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ETHNOBOTANICAL STUDY OF COMMON WEEDS OF DIR KOHISTAN VALLEY, KHYBER PAKHTOONKHWA, PAKISTAN

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ABSTRACT

The present study was confined to traditional medicinal uses of weeds. Study was conducted in 10 remote villages of Dir Kohistan valley in order to collect information from 100 resourceful persons including 85 men and 15 women related to the collection and use of weeds. Questionnaires were developed to collect data from local inhabitants on 26 weeds species belonging to 16 families. Asteraceae is the leading family with 8 plant species. Data were systematically arranged in alphabetic order of botanical name, family name followed by English name, local name, part used and ethnomedicinal uses. It was found that the area is rich in indigenous knowledge related to weeds but still there is large number of underutilized weeds which could not prove useful yet. The knowledge is going to be lost because of interference due to modern cultural changes. Continuity of this practice will result in total loss of such knowledge. It was the first attempt to understand the importance of weeds with special reference to their medicinal uses in this area. It is suggested that such type of studies should be carried out in future on utilization and conservation of indigenous knowledge of weeds.

Key Words: Medicinal value, weeds, Ethnobotany, Dir Kohistan valley, Khyber Pakhtoon Khwa Province, Pakistan.

INTRODUCTION

Dir Kohistan valley, covers 140,351 acres of the coniferous forests situated between latitude 35°-9' to 35°-47' and longitude 71°-52' to 72°-22' in the northern side of the watershed of Panjkora river. Pangkora is a Pashtu word meaning five streams; the five tributaries of the river are Azgologh, Zandrai, Shandoor, Gwaldai and Dokdara khwars. Territories adjoining the tract are Chitral on the north and

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west, Swat Kohistan and Upper Swat on the east, and Painda khel and Dir on the south. The total area of Dir Kohistan is 4,12,570 acres i.e., 645 squares miles. Of this, an area of 1,40,351 acres is covered with coniferous forests (District Census Report, 1999).

Dir Kohistan valley has a rural culture of old traditions and the local people have their own principle and choice for a village site house, family, dress and ornaments, weddings, childbirth, death ceremonies, cultural functions, festivals and socio-religious beliefs. The lack of communication with modern civilization has kept them closer to nature where they derive many of their day-to-day needs. The people in the area are very much close to natural vegetation, both in their habitat and livelihood. So, the people of the area have empirical observations of nature and by communicating with other people of their culture, they get indigenous knowledge about the local plants. They are, thus gaining the indigenous knowledge generation after generation from their ancestors. The plant and plant materials available from the nearly area are used as medicine. Similarly, local people in various villages of the area gather native medicinally important weeds in different seasons of the year for personal use and whole community uses within the area. So, in this way, the ethnomedicinal knowledge of weedy plants is interactively linked to local culture and history (Ahmad, *et al*., 2005). Ahmad *et al.,* (2006) reported the ethnobotanical information of 15 common weeds in district Attock. Similarly Islam *et al.,* (2006) also reported the ethnobotanical study of common weeds of Shawar valley, district Swat. Ethnobotanically, valley is rich in medicinal plants and most of the people are using these plants as a primary source of health care. Among these medicinal plants *Acorus calamus* used as stimulant, emetic, carminative and as expectorant. Similarly *Dioscorea deltoidea and Xantoxylum armatum* are used for different diseases (Ur-Rahman, 1999; 2000; 2001). *Hedera helix* is common liana plant and its leaves contain chromium, zinc and manganese which are hypoglycemic trace elements, is reputed as a folk hypoglycemic medicinal plant. It is also known that aqueous extract of *Hedera helix* has significantly lowered the blood glucose level and also plays an important role in blood metabolism (Ibrar, 1999; 2000). Annually a large number of medicinal plants are harvested and bought by the local shopkeepers of the valley.

MATERIALS AND METHODS

This research was conducted during 2008-2009 in Dir Kohistan Valleys. The plants were collected, dried and preserved for identification. They were identified with the help of available literature (Stewart, 1972; Nasir and Ali, 1971-95). The information about the medicinal uses of the plants was obtained from the local people

through questionnaire. The outcome of the results was rechecked and compared with literature like that of Rubina (1998), Ali and Fefevre (1996) and Khalid (1995). The data was analyzed and indigenous knowledge was documented. For knowing the ethnobotanical profile of the people, a questionnaire was developed and filled through interview randomly through different walks of life i.e. farmers, Shop keepers involved in medicinal plants business, Hakims and elders of the area. The knowledge thus extracted from local people regarding their medicinal value has been tabulated.

