MEDICINAL PLANTS OF UDIGRAM, DISTRICT SWAT, PAKISTAN

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Abstract

A study of the medicinal plants of Udigram, District Swat was conducted during spring and summer 2003. The study revealed 78 species under 37 genera belonging to 47 families, of which 68 plant were dicotyledons, 6 monocotyledons, 1 gymnosperm, 2 pteriodophytes and 1 fungus. The largest family was Lamiaceae (9 species) followed by Asteraceae, Poaceae (each with 5 species), and Rosaceae (4 species). The family Apiaceae, Asclepidaceae, Brassicaceae, Caryophylaceae, Euphorbiaceae, Moraceae, Oleaceae, Papilionaceae, Polygonaceae, Scrophulariaceae, Solanaceae, and Uriticeae were represented by two species each. The remaining families have only one species of medicinal importance. These species are used for the curing of various human ailments in traditional system of medicine. The local uses, local method of recipe preparation and their local name and diseases treated were recorded for each species from knowledgeable and experienced persons of the area. Further study is recommended to find out the availability of economical important medicinal and aromatic plants of the area and suggest their conservation with the involvement of local people.

Introduction

Udigram is situated at a distance of 6 kilometer from Mingora towards Peshawar on the main G.T. Road. It lies at 72°–18' East longitude and 34°–47' North latitude on the map. The altitude of the area ranges between 961-1461 m. Most of the settlements lie between 961-970 m and is dominated by the wide and fertile cultivated land.

Medicinal plants are used as a major source of drugs for the treatment of various human and livestock health disorders (Sher and Hussain, 1998a). A medicinal plant is any plant or vegetative growth parts of the plant i.e. root, stem, leaf, bark, fruit and seed which contain active medicinal ingredients in the tissues, that produce a definite physiological response in the treatment of various illness amongst humans and animals (Sher and Shakespear, 2000)

Pakistan has a wide floral diversity containing about 6,000 taxa. A conservation approach indicates that at least 700 plant species are being used

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as medicinal and aromatic plants. The total number of plant species in the Hindu-Kush Himalayas is estimated to be as many as 25,000 or 10 percent of the world of which about 10,000 or 2/3 are useful (Pei, 1992)

In Malakand Division collection and sale of medicinal plants is an important economic activity. Over 500 families are involved in the collection of medicinal plants in the region (Sher and Hussain, 1998a)

The plant kingdom has immensely contribution to the health needs of man when no synthetic medicines were available and when no concept of surgical management existed. Even today almost 25% of the prescribe medicine in the develop world contain ingredients derived from medicinal plants (Sher, 2000).

Now a day, with the comparatively recent introduction of orthodox medicine, use of herbal medicine has somewhat sadly declined and the local people are loosing the traditional knowledge of herbal medicine. Secondly with the growing population, the pressure on wild plants resource is increasing, resulting in an alarming decreased in the bio mass coverage of certain important medicinal plants species. Therefore, the present study was initiated to prepare the inventory of medicinal plants along with their traditional uses and their influence on the socioeconomic condition of the local community. Further more to suggest new avenues for their conservation and to preserve traditional knowledge of medicinal plants of the study area.

Material and Methods

A study on medicinal plants of Udigram was conducted during spring and summer 2003. Prior to exploring the medicinal plant resources, topo sheet, map and other general information about the study area were collected from the Forest Department District Swat. Accordingly several field trips were arranged to different localities of the area with respect to the blooming season of the plants.

A questionnaire was used for the collection of information. The questionnaire was divided into two parts. The first part included personal information such as name, locality age and occupation etc, while second part was specific to the plant such as local name, part used, purpose of uses, and local methods of recipe preparation. The traditional medicinal uses, local name and other information related to the plant were asked from the aged persons of the area. The age group of the respondents generally varied from 40-80 years. Throughout the field visit general collections of plant were made and put in

newspapers and a press was used for the preservation of specimens. The newspapers were changed from time to time and the dried specimens were mounted on standard herbarium sheets (12" x 18") with adhesive tap.

Naphthalene powder was also sprinkled to protect the plant from microbial attack. The specimens were identified with the help of available literature (Stewart, 1972, Nasir and Ali, 1971-91). The identification of the plants was confirmed from the National Herbarium, NARC, Islamabad. Sets of voucher specimen were submitted to National Herbarium, NARC Islamabad and to the Botany Department Govt. Post Graduate Jahanzeb College, Swat.

Results and Discussion

The present investigation has listed 78 species under 37 genera of 47 families of ethno-medicinal importance, used as healing agent in Udigram. There were 41 dicotyledons families, 2 Monocots families (Liliaceae, Poaceae) and two pteriodophytes families (Equisetaceae, Polypodiaceae). While Fungi and Gymnosperm were represented by one family each i.e. Helvelaceae and Pinaceae respectively.

