

# Ethno-Medicinal Plants of Tahsil Barawal Bandi Dir Upper Khyber Pakhtunkhwa Pakistan

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## ARTICLE INFO

### Article history:

Received on: 11/04/2014

Revised on: 21/04/2014

Accepted on: 30/04/2014

Available online: 28/07/2014

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### Key words:

Ethno botany, Medicinal plants, Barawal Bandi, Medicinal uses, Pakistan.

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## ABSTRACT

This study is carried out to identify the folk knowledge medicinal plants of Tahsil Barawal Bandi, District, and Dir Upper Khyber Pakhtunkhwa Pakistan. Various field trips were made to collect medicinal plants and ethno botanical information. A total of 62 species belonging to 36 families have been found to be used by the local people for curing various diseases. This efforts includes the local name, family name, flowering season, part used and folk knowledge of medicinal plants.

## INTRODUCTION

Barawal area is located at 35° 00' 45.27"N and 71° 50' 40.14"E and at altitude range from 5000-7000. The valley of Barawal lies in the extreme end of the District Dir Upper. It is bordered by proper Dir on the East side, Maidan on the south and on Samarbagh the West, while on North-west side it is bordered by the land lock country Afghanistan and Chitral District. The main Barawal valley has small sub-valleys of Attan, Shingara, Bin, Nusratt and Sonai. The valley makes part of Dir Tahsil, subdivides in to four union councils; the total number of recognized villages is 140 with numerous small hamlets/settlements. Human population is 82000 according to the senses of 1998. The climate of Barawal is dry-temperate with precipitation mainly in the form of snow (Hamayun *et al.*, 2007; Ali *et al.*, 2011). Rains are mostly in winter and spring, summer months are pleasant while winter is very cold and severe. Temperature rapidly falls from

November onwards and is generally below the freezing point (Hazrat *et al.*, 2010). The relative humidity is quite high throughout the year. The rainfall is received throughout the year. The winter rainfall is more than the summer rainfall.

The maximum winter precipitation has been recorded during the month of March, which is about 242 mm (Abbasi *et al.*, 2008). Harsh Berger introduced the term Ethno botany in 1896. Ethno botany deals with the direct, traditional and natural relationship of primitive settlements with the environment (Shinwari *et al.*, 2001). Ethno botany, a branch of Ethno biology, is defined as the science of traditional uses of plants. It is the systematic study of the botanical knowledge of a social group and use of locally available plants for foods, medicines, clothing or religious rituals (Ahmad *et al.*, 2006). Ethno botany deals with the direct traditional and natural relationship between human societies and plants (Ahmad *et al.*, 2007; Khan *et al.*, 2007). It has been recognized as a multidisciplinary science, comprising human uses of plants, History, Anthropology, Culture and Literature. Its importance has been realized mainly due to the diverse economic importance of plants among the primitive human societies.

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It brings to light many little known or unknown uses of plants, some of which have potential for wider usage. It has also been in relevance with conservation of genetic resources (Nasir *et al.*, 2011). These plants when used medicinally have synergy and harmony with human body due to combination and interaction of the chemical constituents they contain. The various chemical works to gather to reach equilibrium in the body as they do in the plant, and so produce gentle progressive healing within a body tissue (Hussain *et al.*, 2012; Hussain *et al.*, 2013).

## MATERIAL AND METHODS

In order to obtain ethno medicinal information of the area, four trips of Barawal Bandi were made from February to June for collection of medicinal plants at their flowering periods. Plants specimens were collected from various localities of research area. The collection was tagged on the spot, the local names and their medicinal uses were asked from the aged knowledgeable people of the area. The collected specimens were properly dried and pressed in plant presser in shade condition. The dried specimens were mounted on herbarium sheets and botanically identified by comparing the plant with different herbarium specimens and by Taxonomist. The identified specimens were confirmed from flora of Pakistan. Each specimen was given voucher number and deposited in the herbarium of Botany Department, University of Peshawar for reference.

## RESULT AND DISCUSSION

A total of 62 species belonging to 36 families have been used by the local people for treatment of various diseases. All plants are alphabetically arranged with their botanical name, local name, family and part used of medicinal plants in the Tahsil Barawal.

