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Ethnomedicinal Plant Resources of Shawar Valley

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Abstract: Shawer Valley, District Swat was ethno-medicinally collated during summer, 2003. The study revealed that 88 species of 82 genera belonging to 58 families are traditionally used as medicinal plants. Thirty-two of these plants were medicinally used for the curing of Stomach or Gastric problems. Renal disorders are locally treated with 10 species. Jaundice and its associated fevers are healed with 7 species. For cough and cold 6 species are in practice. Skin diseases and wound healing are treated each with 4 species independently. Some of the plants are used as expectorant, anti diabetic and as general body tonic. Habitat fragmentation and unwise use of these plants are threatening them with extinction. Elaboration of conservation status for checking irreversible losses to the genetic resources of MAP's and introduction of wise-use practices are imperative for effective conservation of the resources.

Key words: Ethnobotany, medicinal plants, Shawer valley, traditional knowledge, conservation

INTRODUCTION

Shawar Valley occupying an area of 4877 ha is located in the Mid of Hindu Raj series (Ahmad and Sirajuddin, 1996). It can be traced on 34 06-34 20 N and 72 30-72 40 E. The valley has almost 50% (2450 ha) of cultivated and forest/range lands of (2427 ha). It has population of 20163 individuals with an annual growth rate 3.9% and literacy rate of 16.6%. Topographically the area is rugged mountainous and varying in elevation from 1200 m at village Sigram to 3800 m at the lofty peak of Chotasar (Anonymous, 1999). Floristically the valley is a better representative of the western Himalayan Province (Takhtajan, 1988). Perennial springs, glaciers and rainfall are the principal sources of water (Ahmad and Ahmad, 2003). Timber and non-timber forest products are the main marginal sources of earnings in the valley. The ruthless exploitation of trees for Timber extraction from the natural forests during the last couple of decades has destroyed the watershed, which is appearing in the reduced NTFP's production and accelerated soil erosion.

Medicinal plants are specifically under heavy collection stress, which has threatened their availability and decreased commercial production (Ahmad and Amin, 2005). Not only the medicinal plants but the traditional communities and their knowledge about plants use are also in accelerated decline. It was therefore necessary to collect and preserve not only the plant specimens used in the local healing system but also the traditional knowledge of the use of medicinal plants of the area.

MATERIALS AND METHODS

Three collection sites of the Shawer valley viz. Kuz Shawer, Bar Shawer and Gat were analyzed during summer-2003 (Khan, 2003). Traditional healers and other informants of the area were frequently visited. Semi-structured questionnaires were used to document the traditional knowledge regarding gathering, processing, marketing and use of medicinal plants. Individuals having the knowledge about local uses, collection criteria, processing and recipes preparation were considered in sampling.

Plant specimens were collected, dried and mounted on the herbarium sheets. The identification was done with the help of Nasir and Ali (1971-1975) and Ali and Qaiser (1975-2005). The plant specimens were preserved in the Herbarium of Government Postgraduate Jahanzeb College Saidu Sharif, Swat.

RESULTS AND DISCUSSION

Analysis of the data shows that 88 of MAP'S species belonging to 58 families were important ethno medicinally. Based upon the main divisions of plant Kingdom Dicot, Monocot, Gymnosperms, Pteridophytes and Fungi contributed 50, 3, 2, 2 and one families respectively to the medicinal flora of the Valley.

The family scored highest for number of medicinally important plants was family Lamiaceae with seven species. Rosaceae remained the second large scorer of MAP'S which is represented by six species. The remaining families were represented either by three, or less

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than three species of medicinal importance. Based upon plant habit, herbs, shrubs, trees and fungi have the percentage share of 68.1, 13.7, 21.8, 2.2 and 1.1%, respectively to medicinal flora of Shawar valley. The studies revealed that some plants are used singly while many others are used in combination with other plants, animal products and mineral combinations. Similarly some of the plant species are used for the treatment of only one disease while others have multiple uses (Table 1).

The market survey shows that Shawar Valley contribute a lot in terms of species to the market. Out of 88 plants used traditionally as medicines 11 species are marketed for marginal earnings. Commercially important species include *Berberis lyceum*, *Cichorium itybus*, *Diospyrus lotus*, *Dryopteris jaxtapostia*, *Mentha longifolia*, *Morchella conica*, *Morchella esculenta*, *Paeonia emodi*, *Pistacea integerima*, *Skimmea laureola* and *Viola serpens*. These species are sold fresh or in dried form. The highest price