Among Monocot families Poaceae was the leading family and represented by five species and Liliaceae has a single genus with a single species (*Allium sativum*) of medicinal importance.

Among Dicot families Lamiaceae was the largest family and represented by nine species which is followed by Asteraceae (5 species) and Rosaceae (4 species), while the remaining families are represented by two or one species.

The documented 78 plants species are used in traditional system of medicine for curing of various health disorders. Some of the plants are used individually while many other are used in combination with other plants or items. Similarly some plants has single medicinal use while several others have multiple such uses.

Medicinal plants are an important source of drugs in traditional system of medicines (Sher and Hussain 1998a). They are used for the treatment of various human and live stock health disorders. (Bukingham, 1999). The present study documented 78 species used by the local in traditional system of medicines for the curing of various ailments of both human beings and livestock. Similar results were also reported by Ali and Fever, (1996), who studied indigenous knowledge of plants in Northern Chitral and described 85 plants of medicinal importance and

also by Sher and Ahmed. (1998). Who described traditional uses of 57 wild medicinal plants of District Bunir. Among the reported species *Achyranthus aspera, Cariandrum sativum, Cynodon dactylon, Fumaria indica, Olea ferruginea, Solanum nigrum, Taraxicum officinale, Tribulus terrestris, Vitex negundo* are used as a diuretic agent. These findings are in line with those of Hussain *et al.* (1996), who reported 125 species of Dabargai Hill District Swat.

The species like *Achyranthus aspera, Ajuga bracteosa, Dodonaea viscose, Melia azadarach, Olea ferruginea, Punica granatum, Ziziphus numularia* is used as astringent agent. This statement is also in confirmation with those of Haq and Ghani (1994), who listed 58 medicinal plants from lower Swat, each with its families, constituents, part used and uses. The study showed that species like *Morchella esculenta, Juglans regia, Justacia adhatoda, Morus alba, Avena sativa, Cariandrum sativum, Rubus fruticosus, Uritica dioica, Verbena officinale, Zanthozylum armatum* are used as tonic. These findings are in line with those of Haq and Rehman (1981). They also reported that the local people of upper Swat used most of the wild medicinal plants for the treatment of backache. The species like *Cannabis sativa, Corundum sativum, Hedera nepalensis* and *Mentha longifolia* are used as stimulant. These finding are in line with those of Sher, (2002), who listed 35 species of Swat and Chitral with their local names, botanical names and local uses. The species like *Nasturtium officinale, Melia azadarach, Oxalis corniculata, Lathyrus aphaca, Rumex hastatus, Berberis lycium* are used for stomachache and considered as remedies for digestive ailments. Similarly *Convolvulus arvensis, Euphorbia helioscopia* and *Ricinus communis* are used as pugative. The same use were also reported by Fakim (1990), who reported 197 species of plants of medicinal properties form Maunitus along with their local name, part used and local uses.

The study revealed that the area, as a whole is under heavy biotic pressure. Over grazing, cutting, fodder and fuel wood extraction are very common. Man and his agent have ruined the natural vegetation at all elevations through intensive deforestation and cleaning of land for agricultural practices. It is, therefore, recommend that ex-situ cultivation and in-situ conservation should be initiated in the area with the participation of local people.

INVENTORY OF MEDICINAL PLANTS IN UDIGRAM, DISTRICT SWAT

FAMILY	BOTANICAL NAME	LOCAL NAME	PART USED	HABIT	AVAIL-ABILITY (1-5)	LOCAL MEDICINAL USES
A. FUNGI						
1. Helvelaceae	1. *Morchella esculenata* (L.) Pers. Ex Fr.	Guchi	W.P	Fungus	1	Tonic, Aphrodisiac
2. Equisetaceae	2. *Equisetum arvensis* L	Bandaki	St.	Herbs	3	Remove kidney stone
3. Polypodiaceae	3. *Adiantum venustum* B. Don	Sumbal	Frond (Leaves)	Herbs	4	Backache, Blood purifier
C.GYMNOSPERM						
4. Pinaceae	4. *Pinus roxburghii* Silva	Nakhtar	L	Tree	3	Stimulant, for Snake and Scorpion stings
D. MONOCOT						
5. Liliaceae	5. *Allium sativum* L	Ouga	Bu	Herbs	4	Blood pressure, Heart disease
6. Poaceae	6. *Avena sativa* L	Gamdaray	Fr	Herbs	3	Tonic, Aphrodiasac
	7. *Cynodon dactylon* Linn	Khabal	W.P	Herbs	5	Blood purifier, anti septic and coagulant
	8. *Hordeum vulgare* L	Warbaschy	Fr	Herb	3	Enuresis, dyspepsia
	9. *Oryza sativa* L	Shoulai	Fr	Herb	5	Dysentery, constipation
	10. *Zea mays* Lill	Guwar	Fr	Herb	5	Tonic, astringent
E. DICOT						
7. Acanthaceae	11. *Justaciae adhatoda* Nees	Baikar	L	Shrub	2	Cough, wound healing, asthma, chest diseases
8. Amaranthaceae	12. *Achyranthus aspera* Linn	Spaybotay	W.P	Herb	4	Toothache, abdominal pain, astringent
9. Apiaceae	13. *Coriandrum sativum* L	Danial	Fr	Herb	4	Control vomiting, Dyspepsia
	14. *Foeniculum vulgare* Miller	Chaga Valeny	Fr	Herb	3	Enuresis, dysuria
10. Apocynaceae	15. *Nerium odorum* Soland	Ganderai	R	Shrub	2	Haemorrhoids, cancer, scorpion stings and snake bites
11. Araliaceae	16. *Hedera nepalensis* K. Kovh	Priwata	L	Herb	2	Anti asthmatic, urinary trouble, indolent ulcer diseases
12.Asclepiadaceae	17. *Calotropis procera* Wild	Spalmai	W.P	Shrub	2	Skin diseases, dysentery

