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## **An Ethnobotanical Survey of Important Wild Medicinal Plants of Hattar District Haripur, Pakistan**

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### **Abstract**

An ethnobotanical survey was undertaken for the purpose of collecting information from traditional healers on the use of medicinal plants in Hattar region, District Haripur, NWFP, Pakistan during 2004-06. The indigenous knowledge of local traditional healers and the native plants used for medicinal purposes were collected through questionnaire and personal interviews during field trips. Plants with their correct nomenclature were arranged alphabetically by family name, vernacular name and ethnomedicinal uses. The identification and nomenclature of the listed plants were based on The Flora of Pakistan. Hattar was surveyed 2-times per year comprising autumn and spring season. A total of 45 plants species were identified by taxonomic description and locally by folk knowledge of people existing in the region. Out of 45 plant species, 17 were perennials/biannual, 20 were found in spring, while 8 species were found in autumn season. Plant specimens collected, identified, preserved and mounted were deposited in the Herbarium, Qarshi Herb Centre, Hattar, Haripur for future references.

### **Introduction**

Pakistan is a fairly large country endowed with a variety of climates, ecological zones and topographical regions. The flora is, likewise, extremely varied and diverse and highly fascinating. Nearly six thousand species of flowering plants are reported from Pakistan and Kashmir (Shinwari, 1996).

The history of discovery and use of different medicinal plants is as old as the history of discovery and use of plants for food (Ibrar, 2002). Medicinal plants play a key role in traditional health care system. A number of allopathic drugs also comprise extracts taken from medicinal plants (Rashid

and Arshad, 2002).

Hattar is located in district Haripur. Haripur is 30 km on the West and South West from Abbottabad. Haripur is in the Northwest of Rawalpindi comprising 60 km distance by road in north. The District Abbottabad lies between 33° 50' to 34° 23' North latitudes and 72° 35' to 73° 31' East longitudes. The climate of Hattar is moderate. During summer season, the climate is hot average temperature ranges between 30-35°C. The winter season is cool and extends from November to March average temperature ranges between -04-10°C.

The herbal medicines occupy distinct position right from the primitive period to present day. The ethnobotanical pharmacology is as old as man himself. In Indo-Pak first record of plant medicine were compiled in Rig Veda between 4500-1600 BC and Ayurveda between 2500-600 BC. This system traces its origin to Greek medicine, which was adopted by Arabs and then spread to India and Europe. About 80% population of the world depends on the traditional system of health care (Ahmad, 2005). These medicines have less side effects and man can get the herbs easily from nature. Unani system is dominant in Pakistan but the ethno medicinal plants use is also seen in the remote areas. (Ahmad et al. 2003).

The indigenous traditional knowledge of herbal plants of communities where it has been transmitted orally for many years is fast disappearing from the face of world due to transformation of traditional culture. The people, who are native to the area in which the plants occur, use around 90% of the medicinal species (Baquar1989). This is indicative of the vast repository of knowledge of plant medicine that is still available for global use, provided of course that it does not get lost before it can be tapped or documented. Traditional and indigenous medical knowledge of plants, both oral and codified, are undoubtedly eroding (Mujtaba and Khan, 2007).

Keeping in view the importance of medicinal flora of Hattar the study was confined to collect and document the indigenous knowledge of local people about medicinal uses of native plants.

## **Materials and Methods**

### ***Plant collection and preservation***

Six field trips in autumn and spring seasons were arranged in order to collect information about the ethnomedicinal uses of plants by the local people from January 2004 to January 2006. The main target site was Hattar of District Haripur, NWFP, Pakistan.

Standard method was followed with regard to collection of plant materials, drying, mounting,

preparation and preservation of plant specimens (Nasir and Ali, 2001). Voucher specimens of medicinal plants in triplicates were collected, prepared and identified. Plants with their correct nomenclature were arranged alphabetically by family name, vernacular name and ethnomedicinal uses. The identification and nomenclature of the listed plants were based on The Flora of Pakistan (Nasir and Ali, 1978). The specimens were deposited in the Herbarium, Qarshi Herb Centre, Hattar, Haripur.

### ***Traditional folk knowledge***

Questionnaire method was adopted for documentation of folk indigenous knowledge. The interviews were carried out in local community, to investigate local people and knowledgeable persons (Hakims, Women and Herdsmen) who are the main user of medicinal plants. About 200 informants have been interviewed on random basis. The indigenous medicinal plants having traditional knowledge of utilization among the people have been selected as reference specimens.

### **Results**

During the present study, ethnomedicinal data on 45 plant species belonging to 17 perennials/biannual, 20 spring seasonal, and 8 species of autumn season were collected. Information regarding their botanical name, vernacular name, family, part used and their ethnomedicinal uses are listed in Tables 1, 2 and 3. Data presented in Table 1 shows 17 plant species that are perennials or biennials. Woody plants consisted of two *Acacia* species, *Broussonetia papyrifera* (Jangli Toot) and *Dalbergia sissoo* (Shisham). *Mentha longifolia* (Jangli Podina) and *Saccharum spontaneum* (Khai) were herbaceous, while the remaining species were documented as shrubby.

