



## Journal of Medicinal Plants Studies

### Study of Wild Medicinal Xerophytes of District Bannu, Kpk

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The present study was carried out, to assess record and report the medicinal properties of wild plants of Bannu District. The present investigation comprises the indigenous uses of 22 species belonging to 16 families of Angiosperm. Based upon their utility these most wild plants are medicinal and are also used as a fuel. 10 species are used as fodder for cattle. 6 species were found useful as timber. Some species have edible fruit i.e. *Zizphus mauratiana* L. 6 species are honey bee species. 10 species are useful for agricultural tools. 2 species are found to be cultivated. Most important families having medicinal importance are *Chenopodiaceae*, *Rosaceae*, *Rhamnaceae* and *Mimosaceae* having 2 Plants, while the remaining families i.e. *Amaranthaceae*, *Apiaceae*, *Apocynaceae*, *Asteraceae*, *Asclepiadaceae*, *Brassicaceae*, *Capparidaceae* *Euphorbiaceae*, *Solonaceae*, *Tamaricaceae*, *Verbenaceae*, and *Zygophyllaceae* having one plant each. The most common wild medicinal plants in this area are *Calotropis procera* *Solanum surratense*, *Ricinus communis*, *Nerium odorum*, *Trachy spermium*, *Vitex negundo*. Some plant have Wild fruit such as *Capparis deciduas*. Famous fodder species of the area are *Acacia modesta* and *A.nilotica* L. Some medicinal plants are depleting in Bannu District due to over-exploitation by the local people and need proper attention e.g. *Trachy spermium ammi*. About 100 informants including local people i.e. farmer, herbalists, hakim and Medicinal plants user were interviewed for the collection of medicinal data through questionnaire. The data obtained was compiled; it was suggested that vulnerable and over-exploited medicinal plants may be conserved for sustainable use and to protect natural biodiversity.

**Keyword:** Ethnobotanical, *Caricapapaya*, Leaves and Root Aqueous Extracts.

#### 1. Introduction

District Bannu is a green valley, irrigated by River Kurram and Hill torrents. It is famous for its condiments, fruits and vegetable, and is known as Edward or a vegetable emerald. The People of District Bannu are still forced to practice traditional or alternative medicine for their treatment. The knowledge of uses of plants transmitted from one generation to the next<sup>[4]</sup>. People use plant in many way such as medicinal, Timber, wood, Fuel wood, Food, Fodder etc<sup>[1,7]</sup>. So there is a great impact of human life on local vegetation as well as local vegetation influence human rights.

#### 2. Material and Method

The present study was conducted during 2009-2012, Work plan was prepared and general information about the area, culture and vegetation

was collected before the start of field work. Topo sheets and maps were obtained from concerned offices.

**2.1 Equipments:** The equipments during the Research work were Note Book, Map of the area, Pencil, Plant Presser, old English News Papers and Blotting Papers, Polythene Bags, Knife, Compass, Altimeter and Camera.

The methodology comprises the following phases:-

1. Collection of medicinal data
2. Taxonomic work

#### 1. Collection of Medicinal Data

For collection of Medicinal data, the following steps were used:-

### a. Field work

Frequent trips were arranged during the spring, summer, autumn and winter seasons during 2009-2012. Plants were classified according to their economic traditional, local uses and other related information was gathered through interviewing and filling questionnaires from farmers, timber dealers, and common people but priority was given to elder people who were real user and had a lot of information about the plants and their traditional uses. Literature survey and general observation added some more information's. These information's were then compared with each other and people of other villages of the district were provoked to share and exchange their experiences. This effort will help to awake the local people about the conservation of useful plants for their coming generations. Repeated queries were made to get the data confirmed. Outcome of the result were rechecked and compared with literature.

Different maps were obtained from concerned offices. To study the medicinal and ethno-botanical study of the plants, I made a profile or proforma on which different characteristic of plants were mentioned. I visited the following area i.e. Khujari, Bharat, Kakki, Mandan, Mira Khel, Ismail Khel, Sokari, Bada Mir Abas, Mandew, Domel, Townshhip Bannu, Azim kala Bannu. The equipment like Compressor, Altimeter, Note Book, Pencil and Polythene bags were carried to the site. The working plan was prepared according to the life form of the plants and utilization of the plant product by local people.

### b. Ethnobotanical Inventory

The Ethno botanical inventory consists of families names in alphabetical order followed by Botanical name, local name, part used, flowering period, voucher specimen no. and Ethno botanical uses.