Total Sixty two species of medicinal plants (Table 1) were collected from Tahsil Barawal Bandi, Dir Upper, and Khyber Pakhtunkhwa Pakistan belonging to 36 families. The area is very rich as regard to Medicinal plants. Medicinal plant are considered to be important from economic point of view as these plants are used to cure various ailments as well as for other purposes like fodder, shelter, food, furniture etc (Ajaiib *et al.*, 2010). Plants are considered as chief source of medicine and also get preference as

they are considered harmless as compared to synthetic drug (Arshad *et al.*, 2011). Traditional knowledge regarding the use of medicinal plants is not uniformly distributed among the people; the old aged people and Hakims are more experienced and have knowledge about the use of wild medicinal plants, *Amaranthus viridis*, *Cynodon dactylon*, *Coriandrum sativum*, *Ficus carica*, *Foeniculum vulgare*, *Olea ferruginea*, *Solanum nigrum*, and *Taraxacum officinal* were reported for curing kidney problem. Mostly they are used in the form of powder or decoction, *Ajuga bracteosa*, *Melia azedarach*, *Olea ferruginea*, *Punica granatum*, and *Ziziphus sativa* are used in the area for various ways as astringent, *Berberis lyceum*, *Datura stramonium*, *Mentha longifolia*, *Oxalis corniculata* and *Solanum nigrum* are used as antispasmodic agent. The same therapeutic action has also been reported from the inhabitant of the research area. Endo parasitic worms that causes severe gastric and other health problems especially in children were cured by traditional people using plants. *Euphorbia helioscopia*, *Ficus carica*, *Fumaria officinal*, *Juglans regia* and *Punica granatum*, were used as anthelmintic (A substance causes the death or expulsion of parasitic worms) drugs. Four plants such as *Coriandrum sativum*, *Foeniculum vulgare*, *Mentha longifolia* and *Solanum nigrum* are used as carminative. The *Solanum nigrum* and *Ziziphus sativa* are used as in various ways as expectorant. Similarly *Artemisia martima*, *Convolvulus arvensis*, *Euphorbia helioscopia* are used as purgative. The plants which are used as emollient are *Amaranthus viridis*, *Ficus carica*, and *Plantago lanceolata*. These plants contain rutin, lysine, carbohydrates, sugar, gum, tryosin, cravin, fixed oil, glycoside, pentans and mucilage. These substances may be responsible for its emollient properties. Locally *Artemisia maritima* and *Oxalis corniculata* are used for diarrhea. Plants such as *Artemisia maritima*, *Convolvulus arvensis*, *Euphorbia helioscopia*, *Fumaria officinal*, are used as purgative. They contain fixed oil, cusculin, latex, fatty acid, fumaric acid, trizonelline and resin. These compounds might be responsible for such action. So the result of the collected plants shows that if proper attention is given to the area, it will provide a best source of income and raw material for the synthetic drugs. Majority of them are found vulnerable due to their over use, slow growth rate, quantity of consumption and pressure like grazing, erosion and fuel wood collection.

**Table 1:** Medicinal plants of Tahsil Barawal Bandi, Dir Upper Khyber Pakhtunkhwa Pakistan.

1	2	3	4	5	6
S.No	Voucher number	Botanical Name	Family	Local name	Part used
1.	11310	<i>Acorus calamus</i> Linn.	Aracaceae	Skhawaja	Dried rhizome
2.	11311	<i>Ajuga bracteosa</i> Wall ex. Benth.	Lamiaceae	Gouti	Whole Plant
3.	11312	<i>Amaranthus viridis</i> L.	Amaranthaceae	Chourlaie	Whole Plant
4.	11313	<i>Andrachne cordifolia</i> wall. ex Decne	Euphorbiaceae	Kamoray	Leaves and Twigs
5.	11314	<i>Artemisia maritima</i> Linn.	Asteraceae	Tarkha	Flowering Tops
6.	11315	<i>Avena sativa</i> L.	Poaceae	Jawdar	Whole Plant
7.	11316	<i>Barberis lyceum</i> Royle	Berberidaceae	Kwarey	Leaves, Root, Fruit and Bark
8.	11317	<i>Capsella bursa pastoris</i> L.	Brassicaceae	Bumbusa	Aerial parts
9.	11318	<i>Cannabis sativa</i> L.	Canabinaceae	Bhang	Leaves and Flowering tops
10.	11319	<i>Celtis australis</i> L.	Ulmaceae	Tagha	Leaves, Fruit and Wood
11.	11320	<i>Cichorium intybus</i> L.	Asteraceae	Kashne	Leaves and Roots
12.	11321	<i>Coriandrum sativum</i> L.	Apiaceae	Dania	Fruit and Leaves
13.	11322	<i>Convolvulus arvensis</i> Linn.	Convolvulaceae	Pirwatkai	Whole Plant
14.	11323	<i>Conyza canadensis</i> L.	Asteraceae	Ghajabaie	Whole Plant