**Table 1. Important perennial medicinal plants of Hattar region perennials/biennial).**

Sr. #	Botanical Name	Vernacular Name	Family	Part used	Ethnomedicinal Uses
1	<i>Acacia modesta</i> Wall.	Phulahi	Mimosaceae	Gum	Gum is restorative
2	<i>Acacia nilotica</i> (L.) Delice.	Kikar	Mimosaceae	Bark, pods, gum	Astringent, bark used in diarrhea, gum used in cough
3	<i>Adhatoda vasica</i> Nees.	Baker/Arusa	Acanthaceae	Whole plant	Used in cough and asthma

4	<i>Berberis lycium</i> Rolye	Simblo	Berberidaceae	Roots, leaves	Root is febrifuge, used in piles. Leaves are used in jaundice
5	<i>Broussonetia papyrifera</i> (L.) Ventenat	Jangli Toot	Moraceae	Bark, fruit	Laxative and febrifuge
6	<i>Calotropis procera</i> (Wild.) R.Br.	Ak	Asclepiadaceae	Whole plant	Plant is expectorant, anthelmintic, diaphoretic and purgative
7	<i>Cynodon dactylon</i> (L.) Pers.	Khabal Ghass	Poaceae	Whole plant	It is laxative, astringent, diuretic
8	<i>Dalbergia sissoo</i> Roxb.	Shisham/Tali	Papilionaceae	Leave, root, bark	Stimulant, astringent, alterative
9	<i>Dodonea viscosa</i> (L) Jacq	Sanatha	Sapindaceae	Leaves, bark	Febrifuge, used in swelling and burns. Bark is astringent.
10	<i>Mentha longifolia</i> (L.)Huds.	Jangli Podina	Labiatae	Aerial Parts	Carminative and stimulant
11	<i>Morus alba</i> L.	Toot	Moraceae	Fruit, bark	Refrigerant, used for sore throat. Bark is purgative
12	<i>Ricinus communis</i> L	Arand	Euphorbiaceae	Leave, seeds	Leaves applied in poultice and to relieve pains. Seeds used in scorpion sting.
13	<i>Saccharum spontaneum</i> L.	Kahi	Poaceae	Whole plant	Laxative, used in burning sensation, phthisis and in diseases of blood
14	<i>Saccharum arundinaceum</i> Retz.	Sarkanda	Poaceae	Stem, root	Diuretic, refrigerant and diaphoretic, useful in blood troubles and urinary complaints.
15	<i>Sorghum halepense</i> (L.) Pers.	Baru	Poaceae	Seeds	Seeds are diuretic and demulcent
16	<i>Withania somnifera</i> Dunal	Asghand	Solanaceae	Whole plant	Aphrodisiac, alternative. Fruit diuretic. Tubers used in bronchitis, ulcer.
17	<i>Ziziphus nummularia</i>	Jhar beri	Rhamnaceae	Leaves,	Externally leaves used in

(Burm.) W. & A.			fruit	boils and scabies. Leaves are astringent
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**Table 2. Important medicinal plants of Hattar region in spring season.**

Sr. #	Botanical Name	Vernacular Name	Family	Part used	Ethnomedicinal Uses
1	<i>Achyranthus aspera</i> L.	Putt Kanda	Amaranthaceae	Whole plant	Plant is purgative, diuretic, astringent and emetic
2	<i>Amaranthus viridis</i> L.	Chuli	Amaranthaceae	Whole plant	Used in diarrhea, mouth ulcer
3	<i>Anagallis arvensis</i> L.	Dahber booti	Primulaceae	Whole plant	Lowers fever, diuretic and expectorant
4	<i>Cannabis sativa</i> L.	Bhang	Cannabinaceae	Whole plant	Tonic, intoxicant, stomachic, narcotic and sedative
5	<i>Capsella bursa-pastoris</i> (L.) Medic.	Chambraka	Cruciferae	Seeds	Stimulant, antiscorbic, astringent in diarrhea
6	<i>Carthamus oxycantha</i> M. Bieb.	Kantiari	Compositae	Seeds	Seed oil used in dressing ulcer and against itch
7	<i>Cassia absus</i> L.	Chaksu	Leguminosae	Seeds	Enriching the blood as tonic, a bitter astringent for the bowels
8	<i>Cyperus rotundis</i> L.	Deela ghass	Cyperaceae	Tuber	Stimulant, astringent, diuretic and stomachic
9	<i>Eclipta prostrata</i> L.	Bhangra	Compositae	Whole plant	Juice is used in fever, liver problems. Leaves in cough, headache and as a hair restorer
10	<i>Euphorbia helioscopia</i> L.	Gandi-buti	Euphorbiaceae	Whole plant	Latex is applied to eruption. Seeds with pepper is given in cholera
11	<i>Euphorbia hirta</i> L.	Dudhi	Euphorbiaceae	Whole plant	Expectorant, colic, used in bronchial affection, cough and asthma
12	<i>Malva sylvestris</i> L.	Khubazi	Malvaceae	Whole plant	Cooling, emollient, febrifuge and used in