## 2. Taxonomic work

### a. Plant Collection and Preservation

Plants were collected from various sites during the period of research work. The specimens were dried in folded newspapers. The plants were

tagged with signified data, local and other characteristic about the plant species. The specimens were pressed in a presser with blotting paper b/w the adjacent specimen. The blotting papers and News Papers were changed from time to time depending upon the weather and situation of plant. Dried species were poisoned by 2% solution of Mercuris Chloride and Ethyle Alcohol, mounting of specimens was made on standard herbarium of sheets of size (41.25cm) x 28,75cm

### b. Identification and Voucher Specimen Number

Plants were identified with help of literature<sup>[8,11]</sup> and also using herbarium of Botany Department, University of Science and Technology Bannu and Herbarium of Biological Sciences, Quaid-e-Azam University, Islamabad. They were accessioned and submitted in the Herbarium, Department of Botany, University of Science and Technology Bannu.

## 3. Results

The present investigation comprises the indigenous uses of 22 species belonging to 16 dicot families of Angiosperm. The most common wild medicinal plants in the area are *Nerium odorum*, *Trachy spermum ammi* etc. Some plants species have wild fruit i.e. *Capparis deciduas* and *Solanum surratense*. Some species, *Calotropis procera* and *Capparis deciduas* are use as a whole or in part in Veterinary medicine. The detail study is explained below.

### 1) *Acacia modesta* wall.

**Family:** (MIMOSACEAE)

**Local Name:** Paleasa

**Habit and Habitat:** A small medium size deciduous tree, grow in xeric area

**Flowering Period:** March-April

**Part Used:** Gum from the bark, wood, leaves

**Folk Medicinal Uses:** The gum of this plant is cooked and then grinds it, after grinding. It is used for the pain of body parts. The gum obtained from the bark is used as tonic, stimulant and demulcent. It is a timber and fuel wood species

and is used for hedging. Goats and camels browse leaves. It is a honey bee species.

**2) *Acacia nilotica* (L) Delile**

**Syn:** *A: arabica* (Lam) Wild

**Family:** (MIMOSACEAE)

**Local Name:** Kikar Babal (Urdu)

**Habit and Habitat:** A common medium size tree, spine stipule in pair below the petiole, this wild plant grows in xeric condition.

**Flowering Period:** March-April.

**Part Used:** Bark, Gum, Leaves, seed, pods, wood, root.

**Folk Medicinal Uses:** It is a timber, fuel wood; fruit is edible and honey bee species. Its barks is used in dyes. The branches are used as toothbrushes for its germicidal property. Bark is used in diarrhea, dysentery, and as astringent. Pods are used as a powerful expectorant. Its branches are used for hedging and fencing due to its large thorns. The roots are used in making domestic vines. Gum is used in cough, rheumatism and mucous discharge. Its branches are used for thatching; leaves are browsed by camels and goats.

**3) *Amaranthus viridis* L.**

**Family:** (AMARANTHACEAE)

**Local Name:** Surrma.

**Habit and Habitat:** An annual erect glabrous weed, 30-60 cm high very common in waste places.

**Flowering Period:** October-July

**Part Used:** branches and leaves.

**Folk Medicinal Uses** It is a fodder of cattle and it is also used as Sag, Leaves are used as emollient. It is also used as anti helminthes. The leaves are cooked as Sag and eaten in the same amount as Sag.

**4) *Calotropis procera* (Wild) R.BR. Family: (ASCLEPIADACEAE)**

**Local Name:** Spalmaka.

**Habit and Habitat:** An erect glabrous shrub, much branched from the base, covered with soft white tomentum.

**Flowering Period:** June-October

**Part used:** Latex, shoot and leaves

**Folk Medicinal Uses** Its leaves are used for relief of pain and recovery of wounds, the grasshopper of this plant is used for increase of sexual behavior in animal. Leaves are smoked for curing asthma, also used as veterinary medicine for swellings, if thorn or spine is broken in the skin, a drop of its milky latex will catch it out. It is also used for fuel purposes.

**5) *Capparis decidua* (Forsk.)Edgew. Syn: *Capparis aphylla* Roth.**

**Family:** (CAPPARIDACEAE)

**Local Name:** Kara

**Habit and Habitat:** A waste land small size tree.

**Flowering Period:** June-July

**Part used:** Fruit, Branches, Wood, Flower.

**Folk Medicinal Uses** The un-ripen fruit is used as anthelmintic in animals. It is also used for that animal which eats little grass. The decoction of its flower is used in sciatica. Its ash is mixed with ghee and used in backache and rheumatism. It is a hedge plant and used as fuel wood, its wood is used by cobbler for its high quality for them having less xylem fibers.

