



Ethno Medicinal Study of Parachinar, Kurram Valley (FATA) KPK, Pakistan

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ABSTRACT

The Present studies were carried out to identify the medicinal plants, folk knowledge of medicinal plants and to motivate the inhabitants of Kurram Agency to use their knowledge in a better way. The area has high potential regarding its biodiversity as well as valuable medicinal plants. The Information was collected from traditional experts regarding 26 medicinally important species belonging to 17 families. *Asparagus officinalis* Royal is used for constipation, *Berberis lyceum* Royal is used for urine and chest problems, *Cichorium intybus* Linn is used as antipyretic, *Foeniculum vulgare* Millis is used for stomach problems, blood purifier & intestinal diseases, *Fumaria indica* Haussk is used as a drug for blood purification and as antipyretic, *Quercus ilex* Rox is used in diabetes, *Seriphidium kurramensis* L is being used as a good anti-malarial drug and a vermifuge and *Ziziphora tenuior* Linn is used as carminative and for colic pain. These specimens were deposited in the herbarium at plant sciences department, Kohat University of Science and Technology, Pakistan for further medicinal investigation.

INTRODUCTION

Kurram agency is one of the seven tribal agencies in the Federally Administered Tribal Area (FATA). The major town of the agency, Parachinar, is close to the spot where 34th parallel of latitude crosses the 70th parallel and can be easily located on the map (Stewart 1981). The agency lies between 33.20 to 34.03 North latitudes and 69.50 to 70.45 East longitudes. Kurram Agency is bordered in the west and north by Afghan provinces of Paktia and Ningarhar respectively, in the East by Orakzay and Khyber Agencies, in the South East by Hangu District and in the South by North Waziristan. Any plant or part of plant like root, stem, leaf, bark, fruit, and seed which contain active chemical constituents in the tissue that produce a definite physiological response in the treatment of various diseases in human and in the animals are called medicinal plants (Anonymous 1994). Most of the medicinal plants are used in the form of crude drugs nowadays. The ethno botany has been used by humans from the pre-historical times.

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Studies have pointed out that many drugs that are used in commerce have come from folk-use and use of plants by indigenous cultures (Wazir 2008). Archaeological or Palaeo botanical, evidence about collection, use and cultivation of many plants by early man for food, house building etc and reference to herbal medicines in ancient scriptures suggest a very long history of ethno botany.

Among the primitive societies, even now man offers flowers or fruits of particular to their gods (Gilani *et al* 2003). 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 with in a body tissue (Shinwari *et al* 1999). Medicinal plants are plants whose extracts can be used directly or indirectly for the treatment of different ailments. Therefore, the use of traditional medicine and medicinal plants in most developing countries, as a basis for the maintenance of good health, has been widely observed (Edward 2001). Scientists throughout the world are trying to explore the precious assets of medicinal plants to help the suffering humanity.

Furthermore, in the world more than 30% of the pharmaceutical preparations are based on plants (Shinwari *et al* 2003). The people living in remote areas and in villages are using indigenous plants as medicines from long ago because this knowledge reaches to them through generation to generation (Barktullah 2000). The reported 26 medicinal plants belonging to 19 families and they are collected from different villages of upper Kurram i.e. village Sultan (4193 feet) from the sea level, Agra (4009 feet), Jalandar (5595 feet), Shublan (4985 feet), Saidara (5103 feet), Dall (4981 feet), Sultan Kanda (4885 feet), Kakhail (4785 feet), Malikhail (4675 feet), Taida (4977 feet), Nastikoat (4901 feet), Kongalizai (5101 feet), Shangak (4875 feet), Shakieh (4900 feet), Kharlachi (4854 feet), Bughdia (5795 feet), Kachkina (5400 feet), Burki (5302 feet), Pekar (6522 feet), Speenashaga (6832 feet), Termangal (7241 feet), Ganda (5990 feet), Alisheri (6207 feet), Shalozan (6080 feet), Laqmankhail (6275 feet), Landiwan (6294 feet), Malana (5494 feet), Zeran (5450 feet), Kirman (5111 feet), Dungala (5102 feet), Alamsher (5206 feet) and Parachinar city (6000 feet).