	18. *Caraluma tuberculata*	Pamankay	W.P	Herb	4	Stomach trouble, rheumatism and in blood diseases
13. Asteraceae	19. *Artemisia maritime* L	Tarkha	L/Fl	Herb	3	Antihelmintic, rheumatism
	20. *Calaendula arvensis* Linn	Ziar gulai	Fl	Herb	5	Stimulant, emmenagogue, treat wound and injuries
	21. *Silybum marianum* L	Vrijaky	Fr	Herb	3	Cure jaundice, fever and heart diseases
	22. *Sonchus aspera* L.	Shodapai	W.P.	Herb	4	Tonic, anti poison (Food Poison)
	23. *Taraxicum officinale* Weber	Ziargulai	L/R	Herb	3	Body tonic, cure disorder of kidney and liver
14. Berberidaceae	24. *Berberis lycium* Royle	Kwaray	R	Shrub	1	Body tonic, cure disorder of kidney and liver
15. Brassicaceae	25. *Capsell abursa-pastoris* (L.) Medic	Bambaisa	W.P.	Herb	3	Increase digestion, control diarrhea
	26. *Nasturtium officinale* R.Br.	Talmera	L/St	Herb	4	Enhance digestion, stomachache
16. Canabidaceae	27. *Cannabis sativa* L	Bung	L/Fl	Herb	5	Anodyne and treat wounds
17. Caryophylaceae	28. *Silene conoidea* L.	Mangotay	W.P	Herb	3	Stomatits, emollient
	29. *Stellaria media* L. Vill	Oulalai	W.P	Herb	4	Purgative
18. Celastraceae	30. *Gymnosporia royleana* Wall.ex Lawson.	Soor azghay	S	Shrub	2	Relieve toothace
19. Chenopodiaceae	31. *Chenopodium album* L.	Sarmay	W.P.	Herb	4	Carminative, Diuretic
20.Convolvulaceae	32. *Convolvulus arvensis* L	Prewathai	R	Herb	4	Purgative, laxative agent
21. Cuscutaceae	33. *Cuscuta reflexa* Roxb	Zelai	W.P	Climber	1	Anti diabetic, anti vomiting
22. Ebenaceae	34. *Diospyrus lotus* L.	Toor-amlok	Fr	Tree	2	Treat constipation, dysentery
23.Euphorbiaceae	35. *Euphorbia helioscopia* L	Prewatka Mandaroo	R	Herb	2	Laxative
	36. *Ricinus communis* L	Harhanda	S/R	Shrub	3	Relieve flatulence, constipation
24. Fumariaceae	37. *Fumaria indica* Pugsley	Papra	W.P	Herb	5	Treat chronic fever, jaundice
25.Gentianaceae	38. *Centaurium centaurioides* (Roxb) R.Rao	Mai	W.P.	Herb	3	Remove kidney stone
26.Juglandaceae	39. *Juglans regia* L.	Ghoz	Fr	Tree	3	Tonic/treat heart problem