**6) *Carthamus oxyacantha* M. B**

**Family:** (ASTERACEAE)

**Local Name:** Kunzala

**Habit and Habitat:** An erect, medium size, annual weed of different crops.

**Flowering Period:** May-July

**Part used:** Seed

**Folk Medicinal Uses** It is used as a fodder for cattle. Oil is obtained from this plant which is used as a brain tonic. Commonly used as fuel, seeds are used by children as lines seeds.

**7) *Chenopodium album* L.**

**Family:** (CHENOPODIACEAE)

**Local Name:** Surma, Batho (Punjabi)

**Habit and Habitat:** Very common weed of waste places and fields, an erect or sub erect.

**Flowering Period:** February-march.

**Part used:** Whole plant.

**Folk Medicinal uses:** This plant is used as vegetable as well as laxative antihelmintic also used in hepatic disorder and enlarge spleen. The roots are used in jaundice, urinary diseases and rheumatism. Fruit and root are known as antidote to snake poison. It is also used as sag.

**8) *Chenopodium murale* L.**

**Family:** (CHENOPODIACEAE)

**Local Name:** Thar surma,

**Habit and Habitat:** An annual herb, Very common weeds of waste places and field.

**Part used:** Whole plant

**Flowering Period:** February-March.

**Folk Medicinal uses:** It is commonly used as antihelmintic, also used as laxative, and used in hepatic disorder and in large spleen. The roots are used in jaundice, urinary diseases.

**9) *Datura stramonium* Linn.**

**Syn:** *D. Innixia* Miller

**Family:** (SOLANCEAE)

**Local Name:** Barbaka

**Habit and Habitat:** A large coarse annual herb up to 1.5 m tall, weeds of waste places.

**Part used:** Leaves, seeds

**Flowering Period:** May-July

**Folk Medicinal uses:** It is a very medicinal and used for wound recovery. Seeds are smoked for its narcotic action. Seed are also purgative and used in intestinal disorder and for fever, also used in asthma and cough. Seed and leaves are used as anodyne and narcotic. It causes dilation of pupil when locally applied in watery solution. The juice of flower petals is used for ear pain. Leaves are mixed with mustered oil and are used as poultice in skin disorders. It is a poisonous plant and it is also used as fuel.

**10) *Euphorbia helioscopia* L.**

**Family:** (EUPHORBIACEAE)

**Local Name:** Parparay

**Habit & Habitat:** An annual weed of different winter crops, smooth, small herb.

**Flowering Period:** February-April

**Part used:** Shoot, root and juice or latex

**Folk Medicinal uses:** Used as a fodder for cattle and also used for different disease of animals. It

is cathartic, anthelmintic. Juice is applied to eruption latex is poisonous and causes swelling and irritation on skin. It is also used as fish poison. When it is cooked with other pot herbs, it depresses their flower.

**11) *Fagonia cretica* L.**

**Family:** (ZYGOPHYLLACEAE)

**Local Name:** Spelaghzai

**Habit & habitat:** small annual green spinning waste land or dry area herbs.

**Part used:** Young branches, leaves and fruits.

**Folk Medicinal uses:** Leaves and young branches are grained and mixed with water and sugar then one glass is used for purification of blood and allergies. It is also used in summer for cooling. It is used two times for the whole season.

**12) *Lepidium sativum* L.**

**Family:** (BRASSICACEAE)

**Local Name:** Bushta

**Habit & Habitat:** Weed of road side and weed of different crop

**Flowering period:** March-April

**Folk medicinal uses:** Used as a saag, also used as anthelmintic. It is a common weed.

**13) *Nerium indicum* L.**

**Family:** (APOCYNACEAE)

**Syn.** *N. odorum* L.

**Local Name:** Gandari. (Kaneer in Urdu).

**Habit and Habitat:** An ornamental shrub or bush, common in streams

**Flowering period:** April-October.

**Folk Medicinal uses** Grow for ornamental purposes. Bark is used in skin diseases, especially leprosy. Root is used for abortion. Root paste is useful in scorpion sting and snake bite. Decoction of leaves is applied externally to reduce swellings (Rumi village). dogs are died by eating its stem (people observation)

