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ETHNOBOTANICAL STUDIES ON PLANT RESOURCES OF RANYAL HILLS, DISTRICT SHANGLA, PAKISTAN

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Abstract

Ethobotanical information were collected on 97 plant species from Ranyal Hills District Shangla, Pakistan. These plants were classified for their traditional medicinal and economic uses. Many of these plants have more than one local use. There were 37 fuel species, 37 forage/fodder species, 31 medicinal species, 18 edible species, 12 species used for making shelter, 10 vegetables species, 9 poisonous species, 7 ornamental species, 6 timber wood species, 4 furniture wood species, 4 species used for fencing, 4 honey bee plants, 3 species for agricultural tools, 2 species used as flavoring agents, 2 species for making mats and baskets, 2 species used with religious belief , 2 species for cleaning teeth, 1 species as tea substitute,1 fiber yielding species, 1 species as adhesive, 1 irritant species and 1 species for making pens.

Introduction

Ranyal Hills, District Shangla has average altitude from 850-2350 m, lies between 34°31′ to 33°08′ north latitudes and 72° 33′ to 73°01′ east longitudes. The climate of the area is mild in summer and cold in winter. The annual rainfall is approximately 1415.9 mm. (Anon., 2003).

The ethnobotanical information besides listing the traditional uses of plants, helps ecologists, pharmocologists, taxonomists, watershed and wild life managers in their efforts for improving the wealth of area. Ethnobotanical research addresses the characterizing traditional knowledge to establish priorities with the local community to ensure that the local values are translated into rational use of resources and effective conservation of biological diversity and cultural knowledge. Plants as bioresource are responsible for the socioeconomic uplift of the area and people. The people of the area are mainly poor depending upon agriculture, government services and forest resources. Therefore, the forest is under severe biotic pressure. A forest reserve should be a constant source of maintaining genetic diversity of plants and animal and these resources should be available to man through proper conservation.

Many such studies have been done on the ethnobotany of medicinal and other useful plants of neighboring countries (Gupta *et al.*, 1997; Singh *et al*., 1997; Vedavathy & Mrudula, 1997; Siwakoti & Siwakoti, 1998; Khan, 1999; Mustafa *et al*., 2000; Ghimireet *et al*., 1999; Siddiqui *et al*., 2000). In Pakistan, some ethnobotanical studies have also been carried out (Tariq *et al*., 1995; Shinwari & Khan, 1997, 1998; Badshah *et al.*, 1996; Durrani *et al*., 2003; Gilani *et al*., 2003). The ethnobotany of some parts of Swat has also been reported (Hussain *et al*., 1995; Hussain & Sher.1998; Sher *et al*., 2003, 2004; Hussain *et al.*, 2004, 2005). The present study reports the traditional utilization of plants of Ranyal Hills as no reference on the ethnobotany exists from this remote area.

Materials and Methods

The study was conducted during July-August, 2000-2001 to document the traditional uses of plants of Ranyal Hills District Shangla, Pakistan. The plants, collected from different localities round the year were dried, preserved and identified with the help of Flora of Pakistan (Nasir & Ali, 1971-1995; Ali & Qaisar, 1995-2005). The ethnobotanical information was known from local elderly knowledgeable people and local drug dealers. The plants were classified into various ethnobotanical classes.

Results and Discussion

Ethnobotanical information showed that 97 species were locally used for various purposes (Table 1). They included 37 fuel wood species, 37 fodder species, 31 medicinal species, 18 edible species, 12 shelter making species, 10 vegetable species, 7 ornamental species, 6 timber wood species, 4 furniture wood species, 4 fences and hedges species, 4 honey been species, 3 agricultural tools making species, 2 species for cleaning teeth, 2 flavoring agents, 1 coffee substitute species, 1 fiber yielding species, while 10 species were poisonous.

People living around Ranyal hills are mostly poor and lack basic facilities such as health care units, electricity, gas and coal. Therefore, they mainly depend upon forests for fuel wood. Some 37 plants including *Berberis lycium, Continus cogyra, Cotoneaster integerima, Dodonaea viscosa, Plectranthus rugosus, Quercus incana, Q. balloot, Spiraea lindleyana* and *Vibernum cotinifolium* were used as fuel wood. The findings agree with those of Badshah *et al*., (1996), Hussain *et al*., (2004, 2005) and Rashid *et al*., (1997) in this respect. Fuel wood is the major source of household energy (Awan, 2000). Khan (2000) stated that 18% people have dependency on fuel wood even in Mingora, Swat, which has electrisity and fuel gas facilities.

