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Check List of Medicinal Plants of Siran Valley Mansehra-Pakistan

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ABSTRACT

This study was carried in Siran Valley district Mansehra. (Pakistan). The method adopted for documentation of indigenous knowledge was based on questionnaire consisting of semi-structured interviews employing a checklist of questions and direct observations. The aim of the study was to collect indigenous knowledge of local inhabitants about the use of native plants, which were being utilized by the people for the treatment of different diseases. The ethnomedicinal uses of 80 plant species belonging to 49 families were recorded during field trips from the research area. The cultivated medicinal plants consists of 21 species. The check list and ethnomedicinal inventory was developed alphabetically by botanical name, followed by local name, family, part used and ethnomedicinal uses. Plant specimens were collected, identified, preserved, mounted and voucher was deposited in the Department of Plant Sciences, Quaid-I-Azam University, Islamabad for future references.

Key words: Medicinal plants, ethnomedicinal uses, Siran Valley-Pakistan.

INTRODUCTION

The study area is located in the Hazara Civil Division of the North West Frontier Province, (NWFP), Pakistan. Mansehra district was formed on 1st of October 1976. It consists of three tehsils viz. Balakot, Mansehra and Oghi. Mansehra district is located between 34^0-$15^/$ to 35^0-$12^/$ North latitudes and 72^0–$50^/$ to 74^0-$07^/$ East longitudes. Total area of the district is 5957 Sq km. The Siran River catchments area is commonly known as, "Siran Valley". It is situated between 34^o $33^/$ $35^{//}$ and 34^o $44^/$ $30^{//}$ North latitude, and between 73^o $13^/$ $38^{//}$ and 73^o $22^/$ $40^{//}$ East longitude. The tract is bounded on the north by Allai Valley, on the south by Lower Siran, on the west by the Konsh Valley and on the east by the Kaghan Valley. The Siran River is 130 km in length joining the Indus at Tarbala in Hazara Division. The total area of the tract is 5284.2 km. The climate of the tract is moist temperate with very marked seasonal periods of snow, rain and drought. Snowfall is considerable and occurs any time from later half of November to the end of March. Snow often remains to the end of May. Most of the rain occurs during monsoon viz. July- August between these two seasons of snow and rain, the Spring and Autumn months are periods of less rain and drought.

According to standard classification of forest types of Pakistan (Champion, Seth and Khattak

1965) the forests fall under the major type “Montane temperate forests” a very small part of these forest also fall under group 8 viz. These forests are predominately coniferous with some broad-leaved species. Chir (*Pinus roxburghii*) forests form transitional stage between the Montane temperate and Dry tropical vegetation around about the elevation of 763 and 1830 m. “Chir” covers small area and is confined to lower limits .On upper limits Chir pine is mixed with blue pine (*Pinus wallichiana*.) The dominating species are few forming pure or mixed associations. The occurrence of species depends upon the aspect, altitude and local habitat conditions. *Abies pindrow* in northern aspects or moist slopes, *Pinus wallichiana* with *Taxus wallichiana* as an understorey and occasional *Cedrus deodara* on dryer hotter slopes. Broadleaved trees include *Aesculus indica, Ulmus wallichiana, Juglans regia, Quercus floribunda, Acer caesium A. stercuuliaceum* and *Prunus cornuta* the shrub layer comprises *Vibernum grandiflorum, Berberis lycium, B. ceratophylla, Rosa brunonii, Skimmia laureola* and *Lonicera webbiana*. Herbs include many species of *Impatiens* and *Euphorbia* as well as *Viola, Fragaria* and *Gentiana*. Climbers include *Hedera nepalensis, Clematis grata* and *Clematis montana*. At lower elevations shrubs like *Punica granatum*, *Nerium oleander*., *Vitex negund*., *Colebrookea oppositifolia*., *Debregeasia salicifolia., Otostegia limbata., Dodonaea viscosa*., *Justicia adhatoda* ., *Jasminum* sp., *Sageretia brandrithiana*., *Rumex hastatus*., *Mallotus philippensis*., *Indigofera gerardiana., Woodfordia fruticosa* and *Rosa* sp. are fairly common. The herbaceous flora is represented by *Verbascum thapsus*., *Fumaria indica , Solanum* sp. *Salvia moorcroftiana*., *Senecio* sp., *Inula* cappa., etc. Spring flora like *Colchicum luteum, Tulipa stellata, Gagea lutea, Medicago sativa., Lathyrus* sp. *Crotalaria madicaginea*., *Capsella bursa-pastoris*., *Lamium amplexicaule*., *Viola odorata, Galium aparine*., *Dicliptera roxburghiana*., *Oenothera rosea*., *Oxalis corniculata*., *Bupleurum* sp., *Ajuga bracteosa*., *Evolvulus alsinoides*., *Chenopodium album* and *Macromere* sp. are common.