MATERIALS AND METHODS

All the relevant materials were thoroughly studied before going into the field work. The study trips were scheduled according to the blooming periods of plants. Several study trips were made to the research stations.

Field Work

The field work was carried out in order to investigate the folk knowledge of using medicinal plants and their conservation status. The field work included, observation, interviews and guided field walks/transsects walks. Two methods were frequently used during fields.

Observation and Plant collection

This method is based on observation in the field conditions. These observations were made while visiting different villages. The equipments like field notebook, pencil, tags, polythene bags, newspaper and camera were carried to the site. In each trip, specimens of complete plants and shoots from, herbs, shrubs and trees were collected from different localities in the area of investigation. The plant specimens were tagged on the spot. The local name, local uses and other information were extracted from the local inhabitants of the area available.

Questionnaire Method

During field work, interviews were conducted with the local inhabitants, selected informant, drug dealers, timber dealers, local Hakeem's, who were the real users and had a lot of information about the plants and their traditional uses. Priority was given to local elderly person and Hakims, because they know well the uses of medicinal plants in folk knowledge. The medicinal plants were studied according to their economic, traditional, local uses, local names and other related information through

interviewing and filling questionnaires from shopkeepers, literature survey and general observation added some more information to research works. The questions concerning the utility of different plants used, rate of consumption, availability, and economics/market value had been asked.

Chemical treatment

After completion of the field work, the specimens were arranged properly on the blotting papers and old newspaper and used to change them after three days to avoid the spoilage, fungi attack, and from rotting. This process was continued for 15 to 20 days, which made them moisture free. The plants were treated with 2% solution of Mercuric Chloride in the ethyl alcohol to protect them from fungal attack. The identification was made wholly in the Herbarium Department of Plant Science, University of Science & Technology Kohat. The identification of specimens was described from both taxonomic and medicinal literature. The local Hakim and local medicinal plants experts were interviewed for ethno botanical information of the area.

RESULTS AND DISCUSSION

The present ethno medicinal study provides us information about the botanical names, local uses, local names, habits and chemical constituents of 26 plants species belonging to 17 families [Table.1]. Medicinal plants reported from the research area have multiple uses for different diseases e.g. *Asparagus officinalis* Royal is used for constipation, *Berberis lyceum* Royal is used for urine, chest problems, *Cichorium intybus* Linn is used as antipyretic, *Foeniculum vulgare* Mill is used for stomach problems, blood purifier & intestinal diseases, *Fumaria indica* Haussk is used as a drug for blood purification and as antipyretic, *Onosma hispidum* Wall is used in wound healing, *Caralluma tuberculata* N.E Brown is used in stomach problems, high blood pressure & in intestinal problems, *Ephedra intermedia* Wall Stapf is used in snuff making, for asthma, *Quercus ilex* Rox nuts is used in diabetes, *Sambucus nigra* Linn fruit is used in common cold and *Seriphidium kurramensis* L. is a good anti malarial drug and used as vermifuge. Similarly *Solanum surattense* Burm is used as anti-cough, *Tanacetum artemisioides* L is used in hepatitis, dry leaves of *Thymus linearis* Benth and *Viola* are powdered, mix with sugar and is used to cure flu, stomach, colic and cough problems. *Taraxacum officinale* Weber leaves and roots are boiled and the decoction is used for the treatment of hepatitis, which is very effective. *Teucrium stocksianum* Bios leaves and flowers are used to reduce the obesity, and is also used as antipyretic, blood purifier and anti-diabetic. *Tulipa stellata* L. rhizome is used in treatment of most intestinal worms and for colic pain, *Urtica dioica* Linn young leaves are cooked and used for arthritis, *Valeriana jatamansi* Jones, roots are dried, crushed, and small amount are used as sexual tonic and whole root is used for good smell, *Verbascum thapsus* leaves are put on wound to prevent the bleeding and good anti-bacterial agent, *Xanthium strumarium* fruit is crushed and used for kidney problems *Zay mays'* stigma boiled in water and

Table. 1: List of folk knowledge of ethno medicinal plants.

