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A SURVEY OF ETHNOBOTANICALLY IMPORTANT SHRUBS AND TREES OF TEHSIL JATOI, DISTRICT MUZAFFAR GARH, PUNJAB, PAKISTAN

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ABSTRACT

An ethnobotanical documentation of the plants of Tehsil Jatoi, District Muzaffar Garh, Punjab, Pakistan was conducted to collect information according to the ethnobotanically important shrubs and trees of the area through interviews and questionnaire. A total of 31 shrubs and trees were documented in the study area belonging to the 31 families, out of which 9 (29%) were single-usage, i.e. used for medicinal, furniture fuel. Two-usage plants were 10 (32%) in number, falling in 9 categories such as medicinal and fodder, fodder and foods, fodder and vegetables, etc. There are 12 (39%) multi-usage plants belonging to 9 different categories. It is concluded that the local knowledge about the plants is decreasing generation after generation. Overgrazing, deforestation, overexploitation of medicinal plants exerts massive stress on the vegetation of the study area, i.e. Tehsil Jatoi, District Muzaffar Garh.

KEYWORDS: Ethnobotany, Shrubs, Trees, Jatoi, Muzaffar Garh, Pakisran.

INTRODUCTION

Ethnobotany literally means an interaction between people and plants (Harshberger, 1896). The ethnobotany thus deals with the dynamic relationships and interactions among people, their cultural values and plants and this interaction between humans and plants vary due to their uses, relative importance and varying social, cultural and ethnic factors (Pahnwar and Abro, 2007).

Plant-based medicines enjoy a respectable position today, especially in the developing countries, where modern health service is limited and indigenous remedies which are more effective, safer and inexpensive are gaining popularity among both rural and urban areas. Information from ethnic groups or indigenous traditional medicines had played a vital role in the discovery of novel products from plants as chemotherapeutic agents (Katewa *et al*., 2004).

The present study was conducted keeping in view the significance of rich floral biodiversity of Tehsil Jatoi, District Muzaffar Garh. Latitude and Longitude of the city Jatoi is 29.5097 / 70.8458(GPS Garmin Nuvi).The climate of Tehsil Jatoi is cold in winter but hot in summer season. The annual rainfall in Tehsil Jatoi, District Muzaffar Garh is 282.46 mm. Humidity is more in the morning than that of evening.

MATERIALS AND METHODS

The material required included: Notebook, blotting paper, pencil, newspaper, knife, polythene bags, map and plant presser. The ethnobotanical study was carried out in the following steps:

In order to document the ethnobotanical uses of shrubs and trees of Tehsil Jatoi, District Muzaffar Garh, 31 villages were visited and plants were collected from these areas. Information regarding plants was collected from the local elderly people of the area, i.e., herbal doctors, herbal shopkeepers, farmers and wood sellers, etc. by interviewing and filing a questionnaire. Main areas visited are Permat Chowk, Samma Wali, Hamzawali, Baiti Nala, Ali Shah, Murad Pur, Mouchi Wala, Kallar Wali, Kallar Wali Pull, Massu Shah, Hathyan, Chandar Bhan Nala, Bhambho Sandhela, Bait Meer Hazar Khan and Kotla Gammu.

The plants collected from the study area were pressed immediately before wilting in between the sheets of newspaper or blotting papers. The plants specimens after drying were mounted on the herbarium sheets with the help of wood glue and fiber tape and then one plant specimen was pasted on one herbarium sheet. The mounted specimens were identified with the help of existing literature such as flora of Pakistan with voucher numbers and submitted in Dr. Sultan Ahmad Herbarium, Botany Department GC University Lahore, Pakistan.

RESULTS AND DISCUSSION

In the study area a total of 31 shrubs and trees species were recorded belonging to 21 families, out of which, monocot included 1 species of 1 family Palmaceae. The remaining 30 plants were belonging to dicot families; Mimosaceae and Moraceae with 4 species are the dominant families (Fig. 1). Other families are Amaranthaceae, Asclepiadaceae, Bombaceae, Caesalpiniaceae. Capparaceae, Meliaceae, Moringaceae, Myrtaceae, Rhamnaceae, Solanaceae, Tamaricaceae and Salvodoraceae (Table 1).

Single-usage shrubs and trees are those plants which are used for only one specific purpose. Single-usage shrubs and trees (Fig. 2) are *Calotropis procera* (Ait.) Ait.f., *Otostegia limbata* (Bth.) Boiss, *Ficus elastica* L., *Seuda fruticosa* (L.) Forssk, *Leptadenia pyrotechnica* (Forssk.) Decne, *Terminalia arjuna* (Roxb.) Wight and Arn., *Bombox ceiba* L., *Prosopus juliflora* (Swartz) DC. and *Tamarix aphylla* (L.) Karst. Out of 31 shrubs and trees species, 9 (29%) were single-usage. Single usage shrubs and trees must be divided into 5 categories. Medical plants have highest percentage of 33% followed by fodder and furniture plants 22%, fuel and tanning are 11% each. Out of 9plants, medicinal plants were 3, fodder plants and furniture were 2, fuel and tanning were 1each.

