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ETHNOBOTANICAL STUDIES ON USEFUL SHRUBS OF DISTRICT KOTLI, AZAD JAMMU & KASHMIR, PAKISTAN

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Abstract

The ethnobotanical data on the shrubs of District Kotli, Azad Jammu & Kashmir, Pakistan was documented during 2007-2008 and 38 species of 36 genera belonging to 25 families were found useful in every day life of local inhabitants as medicinal, fuel, shelter, fodder/forage and in making agricultural tools. Most of the shrubs were noticed having more than one ethnobotanical uses. Family Rhamnaceae was recorded unique among all the families in having comparatively the highest number of species i.e., 4.

Introduction

Plants are essential ingredients of healthier life because they provide us medicines, which are both effective and safe, without any side effect. Plants play a vital role in our lives more than animals mainly due to their extraordinary array of diverse class of biochemicals with a variety of biological activities (Cotton, 1996; Buckingham, 1999).

Ethnobotanical information on medicinal plants and their uses by indigenous cultures is useful not only in the conservation of traditional cultures and biodiversity, but also for community health care and drug development. This information is utilized as a guide for drug development under the assumption that a plant which has been used by indigenous people over a long period of time may have an allopathic application (Farnsworth, 1993).

Azad Jammu & Kashmir, Pakistan is rich in plant diversity because of the diversified habitats, such as lakes, rivers, streams, springs, nullahs, meadows, steep mountain slopes and roads, waste lands cultivated fields, etc. The present study was carried out to document the ethnobotanical data on the useful shrubs of District Kotli, that lies in between longitude 73° 6′ to 74° 7′ East and latitude 33° 20′ to 33° 40′ North (Topo sheet No. 43^{G} /15). It is about 700m-1400m above the mean sea level and is bounded on the Eastern side by Occupied Kashmir, Western side by Rawalpindi (Pakistan), Southern side by Mirpur and Northern side by District Poonch. The population is 0.558 million, according to census 1998. Its area is 1862sq.km. The annual rainfall is 1227.91 mm, maximum during July to August, i.e. 306.93 mm and 256.53 mm, respectively, while low during winter. Thus average monthly rainfall is 102.32 mm (Anon., 2006). Humidity is low during the day time as compared to night. January, February, August and September are more humid months than May and June. District Kotli is divided into Kotli, Sehnsa and Nikyal Tehsils.

The ethnobotany of Chikar and allied areas of District Muzaffarabad was investigated by Saghir *et al.*, (2001) and 53 plant species belonging to 48 genera of 33 families were found useful mostly as medicinal, fuel, fodder, fruit, timber and vegetables. Similarly, in the present ethnobotanical study, it was noticed that the local inhabitants largely depended upon the local flora for food and health.

Material and Methods

The socioeconomic and ethnobotanic information of the people of 20 villages of District Kotli viz., Khanara, Mohra, Panagh, Jandrot and Karela of Tehsil Nikyal; Holar, Khori, Prandan, Sehr Mandi and Sarsawah of Tehsil Sensa and Seri, Andralla Kotera, Phalni, Bandli, Brooth, Dahana, Dana, Anda, Khajurla and Saney Baney of Tehsil Kotli, was recorded through interviewing and filling in questionnaire from drug dealers, shopkeepers, timber dealers, fuel wood sellers, local hakims and farmers but priority was given to local elderly people and hakims who were the real users having a lot of information about the plants and their traditional uses. The plants were classified according to their economic value in that area (medicinal, fodder, vegetables, fencing, fruit, fuelwood and ornamental).

Plant specimens collected from the area were dried, pressed and mounted properly. Some of them photographed (Figs. 1&2). They were identified with the help of Flora of Pakistan Nasir & Ali (1970-1989), Ali & Nasir (1990-1992), Nasir & Rubina (1995) and Ali & Qaisar (1992-2007). The plant specimens were submitted to Dr. Sultan Ahmad Herbarium, GC University, Lahore, Pakistan after pasting voucher numbers.

