

Full Length Research Paper

Medicinal biodiversity of weeds and livelihood security of District Shangla, Pakistan

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District Shangla is a hot center of plant biodiversity located in Hindukash Range, Pakistan. A study was conducted during 2005 and 2006 to investigate the medicinal weeds in the District Shangla, Pakistan. Study revealed that there are 22 medicinal weeds belonging to 13 families. Among these, 10 weeds are perennial, 10 weeds are annual, one is biennial and one is parasitic. Plants were systematically arranged into botanical name, local name, habitat, and part used. The main aim of this work was the documentation and exploration of the medicinal weeds growing in the area.

Key words: Shangla medicinal weeds, perennial, annual, biennial, local uses.

INTRODUCTION

District Shangla is located on 34° 31' to 33° 08' N and 72° 33' to 73° 01' E on the globe. It has an area of 11,528 acres of high mountain terrain with moist temperate and coniferous type of vegetation. The total area of the forest is 8,090 acres. The district is bounded; on the east by District Batagram and the tribal area of Kala Dahka along which the River Indus flows for about 75 km, on the west by District Swat, on the south by District Buner and the tribal area of Kala Dahka and on the north by District Kohistan (Anonymous, 1998). Shangla is one of the mountainous Districts which consist of small and narrow valleys. These mountains are the western extremities of the great Himalayan ranges. The general elevation of the district varies from 2.00 to 3500 m above sea level. The highest point is near Kuz Ganrshal in the North of the district that is 3,440 m. The mountain slopes are covered with thick forests. The area is a hot spot for medicinal plants and most of the people are using these plants as primary source of health care. Pie (1992) reported that the number of plant species in the Hindu Kash Himalaya is estimated to be as many as 25,000 or 10%, of which about 10,000 species or 2/3 are useful. Chaudhey and Qureshi (1991) surveyed vascular plants of Pakistan and

reported 709 species, out of which 1/10 of vascular flora are in danger of being gradually wiped out or exterminated altogether. Hussain et al. (1995) reported 140 species of 53 families from Dabagai hills, Swat. Shinwari et al. (1995) studied the ethnobotany of Kaghan Valley including medicinal and fodder species. Hussain et al. (2006) reported 121 plants species from Shawar valley which are used for different purposes. Islam et al. (2006) reported 30 plants as medicinal, 22 plants as weed with medicinal values and 18 plants species as pure weeds. Shah et al. (2006) reported 19 medicinal weeds from Maize and Wheat crops. Ullah and Rashid (2007) studied 23 species among weeds of different crops in Mankyal Valley.

MATERIALS AND METHODS

Weeds were collected during the flowering season of 2005 to 2006, from April to September. Information on indigenous knowledge and medicinal values was collected through a questionnaire from farmers, Hakims, Shop keepers (engaged in medicinal plants business), and elders of the area. Plants specimens were collected, dried, preserved and identified with the help of flora of Pakistan.

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Table 1. Medicinal weeds with uses and other features of District Shangla.

S.#	Family/botanical name	Local name	Part used	Crop field	Folk and medicinal uses
1	Amaranthaceae <i>Achyranthus aspera</i> L.	Geshkay	Root and plant	Annual herb of maize field	Plant is diuretic and laxative; an infusion prepared from the root of plant is utilized to remove stones from kidney
2	Amaranthaceae <i>Amaranthus caudatus</i> L.	Chalairy	Leaf	Annual herb of maize field.	Leaves are considered to be emollient. The plant has cooling effect, laxative, diuretic, stomachic and antipyretic.
3	Asteraceae <i>Artemisia absinthium</i> L.	Tarkha	Leaves and shoots	Perennial herb of wheat field	Plant is effective against malarial fever and cough.
4	Poaceae/ <i>Avena sativa</i> L.	Jamdar	Seeds and leaves	Annual herb of maize and rice field.	The seeds and leaves are nerve tonic, stimulant and laxative
5	Canabinaceae <i>Cannabis sativa</i> L.	Bhang	Leaves and flowering tops.	Perennial herb of wheat field	Resinous exudation that collects on the leaves is used for narcotic in the form of 'CHARS'. The dried and fresh leaves are used as narcotic. The leaves are also stimulants, sedative and diuretic. Flowering tops also are sedative, anodyne and narcotic. Paste made from fresh leave is used to kill lice.
6	Chenopodiaceae <i>Chenopodium album</i> L.	Sarmay	Leaf	Annual weed of maize and rice.	The oil is aromatic. Powder of the plant is useful for abdominal pain. The juice of plant is effective against gas trouble.
7	Cuscutaceae <i>Cuscuta reflexa</i> Roxb.	Prewathi	Whole plant	Parasitic weed	Blood purifier, used in jaundice. Infusion prepared from the plant is used for treating sores and itching area of the body. Shoots are also diuretic and purgative, and used in vomiting.
8	Poaceae <i>Cynodon dactylon</i> (L.) Pers	Kabal	Roots	A small weed (rhizomatous grass)	Roots are aphrodisiac and also used in dysentery and jaundice
9	Solanaceae <i>Datura stramonium</i> L.	Harhanda	Young leaves, seeds	Annual weed of wheat	The plant is used for curing fever, diarrhea, skin diseases, jaundice and stomach problems. The juice of flower is useful in earache. The dried leaves are smoked the form of Chillum which is considered as expectorant. The seeds and leaves are used for antispasmodic, anodyne and narcotic purposes. Seeds are used against urinary disorders
10	Poaceae <i>Eleusine indica</i> (L). Gaertn.,	Whole plant	Whole plant	Perennial weed of wheat, maize and rice	It is considered as diuretic, stomachic and used against hypertension and retention of urine.

