of 179 shrubs, 177 herbs, 68 creepers, and 115 trees.

The germplasm gathered is kept in the field gene bank at the BN College of Agriculture's Assam campus. The morphological and taxonomic characterizations of the genotypes are underway. It is believed that these valuable genetic stocks shall be of immense value for the research on drug discovery, validation of traditional healing practices, micro-propagation of commercial species and biotechnological studies including genomics, metabolomics & phenomics of medicinal plant.

Although, a number of phytochemicals are known worldwide for their use as potential drugs for the treatment of various diseases including cancer, these traditional treasures of medicinal plants are yet to gain the attention of scientific community. They are not only considered as valuable economic resources to the country of India but also as the source of discovery of new. Despite the fact that a number of phytochemicals have been identified as possible medications for the treatment of a variety of ailments, including cancer, the scientific community has yet to pay attention to these ancient medicinal plant gems. They are regarded not just as major economic resources for India, but also as a source of fresh discoveries.

We would like to draw the scientific community's attention to the need for more intensive research into the therapeutic properties of traditionally known species, as well as biomolecular characterization and screening of specific therapeutically important compounds using biomolecular tools, as well as conservation efforts.

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