Results

Ethnobotanical uses were enumerated for 38 species of shrubs belonging to 36 genera and 25 families of angiosperms. The data collected from the local inhabitants depicted that these shrubs were in use since their forefather's time as: medicinal, fodder/forage, fuel, fruit, ornamentation, etc. It was observed that most of the shrubs of medicines uses such as skin cracks, blisters, antispasmodic, expectorant, fever, tumors, dysentery, scabies, itching, diarrhoea, epilepsy etc., were also having other common uses. Hence as a whole, 11 species (28.94%) were having multi uses, 10 (26.31%) with two usage and the remaining 17 (44.73%) having single usage. The plants were arranged in the alphabetical order of botanical name followed by family, local name and traditional uses with flowering period (Table 1).

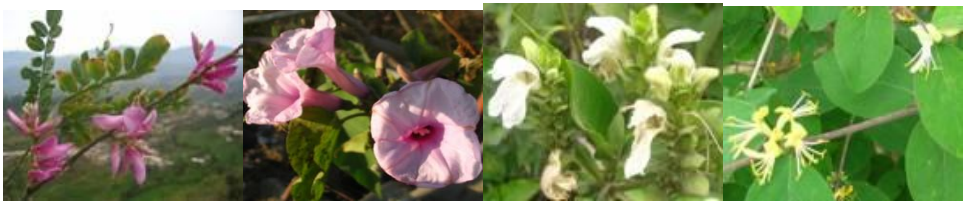
Discussion

Almost all the species of shrubs recorded for their ethnobotanical uses were found medicinally important. This data matches with that of Basu (1991) on the medicinal uses of Indian plants as well as Shinwari *et al*., (2006) on the medicinal plants of Pakistan. The medicinal plants are necessary for the preparation of various drugs and curing diseases as stated by Qureshi *et al*., (2007b). There are 50,000 registered hakims (herbal healers) in Pakistan (William & Zahoor, 1999). It has been found that traditional herbal medicines are cheaper and often accepted by many people. The younger generation is often adopting the allopathic medicines, thus the traditional knowledge on the medicinal plants and the preparation of medicines from them is only confined to the old people. The treasure of traditional knowledge on the medicinal plants is, therefore under threat. Most of the shrubs in District Kotli were found multipurpose. A similar study was conducted by Sardar & Khan (2009) in Shakargarh, District Narowal, Pakistan and recorded somewhat similar results. It was also found that most of the palatable shrubs were over grazed due to the wild and domestic grazers. People destroyed the forests very badly and exploited extensively the important shrubs for medicinal, fuel, thatching and other uses. It looked as if people were not plant lovers.

Astragalus psilocentros *Berberis lyceum* *Buddleja asiatica* *Calotropis procera*

Carissa opaca *Caryopteris odorata* *Colebrookea oppositifolia* *Cotinus coggyria*

Datura innoxia *Debregeasia salcifolia* *Dodonaea viscosa* *Eranthemum pulchellum*



Indigofera heterantha *Ipomoea carnea* *Justicia adhatoda* *Lonicera quinquelocularis*

Fig. 1.

Over exploitation not only degraded the local vegetation and the disappearing of natural beauty but also made certain species endangered, for example, *Rhynchosia pseudo-cajan* Camb., *Ziziphus oxyphylla* Edgew and *Carissa opaca* Stapf ex Haines were disappearing day by day. Today certain direct causes such as cutting of shrubs for commercial and subsistence purposes and degradation and indirect causes such as insecure land tenure, poverty and population growth were also influencing the local vegetation. Therefore there is a dire need for the protection of this wealth of nature until it disappears on this planet.

Loranthus pulverulentus *Maytenus royleanus* *Myrsine Africana* *Nerium oleander*

Otostegia limbata *Periploca aphylla* *Reinwardtia trigyna* *Rhamnus triquetra*

Rhynchosia pseudo-cajan *Rosa damascena* *Rubus ellipticus* *Rubus fruticosus*

Woodfordia fruiticosa *Ziziphus oxyphylla* Grazing at Khui-Ratta Hills

Fig. 2.

During recording the phenological behavior of plants from February to June and July to January, 2007, a relationship between climate and growing period of plants was noticed. This type of study is essential for regeneration, conservation and aforestation. The vegetation varied in different altitudes in a zone. The present study disclosed that the growing season started from February, there few shrubs initiated vegetative growth. The majority of shrub species (68.42%) flowered from February to June, 21.05% flowered during July to January and 10.5% flowered throughout the year and the flowering reached to the peak during April. The phenological studies by Qureshi *et al.* (2007a) in Sudhan Gully and Ganga Chotti Hills, District Bagh, Azad Kashmir reported similar findings.

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