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 1999). These medicines have less side effects and man can get it easily from nature. Unani system is dominant in Pakistan but the ethno medicinal plants use is also seen in the remote areas. (William 2002).

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. 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. Keeping in view the importance of medicinal flora of Siran Valley, the study was confined to collect and document the indigenous knowledge of local people about medicinal uses of native plants .The present study was aimed to document the traditional knowledge of Siran Valley.

METHODS AND MATERIAL

Plant Collection and Preservation

Frequent field trips in different seasons were arranged in order to collect information about the ethnomedicinal uses of plants by the local people from January 2001 to January 2003. The main target sites in Siran Valley were Baffa, Shinkiari, Banda Piran, Dhodial, Dadar, Jabori, Jacha, Mandagucha, Panjul, Kund Bungla, Shaheed Pani, Khori, Bakki, Jabbar and Musa- Ka-Musallah. Plant specimens were collected, pressed, dried, preserved, mounted and identified through the available literature (Nasir & Ali, 1971- 2001). The specimens were deposited in the Herbarium, Department of Plant Sciences, Quaid -i-Azam University Islamabad Pakistan (ISL). The data taken in the field was transferred to the slip pasted on the herbarium sheets. The plants were identified with the help of taxonomic literature, manuals and floras. Stereomicroscope was used for critical examination of the material.

Survey of Traditional 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. A female student was involved to interview the women community of the area. First of all, the focal area; Siran Valley has been surveyed. The indigenous medicinal plants having traditional knowledge of utilization among the people have been selected as reference specimens. The traditional knowledge about the indigenous medicinal plants has been checked from other sites (Jabori, Hilkot, Jacha, Mandagucha and Shaheedpani)

RESULTS AND DISCUSSION

The data on ethnomedicinal of 80 plant species belonging to 49 families, different season were collected. Information regarding their botanical name, vernacular name, family, part used and their ethnomedicinal uses are listed in the Check List (Table.1). The cultivated medicinal have also been reported. (Table 2).

Herbal medicine, there pharmacognostic characterization and their rational uses are actually the cultural assets lying viable and remained preserved in the remote cut off areas like Siran Valley. Pakistan has a diverse flora containing about 6000 species of phanerogams. Estimates indicate that around 700 plant species are used as medicinal and aromatic plants (Pei, 1992). In Pakistan 80% of the people belonging to the rural areas still depends upon the herbal medicines (Anonymous, 1997) In the recent years, more efforts have been made to document the traditional knowledge .In this regard traditional utilization of 160 plants have been described, collecting the knowledge form Margalla

Hills National Park. The conservation status has also been discussed (Shinwari & Khan, 2000). About 58 species of medicinal plants have been preliminary listed from Ayubia National Park-Galliat (Shah, 2001). Indigenous knowledge of about 25 medicinal herbs from Kahuta-Rawalpindi district has been reported (Qureishi and Khan, 2001). Similarly traditional uses of about 77 species have been recorded from Shogran valley, Mansehra (Matin *et al.*, 2001). Ethnobotanical importance of about 48 species has been documented from Kaghan valley, Mansehra (Shinwari *et al*., 1996).

The people of the Valley are entirely rural and mostly poverty-sticken, undernourished and illiterate. The have to cut forests to sell as timber and fuel wood. As a result forests of *Abies pindrow, Cedrus deodara, Juglans regia, Pinus roxburgii, Pinus wallichiana, Picea smithiana and Taxus wallichiana* are disappearing at an alarming rate. *Fraxinus excelsior" Sum" was* a valuable broad leaved tree of the forests of Siran Valley but due to heavy exploitation of this tree for furniture, today it is found only in some graveyards or road side plantations near Govt. Post Graduate college Mansehra. No big tree has been found in the forests. Forest department should reintroduce this tree. A number of medicinal plants like *Podophyllum emodi, Paeonia emodi, Skimmia laureola* and *Bergenia ciliata* are on the verge of extinction due to over exploitation. The conservation programme can protect the medicinal plants by help of local people Regeneration of plants is also badly affected due to heavy grazing. The local people and researcher face the challenging task of not only recording knowledge of plants, but also applying the results of their studies to biodiversity conservation and community development. (Ahmad *et al.*, 2003). Most of the species are under severe pressure due to their extensive uses in many fields. The community people collect these plants with an unmechanized method and sell them in the local markets. The forests belong to community, as a result there is no check to conserve and protect the forest and the precious plant resources. The area is highly disturbed and degraded due to biotic factors. Man is the prime source in removing the vegetation for fuel wood and the degradation of vegetation through slashing and burning particularly at higher elevation. However, sustainable use of plant resources is required in the area, as ruthless use of these plant resources will result in the loss of valuable flora and fauna. If the interferences could some how, be controlled, the local vegetation will definitely take a turn toward improvement.