RESULTS AND DISCUSSION

The study revealed that there were 22 medicinal

weeds belonging to 11 families. Of these, 17 were herbs, 2 shrubs, and one parasitic (Table 1). Seven species were wheat weeds, 3 were maize

weeds while 3 weed species were found both in wheat and maize, and two weeds were found in maize and rice field. Some were found in a variety

Table 1. Contd.

11	Fumariaceae <i>Fumaria indica</i> (Hauskhn) H. N.	Papra	Whole plant	Annual weed of wheat	The juice of plant is used in stomach problem, fever and itching. The decoction of plant is used for purification of blood. The extract of plant is useful for jaundice, having cooling effect, and also used for eye trouble.
12	Fabaceae <i>Medicago denticulata</i> L.	Spashtay	Fruits and Plants	Annual weed of wheat field.	Fruits are used as nutritive, emollient, antispasmodic, laxative and also used as constipation
13	Oxalidaceae <i>Oxalis corniculata</i> L.	Zmake taroke		Perennial weed of wheat, maize and rice crops.	The fresh leaves are utilized to stop bleeding from wound. The juice of plant is effective in stomach problems. The leaves are also refrigerant, having cooling effect. The decoction of roots is used as vermifuge.
14	<i>Platago major</i> L. Plantaginaceae.	Ghata jabai	Leave and seeds	Perennial herb	Leaf is a refrigerant and astringent, while the seeds are tonic and also used for cooling effect. The inflorescence of plant is utilized for measles in children.
15	Solanaceae <i>Solanum nigrum</i> L.	Kach Mako	Fruits and shoots	Annual weed of maize field	Herb is diuretic and used for curing hepatitis and sore throat. Juice of the leaves is used for skin diseases, and also used for cleaning and washing the wounds. Juice extracted from the plant is used in itching.
16	<i>Rumex hastatus</i> D. Don Polygonaceae	Tarokay	Leaves, shoots	Annual weed of potato and maize	The leaves and shoots are carminative, astringent and diuretic. It is also used as coolant, while the powdered roots are useful for abdominal pain.
17	Asteraceae <i>Taraxacum officinale</i> Weber	Alak genai. (Ziar gule)	Flowers and shoots	Perennial herb	The decoction of flowers and shoots is tonic and diuretic. It is also utilized against jaundice and constipation.
18	Papilionaceae <i>Trifolium repens</i> L.	Shautal	Whole plant	Annual weed of wheat and vegetables	It is an expectorant and also used for spasmodic coughs.
19	Scrophulariaceae <i>Verbascum thapsus</i> L.	Khar dag	Leaves and flowers	Vegetable (Turnip)	Seeds are narcotic. Leaves and flowers are used against cough and pulmonary diseases. Leaves and flowers are also used as wound healer.
20	Asteraceae <i>Xanthium strumarium</i> L.	Ghat ghishkay	Leaves, fruits and seeds	Shrubby weed of maize crops.	Fruits are powdered and eaten with boiled egg for chest infection. Fruits are also used in case of stomachache, toothache and as a carminative. Seeds are tonic, aromatic and used for fever. Young shoots are useful in gum diseases. Leaves decoction is recommended for malarial fever.

of crops and vegetables. Medicinal plants continue to be extensively used as a major source of drugs for the treatment of many health disorders all over the world. Most plant species are wild. The local people depend on the wild resources in the form of foods, medicines, wood, fodder etc. The use of medicinal plants for primary health care is a common practice in the area due to poor socio-economic condition, high price of medicine and lack of modern health care facilities.

There are hundreds of weeds found in Pakistan which adversely affect the growth of crops and health of organisms. In Pakistan, the annual loss due to weeds is worth billions of rupees but some weeds are also used to cure various fatal diseases in remote areas of Pakistan. The ethnomedicinal uses of 22 weed were recorded, which are used to cure various ailments. The main aim was to document and explore the medicinal uses of weeds, and it was the first attempt to know the importance of weeds, with special reference to medicinal uses in the area. There is a need to protect some important weeds of the area due to their strong medicinal properties besides their effect on crops and other organisms. Medicinal plant is a part of the agricultural sector and contributes its share in economic development. It is one of the rich and beautiful valleys of District Shangla; so effort has been made to explore the indigenous knowledge of people about weed plants. Table 1 shows medicinal weeds in the Changa Valley.

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