

## Study of Medicinal Plants of Lower Dir, Timergara, Tehsil Balambat, Khyber Paktunkhaw-Pakistan

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**Abstract:** This study was conducted in the Lower Dir District, in the Khyber Paktunkhaw in Pakistan, during February 2013 to August 2013. The work was focused on traditional medicinal folk remedies based on the knowledge of the local peoples. During each trip, questionnaires were used to query the local men and women who were familiar with local knowledge of indigenous plants species. Main aims of the study are to conserve the old knowledge about the important medicinal plant. Forty (40) plant species were collected belonging to 30 different families. These plants are used for various purposes including Carminative, Stimulant, Digestive, Anti-diarrheal, Narcotic and Antipyretic etc.

**Key words:** Lower Dir • Flora conservation • Collection of old knowledge • Medicinal Uses

### INTRODUCTION

Dir District is rich in medicinal plants, used by the local peoples, for different medicinal purposes. The main purpose of this study is the review of old medical traditions of the local people. In the past, there were not enough doctors and herbalists (Hakims) in the local area to discover the use of medicinal plants for treatment of different diseases by Shinwari [1] and Arshad [2]. The eastern medicines in Pakistan were comprised of three (3) systems: Chinese, Ayurvedic and Greco-Arabic. Medicinal recipes were derived from these systems from inorganic and organic sources. The old knowledge dates back to prehistoric time. The ancient knowledge records drugs, many now used by modern doctors, which were already used by the Greek, Babylonians, Egyptians, Chinese, as well as the people of Pakistan and India by Khan [3]. Pakistan is rich in local medicinal plants which are used for daily purposes by Afridi [4]. Sixty seven (67) plants were listed from the Khyber Agency by Haq and Hussain [5]. Local medicinal reported with other local plants of Mansehra, Rawalpindi, by Durrani and Hussain [6]. From Kurram Agency by Gillani *et al.* [7] from Margalla by Shinwari and Khan [8] from Abbottabad by Abbasi *et al.* [9] from Kotli by Ajaib *et al.* [10] from Chitral by Ali and Qaiser [11] and from Attock by Noor and Kalsoom [12] have also been investigated.

Plants species were collected from different areas of Lower Dir including Stanadar, Malakand, Banda Bala, Banada Faen, Balambat and Collage Khawar. The total area of the Lower Dir District is 1,582km<sup>2</sup>, situated between the Afghanistan border and Chitral. The area of plant collection is administratively controlled by Lower Dir. Panjkora River is the lower part of this District. It arises from the Hindu Kush Mountains, high latitude 35.45 and joins with River Swat at Chakdara. The entry point of this district is at 34.40 latitude. Lower Dir has a mountainous area rising with peaks of 4876m on the North side and 3048m along the Swat River on the east and Afghanistan on the west side by Rahatullah *et al.* [13] and Anonymous [14].

**Objective:** Collection, identification, preservation and uses of medicinal plants.

### MATERIALS AND METHODS

The regular study trips were completed in the field in the mountains of Lower Dir i.e. Stanadar, Malakand Banda, Banada Faen, Malakand, Balambat and Collage Khawar from February 2013 to May 2013. Plant species were collected belonging to different families which are identified with the flora of Pakistan with Choudary *et al.* [15] and Riedl [16]. The forty (40) plant species were

identified and preserved in the herbarium of Weed Science at The University of Agriculture. Peshawar, Pakistan for future reference, the medicinal use data were collected from local people (men and women) and herbalists (hakims). The data was collected in the form of questionnaires and identified in the available literature with Nasir and Ali [17]. The results are checked, rechecked and compared with the literature that in Ali and Fefevre [18] and Khalid [19] analyzed and documented.

## RESULTS AND DISCUSSION

Lower Dir has a variety of medicinal plants. The herb and shrub plant species have medicinally important uses for the treatment of various diseases, helpful in the preparing of various medicines. The herbs and shrubs are multipurpose species. The collected forty (40) plant species were used by the native peoples for different diseases. The data on the uses of these medicinal plants were collected from the local men, women and herbalist (hakims).