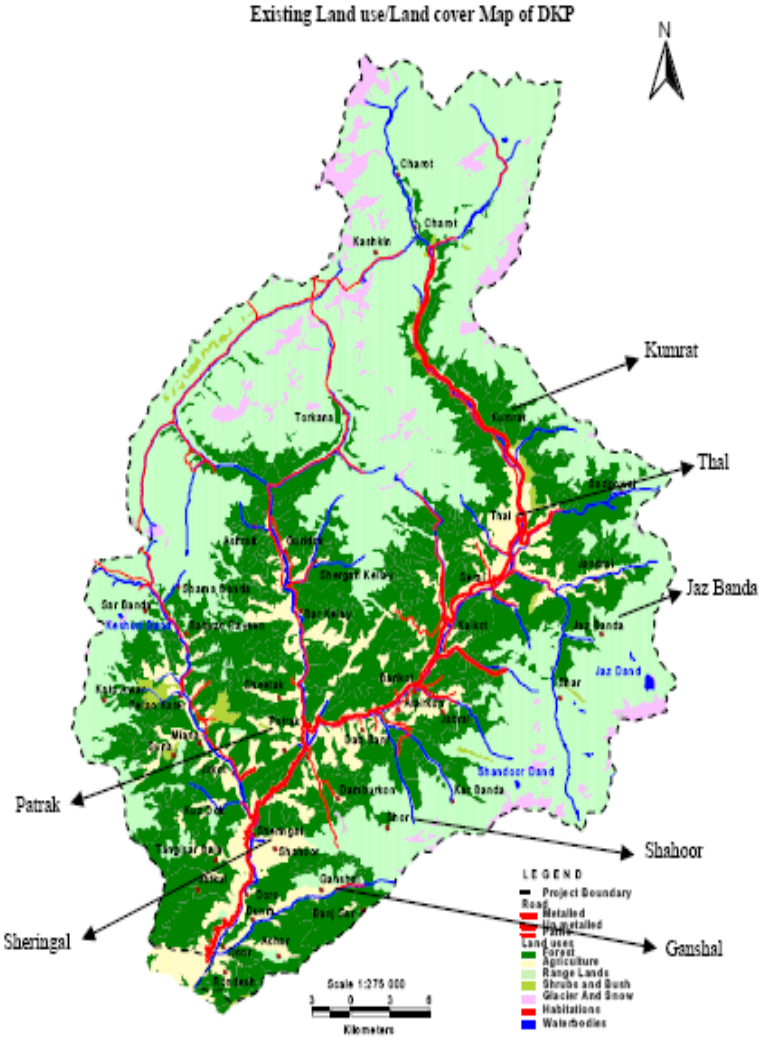

Fig. 1. Dir Kohistan Valleys Map showing the areas from where plant species were collected.

RESULTS AND DISCUSSION

The present study provides information on the indigenous uses of 26 ethnobotanically important weeds belonging to 16 families. These ethnobotanically valued plants with their respective families, botanical name, local name, English name, habit, part used and local uses are documented (Table-1). The important objective of this study was to record the indigenous uses of these plants used by the local people for various purposes. The ethnobotanically important plants are a source of income and cure for the local people.

Ethnobotanically some of the species reported here have multiple uses e.g. the delicious nuts of walnuts are edible, also used in culinary preparation, fruits are mental tonic and also used as sexual tonic. Leaves and bark used for teeth cleaning, flowers are used as antiseptic while bark is used in tea factory for tea processing as dying agent. Similarly *Berberis lycium* is used for jaundice, cooling agent, used for ulcer, colic, aphrodisiac and its fruits are used by children as food, hedge plant and used as fuel. So plants are natural custodian of natural chemical compounds and used for multi purposes (Table-1).

Most of the people of Dir Kohistan valley depend on plant resources; however a large fraction of population also depends on agriculture and agroforestry. They collect a lot of medicinal plants. Human existence, grazing and cultivation exert enormous stress on the vegetation and results in environment degradation (Ahmad *et al*., 2003). Similar situation also prevails in this valley. Some other causes include ignorance, poverty, unemployment and lake of scientific knowledge for the collection of medicinal weed.

Nearly 80% of the world population depends upon traditional system of health care. Allopathic drugs have brought a revolution throughout the world, but the plant based medicines have their own status (Ahmad, 2003). The local uses of plants as a cure are common particularly in those areas, which have little or no access to modern health services. Hence due to less communication means, poverty, ignorance and unavailability of medicinal facilities, most people especially rural people still forced to practice traditional medicines for their treatment. Now some people especially younger generation is using alternative modern medicines for their treatment. And also forgetting about indigenous knowledge of plants. But most of the people especially old people still posses the knowledge about wild resources (Zhang, 1996).

Collection of medicinally important weeds has threatened certain species. There is a need of careful conservation of the plant resources of the region, otherwise many weedy species may be lost forever and become extinct.

Table-1. Botanical names, local names, parts used and local uses of plants of Dir Kohistan valley.

