**ETHNOBOTANY**

Ethnobotany is considered as a branch of ethnobiology, the study of past and present interrelationships between human cultures and the plants, animals, and other organisms in their environment. It leads us to symbolic relationships like faith, taboo, worship and several other magico-relegious aspects. According to Jain and Mithra (1990)- it is defined as “***The total natural and traditional relationship and the interaction between man and his surrounding plant wealth***”

**Categories**

* Ethnobotany of certain ethnically distinct primitive or otherwise interesting human societies
* Ethnobotany of specific geographical region
* Ethnobotany of particular utility group of plants
* Ethnobotany of a particular plant, genus or family
* Ethnobotanical aspects of conservation and management of plant resources
* Tools appliances, articles of personal adornment which have been used since time immemorial
* Study of mythological association or faith in plants among the local folks
* Study of local names and their etymology

**Contributions of SK Jain to ethnobotany**

* Father of Indian Ethnobotany
* Served BSI for nearly 3 decades and was its director for 7 years.
* recipient of the prestigious Pitambar Pant National Environment fellowship of the government of India
* Initiated and organised many broad-based ethnobotanical studies in several parts of the country and directed all India coordinated research projects in endangered species and ethnobotany.
* Founded the Society of Ethnobotanists and an international commission on ethnobotany.
* Chief editor of Ethnobotany, the only exclusive journal on this subject. His research work was mainly concentrated on grasses, orchids, floristic studies, endangered species, medicinal plants, ethnobotany and economic botany.
* He was awarded ‘Emeritus Scientist’ of the Council of Scientific and Industrial Research for his project on Comparative and Deductive Studies in Ethnobotany. This work resulted in his famous book ‘Dictionary of Indian Folk Medicine and Ethnobotany’, which was presented as evidence in US courts to win India the Turmeric patent.
* Organized the 4thISE International Congress of Ethnobiology at NBRI, Lucknow. This was one of the most successful Congresses and was well attended by over 300 delegates including 82 foreign ethnobotanists from various parts of the world

**Sources of ethnobotany**

**Western Sources (Written Tradition)**

People have been interested in plants for their medicinal properties for hundreds of centuries. The first records of plants used for medicinal purposes in the Western tradition appear in ancient Egypt, copies of which date to 1550 B.C, and a tablet listing physician’s prescriptions, dated to about 3,000 B.C. Systematic investigation of plants for their medicinal uses has a long history in the West, built upon Greek, Roman and Islamic foundations. In this tradition, the first work was Dioscorides’ De Materia Medica, whose date of compilation has been estimated between 64 through 77 AD. Dioscorides’ work became the authoritative on medicinal plants and the infant science of folk pharmacology in the West for the next 1,500 years that followed.

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,

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.

**Oral Tradition**

The medicinal knowledge and the quest for healing illnesses is common to all cultures, the written texts on medicinal plant knowledge and healing only demonstrate how specialized such knowledge had become. 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, who collects and prepares remedies for ill children or other household members.

**Age of Discovery**

As early as the reports from Marco Polo about the faraway “spice islands”, Europeans’ interest in exotic and commercially valuable plants from elsewhere was piqued. However, 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.). The establishment of botanical gardens and publication of herbals and botanical treatises in Renaissance Europe began in the sixteenth century and spread rapidly. This movement of economically useful plants worldwide is often referred to as the Columbian Exchange.

**GENERAL ETHNOBOTANICAL TECHNIQUES**

Any ethnobotanical enquiry into the traditional botanical knowledge (TBK) of extant peoples is dependent on the effective application of a number of key anthropological and botanical methodologies. For example, anthropological field techniques including participant observation and structured surveys permit the collection of both qualitative and quantitative data related to plant use and subsistence practices.

**Anthropological Field Methods**

In most cases, the successful collection of anthropological data requires a close and sustained observation of a people, which can be achieved only by long-term participation in local customs and daily life. Although a range of data collection techniques are now available, anthropological studies remain inherently difficult. For the study of people involves a number of unique practical, cultural and ethical considerations, which prevent social scientists from designing the type of controlled, replicable experiment so favoured by natural scientists. This is partly because of the influence of uncontrollable variables such as an individual’s personality and decision-making powers.

**Qualitative and quantitative approaches to anthropological study**

During the course of participatory ethnobotanical studies, information is gathered from selected participants, primarily through observation, casual conversation and the use of various types of analytical tool. Informal or qualitative methods such as open-ended interviews, generally yield responses which can be used in compiling general ethnographic accounts of a community and its culture. More systematic or structured methods (that is formal or quantitative methods) yield data which may be used to calculate a range of numerical indices such as the relative usefulness of a given plant species. Ethnobotanists are ending increasingly, that a combination of qualitative and quantitative methods is proving most useful in the collection of data which are both accurate and complete.

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| --- | --- |
| **Qualitative approach** | **Quantitative approach** |
| **Methods**Open-ended and semi-structured interviews‘Hands on’ learning of traditional techniques | **Methods**Structured interviews and questionnaires ,Free-listingPile-sorting and preference ranking—including triadic and paired comparisonsSystematic surveys—e.g. of transects or hectare plots |
| **Applications**Reveal a range and depth of information which is difficult to elicit using more formal methodsFacilitate the development of informal relationships between local and external participants Provide practical experience of using traditional methods | **Applications**Facilitates the cross-verification of data both within and between informantsFacilitates the numerical evaluation of factors such as the use-value or relative economic importance of a given speciesFacilitates the selection of participants who are particularly knowledgeable in certain areas |

Quantitative ethnobotany—the concept of use-values

Quantitative method allows the calculation of the use-value for a given species*,* which can be compared statis­tically with use-values of other species. In this way it should be possible to identify any species which are perceived as being particularly useful.

**CALCULATING THE USE-VALUE (UV) FOR A GIVEN PLANT SPECIES**

Informants were asked to identify the nature and uses of each plant occurring within a series of 1 ha forest plots. While many different uses of plants were defined by local informants, it can be divided into five broad categories: 'edible', 'construction', 'medicinal' and 'technology and crafts'. Each infor­mant was then asked about the uses of certain plants in order to determine the number and range of uses for each species. In each case, a single '*event’* is defined as the process of asking a single informant on 1 day, about the uses of a given plant species. Using this method, the information from each informant was used to produce, for each plant species, a data set similar to that shown below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Construct | Food | Medicinal | Technology | Total (Uis) |
| Event 1 | 0 | 0 | 1 | 0 | 1 |
| Event 2 | 1 | 1 | 2 | 1 | 5 |
| Event 3 | 0 | 0 | 1 | 0 | 1 |
| Total | 1 | 1 | 4 | 1 | 7 (∑ Uis ) |
| Mean | 0.333 | 0.333 | 1.333 | 0.333 | 2.333 (UVis) |

Data from each informant were then used to calculate the mean number of uses of a given plant species. In this way inconsistencies in the information given are taken into consideration, and the overall mean value *UVjs* represents the mean number of all uses of a given plant species (s), as recognised by a single infor­mant (i). This information is then used to calculate the overall use-value for this species *(UVs)* based on the information from the total number of informants using the following equation:

UVs = $ΣUVis/is$

where:

*UVs =* the overall use-value of species *s*

*UVis*= the use-value of species s as determined by informant

is = total number of informants interviewed for species s

