



Biological Spectrum and Ethnomedicinal Uses of Plants in Chellah District Muzaffarabad Azad Kashmir Pakistan

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ABSTRACT

The recent study was carried out on medicinal plants of Chellah District Muzaffarabad Azad Jammu and Kashmir to find out life form and leaf size spectra and also to explore folk uses of plants of that area. The 30 plants species were collected of medicinal values which were belonging to 16 families. The folk uses of plants were recorded from local inhabitant through questionnaire. The plants species were used for treating various ailments such as malaria, diarrhea, dysentery etc by the local inhabitants. Biological spectrum explored that higher number of Therophytes and low number of trees indicated that vegetation that plants communities were under high biotic pressure due to anthropogenic activities.

Keyword: Biospectrum, Ethnomedicinal uses. Subtropical zone, Muzaffarabad

INTRODUCTION

The term ethno botany was for the first time suggested by Harshburger [1]. Documentation of traditional knowledge, in particular the medicinal values of plant species, provided various novel modern drugs [2]. Ethnomedicinal uses of plants plays an important role in understanding the dynamic relationships between biological diversity and social and cultural systems of local inhabitants [3]. On the other hand Plants can be grouped into life form classes and life form characterized by plant adaptation to certain ecological condition [4]. Similarly leaf size classes have been found to be very useful for plant associations. The leaf size knowledge may help in the understanding of physiological processes of plants and plant communities [5]. Malik reports on phytosociological such as life form and leaf size spectra of plant species in areas of Azad Jammu and Kashmir [6-8].

MATERIAL AND METHODS

The phytosociology studies based on life form and leave size; were carried out in Chellah Muzaffarabad during the field work in different localities of the area. The pants were collected in newspaper and compressed with the help of compressor and dried.

Identification of voucher specimens

The plants were identified with the available flora [9] and nomenclatures of the plants were identified with the help of original description and available literature. The life form was determined as described by [10]. The leaf size spectra were determined with the help of diagram after Raunkiaer [11].

RESULTS AND DISCUSSION

A phytosociology studies were carried in the city campus Chellah Muzaffarabad. In the investigated area 30 plant specimens were collected in point view of medicinal important (Table 1). During the survey it was explored that mainly herbaceous plant species were used to treat diseases. In the area the annual (therophytes) plants were 22 followed by 13 plants which were geophytes and three were tree. The studied is based on life form and leaf size spectra of plant communities. The therophytes (30%) were the indicator and disturbed vegetation of the plant communities. Hemicryptophytes were (10%) which were the indicator of degraded vegetation. while geophytes (1.67%) are the indicator of Mediterranean climatic condition (figure 1). The similar study on degraded vegetation of sub-tropical vegetation zone was reported in Kotli and Muzaffarabad hills by Milk [12]; find higher number of therophytes plants. Our findings in this regard are agreed with him.

In the studied area the leaves spectra were Microphyll (26.7%) and leptophyllous (10%) due to warm climatic condition of the area. The well known cause for declining plant species diversity are habitat loss, narrow distribution range, low population size, fragmentation degradation of population and genetic variation [13].

The highly important medicinal plants were *Ajuga bracteosa*, *Chenopodium album*, *Amaranthus viridus* *Ficus palmate*, *Morus alba*, *Verbascum thepsus* and *Solanum nigrum*. A total 56 medicinal plant species belonging to 36 families were used for curing various ailments. The key medicinal plants in the study area were highly threatened with anthropogenic and natural factors [14].

Table 1. Floristic list, life form, leaf size spectra and medicinal uses of plants

| Botanical names | Families | Life form | Leaf size | Parts used | Folk uses |
|--|----------------|-----------|-----------|---------------|--|
| <i>Amaranthus viridus</i> L. | Amaranthaceae | Th | Mic | Leaves, seeds | The leaves decoction used to treat anemia and gastric troubles |
| <i>Amaranthus spinosis</i> L. | Amaranthaceae | Th | Mic | Leaves, seeds | Seeds lotion applied externally to treat pimples. |
| <i>Silyum marianum</i> Blessed | Asteraceae | Th | Mes | Latex, root | The plat is hepatoprotective and, latex applied external as antiseptis and to reduce inflammation. |
| <i>Sonchus asper</i> L. | Asteraceae | Th | Mic | Leaves roots | The infusion used to treat abdominal pain. |
| <i>Tagetus minuta</i> L. | Asteraceae | Ch | Mic | Whole plant | The plants used as anthelmintic and antispasmodic. |
| <i>Traxacum officinalis</i> Webr. | Asteraceae | H | Mic | Whole plant | The latex used to treat wound infection and has diuretic properties. |
| <i>Xanthium stromariam</i> L, | Asteraceae | Ch | Mes | Whole plant | The decoction used against malaria and bacterial infection. |
| <i>Aster molis</i> L. | Asteraceae | Th | Mes | Whole plant | The decoction used to treat fungal infection. |
| <i>Chenopodium album</i> L. | Chenopodaceae | Th | L | Leaves | Leaves used to treat constipation and gastric problems. |
| <i>Canabis sativa</i> L. | Canabaceae | Th | N | Leaves, seed | Seeds and leaves dried and grinded into powder form used in smoking. |
| <i>Convolvulus arvensis</i> L. | Convolvulaceae | H | Mic | Root | Root powder is strongly diuretic laxative and purgative. |
| <i>Cynoglossum lanceolatum</i> Forssk. | Boraginaceae | H | Mic | Whole plant | Root decoction is used against bronchitis and urinary tract |