**Name:** *Ailanthus altissima* (Mill) Swingle

Local name: Khara Shandai

Family: Simaroubaceae

Part used: Bark

Medicinal uses:

- The gum of the plant is used to treat dysentery and skin diseases.
- The bark of the plant is heated with water and mixed with milk then used to relieve dysentery
- Also used as an anthelmintic.

**Name:** *Ajuga bracteosa* Wall. Ex Benth

Local name: Gooti

Family: Labiatae

Part used: Root, leaves and flower

Medicinal uses:

- The plants are heated in water then used for blood purification.
- The leaves of the plant help in reducing stomach acidity.
- The plant is used to cure measles, pimples and headaches.
- Also aids in food digestion.

**Name:** *Bergenia ciliata* (Haw) Sternb

Local name: Kamar panra

Family: Saxifragaceae

Part used: Rhizome

Medicinal uses:

- The plant rhizome is used as a diuretic, a demulcent and an astringent.
- A dose of 10-30g helps reduce fever, cough, diarrhea and pulmonary infections.

**Name:** *Berberis lyceum*. Royle

Local name: Korai

Family: Berberideaceae

Part used: Root, bark and fruits

Medicinal uses:

- It is considered the most important local medicinal plant. The dry roots are used to treat mouth infections, for blood purification, for killing germs in the alimentary canal and for strengthening sex organs.
- It is used as an antiseptic.
- It is also used as a pain reliever.

**Name:** *Brassica campestris* Linn.

Local name: Sharshum

Family: Cruciferae

Part used: Leaves and seeds

Medicinal uses:

- Brassica has antibacterial and antiviral properties.
- The plant contains high amounts of minerals and vitamins that help to treat cancer, goiter and hypothyroidism.

**Name:** *Cedrus deodara* (Roxb. ex Lamb.) G. Don

Local Name: Deyaar

Family: Pinaceae

Part used: Wood, resins

Medicinal Uses:

- The plant gums are used for spinal column pain.
- The plant shows resistance to worms.

**Name:** *Chenopodium album* L.

Local name: Sarmy

Family: Chenopodiaceae

Part used: Root, stem and leaves

Medicinal uses:

- Leaves of the plant heated in water are used to relieve body pain.
- Plant seed oils are used as an anthelmintic.

- The root of the plant heated in water is used in treatment for urinary diseases and jaundice.

**Name:** *Chenopodium botrys* L.  
Local name: Kharawa  
Family: Chenopodiaceae  
Part used: Root, stem and leaves  
Medicinal uses:

- Species used for treatment of internal infection and various diseases.

**Name:** *Coriandrum sativum* L.  
Local name: Danyaa  
Family: Apiaceae  
Part used: leaves and fruit  
Medicinal uses:

- Aids in digestion.
- Reduces acidity of stomach.
- Help in blood cleaning and used in the summer for cooling the body.

**Name:** *Convolvulus arvensis* L.  
Local name: Perwatai  
Family: Convolvulaceae  
Part used: whole plant  
Medicinal uses:

- The species is used to treat dandruff in different hair shampoos.
- Plants are used as purgatives.
- The plants are heated with water to treat dysentery.

**Name:** *Cynodon dactylon* L.  
Local Name: Kabal  
Family: Poaceae  
Part used: Root  
Medicinal uses:

- The plant is both a diuretic and an astringent.

**Name:** *Datura stramonium* L.  
Local name: Baatura  
Family: Solanaceae  
Part used: Dry leaves and flower  
Medicinal uses:

- The plant is used as an antispasmodic.

**Name:** *Duchesnea indica* Lindl. Ex Lacaite  
Local name: Zamkay Toot  
Family: Rosaceae  
Part used: Flower and dry leaves  
Medicinal uses:

- Plant is laxative.

**Name:** *Ferula jaeschkeana*  
Local name: Skhwara  
Family: Apiaceae  
Part used: Fruit and leaves  
Medicinal uses:

- Roots are used for sexual purposes.
- The plant rhizome is used in treatment of cough and throat infections.

**Name:** *Ficus carica*  
Local name: Inzar  
Family: Moraceae  
Part used: Leaves Saf and fruit  
Medicinal uses:

- Plant milk is used for the removal of spines and thorns from skin.
- The fruit of the plant is used to treat cancer.
- The plant's milk is used in control of vitiligo disease in early stages.