Table 1: Family wise inventory of the medicinal plants of Shwar valley

S. No.	Family	Botanical name	Habit	Part used	Local name	Local medicinal uses
1	Helvelaceae	*Morchella esculanta*	Fungus	Fruiting body	Spina Gujai	General body tonic and aphrodisiac
		Morchella conica	Fungus	Fruiting body	Tura Gujai	General body tonic and aphrodisiac
2	Polypodiasaceae	*Adiantum venustum*	Herb	Leaves	Sumbal	Aphrodisiac, backache and fever
3	Pteridaceae	*Dryopteris jaxtapostia*	Herb	Young shoots	Kwanjay	Digestive
4	Pinaceae	*Pinus wallichiana*	Tree	Resin	Srap	Wound healing
		Picea smethiana	Tree	Leaves	Mangazai	Kidney stone, rheumatism
5	Taxaceae	*Taxus wallichiana*	Tree	Bark	Banrrya	Antispasmodic and emmenagoge
6	Amaranthaceae	*Amaranthus viridis*	Herb	Leaves and shoots	Chalvai	Cough and asthma
7	Anacardiaceae	*Pistacea integerima*	Tree	Leaves and bark	Shnai	Jaundice, antiseptic
8	Apiaceae	*Coriandrum sativum*	Herb	Fruit	Danial	Stomachache, carminative
		Foeniculum vulgare	Herb	Fruit	Kagavalanay	Dysuria, as laxative
9	Asteraceae	*Artimisia vulgaris*	Herb	Leaves and young shoots	Tarkha	Antispasmodic, stomachache
		Cichorium intybus	Herb	Root	Han	Jaundice and fever
		Taraxacum officinale	Herb	Leaves and roots	Zairgulay	Liver and kidney disorders
10	Berberidaceae	*Berberis lyceum*	Shrub	Root	Kwaray	Jaundice, as astringent
11	Brassicaceae	*Capsella bursa pastoris*	Herb	Leaves	Bambesa	Anti diarrhea
		Nasturtium officinale	Herb	Young shoots	Talmira	Constipation, stomachache
12	Buxaceae	*Sarcococca saligna*	Herb	Leaves	Ladanrr	Rheumatism
13	Canabinaceae	*Cannabis sativa*	Herb	Leaves	Bhang	Wounds healing, anodyne
14	Caprifoliaceae	*Vibernum grandiflorum*	Shrub	Fruit	Ghoz meva	Stomach disorders
15	Caryophyllaceae	*Silene vulgaris*	Herb	Leaves	Bashka	Stomachache, emollient
		Stellaria media	Herb	Whole plant	Oulalai	Purgative
16	Chenopodiaceae	*Chenopodium album*	Herb	Whole plant	Sarmay	Carminative and diuretic
17	Cuscutaceae	*Cuscuta reflexa*	Climber	Whole plant	Niladarai	Anti diabetic and blood purifier
18	Convolvulaceae	*Convolvulus arvensis*	Climber	Whole plant	Prewatai	To remove dandruff
19	Ebenaceae	*Diospyros lotus*	Tree	Fruit	Tor Amlook	Dysentery and Constipation
20	Eleagnaceae	*Elaegnus umbellata*	Shrub	Flowers heads	Ghanam ranga	Heart problems, cough and chest pain.
21	Euphorbiaceae	*Euphorbia helioscopia*	Herb	Root	Mandanroo	Laxative
		Euphorbia wallichi	Herb	Young shoots	Shangla	Vermicide
22	Fagaceae	*Quercus dilatata*	Tree	Fruit	Tor Banj	Gonorrhea and Urinary tract diseases
		Quercus incana	Three	Fruit	Spin Banj	Enuresis and dysuria
		Quercus semicarpifolia	Tree	Fruit	Mer	Body Tonic
23	Fumariaceae	*Fumaria indica*	Herb	Rhizome	Papra	Jaundice, blood purifier
24	Geraniaceae	*Geranium wallachianum*	Herb	Rhizome	Srazela	Cough, fever and kidney diseases
25	Hippocastinaceae	*Aesculus indica*	Tree	Fruit	Jawaz	Rheumatism and Anthelmintic
26	Hypericaceae	*Hypericum perforatum*	Herb	Leaves	Shin Chay	Diuretic
27	Juglandaceae	*Juglans regia*	Tree	Fruit and bark	Ghuz	Brain tonic and teeth cleaning
28	Lamiaceae	*Ajuga bracteosa*	Herb	Whole plant	Booti	Sore throat, epilepsy and blood purifier
		Mentha longifolia	Herb	Leaves and shoots	Velanay	Diarrhea and vomiting
		Mentha spicata	Herb	Leaves and shoots	Podina	Carminative, vomiting
		Micromeria biflora	Herb	Whole plant	Naray Shamakay	Antiseptic
		Plectranthus rogosus	Shrub	Leaves	Sperkay	Toothache
		Salvia moorcroftiana	Herb	Leaves and stem	Khardag	Aphrodisiac and wound healer
		Thyums linearis	Herb	Whole plant	Sperkai	Fever, cough and cold
29	Malvaceae	*Malva neglecta*	Herb	Leaves	Panerak	Digestive, anti-constipation
30	Meliaceae	*Melia azadirachta*	Tree	Leaves and fruit	Bakayanra	Anthelmintic, anti-allergic and stomachache
31	Moraceae	*Ficus palmate*	Tree	Fruit	Enzer	Demulcent, digestive and remove kidney stone
		Morus alba	Tree	Fruit	Toot	Cough, cold and constipation
32	Myrsinaceae	*Myrsine Africana*	Shrub	Fruit	Marurrang	Toothache
33	Oleaceae	*Olea ferruginea*	Tree	Leaves and fruit	Khona	Toothache, rheumatism and as antiseptic
		Jasminum officinale	Shrub	Root	Chambeli	Anthelmintic
34	Oxalidaceae	*Oxalis corniculata*	Herb	Whole plant	Tarukay	Digestive
35	Paeoniaceae	*Paeonia emodi*	Herb	Rhizome	Mamekh	General body tonic
36	Pappilionaceae	*Indigofera heterantha*	Shrub	Leaves and root	Ghwarija	Scabies and stomach disorders
		Lathyrus aphaca	Herb	Seeds	Kurkamanay	Digestive and wound healing

