Research Paper

Ethnobotanical survey of medicinal plants of Musamina District Malakand Khyber Pukhtoonkhwa, Pakistan

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ABSTRACT

In the present investigation, a total of twenty-five (25) medicinal plants belonging to 18 families were collected. Among them family Asteraceae and Lamiaeae consists of three (3) species each followed by Euphorbiaceae and Mimosaceae have two (2) species each. Based on habit hereds it has ten species (38.46%) followed by five species of shrubs (19.23%) and ten species of trees (38.46%) used for curing of various diseases. Based on parts utilization, whole plant (28%) followed by stem (8%), leaves (48%), fruits (28%), seeds (20%) and gums (8%) were used ethnomedicinally for curing of different ailments. Due to the lack of awareness of new age generations, current life standard and mainly anthropogenic activities there is possibility of losing this valuable knowledge in the near future. It was the first attempt to know about the medicinal importance of plants with special reference to their uses. It is theorized that such type of study should be carried out in the future in proposed areas.

Keywords: Medicinal plants, ethnobotany, medicinal uses, Mussamina, District Malakand, Pakistan.

INTRODUCTION

Musamina is located between the latitudes of 34°29, North and longitudes of 71°54; East elevation is 533 m (1750 ft) from sea level. Musamina is situated at a distance of 10 km from Tehsil Dargai. It is bounded by Hazarnu in West, Dargai in the East, Kharkai in the North and Harichand in South. The climate in the area is affected by several factors such as altitude, latitude, wind direction, vegetation and precipitation. The area observes four seasons in a calendar year. Winter is cool while summer is pleasant and short. The area receives sufficient rain during December to mid-March. July and August are the hottest, while January and February are the coldest months.

Ethnobotany is considered to cover all studies which concern the mutual relationship between plants and conventional people (Cotton, 1996). Ethnobotany is the study that shows how people of the specific area used plants for various purposes, while Ethnobotany aim to explore, document, describe and explain complex relationships between cultures and use of plants, focusing primarily on how plants are used, managed and perceived across human societies. This includes use for foods, clothing, currency, medicine and dye construction (Acharya et al., 2008).

According to the World Health Organization (WHO) about 65 to 80% of the world's population in developing countries depends essentially on plants for their primary healthcare due to poverty and lack of access to modern medicine (Awoyemi et al., 2012). Plants form the basis of life, provide us readymade food, medicines to fight diseases, services to earn, fodder for our cattle, fuel wood for burning, flowers for celebrations, materials for making agricultural tools, honey collected from its flowers, timber for construction and many more useful items. The interaction between the mountain people and natural system through history has helped in maintaining the richness of species, communities and genetic materials in both productive systems and wild lands of the mountain environment. However, the rich biodiversity is being
unsuccessfully impoverished due to the anthropogenic activities in the last few decades. Understanding the indigenous knowledge of mountain people in relation to biodiversity resource management is one of the key issues for sustainable development (Pie, 1991).

Medicinal plants history is as old as history of mankind itself. As such humans are involved in utilization of plants resources since time immemorial. About 35,000 to 25,000 plants have been used for medicinal purposes (Walter and Hamelton, 1993). Pakistan has rich history on the traditional use of plants. Zabihullah et al. (2006) reported 82 plants of Kot Manzaray Baba valley, Dargai Malakand Agency. Pervaiz et al. (2013) listed 50 medicinal plants from Dinga District Gujrat. Ibrar et al. (2007) reported 97 local medicinal and other traditional uses of plants of Ranyal Hills District, Shangla. Medicinal plants of Darra-e Pezo District, Lakki Marwat were also reported by Zahoor et al. (2009).

Although no such studies exist on plants wealth of Musamina, there is a dire need to work out on multidisciplinary aspect of plant resources of the area.

MATERIALS AND METHODS

A series of field surveys were conducted in order to collect information about the ethnomedicinal tibb and ethnomedicinal uses of plants by the local inhabitants during March, 2017 to August, 2017 in Musamina District, Malakand Khyber Pukhtoonkhwa, Pakistan. An effort was also made to confirm the ethnomedicinal uses from local farmers, plants collectors and healers (Hakeems) and herbal dealers (Pansars) in Musamina bazar. Standard methods were followed in collection and identification of plant materials with the help of available literature described by Nasir and Ali (1971-1995) and confirmed by local herbaria. About 25 individuals were interviewed through employing questionnaires. Interviewees were selected among the local inhabitants who had knowledge about the plants or were almost dependent on the local resources for survival. Information was collected on different aspects of ethnobotanical usage, for example, common name; parts used and use categories of individual species. The voucher specimens were photographed, collected, preserved and kept in herbarium Department of Botany, University of Malakand Khyber pukhtoon khwa, Pakistan. Plants were arranged alphabetically with correct nomenclature, botanical name, vernacular name, family name, habit, parts used and ethnomedicinal uses (Figures 1 and 2). The identification and nomenclature of the listed ethnomedicinal plants were based on the flora of Pakistan (Nasir and Ali, 2001).

