

# Traditional Plant uses and Indigenous Knowledge in Ethnobotany

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**Abstract**— Malaria, diabetes, tetanus, and pneumonia were the top four diseases for which locals had an understanding of medicinal plants (40%+), followed by arteriosclerosis (10%), trachoma (5%), smallpox (5%), rheumatic fever (5%), and gout (5%). People in the area were more than twice as likely to know that roots may be used as a medicine than they were to know that fruits, bark, bulbs, or flowers could do the same. There is an urgent need to document and transmit this knowledge from one generation to the next because of the community's dependence on traditional medicinal plants. One strategy for reaching this objective is to compile a database of useful plants for medicine and study. The identification of the active ingredient in a medicine from voucher samples is a crucial but time-consuming part of any ethnobotanical study. However, biochemical analysis was used to separate the active components of two plants. The research on traditional treatments is meant to inform mainstream medicine. The identification of the active elements of indigenous remedies may lead to a synthesis of modern and traditional medicine.

**Keyword**— Indigenous, traditional medicinal plants, mainstream medicine, cultural change, Ayurveda

## I. INTRODUCTION

Ethnobotany is often used interchangeably with economic botany and traditional medicine. Indigenous knowledge that has been handed down orally through the centuries is in danger of being lost as a consequence of modernization and cultural change. For the next quarter century after the first book was published on the topic, the term "aboriginal botany" was often used in the academic community. Superstition and mysticism coexisted with indigenous or naturalistic medical practices in ancient India. There is evidence that Indian civilization was pioneering the use of plants as medicine as early as 5,000 years ago. Two ancient medical systems from India, Ayurveda and the Siddha school of medicine, have made important contributions to medicinal botany.

The Indian classical and ancient medicinal system known as Ayurveda, sometimes known as the "Science of Life," is extensively used across the country. The earliest records of the use of biological products and, more especially, herbs in the prevention and treatment of disease may be found in the Vedic literature, the Rig-Veda, which was likely authored in

India between 3500 and 1800 BC. Atharvanaveda, a later text, delves more deeply into the therapeutic use of plants. The last eight sections of Ayurveda are the fundamental foundation of ancient medicine and were likely written between 2500 and 900 BC. Both largely medical and mostly surgical books were released around this time.

Approximately 70% of India's population lives in rural areas, where the use of traditional medicine is widespread. The Council of Scientific and Industrial Research (CSIR) in New Delhi is only one of several prestigious educational institutions in India. Lucknow's Centre for Drug Research and Innovation (CDRI). Both the Botanical Survey of India (BSI) in Kolkata, India, and the Tropical Botanical Garden and Research Institute (TBGRI) in Miami, Florida, have undertaken substantial, continuing efforts to gather data on medicinal plants across India. Both the Central Council for Research in Unani-Medicine (CCRUM) and the Central Institute of Medicinal and Aromatic Plants (CIMAP) have launched initiatives in the last two and a half decades. Asia, World Health Organization (New York). Traditional medicine is the primary healthcare system for an estimated

80% of the population in developing countries. Plant extract is used in over 85% of traditional medicine. This has been true throughout the history of ethnobotany.

For thousands of years, indigenous tribes have depended on plant medicine, but owing to a lack of record, much of this knowledge has been lost. Therefore, it is essential to record and keep safe the communities' and healers' anecdotal accounts of herbal medicine's use. This study contributes to the need for fully documenting indigenous knowledge. The use of local plants as medicines is supported by a lot of research. Records of the medicinal use of plants date back to ancient China, India, and the Near East. Many medical disorders may respond to treatments made from natural plant sources. Sixty percent to eighty percent of the global population relies on herbal treatment. As a result, there has been a surge in the promotion of various plants for use in alternative medicine. Where people in Asia and Africa feel the cost of medical care to be out of reach, the use of medicinal plants has risen in popularity. Due to its cheap cost and great availability, traditional medicine is often used as the main healthcare system in low-income countries. As a result, there has been a rise in curiosity in the effectiveness of historically used medicinal herbs in the context of alternative medicine.

As civilization has advanced, it has become plainly clear that indigenous peoples' knowledge of the medicinal applications of plants has been disappearing. The gradual erosion of cultural diversity has led to a decline in human understanding about medicinal plant species, their distribution, management, and extraction procedures. Before contemporary scientific documentation and pharmacopoeias for doctors and institutions, Traditional Medical Knowledge (TMK) among families, communities, and/or ethnic groups was the major source of knowledge on the usage of medicinal plants. It has been stated that rather than relying on legislation and regulation, local practices based on traditional medical knowledge are the best way to promote the responsible use and care of medicinal plants.

