

A Study of Ethnobotanical Knowledge of Tribal Plants: A Review of Decade

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Abstract

The present study was carried out to gather information about Ethnobotanical knowledge of tribal people and ethnic races those are residing in forests since prehistoric times. Aborigines throughout the world have developed their own culture, costumes and medicinal practices etc. They are not only inhabited in these forests and fulfill their need of food, fodder, fuel, fiber etc. from it but a large number of wild and cultivated plants are being used by them to treat various ailments. Thus a considerable amount of information on medicinal plants is available with these communities that passed on from generation to generation through word of mouth. Since, long efforts have been made to preserve this knowledge and researchers engaged in validation of the traditional claims. Oral tradition and written tradition that include both western and non western sources have been reviewed carefully as well as the work done by various scholars in India is studied thoroughly to gain information about this ancient science and cure diseases from it. Looking to the above facts, there is a strong need to gather information systematically on forest plants those are having high value as medicinal plants and the knowledge is available with tribal people. In this review article a concrete thought is generated that how this information may be utilized by researcher and medical industries.

Key words: Ethnobotany, Forest medicinal plants, Identification and validation.

1. Introduction

Ethnobotany is broadly defined as the study of relationship between people and plants. Some prefer to define it as the scientific study of the intersection between human cultures and plants. Although the scope of ethnobotany includes the study of plants used for a variety of economic and non-economic societal purposes. This study primarily focuses on the contributions that ethnobotany has made to modern medicine through its studies of the uses of plants in traditional societies. This subset of ethnobotany is referred to as Medical Ethnobotany

The term "Ethnobotany" was coined by J. W. Harshberger in 1895 to indicate plants used by the aborigines: From "ethno"-study of people and

"botany"-study of plants. Ethnobotany is considered as a branch of ethnobiology. It deals with the study and evaluation of plant-human relations in all phases and the effect of plant environment on human society.

The term "Ethnobotany" is not new even to India, Kirtikar and Basu (1935) stated", the ancient Hindus should be given the credit for cultivating what is now called ethnobotany". According to Schultes (1962), ethnobotany is "the study of the relationship which exists between people of primitive societies and their plant environment". In the past, ethnobotany has emphasized on the relationships and interactions between plants and people in traditional tribal or non-Western cultures. Today, ethnobotanical studies also include all culture areas, including Western peoples, who utilize plants in folk medicine or traditional remedies in contradistinction to the use of conventional medicine (i.e., biomedicine or modern medicine) to treat illnesses and injuries.

Ethnobotanists document, describe and explain complex relationships between people and how they use and manage plants as economic and medicinal resources. Ethnobotanists also record the ritual and ceremonial uses of plants in society, discussing the role that a specific plant or set of plants has within a cultural group.

2. Material and Methods

2.1 Western Sources (Written Tradition)

The first records of plants used for medicinal purposes in the Western tradition appear in ancient Egypt (Ebers Papyrus, copies of which date to 1550 B.C., as well as in numerous texts from funerary monuments, sarcophagi, and wall paintings), and ancient Sumer (a tablet listing physician's prescriptions, dated to about 3,000 B.C.). While these early artefacts represent the knowledge held by medical specialists of ancient Old World civilizations, it is thought that these written records regarding medicinal plant use reflect a medical tradition at least five to twenty-five centuries prior to the compilation of this medicinal knowledge in written form. Systematic investigation of plants for their medicinal uses has a long history in the West, built upon Greek, Roman and Islamic foundations

and intensified by colonial expansion and geographic exploration of the known world. In this tradition, the first hallmark work was Dioscorides's *De Materia Medica*, whose date of compilation has variously been estimated at 64 through 77 AD. Dioscorides relied on the texts of Crateuas, physician to King Mithradates VI from 120 to 63 B.C., whose texts have not survived to the present day. A.D. Dioscorides was the first to attempt to systematize all plant knowledge known at the time to the Greek world. While his mode of organization was to group medicinal remedies by form and origin of the illness and/or the remedy itself rather than by a botanical, zoological or mineralogical nomenclature, nevertheless his work was all-encompassing and, therefore, quite valuable to the scholars of his day and thereafter. The works of other classicists, such as Pliny the Elder's *Naturalis Historia*, also survived and were passed down in the physician and scholarly community. Dioscorides' work was cited in the works of most other herbalists for the centuries to follow, including *Hortus sanitatis* and *Herbarius latinus*, which represented the culmination of herbal knowledge in medieval Europe. During the medieval period and later, "herbals," or compendia of knowledge of herbal medicine, were produced and appeared throughout Western Europe, but most notably in Naples, southern Italy, Germany, and England.