Two-usage plants are those plants which are used for two purposes. Two-usage plants are *Ficus religiosa* L., *Pentatropis spiralis* (Forssk.) Decne, *Cordia myxa* L., *Melia azedarch* L., *Salvadora persica* L., *Capparis decidua* (Forssk.) Edgew., *Callistemon lanceolatus* (Sm.), *Datura innoxia* Mill., *Cassia tora* Linn. and *Salsola imbricate* Forssk. In Fig. 3 the percentage of double usage plants are presented. Out of 31 shrubs and trees, 10 (32%) plants were two-usage plants. 10 plants species falling in 9 categories were representing two-usage plants, i.e., medicinal and fodder (1), fruit and furniture (1), fodder and fruit (1), fodder and vegetable (2), medicinal and vegetable (1), fodder and fuel (1), medicinal and ornamental (1), fuel and medicine (1) and fodder and fertilizer (1). All the plants included in these categories belong to dicot families except one species of fodder and handicrafts and 2 species of medicinal and vegetable.

Those plants which are used for more than two purposes are called multi-usage plants (Fig. 4). Multi-usage plants are *Albizia lebbeck* (L.) Benth, *Acacia nilotica* (Benth.) Brenan., *Azadirachta indica* Adr. Juss., *Morus nigra* L., *Dalbergia sissoo* Roxb., *Eucalyptus camaldulensis A.Cunn.*, *Moringa oleifera* Lam., *Ziziphus mauritiana* Lam., *Morus alba* L., *Ricinus communis* L., *Prosopis glandulosa* Torr. and *Phoenix dactylifera* Roxb. Out of 31 shrubs and trees species 12 were of multi usage. The percentage of multi-usage plants is 39%. These plants were categorized in 9 categories.

Percentage of shrubs and trees used ethnomedicinally by people in Tehsil Jatoi District Muzaffar Garh is presented in Fig. 5. Most of the people use plants for multipurpose (39%), followed by 32 percent people use plants as dual purpose while 29% use as single use.

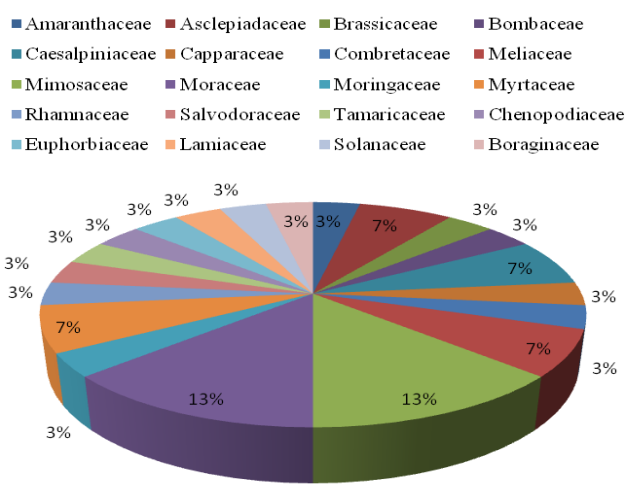

Fig. 1. Chart showing percentage contribution of dicot families in shrubs and trees.

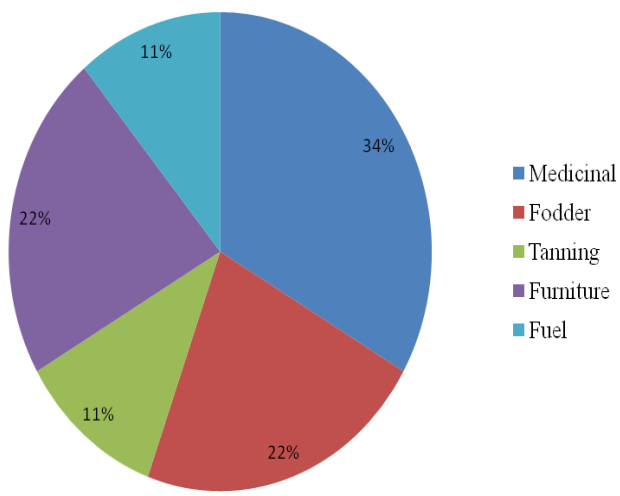

Fig. 2. Chart showing the percentage contribution of single-usage shrubs and trees.

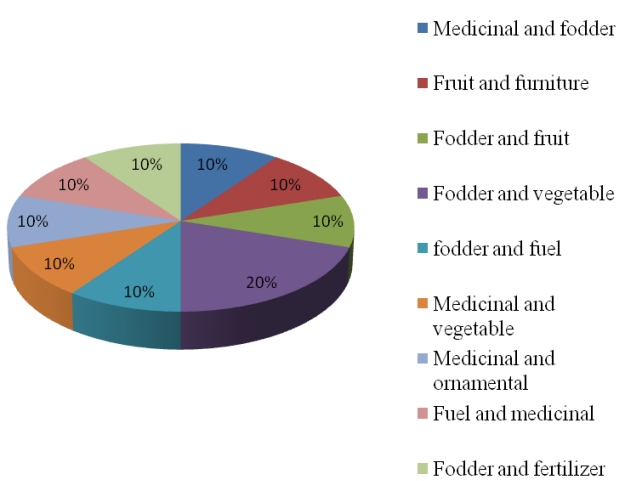

Fig. 3. Chart showing percentage contribution of dual-usage shrubs and trees.

