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Ethnobotanical Study of Kahuta from Rawalpindi District Pakistan

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Abstract: A study was conducted in Kahuta to enlist the medicinal plants. The inhabitants of the area have to use the medicinal plants for various purposes and have for a long time been dependent on surrounding plant resources for their food, shelter, fodder's, health, care and other cultural purposes. However changes in their life styles are responsible for the decrease of practice in the local use of herbs for medicine. It is, therefore, felt worth while to record the native uses of these plants before the information is to be lost. In total 25 species of herbs belonging to 18 families were recorded, used medicinally by inhabitants of the area. Some of the most interesting and representative plants of the area are: *Cyperus rotundas* L. which is mainly used for cholera, dyspepsia and fevers. *Saussuoria heteromala* D. Don is used as a tonic for animals. The oil of *Pongamia pinnata* (L.) Merrill is externally applied to cure herpes and eczema. Leaves of *Euphorbia helioscopia* L. are given to cure mad dogs. *Boerhavia diffusa* Linn. is useful for jaundice and liver complaints.

Key words: Ethnobotany, Kahuta, medicinal plants, plant resources, Rawalpindi district

Introduction

Indigenous knowledge is as old as human civilization but the term "ETHNOBOTANY" was first applied by an American botanist Harshberger (1896), "To the study of plants used by primitive and aboriginal people". Later on, Jones (1941) redefined Ethnobotany using modern ecological terms, from which Ethnobotany was described as "The study of direct interaction between human and plant population, through its culture each human population classified plants, develops attitude and beliefs and learns the use of plants, while human behavior has direct impact on the plant communities with which they interact, the plants themselves also impose limitations on humans, these mixture interactions are the focus of Ethnobotany" (Pei, 1995). Today Ethnobotany is widely accepted as a science of human interactions with plants and its ecosystems. Plants are used as medicine science in ancient times. Use of plants to improve economy is an old tradition of human history. In Pakistan the field of Ethnobotany is quite virgin. Only a few papers have been published. Khan (1994) described the past and present status of natural tropical thorn forest in Punjab which were the main source of fire wood supplies for urban and rural populations. The past distribution and gradual decline of these forests is traced by literature research. The present status of natural tropical thorn forest was appraised by surveying areas formally under these forests. He concluded that the natural tropical thorn forest system of the Punjab had almost disappeared due to over grazing, salinity and water logging. *Salvadora oleoides* is given special attention because of its great ecological and ethnobotanical importance. Leoratti and Lathanzi (1994) studied 27 medicinal plants Ethnobotanically in Makran (Southern Pakistan). They reported and discussed their traditional medicinal uses. Goodman and Ghafoor (1992) conducted Ethnobotanical study in Baluchistan province of Southern Pakistan, the region where a heterogeneous cultural group known as the Baloch lives. They collected information on about 114 plant species used by nomads and village dwellers for mutational, utilitarian and medicinal purposes and total of 56 species dispensed by herbalists or herbal doctors residing in population centers. Hocking (1958) wrote a series of papers on medicinal plants of Pakistan and included some information on Baluchistan.

Materials and Methods

During the fieldwork, trips were arranged during proper harvest time of the plants collected and information about their use is collected from inhabitants of the area. Interviews were taken and observations were made during guided and transect walks. Plant specimens were collected, preserved and identified in the herbarium of Quaid-I-Azam University, Islamabad. Interviews of about ~100 informants including local inhabitants, herbalists, pansaries and societies were conducted on random basis. The out come of the results were rechecked and compared with literature. Analysis of the data was done and indigenous knowledge was documented.

Family: Cruciferae/Brassicaceae

Sisymbrium irio L. (Jangli Sarson)
Flowering period: February-April.
Parts used: Leaves, seeds.
Distribution: Common.
Medicinal Use: Infusion of the leaves is used for throat and chest infections. The seeds are expectorant, stimulant & antiseptic.

Family: Euphorbiaceae

Euphorbia helioscopia L. (Chattri Dodak)
Flowering period: February-April.
Parts used: Leaves, roots and milky juice.
Distribution: Common on waste places.
Medicinal use: It is used as glactagogue. Leaves are cooked and given to mad dogs. Milky latex of plant is poisonous and causes swellings on the skin. Roots are laxative.

Family: Asteraceae (Compositae)

Aremesia scoparia Walds and Kit (Done Jhan)
Flowering period: August-November.
Distribution: Common
Parts used: Whole plant.

Medicinal use. The medicine is prepared from the leaves which is used for abdominal disorder. Infusion of the plant is used as purgative. Plant is also used as cure for earache. Smoke is good for burns.

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Carthamus oxycantha Bieb (Pholi)

Flowering period: April-May.
Distribution: Common.
Parts used: Seeds
Medicinal use: The oil is extracted from the seeds used for dressing ulcer and against itch.