Table 1: Continued

S. No.	Family	Botanical name	Habit	Part used	Local name	Local medicinal uses
37	Papaveraceae	*Papaver somniferum*	Herb	Fruit	Qashqash	Cough, fever, headache and as a tonic
38	Plantaginaceae	*Plantago lanceolata*	Herb	Leaves	Jabai	Inflamed surfaces
39	Platanaceae	*Platanus orientalis*	Tree	Bark	Chinar	Anti-diarrhea
40	Polygonaceae	*Polygonum aviculare*	Herb	Root	Palpulak	Tonic
		Rumex dentatus	Herb	Leaves	Shalkhay	Wound healing
		Rumex hastatus	Herb	Leaves and shoots	Tarukay	Digestive and refrigerant
41	Portulaceae	*Portulaca olaracea*	Herb	Shoots	Warkharray	Kidney and liver disorders
42	Primulaceae	*Primula denticulata*	Herb	Flower	Mamera	Opthalmia
43	Rhamnaceae	*Zizypus vulgaris*	Tree	Fruit	markhanrrai	Cough and cold
44	Rosaceae	*Crataegus oxycantha*	Tree	Fruit	Tamposa	Heart tonic
		Fragaria vesica	Herb	Fruit	Zmakeen toot	Carminative and laxative
		Prunus cornuta	Tree	Fruit	Changa	Digestive
		Rosa moschata	Shrub	Flowers	Khwrrach	Stomach disorders
		Rubus fruticosus	Fruit	Fruit	Baganrra	Stomachache and digestive
		Spiraea chinensis	Shrub	Flower	Krachay	To ease delivery
45	Rutaceae	*Skimmia lauriola*	Herb	Leaves	Namer	Antiseptic and dyspepsia
		Zanthoxylum alatum	Shrub	Bark	Dambara	Stomachache
46	Saxifragaceae	*Berginia ciliate*	Herb	Rhizome	Makanpat	Anti-diabetic and expectorant
47	Scrophullariaceae	*Verbascum thapsus*	Herb	Leaves	Khardag	Antibiotic
48	Simarubaceae	*Ailanthus altissima*	Tree	Fruit	Shandai	Aurticaria
49	Solanaceae	*Datura stramonium*	Herb	Root and flower	Herhanda	Fever and earache
		Solanum nigrum	Herb	Leaves and fruit	Karmachu	Eczema and Fever
50	Thymelaeaceae	*Daphne mucronta*	Shrub	Shoot and root	Laighuanay	Gonorrhea and anthelmintic
51	Ulmaceae	*Celtis avstralis*	Tree	Fruit	Tagha	Colic, amenorrhea
52	Urticaceae	*Urtica dioica*	Herb	Whole plant	Seezunkay	Anti-constipation, pulmonary disorders
53	Valerianaceae	*Valeriana jatamonsi*	Herb	Rhizome	Mushkebala	Epilepsy and antispasmodic
54	Verbinaceae	*Verbina officinalis*	Herb	Whole plant	Shamakay	Anti malarial and coolant agent
55	Violaceae	*Viola serpens*	Herb	Flower and leaves	Banafsha	Sore throat and carminative
56	Aliaceae	*Allium sativum*	Herb	Whole plant	Ouga	Anti dysenteric and anti hypertension
57	Iridaceae	*Gynandrisis sisrinchium*	Herb	Whole plant	Gandechar	Diuretic
58	Poaceae	*Avena sativa*	Herb	Whole plant	Jamdaray	Nerve tonic and aphrodisiac
		Cynodon dactylon	Herb	Whole plant	Kabal	Stop bleeding, blood purifier and antiseptic
		Zea mays	Herb	Grains	Jwar	Aurticaria (Larrama)