27. Lamiaceae	40. *Ajuga bracteosa* Wall. Ex. benth	Khwaga bootei	W.P	Herb	2	Treat throat sore, kidney pain and jaundice
	41. *Ajuga parviflora* Benth	Tarkha booti	W.P	Herb	3	Treat throat sore, kidney pain
	42. *Mentha aquatica* Linn	Desi botai	St/L	Herb	2	Remedy for headache, cholera
	43. *Mentha longifolia* (L.)	Villanay	L/St	Herb	3	Anti vomiting, carminative
	44. *Mentha spicata* L	Podina	L/St	Herb	3	Anti vomiting, carminative
	45. *Micromeria biflora* (Buch-hamp ex. D.Don) Benth.	Naray Shamakay	W.P	Herb	2	Anti bacterial, Antiseptic
	46. *Otostegia limbata* (Benth.)Boiss.	Spin azghay	L	Shrub	3	Treat gum diseases, jaundice
	47. *Plectranthus rugosus* Wall. Ex. Bth	Spearkai	St/L	Shrub	1	Used as an antiseptic agent
	48. *Salvia moorcroftiana* Wall. Ex. Benth	Khurdug	L/R	Herb	3	Heal external wounds
28. Meliaceae	49. *Melia azadarach* L.	Tora bakyanra	L/Fl	Tree	4	Stomachache, astringent, remedy for eruption skin
29. Moraceae	50. *Ficus carica Forssk*	Inzar	Fr	Tree	4	Remove kidney stone
	51. *Morus Alba*. L	Spin tout	Fr	Tree	4	Treat constipation
30. Oleaceae	52. *Jasminum officinale* L	Rambil Chambil	R	Shrub	3	Antihelmintic agent
	53. *Olea ferruginea* Royle	Khona	L/St/Fr	Tree	4	Treat mouth diseases, toothache
31. Oxalidaceae	54. *Oxaliscorniculata* L	Tarukay	W.P	Herb	4	Increase digestion
32.Papilionaceae	55. *Lathyrus aphaca* L.	Kurkamany	Fr	Herb	2	Anti biotic, treat wounds
	56. *Lotus corniculata* L	Fateh khana	W.P	Herb	1	Backache, sexual disability
33.Papaveraceae	57. *Papavar somniferum* L	Apeem	Latex	Herb	2	Treat dysentery, diarrhea, stomach problem
34.Plantaginaceae	58. *Plantago lanceolatum* L.	Jabai	L	Herb	3	Treat dysentery, constipation
35.Polygonaceae	59. *Rumex dentatus* L.	Shalkhay	L	Herb	4	Treat wound, burns
	60. *Rumex hastatus* D. Don	Tarookay	L	Herb	4	Enhance digestion
36. Portulaceae	61. *Portulaca oleraceae* L	Warkharay	L/St	Herb	3	Treat liver disease, scurvy
37. Punicaceae	62. *Punica granatum* L.	Anar	Fr/R	Shrub	2	Remedy for diarrhea and dysentery
38. Rhamnaceae	63. *Zizyphus vlugaris* Lam.	Markhanaey	Fr	Tree	2	Treat cup, cold and as blood purifier

39. Rosaceae	64. *Cotoneaster microphyla* Wall. Ex Lindley	Kachguallay	Stolon	Herb	1	Use as astringent
	65. *Fragana vesica* L.	Da zamaki toot	Fr/R	Herb	2	Use as carminatives, laxative, treat diseases or urinary tract
	66. *Rosa muschata* L	Gulab	Fl	Shrub	3	Use as astringent and in palpitation of heart
	67. *Rubus fruticosus* Hk. F	Karwara	Fl/R	Shrub	4	Aphrodisiac, treat whooping cough
40. Rutaceae	68. *Zanthozylum armatum* DC	Dumbara	Fr	Shrub	2	Relieve flatulence
41.Sapiandaceae	69. *Dodonaea viscose* L	Ghuraskay	L	Shrub	5	Treat wounds burns/antibiotic
42.Scropulariaceae	70. *Verbascum thapsus* L.	Kharghwag	L	Herb	3	External wound healing, burns
	71. *Veronica anagallis* Linn	Purhar botay	L	Herb	2	External wound healing, burns
43. Solanaceae	72. *Solanum nigrum* L	Kachmachu	L	Herb	2	Treat skin diseases, swollen and painful scrotum
	73. *Solanum surratense* Burm	Maraghoni	W.P.	Herb	3	Treat chronic cough, antirheumatic
44. Urticaceae	74. *Urtica diclica* L	Scizonkia	L	Herb	1	Tonic alleviate asthma
45. Verbinaceae	75. *Verbena officinalis* L	Shamakay	W.P	Herb	2	Anti spasmodic, tonic, febrifuge.
	76. *Vitex negundo* L	Marwandai	L/R	Shrub	5	Relieve headache, tonic, febrifuge
46. Violaceae	77. *Viola serpensh*	Banapsha	Fl	Herb	1	Emollient, diaphoretic, laxative
47.Zygophyllaceae	78. *Tribulus terrestris* Linn	Markundai	Fr	Herb	3	Treat diseases of urinary balder, tonic, demulcent

KEY:

L	-	Leaves	1	Very rare
St	-	Stem	2	Rare
Fr	-	Flower	3	Frequent
R	-	Root	4	Common
Rh	-	Rhizome	5	Dominant
S	-	Seed		
W.P	-	Whole Plant		

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