Conyza canadensis (L.) Cronquist (Paleet)

Flowering period: August-October.
Distribution: Common.
Medicinal used: The herbs used as homeostatic, stimulant, astringent, and diuretic, used for dysentery, diarrhea, and uterine hemorrhage.

Lactuca serriola L. (Kahu)

(Synonym: *Lactuca scariola* L.)
Flowering period: April-June.
Distribution: Common.
Parts used: Whole plant.
Medicinal use: Tea is made for stomachache. Tea from leaves drunk by pregnant women to keep them cool. It is also used as female douche when finally grated and mixed with Water (Loeb, 1956). The herb is used as cooling, sedative, diaphoretic, diuretic, antiseptic, hypnotic, expectorant, useful in the treatment of coughs in phthisis, bronchitis, asthma, and whooping cough.

Saussuoria heteromala (D.Don) (Kali Ziri)

Flowering period: March-June.
Distribution: Common.
Parts used: Seeds.
Medicinal use: The seeds are known as carminative, used as tonic for horses and other animals.

Silybum marianum (L.) Gaertner (Kandiali)

Flowering period: March-June.
Distribution: Common.
Parts used: Leaves, seeds.
Medicinal use: The leaves are used as apparent sudorific and cholagogue. The seeds are known as demulcent and are used in hemorrhage and liver diseases. The seeds are also used as a cure for horse bite.

Sonchus arvensis L. (Dodak)

Flowering period: March-May.
Distribution: Fairly common.
Parts used: Whole plant.
Medicinal use: The leaves are used for fomentation. The roots are diuretic diaphoretic, antiseptic and expectorant, useful in cough, bronchitis, asthma and phthisis. The root is useful in jaundice.

Family: Cyperaceae

Cyperus rotundas L. (Deela)

Flowering period: April-June.
Distribution: Very common.
Parts used: Whole plant.
Medicinal use: The starchy under ground tubers are eaten as food. The plant is eaten as raw as well as cocked. The rhizome yields oil, which is used in perfumery and in manufacture of soaps. It cures dyspepsia, vomiting, cholera and fevers.

Family: Cannabinaceae

Cannabis sativa L. (Bhang)

Flowering period: April-October.
Distribution: Very common.
Medicinal use: Dried and crushed leaves are used for narcotic. The plant is used as tonic, narcotic and sedative. Dried and crushed leaves are taken as a drink for their narcotic action, also used as refrigerant. The leaves are antispasmodic, narcotic sedative digestive and astringent. Paste of fresh leaves is used for tumours. The preparation made from dried leaves and flowers known as Bhang or Hashish is given in dyspepsia, gonorrhoea and bowl complaints. The dried pistillate flowering tops coated with resinous exudation and known as ganga as swallowed as an antidote to poison.

Family: Rhamnaceae

Zizyphus nummularia (Burm) Weight (Berry)

Flowering period: March-May.
Distribution: Common.
Parts used: Leaves, fruit, seeds.
Medicinal uses: Its popular edible fruit; grazing animals eats leaves. Its leaves are antiseptic. The leaves in powder form are used for healing of wounds. The seeds are amphrodisiac.

Family: Fabaceae (Leguminosae)

Pongamia pinnata (L.) Merrill (Sukh Chain)

Flowering period: April-October.
Distribution: Rare.
Parts used: Leaves, Roots, & Seeds.
Medicinal use: Yields edible yellow oil. The oil when applied externally cures herpes and eczema. Root juice cures ulcer and fistula.

Family: Amaranthaceae

Achyranthus aspera L. (Puth Kanda).

Flowering Period: September-April.
Distribution: Uncommon.
Parts used: Whole plant.
Medicinal use: It is useful in excessive menstruation, diarrhea, dysentery, and piles, organs. Decoction of both leaves and roots are used for toothache. It is also used for abdominal pain. The juice of the herb is given in dysentery and skin diseases.

Amaranthus viridis L. (Chaulai)

Flowering period: March-November.
Distribution: Common.
Parts used: Leaves.
Medicinal use: Its leaves are used potherb, boiled, salted and eaten or dried in flat cakes (omavanda) called "cabbages" for later use, when they are again boiled, satted and eaten. The leaves are used as emollient and are used in amenorrhoea.

Family: Caryophyllaceae

Stellaria media (L.) Carillo (Gander)

Flowering period: April-August.
Parts used: whole plant.

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Distribution: Common weed.
Medicinal use: The infusion of the plant is used for enemas. It is common food for cattle's and goats. The plant is known as diuretic, sedative, hypotonic and antiseptic.