14.	11324	<i>Cotoneaster nummularia</i> Fischer & C. A. Meyer	Rosaceae	Kharawa	Whole Plant
15.	11325	<i>Colcicum luteum</i> Baker	Colchicaceae	Ziargulay	Dried corns
16.	11326	<i>Cydonia oblonga</i> P. Mill	Rosaceae	Buff- tango	Fruit
17.	11327	<i>Cynodon dactylon</i> L.	Poaceae	Kabal	Whole Plant
18.	11328	<i>Daphne mucronata</i> Royle	Thymeleaceae	Nighuny	Fruit
19.	11329	<i>Datura stramonium</i> L.	Solanaceae	Bathora	Leaves and Seeds
20.	11330	<i>Elaeagnus umbellate</i> Thumb.	Elaeagnaceae	Sanzala	Flowers, Fruits and Seeds
21.	11331	<i>Euphorbia helioscopia</i> L.	Euphorbiaceae	Mandanu	Roots and milky juice
22.	11332	<i>Fagonia arabica</i> L.	Zygophyllaceae	Azghakey	Whole Plant
23.	11333	<i>Ficus carica</i> L.	Moraceae	Inzar	Fruits and Wood
24.	11334	<i>Foeniculum vulgre</i> Miller	Apiaceae	Kaghy- enaly	Fruit and Leaves
25.	11335	<i>Fragaria nubicola</i> Lindie. Ex Lacaita	Rosaceae	Groous	Fruit
26.	11336	<i>Fumaria officinail</i> L.	Fumariaceae	Shatara	Whole Plant
27.	11337	<i>Indigofera heterantha</i> Wall	Papilionaceae	Ghwareja	Whole Plant
28.	11338	<i>Juglans regia</i> L.	Juglandaceae	Ghwaz	Bark, Leaves, Stem, Wood and Fruit
29.	11339	<i>Malva neglecta</i> Wallr	Malvaceae	Panerak	Leaves and Flowers
30.	11340	<i>Medicago denticulata</i> Willd	Papilionaceae	Peshtarey	Whole Plant
31.	11341	<i>Melia azedarach</i> Linn	Meliaceae	Tora- Shandae	Leaves, Fruit, Wood and Flowers
32.	11342	<i>Menthe piperata</i> L.	Lamiaceae	Pudina	Whole Plant
33.	11343	<i>Mentha longifolia</i> L. Huds	Lamiaceae	Enaley	Whole Plant
34.	11344	<i>Morus laevigata</i> Wall. Ex Brandis	Lamiaceae	Shah toot	Bark and Fruit
35.	11345	<i>Morus alba</i> L.	Moraceae	Spin Toot	Fruits, Leaves, Bark and Wood
36.	11346	<i>Nasturtium officinale</i> R.Br	Brassicaceae	Tarmera	Whole Plant
37.	11347	<i>Olea ferruginea</i> Royle	Oleaceae	Khona	Leaves, Fruits, Bark and Wood
38.	11348	<i>Oxalis corniculata</i> L.	Oxilidaceae	Taruke	Whole Plant
39.	11359	<i>Papaver somniferum</i> L.	Papaveraceae	Doda	Latex, Fruit and Seed
40.	11350	<i>Plantago lanceolata</i> L.	Plantaginaceae	Jabbere	Leaves and Seeds
41.	11351	<i>Polygonum aviculer</i> L.	Polygonaceae	Bandakai	Whole Plant
42.	11352	<i>Prunella vulgaris</i> L.	Lamiaceae	Kargha- sanga	Whole Plant
43.	11353	<i>Punica granatum</i> L.	Punicaceae	Anangonry	Fruits, Stem and Leaves
44.	11354	<i>Pyrus pashia</i> Weber	Rosaceae	Tangaie	Fruits and Wood
45.	11355	<i>Pyrus communis</i> L.	Rosaceae	Tango	Fruits and Wood
46.	11356	<i>Quercus incana</i> Roxb	Fagaceae	Sarai	Leaves, Inner bark and Wood
47.	11357	<i>Robinia pseudocacia</i> L.	Papilionaceae	Kekar	Flowers, Leaves and Wood
48.	11358	<i>Rubus fruticosus</i> L.	Rosaceae	Karwara	Fruits and Leaves
49.	11359	<i>Rumex dentatus</i> L.	Polygonaceae	Shalkhe	Roots and Leaves
50.	11360	<i>Rumex hastatus</i> L.	Polygonaceae	Tarokey	Whole Plant
51.	11361	<i>Salix babylonica</i> L.	Salicaceae	Wala	Whole Plant
52.	11362	<i>Sisymbrium irio</i> L.	Brassicaceae	Jinjar	Leaves and Seeds
53.	11363	<i>Silene conoidea</i> L.	Caryophyllaceae	Mangotey	Whole Plant
54.	11364	<i>Solanum nigrum</i> L.	Solanaceae	Karmacho	Whole Plant
55.	11365	<i>Sonchus asper</i> L.	Asteraceae	Shawdapae	Whole Plant
56.	11366	<i>Taraxacum officinales</i> Weber	Asteraceae	Zear-guly	Leaves and Root
57.	11367	<i>Trifolium repens</i> L.	Papilionaceae	Chapatrara	Whole Plant
58.	11368	<i>Teucrium stocksianum</i> Boiss	Lamiaceae	Spair boti	Whole Plant
59.	11369	<i>Urtica dioica</i> L.	Utricaceae	Sezonkey	Leaves and Shouts
60.	11370	<i>Voila serpens</i> Wall. Ex Ging	Violaceae	Benafsha	Whole Plant
61.	11371	<i>Zizypus sativa</i> Gaertn	Rhamnaaceae	Markhanari	Leaves, Bark and Fruits