RESULTS AND DISCUSSION

Indigenous knowledge is as old as human civilization but the term ethno botany was first coined by an American botanist, John Harshburger (1896), to study the plants used by the primitive and native people. Since then it has been defined as the traditional knowledge on indigenous communities, about surrounding plant diversity and as the study of how the people of particular culture and region make use of indigenous plants. Ethnobotany has its roots in Botany. Botany in turn originates in part from an interest in finding plants to help fight illness. In fact, medicine and
botany have close ties. Many of today’s drugs were derived from plant resources (Qurishi et al., 2007). Use of plants as a source of medicine has been inherited and is an important component of the health care system in different countries of the world (Khan et al., 2012).

According to the general survey of Pakistan about six thousand species of flowering plants have been in existence; out of six thousand, four hundred to six hundred are medicinally important species. About eighty percent of the local people belonging to the rural areas still depend on the local traditional herbal medicines. The local communities of various zones of Pakistan have primitive knowledge about traditional uses of plants found in their areas. This precious knowledge of plants has been transferred from generation to generation. These plants are used to cure almost any type of disease (Pervaiz et al., 2013).

Tables 1 to 3 show that different part of ten herbs, five shrubs and ten trees of Musamina District, Malakand Khyber Pakhtoon Khwa, Pakistan used for curing various diseases. Table 1 also showed that among herbs, *Cannabis sativa* locally known as bhang is used for curing headache, toothache jaundice, falling hairs.
toothache, jaundice and falling hairs (Akhtar et al., 2009), leaves and seeds of Eruca sativa is used for purgative purposes (Zahoor et al., 2009), whole plant of Convolvulus arvensis is used as anti-dandruff and for skin diseases (Ahmad et al., 2008) as well as, whole plant of Fumaria indica used for curing ringworm and throat problems (Ibrar et al., 2007), Fagonia cretica locally called azghakey is used for the treatment of typhoid and blood purification (Zahoor et al., 2009), fresh leaves of Mentha longifolia are edible or its leaves are boiled in water and then used as carminative as well as, for curing diarrhea, dysentery and colic’s (Qureshi et al., 2007), leaves of Artemisia vulgaris is used as a carminative and pain killer (Hazrat et al., 2010), leaves of Sonchus asper is used as anti-poison and for curing asthma (Akhtar et al., 2009), leaves of Ajuga bracteosa is used for blood purification, as a cooling agent and in curing itches (Ibrar et al., 2007), while leaves and stem of Mentha arvensis is used for the treatment of diarrhea and gas troubles indigestion (Akhtar et al., 2009).

Among the shrubs (Table 2), leaves of Aloe barbadensis which is locally known as zooqam are tied on wounds for softening of wound and tumor (Zahoor et al., 2009), whole plant of Euphorbia mili is used for the treatment of cancer and skin problems (Ahmad et al., 2008), seeds of Carthamus oxycantha is used as a brain tonic and fuel plant (Ahmad et al., 2008; Zahoor et al., 2009), seeds of Ricinus communis are laxatives and their fruits are used for numerical calculations in Khathm-e-Quran by illiterate people (Akhtar et al., 2009), leaves and fruits of Calotropis procera is used for curing ear pain, cough, asthma, ring worm and backbone diseases (Hazrat et al., 2010).

Table 3 depicted the usage of nine trees as Acacia modesta locally known as palosa, its gum is used as a blood purifier (Akhtar et al., 2009). Rubenia pseudo-accasia in powder form is used for curing diarrhea, cough and diabetes (Afzal et al., 2009). Crushed and powdered fruits of Capsicum frutescens are used as stimulants, skin irritant and for flavoring food. Leaves and fruits of Vitis vinifera is used as a stomachache laxative as well as, for curing asthma and cardiac pain (Zaman et al., 2013). Leaves and fruit of Punica granatum is used as an astringent and blood purifier (Ibrar et al., 2007). Bark past of Tamarix indica is used for the treatment of older wounds (Zahoor et al., 2009).

Seeds of Syzygium jambos are used for curing diabetes (Pervaz et al., 2013). Fruit, leaves and branches of Ficus carica is used for the treatment of constipation and piles while its fruit is edible and latex is anthelmintic (Akhtar et al., 2009). Fruits of Olea ferruginea are edible and its oil is used for cooking.

Table 2: List of medicinal shrubs of Mosammina, District Malakand.