**14) *Ricinus communis* Linn**

**Family:** (EUPHORBIACEAE)

**Local Name:** Raned

**Habit & Habitat:** An ever green soft, wooded shrub.

**Flowering period:** Through out the year.

**Part used:** seed, leaf, bark, root.

**Folk medicinal uses:** Seed of the plant is also used by the women for family planning purposes. A poultice of leaves is applied to boils, swelling and to relieve pain from the joints. The bark is used for healing wounds and sores. A paste of root is applied for toothache. The dry roots are used as febrifuge the leaves are warmed over fire and applied to the breast of women to increase the milk secretion oil obtained from the seed is used as laxative and is given to children in case of constipation. Some times oil is also used to start labor pain and early delivery.

**15) *Rosa moschata* J Herrm**

**Family: (ROSACEAE)**

**Local Name:** Zangley gulap

**Habit & Habitat:** A smooth climbing perennial shrub.

**Flowering Period:** March-April

**Part used:** Flowers, branches.

**Folk Medicinal uses:** Ornamental, hedge plant and honey bee species. Flowers used for fragrance and in making "Gulkand" which is refrigerant, fattening, tonic and laxative.

**16) *Rosa indica* L.**

**Family: (ROSACEAE)**

**Local Name:** Gulap

**Habit & Habitat:** A smooth climbing perennial shrub.

**Flowering Period:** March-April

**Part used:** Flowers, branches.

**Folk Medicinal uses:** It is an Ornamental plant its flowers are used for fragrance and in making "Gulkand" which is refrigerant, tonic and laxative. It is also a honey bee species.

**17) *Solanum surratense* Burmr. F**

**Syn; *S.xanthocarpum* shrad and wend**

**Family: (SOLANACEAE)**

**Local Name:** Wara-mara-ghinrhye.

**Habit & Habitat:** A thorny more or less prostrate annual wild herb.

**Flowering Period:** June-July

**Part used:** Fruit and leaves.

**Folk Medicinal uses:** This plant is used for eye irritation and for abdomen pain. Crushed fruits are externally applied on head in melancholia and other mental disorders. Fruit decoction is used as gargle in tooth ache. Crushing of fruits by barren feet is useful for diabetes. It is also used for eye diseases. The grinds of fruits are used for pain and other internal diseases. it is also used as fodder for camels.

**18) *Tamarix aphylla* (L) KARST**

**Family: (TAMARICACEAE)**

**Local Name:** Ghaz.

**Habit & Habitat:** A large shrub or small coniferous looking tree with erect trunk.

**Flowering Period:** March-April

**Part used:** Whole tree.

**Folk Medicinal uses:** Fuel wood and timber tree. Fumigation of leaves have germicidal effect and also recommended in cold and flu. Decoction of leaves is used in tetanus. Grinded bark is used as poultice on wound. Reptiles nests in its hollow stem. Used in making agricultural appliances. The leaves are grind or cooked then used for tetanus and pain.

**19) *Trachyspermum ammi* (L) Sprague**

**Family: (APIACEAE)**

**Local name:** Sperkiye.

**Habit & Habitat:** An erect medium size annual wild and cultivated herb.

**Flowering Period:** May-July

**Part used:** Seeds

**Folk medicinal uses:** It is used in stomach disorders, for digestion purposes and given to animal in gastric problems.

**(20) *Vitex negundo* L.**

**Family: (VERBINACEAE)**

**Local Name:** Marmandye.

**Habit & Habitat:** A shrub of waste places, specially on moist places, prefer to canal bank.

**Flowering Period:** April-May

**Part used:** Leaves, roots and branches.

**Folk Medicinal uses:** This plant is very medicinal and it is commonly used by the local people for the wheat protection from insect. It is grind and mixed with wheat then insect can not come to the wheat. Branches are used as tooth brushes. Leaves are crushed and mixed with wheat flour and used on skin disorder. Leaves are smoked to relieve headache. It is anthelmintic and diuretic. Roots are used to relieve back ache.

**21) *Withania somnifera* DUNAL.**

**Family:** (SOLANACEAE)

**Local Name:** Shapyange .

**Habit & Habitat:** An ever green annual wild herb or under shrub.

**Flowering Period:** March-April

**Part used:** Leaves and seeds.

**Folk Medicinal uses:** Seeds are used in stomach pain and digestions, aphrodisiac, tonic, regulates menstrual cycle. Leaves are used extremely as pain killer, used in rheumatism and swellings.