Table 2: Medicinal plants used for ethnoveterinary practices in Shawar valley

S. No.	Family name	Botanical name	Local name	Diseases treated	Livestock treated
1	Aliaceae	*Allium sativum*	Ouga	Digestive tract diseases	Buffaloes and cows
2	Araceae	*Arisaema jacquemontii*	Marjarrai	Cough and respiratory tract infection	Cows and buffaloes
3	Asteraceae	*Artemisia brevifolia*	Tarkha	Digestive disorders	All types of livestock
		Cichorium intybus	Han	Fever	Sheeps, goats, cow and buffaloes
4	Berberidaceae	Berberis lyceum	Kwaray	Digestive and tonic	Buffaloes, cows, goats and sheep
5	Brassicaseae	*Lepidium sativum*	Halam	Takoo (Charmekh)	Cows and Buffaloes
6	Caryophylaceae	*Stellaria media*	Oulalai	Digestive disorder	All livestock
7	Fagaceae	*Quercus dilatata*	Banj	Urinary tract diseases	Cows and Buffaloes
8	Fumariaceae	*Fumaria indica*	Paprra	Fever	All types of livestock
9	Geraniaceae	*Geranium wallichianum*	Srazela	Promote lactation	Cows and buffaloes
10	Hypericaceae	*Hypericum perforatum*	Shin Chay	Wound healing	Cows, buffaloes, goats and sheep
11	Lamiaceae	*Mentha longifolia*	Valenay	Flatulence	Cow, buffaloes and goats
		Origanum vulgare	Shamakay	Increase lactation	Cows, buffaloes and Goat
		Salvia moorcroftiana	Khardag	For removal of placenta	Cows and buffaloes
12	Meliaceae	*Melia azedarach*	Shandai	Carminative and dewarming agent	Cows, buffaloes goats and sheeps
13	Paeoniaceae	*Paeonia emodi*	Mamekh	Increase lactation and tonic	Cows, buffaloes and goats
14	Phytolaccaceae	*Phytolacca latbania*	Tamakoo sag	Fever and body tonic	Buffaloes
15	Polygonaceae	*Bistorta amplixicaul*	Tarwa panra	Paralysis	Cows, buffaloes and goat
16	Rananculaceae	*Delphinium denudatum*	Qaziband	As dewarming agent	All types of livestock
17	Saxifragaceae	*Bergenia ciliata*	Makanrr patt	Diarrhea	Cows, buffaloes, sheeps and Goats
18	Rutaceae	*Skimmea laureola*	Namer	For the removal of liver fluke and other intestinal worms	Sheep, goats, cows and buffaloes
19	Thymeliaceae	*Daphne mucronata*	Laighunary	For killing ticks and lices etc	Cows and buffaloes
20	Urticaceae	*Urtica dioica*	Seezonkay	Increase milk amount	Cows and buffaloes

is paid for *Morchella conica* and *Viola serpen*, which are Rs. 6000 and Rs. 200 per kg, respectively. The plants could be used for human ailments (Table 1) and veterinary diseases (Table 2).

Communities of the valley get significant benefits from forests, in the form of forest products most of which are non-timber forest products especially medicinal plants. The studies concluded beside human health 24 species were also used for healing of livestock diseases. Similar reports are available for Afghanistan and parts of Pakistan (Davis *et al*., 1995; Ahmad and Waseem, 2004; Ahmad *et al*., 2002; Ahmad *et al*., 2004). Plant life in general and MAP's in particular are exposed to variety of anthropogenic stresses in Pakistan. Habitat

fragmentation, over collection, unwise uses, overgrazing and conflicts of variety of nature are the most visible threats (Ahmad and Amin, 2005; Ahmad *et al*., 2002; Ahmad, 2004; Davis *et al*., 1995; Khan, 2003). Shawer Valley remains no exception of the general trend. It is imperative to establish priorities and introduce best practices for the use of natural resources especially medicinal plants. A lot can be done in this regard. Comprehensive strategies and recommendations are given by Ahmad (2004) and Ahmad and Khan (2004), which needs to be implemented for sustainable uses of medicinal and aromatic plant resources.

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