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Botanical name</th>
<th>Vernacular name</th>
<th>Family name</th>
<th>Habit</th>
<th>Parts used</th>
<th>Ethnomedicinal uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aloe barbadensis</td>
<td>Zooqam</td>
<td>Liliaceae</td>
<td>Shrub</td>
<td>Leaves</td>
<td>Leaves are tied on wound for softening of wound and tumor. It is used as a cure for cancer and Skin problems.</td>
</tr>
<tr>
<td>2</td>
<td>Euphorbia mili</td>
<td>Mandano</td>
<td>Euphorbiaceae</td>
<td>Shrub</td>
<td>Whole plant</td>
<td>Seeds are used as brain tonic, Fuel plant.</td>
</tr>
<tr>
<td>3</td>
<td>Carthamus oxycantha</td>
<td>Konzala</td>
<td>Asteraceae</td>
<td>Shrub</td>
<td>Seeds</td>
<td>Seed are laxative; mustard oil is applied on leaves for boil maturation. Fruits used for numerical calculations in Khathm-e-Quran by illiterate people.</td>
</tr>
<tr>
<td>4</td>
<td>Ricinus communis</td>
<td>Arhanda</td>
<td>Euphorbiaceae</td>
<td>Shrubby tree</td>
<td>Whole plant</td>
<td>Snake bite, ear pain, cough, asthma, ring worm, backache, lung diseases.</td>
</tr>
<tr>
<td>5</td>
<td>Calotropis procera</td>
<td>Spalmay</td>
<td>Asclepiadaceae</td>
<td>Shrub</td>
<td>Leaves and fruits</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: List of medicinal trees of Mosammina, District Malakand.

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Botanical name</th>
<th>Vernacular name</th>
<th>Family name</th>
<th>Habit</th>
<th>Parts used</th>
<th>Ethnomedicinal uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acacia modesta</td>
<td>Palusa</td>
<td>Mimosaceae</td>
<td>Tree</td>
<td>Gum</td>
<td>Blood purifier</td>
</tr>
<tr>
<td>2</td>
<td>Rubenia pseudoaccasia</td>
<td>Baghe kikar</td>
<td>Mimosaceae</td>
<td>Tree</td>
<td>Gum powder</td>
<td>Fuel wood, Diarrhea, cough, Diabetes</td>
</tr>
<tr>
<td>3</td>
<td>Capsicum frutescens L.</td>
<td>Tor mirch</td>
<td>Apiaceae</td>
<td>Tree</td>
<td>Seeds</td>
<td>Powdered fruit are used as stimulant, skin irritant and flavoring food</td>
</tr>
<tr>
<td>4</td>
<td>Vitis vinifera L.</td>
<td>Anoor</td>
<td>Vitaceae</td>
<td>Climber tree</td>
<td>Fruits, leaves</td>
<td>Leaves and fruits are used as stomachache, laxative, asthma, cardiac pain.</td>
</tr>
</tbody>
</table>
Table 3 Contd: List of medicinal trees of Musamina, District Malakand.

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Botanical name</th>
<th>Vernacular name</th>
<th>Family name</th>
<th>Habit</th>
<th>Parts used</th>
<th>Ethnomedicinal uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Punica granatum L.</td>
<td>Anar</td>
<td>Puniceae</td>
<td>Tree</td>
<td>Fruits and leaves</td>
<td>Astringent, blood purifier</td>
</tr>
<tr>
<td>6</td>
<td>Tamarix indica Wild</td>
<td>Ghaz</td>
<td>Tamaricaceae</td>
<td>Tree</td>
<td>Leaves and stem</td>
<td>Bark paste is used for the treatment of older wounds, fuel wood.</td>
</tr>
<tr>
<td>7</td>
<td>Syzygium jambos</td>
<td>Jaman</td>
<td>Myrtleace</td>
<td>Tree</td>
<td>Seeds</td>
<td>Diabetes</td>
</tr>
<tr>
<td>9</td>
<td>Olea ferruginea Royal (L) P.</td>
<td>Khona</td>
<td>Oliaceae</td>
<td>Tree</td>
<td>Fruits and leaves</td>
<td>Fruits are edible, oil is used for cooking. Wood is heavy, used for agriculture tools. Leaves are used for toothache, mouth ulcer and sore throat.</td>
</tr>
<tr>
<td>10</td>
<td>Melia azedarach Linn</td>
<td>Tora shanday</td>
<td>Meliaeae</td>
<td>Tree</td>
<td>Fruit and leaves</td>
<td>Fruits and leaves are used in curing of cough and fever of cattle. Leaves are used as fodder.</td>
</tr>
</tbody>
</table>

while the leaves are used for the treatment of toothache, mouth ulcer and sore throat (Ibrar et al., 2007).

Conclusion

The traditional knowledge of medicinal plants of Musamina district Malakand was unexplored. It was my first attempt to document medicinal plants uses, to preserve traditional knowledge, and also to encourage the local inhabitants against the disappearing wealth of local knowledge of medicinal flora.

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REFERENCES


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