Plants and Their Uses; How Communities of Tolipir, Pakistan Get Benefit

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PLANTS AND THEIR USES; HOW COMMUNITIES OF TOLIPIR, PAKISTAN GET BENEFIT

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ABSTRACT

The present study documented ethnobotanical uses of 156 plant species belonged to 93 genera and 51 families listed from five villages of Tolipir landscape (Ali Sojhal, Kanchi Kot, Khor Chana, Kahoo Kot and Noor Kot villages). Study revealed that most of the species were used for medical treatment, where leaves found to be the most frequently used part for preparation of indigenous recipes and fodder purpose. The current study empirically contributes a significant amount of ethnobotanical knowledge and depicts its strong connection with indigenous traditions. It is an urgent need to document indigenous uses of plants for future domestication.

Key Words: Ethnobotany, Tolipir, Indigenous knowledge, Conservation

INTRODUCTION

Wild plants have been used for human benefit such as food, medicine, fuel and timber from a very long time. The utilization of wild plants to fulfill their needs is prevalent in many rural communities of the world and often they have considerable knowledge about their uses (Ahmad et al., 2014). Most of the population from the Third world countries rely on their ethnobotanical knowledge for medical treatment (Luitel et al., 2014). The use of plants as medicine is slowly increasing in the developed world because they have minor or no side effects (Jordan et al., 2010).

The traditional knowledge of medical use of flora possessed by locals is an important asset that can be used as a baseline for further research into plant-use for treatment (Etkin et al., 1993). The documentation of traditional knowledge aids in the preservation of indigenous culture identifies threatened species and contributes to the conservation and management of plant diversity (Watson et al., 2003). No previous study about ethnological aspects of plants was conducted in Tolipir landscape except phytosociology of the area (Faiz et al., 2014, 2015). Therefore, in the present study, we aimed to document indigenous knowledge of the use of medicinal plants in the Tolipir landscape.

MATERIAL AND METHODS

Tolipir landscape is one of the biodiversity hotspots of Azad Jammu and Kashmir. It is located at longitude 73° 53 5.316" east and latitude 33° 32 9.925" north. The altitude ranges from 500-800 meters above sea level. The area falls under dry Sub-tropical type in which Olea ferruginea, Accacia modesta and Pinus roxburghii (Chir Pine) are the most dominant tree species in the area (Kharkwal and Rawat, 2010). The vegetation in the area comprises of a wide variety of trees, herbs, shrubs and climbers. Ground cover comprises of a wide variety of...
angiosperms along with ferns and mosses. Field surveys were conducted during August 2013-July 2014. Visual Appraisal Approach (VAA) and Rapid Rural Appraisal (RRA) methods were employed to document ethnobotanical information through oral interviews and semi-structured questionnaires from local herbalists (Hakeems) and the elderly people who were familiar with traditional uses of plants particularly for medicines, fodder, fuel, timber, food, cosmetics and etc. by following (Martin et al., 1995). The utility value of plants was calculated by using the following statistical formula:

\[ UVs = \frac{\sum U_{is}}{nis} \]

Where \((U_{is})\) stands for single informant and \((nis)\) stands for the total number of people interviewed about that particular species.

![Figure 1: A simplified satellite imaginary of Tolipir landscape with sampling villages Ali Sojhal, Kanchi Kot, Khor Chana, Kahoo Kot and Noor Kot (source: Arc View 3.3 and Google Earth pro 4.2).](image)

RESULTS AND DISCUSSION

The present survey found a list of 158 plants species and most of the plants were used as dual purpose according to respondent of local inhabitants of Tolipir landscape. The list of the plants and their respective uses is outlined in Table 1.

Ethnobotany is the study of traditional pattern of exploitation of indigenous plants by the local populace of a particular culture or region. Ethnobotanical information helps ecologists, pharmacologist, taxonomists, watersheds managers and wildlife workers in their efforts for improving the plant wealth of an area (Faiz et al., 2014).

Tolipir landscape has a greater number of plants (158 species) than any other study area of Kashmir previously recorded such as 36 plants in Leepa valley (Ishiq et al., 2012) and 40 plant species in Neelum valley, (Adeel et al., 2011). It is imperative that this diverse richness of species be conserved for the healthy maintenance of the ecosystem. The plants used for ailments of the skin include Albizia lebbek, Berberis lyceum, Fumaria indica, Mysrine africana, Plantago lancealata, Rumex dentatus and Verbascum thapsus. The plants used for treating different bowel illnesses include Albizia lebbek, Berberis lyceum, Mentha royleana, Ficus palmata, Fumaria indica, Mysrine africana, Trichodesma indicum, Verbascum thapsus, Valeraina jatamansi, V. pyrolifolia and Zanthoxylum armatum. A. indica, Juglans regia, Sarcococca sligna and Trichodesma indicum are used for aching joints. These are just some of the uses of the select few plants. Further studies are required to investigate the other possible uses of these plants, their sustainable cultivation and production of medicines for masses.

Pyrus malus, P. pashia, Prunus armeniaca, Punica granatum, Juglans regia, P. persica, Ficus palmata, Viburnum grandiflorum, Rubus fruticosus, Duchesnea indica and Fragaria nubicola are used in diet.

Abies pindrow, P. roxburgii, P. wallichiana, Populus ciliata and J. regia are used for furniture and constructional.
purposes. A. indica, Clematus grata, Salix acmophylla, Dicliptera bupleuroides, Cederalia serrata and Q. incana are utilized for fuel.

A. indica, A. lebbek, Prunus persica, Viburnum grandiflorum, Myrsine Africana, Adiantum capillus-veneris, Celtis caucasica, Hedera nepalensis, Oenothera rosea, Rumex hastatus, Trifolium repens, Indigofera heterantha, Urtica dioica and Gerbera gossypina are given as fodder to cattle.

Almost all the plant species of Tolipir landscape are being traditionally exploited by the local populace in different ways, i.e., medicine, fodder/ forage, timber and furniture wood, human food, fuel wood, construction material, ornamental, vegetable and flavouring agents, etc., to different degrees. Not all the flora has a fast growth rate and/or high population density; this puts the species readily cultivated for use at risk (Hunde et al., 2004). This is especially crucial where species with multiple known uses are concerned (Sarwat et al., 2012).

It is imperative that policies be made and implemented to secure rare species of plants. To reduce the consumption of firewood, the locals need to be presented with affordable alternatives.
Table 1. List of plants and use of their different parts

<table>
<thead>
<tr>
<th>Name of Plant species</th>
<th>Leaves/Branches</th>
<th>Roots</th>
<th>Stem</th>
<th>Fruits/Flwr.</th>
<th>Bark</th>
<th>Resin/As/Nut</th>
<th>Wood</th>
<th>Ornamental</th>
<th>Essential Oil</th>
<th>Honey Bee spp.</th>
<th>Other (Paper pulp, match industry, dye, tool handles, utensils, rope making, furniture, boats, carts, miswak, insect repellent, soil binder/ground cover plant etc.)</th>
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Faiz et al. (2018). Plants and Their Uses by Tolipir Communities

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CONCLUSION

This study documents ethnobotanical uses of 156 plant species belonged to 93 genera and 51 families listed from five villages of Tolipir landscape (Ali Sojhal, Kanchi Kot, Khori Chana, Kahoo Kot and Noor Kot villages). It was found that most of the species were used for medical treatment.

REFERENCES