The proponents of traditional medicinal knowledge (TMK) stress the need of keeping records of past uses of medicinal plants. Although there have been numerous reports, publications, theses, dissertations, books, inventories, media reports, and monographs describing the tropical environment's wealth of medicinal plants, the vast majority of this information is still based solely on scientific work that does not include the input of local community members and does not accurately reflect TMK. Medicinal plant inventories, uses, and conservation have received the lion's share of attention in developing nations. Both the Chiang Mai International Medicinal Plant Conservation Conference in 1988 (<http://www.frlht-thailand.org>) and the Bangalore

International Medicinal Plant Conservation Conference in 1998 (<http://www.frlht-india.org>) presented recommendations for the conservation of medicinal plants. Regardless, TMK is seldom used with such supplies.

## II. LITERATURE REVIEW

**Marwat et al., (2017)**, Most often, the seed oil of this plant is used to alleviate symptoms of muscular dystonia, rheumatism, menstrual cramps, etc. Some studies (Choudhary et al., 2017; Pullaiah et al., 2017) have demonstrated that massages using seed oil may help relieve pain associated with a wide range of ailments, including a burning sensation in the tissue, a body-ache, a headache, muscular discomfort, etc. According to a 2015 study by Sharma et al., aqueous extract from fresh leaves is useful to heal burns. Cancer and other severe illnesses have been cured with the plant in traditional medicine (Balkrishna et al., 2014). When castor oil is added to warm milk or water, it may help reduce constipation (Raghuvanshi et al., 2021). According to Tariq et al. (2018), the seeds of this plant have contraceptive properties.

**Abdul et al (2018)** investigated the medicinal properties and bioactivities of the *Ricinus communis* plant. According to a 2017 study by Kowser et al., *Ricinus communis* has an allelopathic effect that may be used for weed control. In 2012, Jena and Gupta published a review of the pharmacological properties of *Ricinus communis*. Using a chloroform and methanolic extract of the seeds of the plant, Javaid et al. (2015) investigated the antibacterial activities of *R. communis* against *Rhodococcus*, *Bacillus subtilis*, *Escherichia coli*, *Aspergillus niger*, *Aspergillus flavus*, and *Trichoderma harzianum*. Fungi were more susceptible to the antibacterial effects of acetone extracts.

**Hajrah et al. (2018)**, The phytochemical composition and antibacterial efficacy of castor oil against *Escherichia coli* and *Klebsiella oxytoca* were studied. Rahmati et al. (2015) investigated antimicrobial efficacy against *Candida albicans*. Methanol extracts of the castor plant's leaves, stems, and entire plant were tested for their antioxidant capabilities using the DPPH and nitric oxide radical inhibition tests developed by Singh et al. (2010), Jena and Gupta (2012), and Alugah and Ibraheem (2014). Using diabetic rats in experiments, Morya proved in 2016 that liquid extracts of several Castor plant components had antidiabetic effect.

**Barman et al., (2019)**, *Azadirachta indica* has been the subject of extensive experimental investigation on the plant body, and those results have shown great medicinal properties. This plant is used to cure a wide range of medical conditions, from mild to severe. These conditions include allergies, malaria, typhoid, bacterial and viral infections,

eczema, edema, GI difficulties, skin issues, diabetes, asthma, jaundice, tumors, malignancies, and many more. (Biswas et al., 2002; Thakurta et al., 2007; Bhowmik et al., 2010; Jena and Gupta, 2012; Preeti, 2014; Tiwari et al., 2014; Sarkar et al., 2015; Hashemi and Hossain, 2016; Adithya et al., 2017; Yasmin and Sultana, 2017; Quraishi et al., 2018; Tripathi and Dhaka, 2018;).

**Bhowmik et al., 2020**, Many health problems may be alleviated by consuming the plant's tender leaves on an empty stomach first thing in the morning (Barman et al., 2019). Coughs, colds, and asthma can be cured with the plant's bark; the flowers can be used to get rid of worms in the digestive tract; the fruit can be used to treat conditions like hemorrhoids, diabetes, and excretory system abnormalities; and the roots can be used to treat leprosy and skin disorders (; Tiwari et al., 2014; Benelli et al., 2016).