Table 1. Medicinal Plants of Siran Valley.

S. No.	Botanical Name	Vernacular Name	Family Name	Parts used	Ethnomedicinal Uses
1.	*Abutilon indicum*	Kangi	Malvaceae	L, fl	Expectorant, diuretic, oral contraceptive, abortifacient, antiasthmatic.
2.	*Acacia modesta*	Phulai	Mimosaceae	L	Dental cavities, rheumatism, snake bite, diuretic, hemostat
3.	*Acacia nilotica*	Kikar	Mimosaceae	R	Cardiotonic, diuretic, skin diseases
4.	*Achillea millefolium*	Birangesif	Asteraceae	rh	Carcing, toothache, tonic, dysentery
5.	*Achyranthes aspera*	Lainda	Amaranthaceae	fr	Rheumatism,opthalmia
					Purgative, toothache, emetic,

6.	*Aconitum heteropyllum*	Patris	Rananculaceae	latex, r	specific for guinea worms, rheumatism
7.	*Acorus calamus*	Warch	Araceae	st, r, b, fr	Tonic, astringent, febrifuge, hepatic, dyfunction, laxative, tonic, menorrhagia
8.	*Allium cepa*	Thoom	Liliaceae	gum, r, b	Astringent, styptic, stimulant, ophrodisiac, menorrhagic, antidiabetic.
9.	*Allium sativum*	Piaz	Liliaceae	L	Antidiabetic
10.	*Aloe vera*	Kanvar	Liliaceae	L	Phycotropic, stomachic, antispasmodic, sedative, epilepsy, convulsion, cough, cold
11.	*Apium graveolens*		Apiaceae	r	Tonic, diuretic, analgesic
12.	*Artemisia absinthium*	Chaw	Asteraceae	L	Carminative, cold, fever
13.	*Asparagus officinale*	Shahghandal/ Nanoor	Liliaceae	L	Tonic, anthelminthic
14.	*Asparagus racemosus*	Shahghandal/ Nanoor	Liliaceae	r, w	Chicory, diuretic, stomachic, fever.
15.	*Atropa belladonna*	Cheela lubar	Solanaceae	sd, w	Garden lettuce, sedative, diuretic, antidiabetic
16.	*Bauhinia variegata*	Kalyar	Caesalpinaceae	sd, w	Expectorant, sedative, diuretic, hypnotic pertussis
17.	*Berberis lycium*	Sumbal	Berberidaceae	fl	Tonic, antiseptic
18.	*Bergenia ligulata*	But pewa	Saxifragaceae	r	Perfume, stomachic, diuretic, some toxic constituents, skin diseases, cardioactive
19.	*Boerhavia diffusa*	Itsit	Nyctaginaceae	L	Antidiabetic, hepatic, stimulant, etc
20.	*Bombax ceiba*	Sambal	Bombacaceae	L w	Antibacterial, for urinary and renal complainsts, astringent, antidiabetic.
21.	*Calotropis procera*	Ak	Asclepiadaceae	w	Dodder, purgative and anthelmethic, headache, jaundice, poultice for swelling.
22.	*Cannabis sativa*	Bhang	Canabaceae	r, sd	Anti-inflammatory, estrogenic, antipyretic, antiemetic, diuretic, hypotensive.
23.	*Capparis spinosa*	Karir	Capparidaceae	fr	Cathartic and anthelminthic, red dye, oral contraceptive, skin diseases
24.	*Carum carvi*	Kango	Apiaceae	sd-oil	Caster oil, purgative, contraceptive skin diseases, antidote in food poising
25.	*Cedrus deodara*	Diar	Pinaceae	L,sd	Bitter, stomachic, anthelminthic, febrifuge.
26.	*Cichorium intybus*	Hand	ASteraceae	w	Sudorific, stimulant, stomachic, carminative.
27.	*Cissampelos pareria*	Ghora Sum	Menispermaceae	sd	Barley, easily digested demulcent dyspepsia, antidiabetic