**22) *Zizphus mauratiana* L.**

**syn:** *Zizphus jujuba* Lam

**Family:** (RHAMNACEAE)

**Local Name:** Bera

**Habit & Habitat:** An annual wild medium and large tree or large shrub almost ever green.

**Flowering Period:** April-May

**Part used:** Fruits, wood, branches, leaves.

**Flowering period:** March-April.

**Folk Medicinal uses:** Timber wood, hedge plant and shade tree. Honey bee species and best honey is that of zizphus species. Timber used in making ‘‘charpais,, for its stiffness. Fruit are iron tonic and digestive. The plant is used as folk lore especially for goat. Branches are used in fencing. Leaves of this plant especially young leaves are used by the diabetes patient

**23) *Z. nummularia* (Bum.f.)wight &Arn**

**Family:** (RHAMNACEAE)

**Local Name:** Karkanrh

**Habit & Habitat:** A tomentose bushy or thorny wild tree.

**Flowering Period:** April-May

**Part used:** Fruit, leaves, branches and wood.

**Folk medicinal uses:** It is used as fuel, hedge and fencing. Fruit are used by game birds and human beings. Fruit is an iron tonic and digestive. The leaves are eaten by goats and camels. The young stem and leaves are used by the diabetes patient. It is a good honey bee species and honey of this plant is very costly and popular.

**4. Discussion**

Medicinal plants are the most important approach to study natural resources management of indigenous people<sup>[2]</sup>, The interaction between the mountain people and natural system though history has helped in maintaining the richness of species communities and genetic material in both productive system and wild land of mountain environment how ever, the rich biodiversity is being disastrously impoverished due to human action in the last few decades. Understanding the indigenous knowledge of mountain people in relation to biodiversity resources management is one of the key issues for sustainable development (Pie, 1991).

Nearly 80% of the world population depends upon traditional system of health care Allopathic drugs have brought a revolution throughout of the world, but the plant base medicines have its own status<sup>[3]</sup>. The inhabitants of the area have also used medicinal plants for the treatment of various diseases and have for long time been dependant on surrounding plants wealth for their requirements of life. However, due to modern cultural changes and advancement in every field of life style, the use of plants for medicinal purposes is decreasing. But in fact a large section of rural people of the area depends mostly on untraditional phytotherapies and folk medicines<sup>[6]</sup>.

Many drugs have been developed from the medicinal plants at various research centers around the world by utilizing the information obtained from the local communities. Primary knowledge of the local people about the medicinal plant is the baseline for its further exportation. The local inhabitants who are custodians of this precious germ plasma resources and folk knowledge of local ecology for many centuries may be involved in any medicinal

plants conservation program. To preserve this biodiversity some economic incentives may be paid to the local inhabitants. People participation and awareness about medicinal plants wealth can be play a pivotal rule in the conservation of natures' priceless gift in the research area and else where in the country<sup>[11]</sup>. According to local people, it is believed that traditional phytotherapies are more adoptable and acceptable. It is also observed that these plant based remedies are considered to be better permanent cure of their diseases and chipper and easily available then the commercial prescriptions which are very expensive. The necessity for utilization of such indigenous knowledge has been felt with the increasing needs of drugs, medicines and other useful products. In this way, the indigenous approach can be adopted to record the indigenous, knowledge, collection of indigenous plant material based on their indigenous use for particular diseases, identification and processing etc.

Most of the people depend on agriculture agro forestry and mountain resources. They collected a lot of medicinal plants, fodder, fuel wood and timber wood from the forest results in environmental degradation<sup>[12]</sup>. Similarly situation also prevails in these areas. Some other cases included ignorance poverty, joblessness and lake of scientific knowledge for the collection of medicinal plants. Most of the pants were found to be used for multi purposes, such as medicinal timber wood, fuel wood, leaves used as a fodder, fruit and seed are edible, provides dry fruits, used in spices, agro forestry if based on them, commercial fruit tress, wild edible fruits, used in naming can provide shade and can nest birds<sup>[7]</sup>.

### 5. Conservation

For the conservation of wealth of medicinal plant resources herbal/ethno botanical gardens should be established, with the cooperation/involvement of local people and germ plasma collection of useful plants should be carried out. Nurseries should be developed to supply propagating materials of medicinal plants to local inhabitants.

With the in-vitro technology, those plants should be immediately grown which are very difficult to grow. Efforts should be made to evolve simple, efficient and economical protocol for rapid multiplication and genetic stability of germ plasm of medicinal plants.

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