### III. MATERIAL AND METHODS

#### Traditional Practitioners

Traditional medical practitioners formulate remedies from plants they are acquainted with, either through personal experience or from research into other cultures. There are around 210 recorded traditional healers in the area. Ages range from 25 for the women to 101 for the men. The knowledge and practices of 122 of these traditional practitioners are indigenous, whereas those of the other 88 are not. Different cultures have different bodies of knowledge and practices that have been handed down through the generations. Knowledge acquired from sources other than one's own ethnic group is referred to as "nonethnic knowledge." There are no locals to be found in this area. These experts often engage in agricultural, horticultural, woodworking, or similar industries.

#### Hakeems and Ali Adil Shahi Sultanate

Those who commissioned the building, the Ali Adil Shahi Sultanate, were huge admirers of the poet Golagumbaz and the musician Hakeem. Hakeem Gilani, Hakeem Masoom Isfahani, Hakeem Muhammad Husain, Hakeem Rukh-e-Masih, and Hakeem Millat were only a few of the many Muslim TPs (Hakeems) that served in Ibrahim Ali Adil Shahi-II's court (Imaratwale and Killedar, 2011). This proves the long history and continued popularity of herbal treatment in the area.

#### Collection of Plant Material by Traditional Practitioners

The plants used by TPs are often gathered on the full moon day, or Pushya Nakshatra. At 9 o'clock at night, TPs greet their medicinal plants by tying black thread around them and giving prayers or chanting mantras. The next morning, the dirt is dug up and the plant or parts of the plant are harvested. Leave some of the plant for regeneration while harvesting

the underground or aboveground (shoot) parts of a plant (leaves, stems, branches, tubers, rhizomes, bulbs), and don't harvest the same plant or component of the plant from the same spot more than once. When they need anything from a plant, limb, fruit, or flower, they only take what they need. Since it is against their beliefs and cultural norms to destroy plants, traditional Polynesians cherish and maintain the broad diversity of plants in their area, using only the components they need from them. They steer clear of dumps and crematoriums in order to find the right medicinal plants. Some TPs collect plants using untrained ways; these people should be taught about conservation.

#### Methods of Traditional Practice and preparations of ethnomedicine

TPs sometimes have extraordinary memory, allowing them to retain hundreds of recipes and dosages for treating a wide variety of diseases despite their illiteracy. The most usual days for traditionalists to do their rituals are Sundays, Thursdays, the full moon, and the new moon. TPs may prescribe a wide variety of medications, including decoctions, extracts, fresh juices, pastes, pills (tablets), powders, and even fumigations. When it comes to their ethnomedicines (drugs), they have their own distinct methods of measurement, preparation, and prescription. Each TP has its own special spin. Traditional medical professionals warn against taking any drug in excess because of the risk of fatal overdose. Not eating raw fish, channa daal, peppers, potatoes, pumpkins, or other vegetables or meats.

**Decoction:** Raw materials, wet or dry, are boiled down to roughly a quarter of their original volume by using a 1:10 water to material ratio.

**Extract:** In order to decrease the raw plant material to around a third of its real volume, it is cooked in an earthen pot with water that is twenty times greater than the amount of the raw plant material.

**Fresh Juice:** Crushing the fresh plant pieces in a stone mortar or between the palms yields the fresh juice. It may be used topically or taken orally for maximum efficacy.

**Paste:** Internal and exterior applications are created using a paste formed from fresh or dried plants and plant parts, water, goat, cow, or she buffalo's milk, lime, and, if necessary, other plant components.

**Pills (Tablets):** A paste is prepared by combining fresh or dried plants and plant parts with water, goat, cow, or she buffalo's milk, lime, and other plant components as needed to achieve an appropriate consistency for internal and external use.

**Powder:** With the use of a stone mortar, the dried plant components are slashed into pieces and ground into a

powder.

**Fumigation:** Smoking or fumigating (the medicinal substance is placed in an empty beedi)

The Karakaramunderu of several states, together with Sadhus, Sanyasis, Gurus, and Siddhas, are all said to have contributed to TP's body of knowledge. The drugs used by some conventional physicians may treat 500 distinct conditions. Ex TP122. As a matter of fact, some families have been providing medical care for decades. A scion of the TP208 lineage for seven generations, he is. It is possible to find TPs who do not charge their patients for their care. As payment, they request that patients give coconuts and edible oils to their God of faith. Some TPs, however, charge for their services.

**Botanical name - *Acacia catechu* (Roxb.) Willd**

**Famil - Fabaceae (Mimosaceae)**

**Vernacular name - Byaalad gida, Kaggali**

**Plant description -** Leaflets are linear-oblong, cordate, whole, and subacute; flowers grow in spikes of white; pods are flat and smooth and grey; and there are many of seeds on this moderately large deciduous tree.