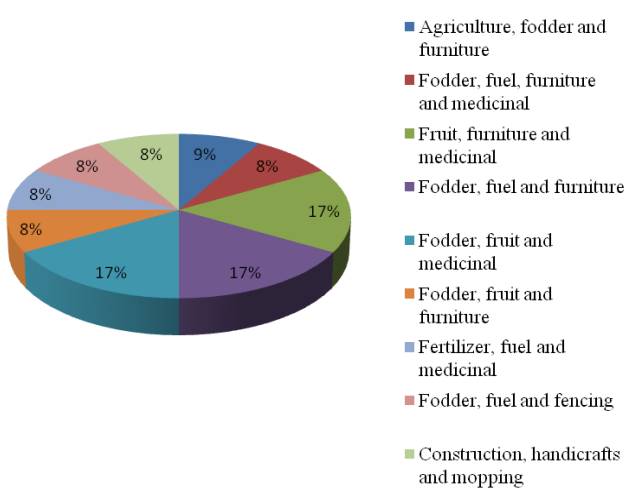

Fig. 4. Chart showing percentage contribution of multi-usage shrubs and trees.

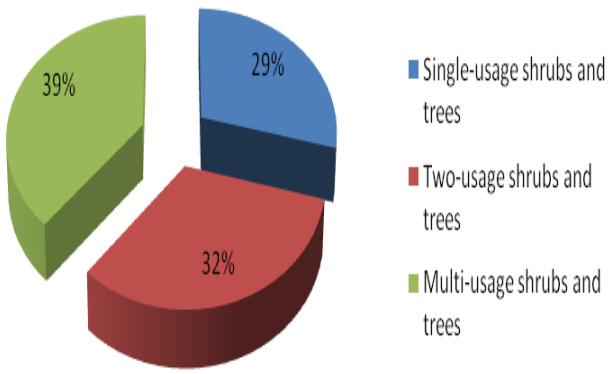

Fig. 5. % of shrubs and trees consumption purpose used ethnobotanically by people in Tehsil Jatoi District Muzaffar Garh.

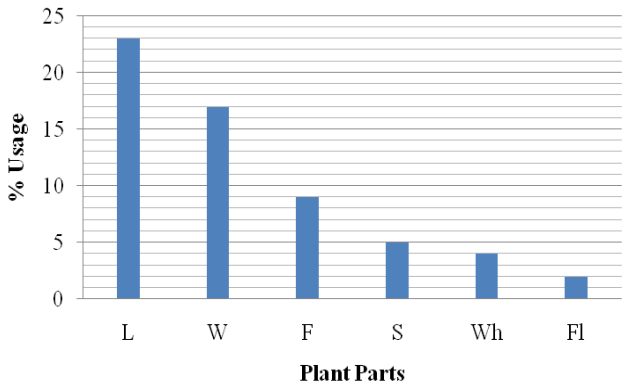

Fig 6. Plant part (%) used ethnobotanically in Tehsil Jatoi District Muzaffar Garh.
Note: More than one part of some plants is used. F: Fruit, Fl: Flower, L: Leaf, R: Root, Rh: Rhizome, S: Seed, W: Wood, T: Tuber, Wp: Whole plant.

Plants parts usage in percentage is presented in Fig. 6. In Tehsil Jatoi most of the people use leaves of ethnobotanical plant for medication (23%), wood (17%), fruits (9%), seed (5%), whole plant (4%) and flowers (29%) that indicated the tendency of people towards the awareness of medically important parts of plant. Medicinal plants are used to treat a number of human and livestock diseases since ancient times. Even now-a-days, people in the Kadhi areas of Khushab are totally dependent on therapeutic uses of 48 plants species (Qureshi *et al*., 2011). In the present investigation it was strongly noticed that most plant species have more than one use. It was also observed that the number of species used for medicinal purpose were greater than any other category, as suggested by Ajaib *et al.* (2012; 2013) during ethnobotanical survey of Loralai, Balochistan and ethnobotanical study of useful climbers/twiners of district Kotli, Azad Jammu and Kashmir. They collected 28 plant species belonging to 19 families, out of which 1 gymnosperm family and 18 families of angiosperms and concluded that local people use the plants for many purposes that include thatching, agricultural tools, household articles, honey bee keeping, etc.

At past, the ethnobotanical research was not undertaken in Tehsil Jatoi, District Muzzafar Garh. The knowledge about the plants uses in the study area is usually transferred in verbal form and there is no written form of data existing. This would lead to the loss of ethnobotanical information. Therefore, the preservation and conservation of the significant plants along with their valuable uses will be beneficial, not only for the local inhabitants of the area but also for the country as a whole.

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