28.	*Colchicum luteum*	Qaimat-Gula	Colchicaceae	sd	Rheumatism
29.	*Cuscuta reflexa*	Akash Bail	Cuscutaceae	L	Rheumatic pain, indigestion
30.	*Cydonia oblonga*	Bhai	Rosaceae	L	For fever and cough, relief of flatulence, vomiting, nausea, diarrhoea
31.	*Cymbopogon cirus*	Baru	Poaceae	L	Carminative, stimulant, emmenagogue
32.	*Cyperus rotundus*	Muthar	Cyperaceae	L,sd	Pulmonary infections, oil in toothache, rheumatism, oil carminative, stimulant.
33.	*Dalbergia sisso*	Talhi		gum	Antidiabetic
34.	*Daucus carota*	Gagar	Apiaceae	g	Burns, scalds
35.	*Eucalyptus globulus*	Gond	Myrtaceae	b	Antidiabetic
36.	*Ficus carica*	Phagra	Moraceae	Sd,f	Purgative,antiseptic
37.	*Foeniculum vulgare*	Sonf	Apiaceae	L,sd	antidiabetic
38.	*Fraxinus excelsior*	Sum	Oleaceae	sd	Antidiabetic, digestive disorders, etc
39.	*Fumaria indica*	Papra	Fumariaceae	sd,b	Diuretic, expectorant, poultice
40.	*Hedra nepalense*	Arbambal	Araliaceae	bulb	Fever, pulmonary infections, antidiabetic, rheumatism, hypoglycemic
41.	*Hordeum vulgare*	Jauo	Poaceae	L,g	Cathartic, purgative
42.	*Hyoscyamus niger*	Ajwain	Solanaceae	fr	Various uses
43.	*Juglans regia*	Akhor	Juglandaceae	r	Antidiarrhoeal, demulcent
44.	*Justica adhatoda*	Sanatha	Acanthaceae	sd, L	Antiseptic
45.	*Lactuca sativa*	Dodal	Asteraceae	r	Skin diseases, syphilis, rheumatism
46.	*Lactuca seriola*	Dodal	Asteraceae	oil, L	Applied to burns, poultice for rheumatism and gout, internally for Gonorrhoea and urogenital irritation
47.	*Mallotus philippensis*	Kambeela	Euphorbiaceae	b, L, sd	Leaves: demulcent, aphrodisiac, laxative, et.Bark: astringent, diuretic. Seeds laxative, expectorant
48.	*Malva sylvestris*	Sonchal	Malvaceae	L	Leaves: demulcent, aphrodisiac, laxative
49.	*Matricaria chammomilla*	-	Asteraceae	r	Intermittent fever, heat stroke, colic
50.	*Mentha arvensia*	Podina	Lamiaceae	fr	Emollient, operient, demulcent
51.	*Mentha piperita*	Podina	Lamiaceae	b, fr	Antidiabetic,carminative