S.No	Botanical Name	Family Name	Local/Eng. Name	Part used	Local Uses
1	*Achyranthes aspera* L.	Amaranthaceae	Puthkanda/ Chaff flower	Vegetative parts	Decoction in water is used for asthma, cough, stomachache, dropsy, piles and skin eruption.
2	*Avena fatua* L.	Poaceae	Jamdar/ Oat	Seeds	Seeds are nerve tonic, stimulant and laxative.
3	*Artemisia scoparia* Waldst. & Kit.	Asteraceae	Tarkha/ Wormwood	Whole plant	Infusion of the plant is used as purgative and is used to cure earache. It is also used for snake and scorpion bite.
4	*Bromus japonicus* Thumb ex Murr	Poaceae	Jokai/ Cheat grass	Young shoots	Young shoots are used for diarrhea.
5	*Calendula arvensis* Linn.	Asteraceae	Zergul / Marigold	Flowers	It is used to strengthen eye sight. Also used for heart diseases and healing of the skin.
6	*Cannabis sativa* L.	Cannabinaceae	Bhang / Indian hemp	Whole plant	It acts as sedative, narcotic intoxicant and antispasmodic. It is useful in diarrhea. Young inflorescence is used for cattle's' diseases.
7	*Capsella bursa-pastoris* (L.) Medik.	Brassicaceae	Jangli Saro / Shepherd's purse	Seeds	It is useful in dropsy, diarrhea, and healing of wounds.
8	*Carthamus oxycantha* M. Bieb.	Asteraceae	Pohli / Thistle	Seeds	Seeds are used for Jaundice. Oil extracted from the seed used for ulcer.
9	*Cichorium intybus* L.	Asteraceae	Hun/ Chicory	Whole plant	Plant is used as liver tonic, also used for diarrhoea, fever and enlargement of spleen.
10	*Conyza canadensis* (L.) Cronquist	Asteraceae	Paleet/ Horse weed	Whole plant	Used as homeostatic, astringent, diuretic. It is used to treat dysentery and diarrhea.
11	*Cuscuta reflexa* Roxb	Cuscutaceae	Jamaldarai/ Ghas bel	Plant	Used as insecticide and antilice agent. Fodder.
12	*Equisetum arvense* L.	Equisetaceae	Bandakae/ Horse tail	Plant	Used as a hair tonic.
13	*Malva neglecta* Waller	Malvaceae	Paneraik/ Mallow	Plant	Used as vegetable and anti-spasmodic.
14	*Mentha longifolia* L.	Lamiaceae	Vanalai/ Mint	Plant	Plants are dried, powdered and used for diarrhea.

15	*Plantago major* L.	Plantaginaceae	Ghata Jabi / Greater Plantain	Leaves	Leaves are warmed and added with warm wet flour of maize and placed on the ulcer for rupture.
16	*Polygonum glabrum L.*	Polygonaceae	Palpolak	Whole plant	Fresh plants are powdered and then stirred in the standing water for hunting fishes.
17	*Portulaca oleracea* L.	Portulacaceae	Warkharae/ Purslane	Plant, Seeds	Refrigerants, used in cure liver, kidney. Seeds are demulcent, diuretic and wormifuge.
18	*Rumex dentatus* L.	Polygonaceae	Shalkhay/ Dock	Leaves	Leaves are used in vegetable to prevent from deterioration and kept them in good condition for one to two days.
19	*R. hastatus*.	Polygonaceae	Tarokay/ Dock	Leaves and shoots	Diuretic, refrigerant and used as cooling agent.
20	*Saussuria hetromalla* L.	Asteraceae	Kali Ziri/ Costus	Roots	It is an aphrodisiac tonic and is useful in liver diseases, kidney and chest complaints.
21	*Solanum nigrum* L.	Solanaceae	Karmacho/ Black Nightshade	Whole Plant	Used for curing hepatitis, soar throat and used as pot herb.
22	*Sonchus asper* L.	Asteraceae	Dodal/Prickly Sow-thistle	Whole plant	It is diuretic, cooling, sedative and antiseptic. It is useful in cough, bronchitis and asthma.
23	*Stellaria media* L.	Staphylaceae	Chechra/ Stitchwort	Plant	Used as vegetable and laxative.
24	*Taraxacum officinale* Weber.	Asteraceae	Peryano doli / Dandelion	Leaves and roots	Leaves and roots are effective against snake bite, leaves are also used for diabetes. Root paste is applied on swelling and joints.
25	*Trianthema portulacastrum* L.	Aizoaceae	Itsit/ Trianthema	Whole Plant	It is used for the treatment of jaundice and liver disorders. It is diuretic and used in dropsy. Also used in swelling to body, pain in bladder, cough Asthma and fever.
26	*Zanthoxylum armatum*. DC.	Rutaceae	Dambara/Prickly ash	Fruits	Fruits are powdered and eaten with boiled egg for chest infection. It is mixed with *Mentha* spp. and salt used as good digestive.

Medicinal plant is a component of Agriculture sector and contributes its share in economic development. The sustainable harvesting of plants having both medicinal and economic value has great potential. In fact, there is no local awareness about the proper collection of various species. Thus there is a need, to create awareness of the importance of these plants among local people and to provide them guidance and training in collection and processing to enhance their income (Zhang, 1996).

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