					urinary bladder problems
13	<i>Melilotus indica</i> L.	Sinjee	Papilionaceae	Whole plant	Externally used as poultice or plaster on swelling
14	<i>Oxalis corniculata</i> L.	Khati Buti	Oxalidaceae	Whole plant	Antiscorbic, refrigerant, cooling and stomachic.
15	<i>Salvia moorcroftiana</i> Wall.	Kalijarri	Labiatae	Leaves, seeds, root	Applied to wounds as poultice. Used in cough and cold
16	<i>Solanum surrattense</i> Bumr.f.	Kandiari	Solanaceae	Whole plant	Bitter, stomachic, diuretic, used in asthma and sore throat
17	<i>Sonchus asper</i> L.	Sontati	Compositae	Whole plant	Applied to wound or boils
18	<i>Taraxacum officinale</i> Weber	Dudal	Compositae	Leaves, root	Aperient, diuretic, tonic, used for kidney and liver disorder
19	<i>Tribulus terrestris</i> L.	Bhakra/ Gokhru	Zygophyllaceae	Whole plant	Cooling, diuretic, used in urinary and kidney disorder and heart diseases
20	<i>Xanthium strumarium</i> L.	Chota gokhru	Compositae	Whole plant	Sedative, astringent, diuretic. Root is used in earache, fruit used in small-pox

Data presented in Table 2 showed 20 plant species that were documented in spring season. In Table 3, autumn plant species consisted of eight species.

**Table 3. Important medicinal plants of Hattar region in autumn season.**

Sr. #	Botanical Name	Vernacular Name	Family	Part used	Ethnomedicinal Uses
1	<i>Cichorium intybus</i> L.	Kasini	Compositae	Whole plant	Tonic, used in fevers, vomiting and diuretic.
2	<i>Chenopodium album</i> L.	Bathu	Chenopodiaceae	Whole plant	Laxative, anthelmintic, used in hepatic disorder
3	<i>Chenopodium ambrosioides</i> L.	Katto/Bathoo	Chenopodiaceae	Whole plant	Anthelmintic, oil is good against

					hookworm
4	<i>Chenopodium morale</i> L.	Kurund	Chenopodiaceae	Fruits	
5	<i>Convolvulus arvensis</i> L.	Leli	Convolvulaceae	Roots	Purgative and diarrheic
6	<i>Fumaria indica</i> (Haussk.) Pugsley	Papra	Fumariaceae	Whole plant	Diuretic, diaphoretic and recommended in leprosy
7	<i>Silybum marianum</i> ( L.) Gaertn.	Kandari/ Ount Katara	Compositae	Whole plant	Seeds, leaves used in hepatitis and liver problems
8	<i>Solanum nigrum</i> L.	Mako	Solanaceae	Whole plant	Sedative, diaphoratic, diuretic, laxative, tonic

## Discussion

In ancient times, people had knowledge of medicinal plants. Several hundred species were used as herbal remedies in indigenous system of medicines that used the whole plant or an extraction. Local people and practitioners with traditional knowledge collected these medicinal plants. Most were not involved in the trade of medicinal plants. The local people had a little knowledge about the species and proper time of collection (Shinwari and Khan, 1999).

The need for a specific definition of traditional knowledge is impelled by the push from the formal sector to control, manage and market the knowledge and to bring it under a regulatory framework. Traditional knowledge provides useful leads for scientific research, being the key to identifying those elements in a plant with a pharmacological value that is ultimately destined for the international markets. Indeed, such traditional knowledge is very valuable. Annual global sales of products derived from the manipulation of genetic resources lie between US\$ 500 and US\$800 billion annually (Kate and Laird, 1999).

Today, according to the World Health Organization (WHO), as many as 80% of the world's people depend on traditional medicine for their primary healthcare needs. There are considerable economic benefits in the development of indigenous medicines and in the use of medicinal plants for the

treatment of various diseases (Azaizeh et al. 2003). Due to the lack of modern communications, as well as poverty, ignorance and unavailability of modern health facilities, most people especially rural people are still forced to practice traditional medicines for their common day ailments. Most of these people form the poorest link in the trade of medicinal plants (Khan, 2002). A vast knowledge of how to use the plants against different illnesses may be expected to have accumulated in areas where the use of plants is still of great importance (Diallo et al. 1999).

## Conclusions

The survey indicated that the study area has plenty of medicinal plants to treat a wide spectrum of human ailments. Earlier studies on traditional medicinal plants also revealed that the economically backward local and tribal people of Hattar prefer folk medicine due to low cost and sometimes it is a part of their social life and culture.

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