## CONCLUSION

The relationship between humans and plants has always been very important. Plants play a vital role in every aspect of our lives and without them life is impossible. Plants not only maintains the concentration of gases in the atmosphere, but organisms also capable to trap solar energy into chemical energy on which all other forms of life ultimately depend upon. The present study work indicated that the study area is rich in medicinal plants and the knowledge of medicinal plants is limited to traditional healers and elderly persons, who are living in the rural areas. Certain species like, *Ajuga bracteosa*, *Berberus lyceum* *Mentha longifolia*, *Mentha pepirata*, *Punica granatum* and *Viola serpens*, are being exploited by the local inhabitants, who are unaware of the importance of these plants. In order to conserve these useful

implementation and monitoring processes. Forest rule must be overhauled by taking villagers into confidence; collection of medicinal plants carried out by collectors may be streamlined in such a manner to provide sufficient regeneration time to the plant, the area once used for collection may be declared as protected area and no more extraction may be allowed for a period of few years. In order to avoid further loss of endangered, endemic and rare species, conservation method should be practiced. Many people in the study areas of Tahsil Barawal still continuously depend on local medicinal plants. Due to lack of interest among the younger generation as well as their tendency to migrate to cities lucrative jobs and modern life style, there is possibility of losing this wealth of knowledge in the near future. Thus, it is important to document and restore the remains of ancient medical practice, and preserve this knowledge for future generations.

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### How to cite this article:

Wahid Hussain, Abbas Ullah, Javid Hussain, Sajid Hussain, Zabta Khan Shinwari, Muhammad Ibrar. Ethno-Medicinal Plants of Tahsil Barawal Bandi Dir Upper Khyber Pakhtunkhwa Pakistan. *J App Pharm Sci*, 2014; 4 (07): 094-097.