| | | | | | |
|--|---------------|----|-----|-------------------------|---|
| | | | | | infection. |
| <i>Euphorbia prostata</i> Ait. | Euphorbiaceae | Th | L | Latex | Decoction of plant used against diarrhea and dysentery. |
| <i>Euphorbia hirta</i> L. | Euphorbiaceae | Th | L | Latex , root | Latex used on inflammation site and reduce to treat reduce bacterial infection. |
| <i>Euphorbia helioscopia</i> L. | Euphorbiaceae | Th | N | Leaves | Latex has antibacterial and anti-inflammation properties. Root used to remove worm. |
| <i>Ajuga bracteosa</i> Wall. | Labiaceae | Th | Mic | Leaves | The leaves decoction to treat blood disorder and to reduce hypertension. |
| <i>Metha logifolia</i> L. | Labiaceae | H | Mic | Leaves | Leaves extract used against cholera, dysentery and vomiting. |
| <i>Mentha arvensis</i> L. | Labiaceae | G | Mic | Leaves | Leaves used as salad. Leaves infusion used against diarrhea and antiemetic. |
| <i>Prunella vulgaris</i> L. | Labiaceae | H | L | Leaves | Leaves paste used on infection. |
| <i>Malvastratum coromandelianum</i> (L.) Gracke. | Malvaceae | Th | Mic | Leaves | The leaves poultice used on source infammed site and wound infection |
| <i>Malva sylvestris</i> L. | Malvaceae | Th | Mic | Leaves, flower | Leaves decoction used as digestive and laxative. |
| <i>Melia azaddaracta</i> L. | Meliaceae | Mp | Mic | Leaves, flower | The powders of the fruits were used to remove worms. |
| <i>Ficus palmata</i> Forssk | Moraceae | Mp | Mic | Fruit, milk latex | Fruit are edible. The milk latex is used against bacterial infection. |

| | | | | | |
|--------------------------------|-----------------|----|-----|--------------|---|
| <i>Morus alba</i> L. | Moraceae | Mp | Mes | Fruits | Fruits used in dyspepsia, jaundice. |
| <i>Poplygonum aviculare</i> L. | Polygonaceae | Th | L | Aerial parts | The plant is sued as vegetables and has laxative and digestive properties. |
| <i>Anagalis arvensis</i> L. | Primulaceae | Th | Mes | Leaves | The leaves paste used on inflammation site to reduce infection. |
| <i>Fragaria indica</i> | Rosaceae | Th | Mic | Fruits | The fruits are edible. The plant sued as anticoagulant and antiseptic. |
| <i>Verbascum thepsus</i> L. | Scropulariaceae | Th | Mes | Leave s | Infusion of plant used to treat pimples, skin rashes. |
| <i>Solanum nigrum</i> L. | Solanaceae | Th | Mic | Fruits | Fruits are aphlogistic for liver spleen and urinary bladder. |
| <i>Verbena officinalis</i> L. | Verbenaceae | H | L | Whole plant | Decoction of plant used to treat dropsy, rheumatism. The root used as antidote for snake and scorpion bite. |

Key: Mp = Megaphanerophytes, Th = Therophytes, He = Hemicryptophytes, G = Geophytes, Ch = Chameophytes, L = Leptophyll, Np = Nanophanerophytes, Mic = Microphyll, Mes = Mesophyll

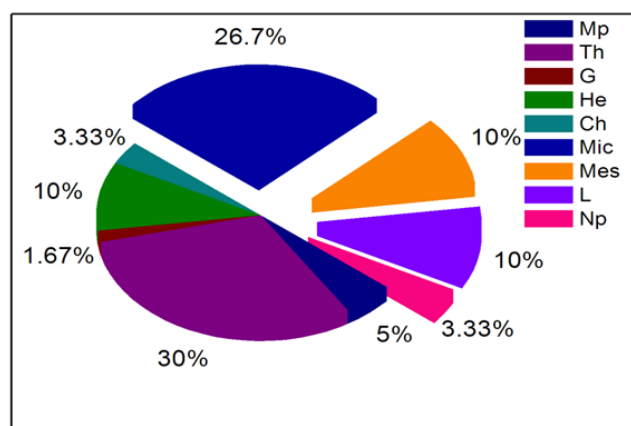


Figure. Life form and leaf size spectra of plants in Chellah Muzaffarabad

CONCLUSION:

The higher number of therophytes and low number of trees indicated that vegetation of the area under biotic pressure due to

anthropogenic activities. Due to human activity the vegetation of that area is highly disturbed. Further investigation is needed to screened bioactive constituents which have ethno pharmacology properties.

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