52.	*Morus alba*	Toot	Moraceae	Loil,r	Insect repellent, oil for burn, antiseptic, respiratory infections, antidiabetic
53.	*Nepeta hindostana*	--------	Lamiaceae	sd	Root diuretic, laxative, , stomachic, leaf appetizer, alexiteric, seed tonic carminative.
54.	*Nerium oleander*	Kaner	Apocynaceae	fr, l, sd	Antidiabetic,poisonous
55.	*Origanum vulgare*	Ban Ajwain	Lamiaceae	tu	For colic, uterine disorders, epilepsy
56.	*Oxalis corniculata*	Khat kurla	Oxalidaceae	w	Aperient, diaphoretic, diuretic, antidiabetic, enthelminthic
57.	*Papaver sominferum*	Posat	Papa veraceae	sd	Narcotic,cooling,tonic
58.	*Papaver sominferum*	Posat	Papa veraceae	ft, fr	Latex: narcotic, analgesic, hypnotic,sedative, antispasmodic, abortifacient
59.	*Pisum sativum*	Mattar	Papilionaceae	Wd	Membrane stabilizing action, carminative, diuretic, immunomodulatoty, diaphoretic
60.	*Plantago ovata*	Chmchi pattar	Plantaginaceae	sd	Emollient, demulcent, laxative
61.	*Plumbago zeylanica*	Chmchi pattar	Plumbaginaceae	r	Diaphoretic, abortifacient, appetizer, diuretic, poultice
62.	*Poeonia emodi*	Mamekh	Paeoniaceae	sd	Demulcent, antidepertieric, refrigerant, antiscorbiotic, diuretic, antiuler, cardiovascular diseases
63.	*Portulaca oleraceae*	Lunak	Portulaceae	Fr	Cholera, diarrhoea
64.	*Punica granatum*	Daruna	Punicaceae	r	Astringent, tonic, fever, cough, dysentery.
65.	*Riccinus communis*	Arind	Euphorbiaceae	fr	Anodyne,digestive, blood purifier, tonic, cough and colds.
66.	*Sassurea costus*	Kuth	Asteraceae	fr	Used in ‘bilious’ affection, astringent.
67.	*Smilax china*	Bilri	Smilacaceae	fr	Demulcent, cardiac tonic, expectorant, astringent
68.	*Solanum nigrum*	Kachmach	Solanaceae	fr, fl	Antiseptic, tonic in fever, dyspepsia, scabies, skin infection, dental problem
69.	*Solanum surattense*	Kindiari	Solanaceae	r, L	Root for kidney stones, tuberculosis, liver complaints, leaf: haemostat
70.	*Swertia chirayita*	Chirita	Gentianaceae	w, r	Anodyne, narcotic, mydriatic , diuretic, sedative
71.	*Taraxacum officinale*	Hand	Asteraceae	sd	Analgesic, astringent
72.	*Taxus wallachiana*	Burmi	Taxaceae	fr	Narcotic, antispasmodic, diuretic, laxative

73.	*Trigonella foenum-graecum*	Methi	Papilionaceae	fr	Chest infections, rheumatism.
74.	*Valeriana jatamansii*	Mushk bala	Valerianaceae	r, L	Tonic, astringent, adaptogenic leaf: febrifuge
75.	*Withania somnifera*	Askand	Solanaceae	L	Antispasmodic sedative, emmenagogue, aphrodisiac
76.	*Woodfordia fructicosa*	Dhawi	Lythraceae	fr	Rheumatism, gout, diuretic
77.	*Xanthium strumarium*	Katula	Asteraceae	sd, oil	Carminative, flatulence
78.	*Zanthoxylum armatum*	Timbar	Rutaceae	fr, L	Renal diseases, tootheache, abortifacient, antifertility
79.	*Zizyphus mauritiana*	Ber	Rhamnaceae	fr, r	Carminative
80.	*Zizyphus nummularia*	Beri	Rhamnaceae	L	Carminative, Sedative

Key: b=bark, fl=flowers, fr=fruits, g=gum, L=leave, lt=latex, r=roots, rb=root bark, rh=rhizome, sd=seeds, tu=tuber, w=whole plant, wd=wood.

Table 2. Cultivated medicinal plants.

S.No	Botanical Name	Local Name	Family
1.	*Aesculus indica*	Ban Khor	Hippocastanaceae
2.	*Allium cepa*	Piaz	Liliaceae
3.	*Allium sativum*	Thoom	Liliaceae
4.	*Beta vulgaris*	Chakandar	Chenopodiaceae
5.	*Capsicum annum*	Mirch	Solanaceae
6.	*Capsicum frutescens*	Mirch	Solanaceae
7.	*Capsicum fastigatum*	Mirch	Solanaceae
8.	*Coriandrum sativum*	Danyia	Apiaceae
9.	*Curcuma longa*	Haldi	Zingiberaceae
10.	*Foeniculum vulgare*	Sonf	Apiaceae
11.	*Jglans regia*	Akhor	Juglandaceae
12.	*Mentha arvensis*	Podina	Lamiaceae
13.	*Mentha peperita*	Podina	Lamiaceae
14.	*Morus alba*	Toot	Moraceae
15.	*Nicotiana tabacum*	Tamakoo	Solanaceae
16.	*Ocimum basilicum*	Niazbo	Labiateae
17.	*Prunus amygoalus*	Badam	Rosaceae
18.	*Prunus persica*	Aru	Rosaceae
19.	*Punica granantum*	Daruna	Punicaceae
20.	*Vitis vinifera*	Dakh	Dakh
21.	*Vernonia anthelmentica*	Kale Ziri	Asteraceae

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