**Fl and Fr** - September to January

**Voucher No** - HGUG-5016

Table 1: Use of Leaves

Plant parts used	Preparation, dosage and administration	Ailment	Traditional practitioners No
Leaves	Leaves are ground and apply on skin till cure	Skin diseases	TP164

In Ayurveda, bark and heartwood are used for a wide variety of conditions, including stomatitis, bronchial asthma, a bad taste in one's mouth, and leprosy (Yoganarasimhan, 1996). Lambadis recommends using a paste made from the stem bark of the plant to treat eczema and other skin conditions (Sangameshwar and Vatsavaya, 2015). The survey results suggest that leaves may be utilized to treat skin disorders.

The following tables and graphs indicate the diversity of medicinal plant families in the Vijayapur area. Plants used for treating asthma, bone fracture, jaundice, leucorrhoea, migraine, piles, primary infertility, psychological disorders, snakebite, and toothache; plants used for treating asthma, jaundice, and leucorrhoea; plants used for treating leucorrhoea, migraine, piles, primary infertility, psychological disorders, snakebite, and toothache. Utilization of plant species: major disease wise analysis, utilization of highest number of species in each family, medicinal plants used by TPs of Vijayapur district representing highest number of species in each family, sex ratio of traditional practitioners in Vijayapur district, and kn

This current corpus of ethnobotanical research documents the use of 132 plant species from 121 genera and 52 families. The Fabaceae family has the most members, with 18, when analysed by order. Over two hundred and ten native healers were surveyed for this study. There are 25 women and 185 men, ranging in age from 25 to 101. 88 of these traditional healers have acquired information from outside their own culture, whereas 122 have natural (ethnic) knowledge.

Table. 2 Family wise distribution of Ethno medicinal plant species in Vijayapur District

SL.No	Total No of Genera	Total No of sps	No of Families	No of Species in each Family	Families
1	13	18	1	18	Fabaceae
2	8	8	1	8	Apocynaceae
3	14	14	2	7	Acanthaceae, Cucurbitaceae
4	9	12	2	6	Euphorbiaceae, Solanaceae
5	15	15	3	5	Malvaceae, Asteraceae, Lamiaceae
6	7	8	2	4	Brassicaceae, Verbenaceae
7	17	18	6	3	Amaranthaceae, Boraginaceae, Annonaceae, Convolvulaceae, Poaceae, Zygophyllaceae,

8	07	08	4	2	Rutaceae, Aristolochiaceae, Sapindaceae, Menispermaceae,
9	31	31	31	1	Papeveraceae, Meliaceae, Basellaceae, Crassulaceae, Xanthorrhaceae, Arecaceae, Gentianaceae, Moraceae, Anacardaceae, Nyctaginaceae, Moringaceae, Myristicaceae, Araceae, Plumbaginaceae, Portulacaceae, Punicaceae, Salvodoraceae, Combretaceae, Aizoaceae, Typhaceae, Rhamnaceae, Musaceae, Pedaliaceae, Amaryllidaceae, Phyllanthaceae, Cleomaceae, Scrophulariaceae, Asparagiaceae, Cyperaceae, Oxalidaceae, Plantaginaceae
<b>Total</b>	<b>121</b>	<b>132</b>	<b>52</b>	<b>54</b>	

#### IV. CONCLUSION

The collection, harvesting, drying, and storage of raw medicinal plant components requires a methodical approach. The findings of this study corroborate the long-held belief of the indigenous people of this area in the

curative powers of certain plants used in traditional medicine. The Santali people, the biggest of the region's 39 indigenous groups, use weeds as a source of therapeutic plants for a broad range of conditions. To get a complete picture of indigenous knowledge and health care practices, further research into the area is needed. It's also been pointed out that many peoples' cultural traditions and customs include the use of plants, and weeds in particular, for things like farming, food, fodder, food supplements, and ceremonies. The modern world is racing to catch up with the expanding market economy and globalization, putting at risk the ITK, making its maintenance an urgent societal need. The most urgent issue that needs solving is the loss of genetic resources, which has been exacerbated by ignorant human behavior. Continuous harvesting and inappropriate collecting without adequate regeneration procedures have led to a precipitous decline in the population of several ethno medicinal plants in the research area. Notable plants include several species of *Amaranthus*, *Solanum*, *Cynodon*, *Abutilon*, etc. Cultural, historical, and traditional knowledge (ITK) of medicinal weeds held by indigenous peoples in the region must be better recognized and safeguarded, and the public must be educated on the importance of these intangible resources.

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