**Name:** *Foeniculum vulgare* Mill.  
Local name: Kaga  
Family: Apiaceae  
Part used: whole plant  
Medicinal uses:

- The plant helps to improve both eyesight and appetite
- The plant relieves chronic constipation.
- Seeds help in food digestion and reduction of stomach acid.
- The plant is a source of volatile oil and is used as a vermicide.
- The plant is used as a stimulant helping to increase body activity.

**Name:** *Fumaria indica* (Hauskn) H. N. Pugsley  
Local name: Krachay  
Family: Fumariaceae

Part used: Fruits and leaves

Medicinal uses:

- The plant is used as an antipyretic.
- Plant leaves and roots are dried for use in a green tea to treat cough and throat infections.

**Name:** *Indigofera heterantha* Wall. ex. Brand.

Local name: Ghorega

Family: Fabaceae

Part used: Whole plant

Medicinal uses:

- Used in treating hepatitis.
- Plants are used to treat coughs.
- Used for blackening of human hair.

**Name:** *Isodon rugosus*

Local name: Gahara Karachy

Family: Labiatea

Part used: leaves

Medicinal uses:

- Used for blood clotting.
- Preparations are used to treat oral fungal infections and as a stimulant.

**Name:** *Juglan regia* L.

Local name: Ghuz

Family: Juglandaceae

Part used: Leaves, barks and fruit

Medicinal uses:

- The bark is used as “dandassa” for cleaning of teeth.
- The fruit is a brain tonic.
- Used to strengthen teeth.

**Name:** *Medicago denticulata*

Local name: Shpastary

Family: Fabaceae

Part used: Leaves

Medicinal uses:

- Leaves are used to treat anemia, diabetes, bladder stone and kidney problems.
- It is used as an anticholestromic.
- It is used as a digestive aid.
- It is also an appetite stimulant.

**Name:** *Malva neglecta* Wall.

Local name: Panirak

Family: Malvaceae

Part used: Leaves and stems

Medicinal uses:

- Plants help cure colds and coughs.
- Roots are boiled for use as a purgative for animals.
- Also used in joshanda, a type of tea.

**Name:** *Melia azadarach* Linn

Local name: Tora Shandai

Family: Meliaceae

Part used: Whole plants

Medicinal uses:

- Plant leaves are used as an insect repellent and as a pesticide for crops.
- Leaves are also used for the removal of lice from hair.
- The bark of the plant is used to treat dysentery and to relieve generalized body pain.
- It is also used as a carminative and as a cooling agent.

**Name:** *Mentha pipratta* L.

Local name: Podina

Family: labiatea

Part used: Whole plants

Medicinal uses:

- Plants aid in digestion.
- Plants treat nausea, vomiting, irritable bowel and bloating.
- Plants help in purification of blood.
- The plant is used to normalize stomach acid production.
- The mint flavor is used to freshen the mouth, both taste and breathe.

**Name:** *Mentha longifolia* (L) Huds.

Local name: Velanay

Family: Labiatae

Part used: Leaves

Medicinal uses:

- The leaves are used in gastric medicine as stomachic and carminative.
- Plants are applied to various gastric problems.

- The leaves aid digestion, relieve vomiting and treats cholera.
- Used by diarrhea and dysentery patients.

**Name:** *Myrsine africana* L.

Local name: Manogaya

Family: Myrsinaceae

Part used: Leaves

Medicinal uses:

- Used as a blood purifier.
- Use as an anthelmintic and laxative.

**Name:** *Olea ferruginea* Royle.

Local name: Khona

Family: Oleraceae

Part used: leaves and seed

Medicinal uses:

- The leaves of plant are chewed or used in green tea to ease cough and mucous flow.
- Olive oil is obtained from the plant which helps rheumatic pain and constipation.
- The bark and leaves are used as antiseptics, astringents and tonics.
- The plant is also used to alleviate dandruff.

**Name:** *Papaver somniferum* L.

Local name: Opium or apium.