Thirteen species including *Heteropogon contortus, Eragrostis papposa, Cyprus spp., Panicum spp., Parapholis incurva* and *Setaria viridis* etc were the commonly used fodder plants. These findings agree with those of Hussain & Mustafa (1995), who reported 51 fodder species from Hunza. The present study is also in line with those of Hussain *et al*., (2004,2005); Hussain & Sher (1998); Sher *et al*., (2003, 2004), who reported almost same plants from other parts of Swat.

The local people use 31 medicinal species in health care system. The promising species included *Berberis lycium, Artemisia absinthium, A. dubia., A. maritima, Achyranthus aspera, Ajuga bracteosa, Paoenia emodi, Bergenia ciliata, Viola canescens, Valeriana jatamansi, Salvia moorcroftiana, Hyparicum perforatum, Mentha longifolia* and *Xanthoxylum armatum.* The results agrees with the findings of Gupta *et al*., (1995), Lewis & Elvin (1995), Dastagir (2001) and Hussain *et al*., (2005), who reported plants that are traditionally used for curing many diseases. Same species are used in other parts of Swat for treating various ailments.

Edible fruits and seed are obtained from 18 species including *Berberis lycium, Diospyrus lotus, Juglans regia, Punica granatum, Fragaria vesica* and *Zizyphus sativa. S*imilar reports have been made by Hussain *et al*., (1996). Ten species including *Amaranthus viridis,* floral buds of *Bauhinia variegata, Chenopodium album, Medicago denticulata* and *Salvia lanata* were locally used as vegetables.

Twelve species were locally used for making shelter in mud made houses. The preferred species included *Dodonaea viscosa, Elaeagnus umbellata, Indigofera heterantha, I. gerardiana,* and *Nerium indicum.* The locals used 8 species as ornamental plants including *Jasminum humile, Rosa macrophylla, Ipomoea purpurea* and *Nerium indicum.* Some of these species have been commercially exploited.

Pinus roxburgii, P. wallichiana, Juglans regia, Aesculus indica, Melia azazracha, Morus nigra, Celtis caucasica and *Olea ferruginea* were the timber wood plants of the area, which have become endangered due to heavy deforestation. *Pinus wallichiana* is the most valuable timber, only second to *Cedrus deodara,* which fetches very high price. Walnut wood is one of the most valued woods for furniture and other decorative items. It also provides handsome turn to the local people. Walnut is also priced for fruits and bark. Four species were used for making high quality furniture. They included *Dalbergia sissoo, Pinus roxburghii, P. wallichiana* and *Juglans regia.* Agricultural tools are made from *Quercus baloot, Q. incana* and *Parrotiopsis jacquemontiana.* The locals still use the traditional tools made from these species.

Fences and hedges are made from *Berberis lycium, Rubus ellipticus, R. fruiticosus* and *Zizyphus sativa.* The spiny nature prevents stray animals not to enter the field or herd sheds. Three species were used for making baskets, mats and pens including *Phragmites karka, Heteropogon contortus* and *Saccharum spontaneum*. Honeybees visit *Justicia adhatoda, Cannabis sativa* and *Pimpinella diversifolia*. *Mentha longifolia* and *Xanthoxylum armatum* are used as condiments and flavoring agents. Two species were used for cleaning and sparkling of teeth. The bark of *Juglans regia* (locally called Dandasa) is regularly used as miswaks for teeth cleaning. *Hypericum perforatum* is used as substitute for tea/coffee. *Cannabis sativa* yield fiber and also is a narcotic plant. Milky latex obtained from leaves and stem of *Ficus carica*, is used as binding agent. *Urtica dioica* causes irritation of skin and itching.

The area is under heavy deforestation and overgrazing pressure, which has reduced regeneration of woody plants. Overgrazing has deteriorated the habitat, as there is no management of grazing land. Most of the medicinal plants are uprooted by the local people for selling or for fuel wood purposes and are also grazed heavily. There is a dire need to conserve the resources for our own survival. Forests are the resource that control the environmental pollution and provide livelihood not only to the local communities but to others as well.

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