Species	Local name	Constituents	Uses
<i>Asparagus officinalis</i>	Asparagus	Asparagin, Alcohol, Diosgenin, Asparagusic acid	Young stem: for constipation, intestinal disorder.
<i>Berberis lyceum</i>	Sarazghai	Berberine, fiber, Protein, Sodium, Calcium	Fruits: for renal problems, sickness Bark: in chest infection
<i>Caralluma tuberculata</i>	Pamani	Bitter principle	Antirheumatic, intestinal cleaner, in diabetes and high blood pressure patients.
<i>Cichorium intybus</i>	Shinguli	Sugar, Nitrogenous matter, Nitrate	Extracted juice of Crushed Leaves and roots: anti pyretic, antimalarial, antiasthmatic.
<i>Ephedra intermedia</i>	Mawa	Ephedrine, pseudo-ephedrine	Leaves and branches: in making snuff, Extracted juice: Antiasthmatic
<i>Ficus carica</i>	Enjeer	Sitosterol, Protein	Boiled fruit in milk: tonic for stomach, constipation
<i>Foeniculum vulgare</i>	Hogalani	Fumaric acid, Protopine, Chlorine, Fumaridine.	Young leaves and stems: stomach problems, blood purifier, and intestinal gases (gas troubles) aphrodisiac and improve the eye sight.
<i>Fumaria indica</i>	Shatara	Fumaric acid, fumarine, protein, Chorine, fumaridine, pertumine	Crushed plant extract: blood purifier, antipyretic and in skin acne
<i>Onosma hispidum</i>	Bezokhania	Caffeic acid, alkaloid	Crushed Leaves paste: for diabetes patient wound,
<i>Quercus ilex Roxb</i>	Serahee	Tannic acid, Querci-tannic acid, Querictine	Roasted crushed Nuts: anti sugar.
<i>Sambucus nigra</i>	Lantas	Sambunigin, Oxalic Acid	Ripe fruit: for common cold
<i>Seriphidium kurramensis</i>	Tarkha	Santonin, essential oil, bitter principle	Dry powder of leaves: anthelmintic, antimalarial and antipyretic
<i>Solanum surattense</i>	SarraAsgh	Glucosidalkaloid, Solanarpine, Solanines, Carpesteral	Dry powder: anti cough and good pain killer
<i>Tanacetum artemisioides</i>	Zawel	Elucidation of Tanacetamide, Elucidation	Dried plant: for chest problems, useful in hepatitis and all kind of fever.
<i>Taraxacum officinale</i>	Chicheo paska	Bitter crystalline Principle, Taraxacin, Taraxasterol, Homo taraxastorel Saponin	Decoction of boiled Leaves and roots: hepatitis
<i>Thymus linearis</i>	Pannay	Essential Oil, Phenols, P- Cymene, Terpenes	Mixture of Viola and thyme Leaves powder: for flu, stomach, colic and cough problem.
<i>Trifolium repens</i>	Shaftal	Cyngenic Glycoside, Pinitol	Boiled Flowers: anti cough
<i>Teucrium stocksianum</i>	Gul bahar/ Khar Booti	Phytochemicals like Carbohydrates, Proteins, Saponins, Tannins, Sterols.	leaves and flowers: reduce obesity, antipyretic, blood purifier and anti-diabetes
<i>Tulip stellata</i>	Shundi gul	Alkalioid, Sponin	Rhizome: anti intestinal worms and for colic pain
<i>Urtica dioica</i>	Sezaonki	Lecithin, Histamine, Pro vitamin	Cooked Young leaves: for arthritis.
<i>Valeriana jatamansi</i>	Mahkak	Valarine, Oil, Valrinic Acid, Malic Acid	Dried crushed Roots: sexual tonic
<i>Verbascum thapsus</i>	Kharghug	Bitter Substances, Sap	Leaves: wound healers to prevent the bleeding and good anti-bacterial agent. Inflorescence crush mixed with water is used for ears problems.
<i>Xanthium strumarium</i>	Zargorak	Glucoside, Xantho strumarin, Oxalic Acid	Crushed Fruit: for kidney problems
<i>Zea mays</i>	Jiwar	Oxalic acid Caand P, Iron	Decoction of boiled Stigma: for kidney stones as well as urine problems
<i>Ziziphora tenuiflora</i>	Sahra walini	Piperitonene, limonene, Thymo	Dried Plant parts: in green tea as carminative agent and for colic pain