Family: Papaveraceae

Part used: Leaves and capsule

Medicinal uses:

- Opium is obtained from this plant for use in various medicines.
- A cold drink, prepared from the seed capsule and resin, called Tendai produces pleasant excitement, relieves pain and alleviates headaches.
- It also treats dysentery and diarrhea.
- It is used as a sedative and as a hypotonic.

**Name:** *Pyrus communis* L.

Local name: Nashpatai

Family: Rosaceae

Part used: Fruit

Medicinal uses:

- The fruit is used as a sedative, a laxative, a febrifuge and as an astringent.

**Name:** *Quercus incana*

Local name: Sarai

Family: Fagaceae

Part used: leaves and seed

Medicinal uses:

- The seed were tonic.
- Leaves are used as purgatives.

**Name:** *Quercus baloot* Griffith

Local name: Zagavan

Family: Fagaceae

Part used: leaves, wood and seed

Medicinal uses:

- Seeds are taken with Desi Ghee or animals fat to help with urinary infection.
- It helps in the treatment of urine problems.
- It is an antithelmsmic.

**Name:** *Rumex hastatus* D. Don

Local name: Tarookay

Family: Polygonaceae

Part used: Whole Plant

Medicinal uses:

- The plant is used as a diuretic, a purgative and as an astringent.
- It is an appetite stimulant.
- It also removes stomach toxicity.

**Name:** *Rumex crispus* L.

Local name: Shalkhay

Family: Polygonaceae

Part used: Leaves and fruit

Medicinal uses:

- This plant is used a cooling agent during hot summer days by the local people.
- The plant is used as a vegetable.
- The small plant spores are used for treatment of ear infections.

**Name:** *Silene conidia* L.

Local name: Mangotai

Family: Caryophyllaceae

Part used: Whole plants

Medicinal uses:

- Seed and leaves of the plant are used in cosmetic creams for skin whitening.
- The plants are also eaten as a vegetable by the native people.

**Name:** *Silene moorcroftiana* Wall.

Local name: Khargug

Family: Labiatae

Part used: Leaves and stems

Medicinal uses:

- Plant species were boiled in water for use as mouth wash.
- The leaves reduce infections of the mouth and throat.
- Leaves also aid in healing external body infections.
- Stem and leaves are used to treat diarrhea.

**Name:** *Solanum nigrum* L.

Local name: Kachmacho/ Karmacho

Family: Solanaceae

Part used: Stem and leaves

- Leaves and stems are used as an antispasmodic.
- Plants are used as a vegetable.
- Leaves and stems are used to treat diarrhea.

**Name:** *Teraxicum officinale*

Local name: Zair gule

Family: Asteraceae

Part used: Root and leaves

Medicinal uses:

- The root was dried then powdered for use in green tea or coffee as a tonic or diuretic.
- Roots and leaves aid in treating kidney and liver disorders.

**Name:** *Viola canescens* Wall. ex Roxb

Local name: Benafsha

Family: Violaceae

Part used: Flower and leaves

Medicinal uses:

- Plant leaves and flowers are mixed in yogurt to reduce cold, cough and headache.
- Flower and leaves are used to treat jaundice.
- Used to treat asthma.

**Name:** *Zanthoxylum armatum* DC

Local name: Damdara

Family: Rutaceae

Part used: Seeds

Medicinal uses:

- Plant seeds were used in a variety of foods for culinary purposes.
- Seeds are used as a carminative, a stimulant and a stomachic.

**Name:** *Ziziphus oxyphylla* Edgew

Local name: Elanai

Family: Rhamnaceae

Part used: Fruit

Medicinal uses:

- Fruits are used as astringent, diuretic and stimulant.

## CONCLUSIONS AND RECOMMENDATIONS

The local area is rich with medicinal plants but is largely underexplored. The majority of the people are illiterate and unaware of the potential and proper use of these important plant species. The local area is adversely affected by lack of awareness of conservation techniques. Poverty, lack of marketing opportunities and general lack of skills, moreover, currently, there are no NGOs, governmental agencies or established institutions working to create awareness, conservation and opportunity. Government and research organizations must announce seminars and create programs for the awareness, Identification, collection and proper use of these invaluable medicinal plants.

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