Family: Chenopodiaceae

Chenopodium album L. (Bathu)
Flowering period: January-April.
Parts used: Whole plant.
Distribution: Common.
Medicinal use: The leaves are used as food. The leaves are boiled as potherb from which *omavanda* dried flat cakes were made, usually called "dried cabbages". Formally these cakes were carried to wars as food. This plant is used as snake repellent because of its root and fruit which are known as antidote to snake poison.

Family: Convolvulaceae

Convolvulus arvensis L. Hirran, Khurry (Urdu), Erlai (Hindko)
Flowering period: January-March.
Parts used: Whole plant.
Distribution: Common weed in open places.
Medicinal use: The plant is used as brain tonic diuretic, sedative and antiseptic. The roots of plant are purgative. Powdered leaves are used as women's under arm deodorant.

Family: Cuscutaceae

Cuscuta reflexa L. (Akashbel)
Flowering period: January-February.
Parts used: Stem, fruit, seeds.
Distribution: Common twining parasite.
Medicinal use: Seeds are anthelmintic & carminative. Plants also cure flatulence & bilious disorders. Seeds are carminative & alternative.

Family: Oxalidaceae

Oxalis corniculata Linn. (Khatti buti)
Flowering period: March-December.
Parts used: Whole plant.
Distribution: Common.
Medicinal use: The extract of the plant is antiseptic and used for skin curing. The juice of the plant is given in stomach trouble and used to clean rusted vessel.

Family: Poaceae

Cynodon dactylon L. (Khabal Grass)
Flowering period: February-April.
Parts used: Leaves stem.
Distribution: Common.
Medicinal use: Plant is used as food by grazing animals especially in dry season. The juice is also used in dysentery with fever.

Family: Nyctaginaceae

Boerhavia diffusa Linn
Distribution: Common.
Parts used: Whole plant.
Medicinal use: The alkaloid punarnavine is febrifuge, emmenagogue and diuretic. Leaf juice is useful for jaundice and liver complaints. The roots are useful for gonorrhoea and dropsy.

Family: Malvaceae

Abutilon indicum G. Don (Kanghi)
Flowering period: January-March.
Distribution: Common.
Parts used: Whole plant.
Medicinal use: The decoction of the leaves is useful for diarrhoea, gonorrhoea, and for inflammation of bladder and urethra.

Family Scrophulariaceae

Verbascum thapsus Linn. Jangli tambaco, Gidhar tambaco (Urdu)
Flowering period: March-October.
Distribution: Rare.
Parts used: Roots, Seeds, flowers & Leaves.
Medicinal use: Used as demulcent and emollient. Leaves and flowers are used as stimulents. It is a valuable remedy in phthisis. Also used in diarrhoea, cough, febrifuge. Dymock's Pharmacographia Indica (reprinted by Harshberger, 1896).

Family Boraginaceae

Trichodesma indicum (L.) R.Br. (Nile Karaji)
(Synonym: *Borago indica* L.)
Flowering period: August-October.
Distribution: Very common.
Parts used: Whole plant.
Medicinally use: Plant parts ground into powder mixed with water and applied to all kind of tumor (Loeb, 1956). The leaves and roots are effective against snake bite, plant is diuretic and depuratives and is used in urinary disease.

Future Demand: According to Rahim (1993) the future thrusts are as follows,

- 1- There is an urgent need to explore the native flora of different environments.
- 2- A systematic cataloging be made of the life support species according to the habitat.
- 3- The information regarding their taxonomy, distribution, ecological characteristics, products (i.e. food, fuel, fiber, medicinal value, soil stabilization, etc) and their conservation factors are taken up at the earliest.
- 4- The germ plasm of some life support species is under threat due to habitat loss. Their conservation should be done on priority basis.
- 5- The selected and prioritized species should be popularized among our people for food, fodder, medicine and energy needs.
- 6- A long time storage should be arranged by the government so that biological life support system can be protected from future needs. The survival of *Homo sapiens* depends, on such protective measures.
- 7- Computer data system should be developed for our region (Pakistan).
- 8- The role of lesser-known plants should be explored.
- 9- The germ plasm of the life support species should be imported or exchanged with neighbour countries and introduced in the local habitat to improve the economic condition of local inhabitants.
- 10- Almost all plants can be life support species during the emergency conditions. It would be worth while to prepare a catalogue, the poisonous or toxic plants of particular habitat.

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- 11- The vast majority of underutilized wild species should be studied through our knowledge of biotechnology.
- 12- The useful genes of life support species be identified and incorporated into the crop genetic background to improve the adaptability of the crops.

The results of this study that medicinal species should be focussed for regeneration and propagation. Establishment of Botanical Garden is suggested in this regard. Periodic grazing should be replaced by rotatory grazing. Local people should be considered in decisions making. There is need to propagate awareness for the protection of wild medicinal plants that during collection not pluck all plants from any area.

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