2.2 Non-Western Sources (Written Tradition)

However, the systematic study of plants is not solely a Western phenomenon. For example, in ancient China the first text of medicinal plants was compiled purportedly by Emperor Shen Nung around 2,700 B.C., the *Pen T'sao Ching*. Similarly, the Rig Vedas and Ayurvedic medicine, compiled in ancient India, include information on many plants used medicinally for healing. Ayurvedic medicine is thought to date back at least 5,000 – 10,000 years, and the Rig Veda around 2500 B.C. or earlier. Other medicinal traditions that employ medicinal plants, rooted in Buddhism, are recorded in palm-leaf manuscripts found in Burma, Laos, Cambodia, Thailand, Vietnam and elsewhere in Indonesia (Java, Bali). Tibetan medicine, also rooted in Ayurvedic medicine, evolved from the works— *Charaka Samhita* (around 1,500 B.C.), the *Susruta Samhita* (300 – 400 A.D.) and the *Ashtang Hrdayam* (around 500 A.D.). Records containing medicinal uses of plants are found in extant Mayan codices, such as the *Book of Chilam Balam of K'aua*. The Incas of South America and the Aztecs of Mesoamerica maintained botanical gardens containing economically and medicinally useful plants.

2.3 Oral Tradition

Medicinal knowledge and the quest for healing illnesses is common to all cultures, from foraging

societies to the more complex city-state polities. A prerequisite to practicing medicine in complex societies was and continues to be literacy, specialized training and education. In contrast, the medicinal knowledge of non-literate groups was and continues to be transmitted through oral tradition, in the context of apprenticeship to a ritual practitioner or healer, a village shaman, or a "household herbalist" who collects and prepares remedies for ill children or other household members.

Studies in the ethnobotany of cultural groups that rely on the oral tradition to pass on traditional medicinal plant knowledge from generation to generation show that, in addition to a great wealth of knowledge about medicinally useful plants, these cultural groups also have an extensive knowledge of economically useful plants and the traditional techniques used to manage, harvest, and conserve these species. These studies have revealed that many traditional peoples possess an intimate knowledge of their environment and are keen observers of subtle changes across the landscape, including changes in weather, where and when medicinal plant resources may be found at different times of year. This extensive oral tradition also includes knowledge of illnesses, remedies, treatments and healing techniques, learned through an apprenticeship with an experienced healer. Furthermore, recent studies in medical ethnobotany have shown that the traditional medicinal knowledge systems of non-literate cultural groups are also extensive, and can be as extensive as that of literate societies.

Age of Discovery

The European discovery of the New World at the end of the 15th century, and the subsequent political and economic expansion, exponentially increased knowledge of the known world and the natural phenomena occupying that world. Explorations in the New World brought back to Europe many economically and medicinally useful plants, including new foods, medicines, construction materials (hardwoods), and items of commerce (dyes, tobacco, etc.). This movement of economically useful plants worldwide is often referred to as the Columbian Exchange. Food plants that were brought from the Old World to the New World include coffee (*Coffea* spp., Rubiaceae), sugarcane (*Saccharum officinarum* L., Poaceae), wheat (*Triticum* spp., Poaceae), rice (*Oryza sativa* L., Poaceae), eggplant (*Solanum melongena* L., Solanaceae), mangoes. Old World spices include cinnamon (*Cinnamomum zeylanicum* J. Presl., Lauraceae), nutmeg (*Myristica fragrans* Houtt. Myristicaceae), black pepper. Today, many of the foods and spices that are considered to be at the heart of the cuisines of the "Old World" – as well as the "New World" – are a direct result of the Columbian exchange.

