Role of Quantitative Ethnobotany in conservation and Sustainable Use of Plant wealth

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Abstract

Census of India 2011, reports that 68.84% of country's total population lives in rural areas.Due to inadequate public health services and trained health workers, poorpeople in rural areas are not having sufficient modern healthcare facilities. Over the years, native population has been using local plants for medicinal purposes and has accumulated significant ethnomedicinal information and therefore found ways to deal with such health insufficiency. This manuscript contains statistical indices used in description of quantitative ethnobotany.The statistical indices require nativedata regarding usage of local plants in a particular area which is collected using proforma and interviews. Subsequently, the data is translated and statistically analyzed to arrive at some important result. For long,anthropogenic activitieshave been threatening plant wealth which led to extinction of many ethnomedicinally important plant species.Loss of such plant bodies stands for unsustainability. Through this study it is anticipated that ethnobotany plays a key role in conservationand sustainable use of plant wealth in rural pockets of Haryana, India,

Introduction

Immeasurable utilization of plant based herbal formulations for therapeutic purposes has been in existence since long time (Koleva et al., 2015). The term ethnobotany was given byJohn Hershberger in 1896. According to him "Ethnobotanyis a science of interaction between plants, environment and indigenous people". Ethnobotany can be regarded as subdiscipline of ethnobiology which also enlightens on unfathomable link between biodiversity and social culture system (Amjad et al., 2015). As per old literature, ethnobotany is a multidisciplinary science which is associated with anthropology, ecology, economy and evolution of a particular site (Carrió and Vallès, 2012).

Usually, weeds on wastelands are considered unwanted plants but scientific literature on the subject reveals that every plant growing on earth is valuable (Sharma and Kumar, 2011). Charak, Shusruta samhita are the ancient literature of India which concerns with medicinal uses of plants (Singh, 2016).Ethnobotanical information worked as foundation for Ayurveda, Sidha, Unani, Homeopathic and even modern medicinal system (Vedavathy, 2003).

Indian tribal and rural population has well-preserved ethnobotanical information alienated to generations through word of mouth and is being extensively used for treatment of common diseases and conditions.Plant based formulationssuch as poultice; infusion and decoction etc. are being practiced by traditional practitioners to treat many ailments like fever, common cold, cough, allergy, boils and sores(Cowan, 1999). To overcome economic burden of modern medicinal system, developing countries including India has been using medicinal plants for primary health care services (Osungunna et al., 2020).

Methodology

1. Ethnobotanical information aboutusage of plants in various forms i.e. cosmetics, medicines, crude drugs, formulated drugs, method of preparation of formulation, method of application along with these side effect and precautionary measures etc. is collected using a semi structured questionnaire/proforma.

2. Standardized statistical formulas are used for evaluation, analysis and comparison of collected native data.

3. After analysis and interpretation results are obtained

Abstract

The aim of this manuscript is to explore thediversity indices which areused to compare and analyzeethnobotanically important plant species. Diversity indices are also called as statistical indices in ethnobotany. The indices are shown in Table no. 1.

Sr.no	Statistical indices	Formulae description	References
1.	Index of Use Totaled (IUt)	IUt is total number of uses of studied plant species.	Hoffman and Gallaher, 2007.
2.	Index of Use Value (IUv)	IUv is the total number of uses of a plant taxon for a particular category such as cosmetics, medicines etc.	
3.	Index of Family Use Value (IFUv)	IFUv is the total number of uses of a group of plant taxon, which comes under the same family.	
4.	Informant Consensus Factor (ICF)	ICF is consent of informants, to treat various ailments using different plant taxon.	Hoffman and Gallaher, 2007; Ugulu et al, 2009; Bibi et al, 2014.
5.	Reported Use Value (RUv)	Total number of reported uses of particular plant species.	Hoffman and Gallaher, 2007.
Sr.no	Statistical indices	Formulae description	References
6.	Relative Frequency of Citation (RFC)	RFC is the ratio of total number of informants who reported uses for a particular plant taxon to the total number of informants surveyed.	Hoffman and Gallaher, 2007; Umair et al., 2017.
7.	Fidelity Level (FL)	It is the percentage of informants for a particular ailment treatment using a plant species to the total number of informants surveyed.	
8.	Relative Popularity Level (RPL)	RPL is the ratio of total number of ailments treated using a particular plant species and total number of informants.	
9.	Rank Order Priority (ROP)	It is the multiplication of fidelity and relative popularity level.	
10.	Reported Plant Part Value (RPPV)	It is the total number of uses of a particular plant part.	

Conclusion

Diversity indices in ethnobotanyconstitute quantitative methodologies that have emerged as an important tool for expressing relative importance and popularity of different plant species in particular area. Undoubtedly, it can be concluded from the study that such methodologies play an important role in systematic study of ethnobotany, cultural biodiversity and conservation of threatened plant species. Furthermore, it also helps in comparison of similarities and dissimilarities in traditional knowledge which exists in usage of plants and relative cultural popularity of plant species inhabiting different areas. Ethnobotany, despite having proven usefulness does not enjoy much favor among posterity.Younggeneration is negligent and has little knowledge of indigenous plants usage. In the light of these facts, documentation of ethnomedicinal dataacquires great importance and providesa way to conservemedicinally valued plants for future generation.

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