decoction is useful for kidney stones as well as urine problems and *Ziziphora tenuiflora* Linn is used as carminative and for colic pain. There is no technical method used by the collector for the processing of medicinal plants. However they use local method for drying, carrying and marketing the plants. *Teucrium stocksianum* are kept in a soft cloth for drying in the sunlight. Further these are kept in bags and brought by the collector to the market. Often after that it is brought to the market in polythene bags. In the past, people did that practice for domestic purpose and much of the people were of its users while contrary to this presently awareness regarding the uses of medicinal plants is reduced and it was shirked to only commercial purpose. The reason given by the locals for decreasing trend of using folk knowledge of medicinal plants against the diseases is that more effective allopathic drugs have replaced that century's old traditional medicine. Overgrazing in research area is severe, due to which the medicinal plants might be in the threatened condition. The local community uses most of the medicinal plants for their domestic purpose. Few local Hakims

also prepare the drugs for commercial purposes, which are sold in the market in only two shops. The primitive people of all the ages had knowledge of medicinal plants which they acquired as a result of trial and error. The knowledge is still alive and several hundred species are used in herbal remedies in indigenous system of medicines, where the whole plant or plant part or its extracts is used (Hussain et al 2012). In Kurram the precious medicinal plants are wasted. The local people are failing to get maximum return for medicinal plants sale. Fuel wood is one of the prime causes of forest destruction in Kurram valley because the winter season is long and very harsh. People need fuel wood for heating and cooking. The local people are unaware of the conservation of valuable and indigenous plants of the area. They took their grazing animals, go to the near forests and cut trees. Some time they cut the whole tree for collection only single branch and twigs. Most of the local people also cut the branches of the *Quercus ilex Rox* for the agriculture purpose, which is great under pressure. Fruit plants also play a role in the economy of the people of Kurram. The flora

of Kurram is under biotic pressure as forests are ruthlessly destroyed and cleared for making agriculture fields (Hussain et al 2012). The forest resources are illegally used for economic benefits without giving a single thought to adverse future perspectives of such action and their impact on the flora of the region. In my view awareness campaigns, good will and sincere efforts on the part of the Govt., NGO's and local people can serve the purpose of saving the diminishing forests in the future. Under present circumstances, it is estimated that about 50,000 higher plants species, that one fifth of the existing total, will be either extinct or severely genetically eroded by the year 2050 AD and this is a folly that our descendants are at least likely to forgive us.

CONCLUSION

Present study was carried out to identify the medicinal plants, folk knowledge of ethno medicinal plants usage and to motivate the inhabitants to use their knowledge in a better way. Kurram agency is one of the seven tribal agencies in the Federally Administered Tribal Area (FATA) which has very much medicinal plants and high potential regarding its biodiversity. Information collected from the traditional experts regarding 26 medicinally important species belonging to 17 families has very important medicinal uses. These specimens were deposited in the herbarium at Plant Sciences Department, Kohat University of Science and Technology.

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