3. Literature In India

Organised field work and other studies on ethnobotany were initiated in the BSI (Botanical Survey of India) by Dr. E.K. Janaki Aromal. Dr. S.K. Jain, known as father of Indian Ethnobotany started intensive field work among the tribals of Central India. He devised methodology for ethnobotany particularly in the Indian context. Ethnobotany, alternative medicine and conservation of Indian medicinal plants has been studied by Acharya and Shrivastava (2007). Use of medicinal plants among tribes in Satpuda region of Dhule and Jalgaon districts of Maharashtra – An ethnobotanical survey has been studied by Jain *et al.* (2010). Zibbu and Batra (2010) studied Chemistry and Pharmacological activity of *Nerium Oleander*. Kumar *et al.* (2010) reported *Allium cepa* : A traditional medicinal herb and its health benefits. Miguel *et al.* (2010) wrote a short review article on Pomegranate (*Punica granatum*): A Phytopharmacological review article on *Lawsonia inermis* has been written by Chaudhary *et al.* (2010). A review article on *Cyperus rotundus* – A potential herb has been written by Meena *et al.* (2010). An account of Kair (*Capparis decidua*) was given by Singh and Singh (2011). Tomar *et al.* (2011) wrote a review article on Neem (*Azadirachta indica*). Devi *et al.* (2011) gave a detailed account of *Acacia catechu*. Ayurvedic uses and pharmacological activities of *Calotropis procera* described by Meena *et al.* (2011). An ethnobotanical survey of medicinal plants used in Terai forest of Western Nepal was carried out by Singh *et al.* (2012). Jena and Gupta (2012) gave a detailed account of *Ricinus communis*. Banjare *et al.* (2012) wrote a review article on *Boerhaavia diffusa*. Traditional and medicinal uses of *Withania somnifera* has been described by Umadevi *et al.* (2012). Shrivastava *et al.* (2013) studied phytochemical investigation of different plant parts of *Calotropis procera*. Health and medicinal properties of Lemon has been described by Mohanapriya (2013). Medicinal property of *Murraya koenigii* has been described by Kumar *et al.* (2013). Patel and Patel (2013) studied ethnobotanical plants used by the tribes of R.D.F. Poshina forest range of Sabarkantha district North Gujarat. Herbaceous medicinal and therapeutic plants of district Samba of Jammu Province, Jammu and Kashmir was reported by Pandita *et al.* (2013). Ethnobotanical studies of *Citrullus colocynthis* was carried out by Meena *et al.* (2014). Gangwar and Ghosh (2014) reported medicinal uses and pharmacological activity of *Adhatoda vasica*. The folk and modern used of *Allium sativum* was described by Shah (2014). An account of *Tamarindus indica* and its health related effects was given by Kuru (2014). Preeti and Tripathi (2014) gave an account of *Ziziphus jujuba*. Agarwal

et al. (2014) reported phytochemical and biological activities of *Chenopodium album*. Borborah *et al.* (2014) described traditional uses of *Allium* species from North East India with special reference to their pharmacological activities. An update of Ethnobotanical survey of Rajasthan was reported by Choudhary *et al.* (2008). Study of some important medicinal plants in urban area of Kota, Rajasthan was carried out by Dadhich *et al.* (2010). Tewari *et al.* (2013) gave a detailed account of *Prosopis juliflora*. Studies on ethnomedicinal plants of Shekhawati region, Rajasthan, having hypoglycemic properties was carried out by Mishra *et al.* (2014).

4. Discussion

According to WHO report, several diseases of modern times are generally life style diseases. Medicinal plants have great importance in providing health care to about 80% of the population in India. Plants have been an important source of precursors and products used in a variety of industries, including those of pharmaceuticals, food, cosmetics and agrochemicals. The continuing search for new drugs has seen researchers looking to the natural world for potential products. On the other hand the traditional medicines are enjoying an upsurge in review highlights useful ethnobotanical information about the uses of plants by the tribals of Rajasthan. Efforts should be made to conserve the ethnomedicinal plants.

5. Result and Conclusion

Transmission of advanced and up to date knowledge is of at most important in research process. All human knowledge is found in books and libraries. Unlike other animals that must start a new with every generation, men build upon the stored and recorded knowledge of the past. Researcher must be thoroughly familiar with previous theories and researches in the field. Hence to review the theoretical as well as reach literature is an important tool in the research. In research methodology the term literature refers to the knowledge of particular areas of investigations including the theoretical, practical, and latest studies. The term review means to organize the knowledge of the specific areas of research in such a way, that justification of the problem undertaken by researcher may be justified. The task of review of literature is very creative as well as tedious, because researcher has to synthesize the available knowledge of the field in a unique way to provide the rationale for the study. Researcher can take the advantage of knowledge which has preserved or accumulated during past years in form of-

- Books and text books
- Periodicals and Journals
- Encyclopaedia

- Hand Books
- Specific Dictionaries
- Dissertation and Thesis

Above sources can help in presentation and utilization, advancement and transmission of knowledge. Review of literature is a tedious and time consuming process so we should take advantage of available facility of computer, internet, e-mail etc. electronic media. Two fold importance of review of literature are -

- (a) May be used as back ground knowledge.
- (b) For presenting in research report (thesis).

Research is a continuous process, hence review of literature should be attempted to throw light on every aspect of researchers work.

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