

Survey-Analysis



SURVEY OF ETHNO-MEDICINAL WEEDS OF DISTRICT RAJHAN PUR, PUNJAB, PAKISTAN.

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ABSTRACT

Rajhanpur is a district of Punjab province in Pakistan. The district lies in the western bank of the River Indus. The present study was performed on the weeds of district Rajhanpur and for that four locations were selected, namely; Kot mithan, Rojhan, Chachran sharif and Fazilpur. Quadrature method was used for the Survey, whereby percentage frequency, density and cover were calculated easily by taking each quadrature of 1m × 1m. And a questionnaire method was implemented for documentation of ethnomedicinal knowledge. Finally we got some valuable information's regarding folklore medicines of the region.

KEYWORDS

Ethnomedicinal Survey, Folk medicine, Quadrature method, Indigenous knowledge, Rajhanpur.

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1. INTRODUCTION

An American, botanist Johan W. Harshberger was the first one that uses the term "ETHNOBOTANY" in 1896, "To the study of plants used by Primitive and aboriginal people"¹. Medicinal plants have been used since ancient period for the cure of numerous diseases. Since these are in common use by the native people and are of great status that's why a lot of people are involved in the trade of significant medicinal herbs all over the world². Ethnobotany is the science, which studies the relationship between a given society and its environment, particularly the plant world³. Primitive people primarily depend on plants for their existence. They acquired understanding of medicinal plants by approaches of trial and error. Consequently, they became the store-house of knowledge of valuable as well as injurious plants, accumulated and enriched through generations and passed on from one generation to another, after refining and additions⁴. Ethnobotanical studies have become increasingly valuable in the expansion of health care and preservation programs in different parts of the world⁵. Pakistan is blessed with a variety of wild plants which are being used for medicinal and aromatic purposes. The properties and proper uses of some of these plants are well known at the community and end users level; many have still to be explored for their medicinal values⁶. Weed invasion is one of the main flaws to Wheat, sugarcane, mustard, guava, animal feed and orange fields. They consume accessible moisture, nutrients and contend for space and sunlight with crop plants and result in yield reduction⁷. Some of the weeds are used to treat numerous diseases by traditional health experts. Current study was organized to document, collect weeds of Ethnomedicinal tibia along with Ethnomedicinal knowledge and calculating the Prevalence, absolute frequency, Relative Frequency, Absolute Density and relative density of District Rajhanpur-Pakistan. This study will help to find out traditional medicinal herb in Rajhanpur, their medicinal value and their abundance in area mentioned in the survey.

2. MATERIALS AND METHODS

Site Description:

Rajhanpur is a district of Punjab province in Pakistan (29:06N, 70:19E) with a geographical span of 12,319 km²⁸. The district lies entirely west of the Indus River (Sind River); it is a narrow, 20 to 40 miles wide strip of land

sandwiched between the Indus River on the East and the Sulaiman Mountains on the West. The town is approximately nine miles from the West bank of the river⁹. The maximum and minimum temperature when the sample was collected lies between 23° and 10° respectively.

FIELD SURVEY:

The current study was performed on the weeds of district Rajhanpur. We selected four locations for the survey 1) Kot mithan 2) Rojhan 3) Chachran sharif 4) Fazilpur. All locations are within the radius of 55 Km² from Toba Tek Singh. We surveyed in the end of February 2014. Numbers of sites selected in each village were five. The method used for the present study was Quadrature method¹⁰. Percentage frequency, density and cover were calculated easily by taking each quadrature of 1m × 1m¹¹. A questionnaire method was implemented for documentation of ethnomedicinal knowledge. The interviews were conducted from local community to document local name and ethnomedicinal application. The plants were collected, dried, preserved and identified with the help of available literature¹². Data regarding prevalence, absolute and relative frequency, and absolute and relative density of weeds were recorded by applying the following formulas:

$$\text{Prevalence (\%)} = \frac{\text{No. of sites in which a species occurs}}{\text{Total No. of sites}} \times 100$$

$$\text{Absolute frequency (AF) (\%)} = \frac{\text{No. of quadrates in which a species occurs}}{\text{Total No. of quadrate}} \times 100$$

$$\text{Relative frequency (RF) (\%)} = \frac{\text{Absolute frequency value for a species}}{\text{Total absolute frequency values for all species}} \times 100$$

$$\text{Absolute density (AD)} = \frac{\text{Total No. of individuals of a species in all quadrates}}{\text{Total No. of quadrate}}$$

$$\text{Relative density (RD) (\%)} = \frac{\text{Absolute density for a species}}{\text{Total absolute density for all species}} \times 100$$

3. SURVEY FINDINGS

During the survey we got some valuable information about various weeds which are used locally in folk medicine. Short details of our findings are summarized below:

Anagallis arvensis : Myrsinaceae
Common Names : Bili booti.
Parts used : Whole Plant
Ethnomedicinal uses : Used as cerebral affections, leprosy, hydrophobia, dropsy, epilepsy and mania.

Abutilon indicum : Malvaceae
Common Names : Peeli booti
Parts used : Leaves and stem
Ethnomedicinal uses : it is used to treat boils.

Alhagi maurorum : Fabaceae
Common Name : Shing
Parts used : Roots and flowers
Ethnomedicinal uses : The flowers are ground with sugar and the powder is used for eye disease, which cleanses the eye. One tea spoon of powdered is taken in the morning one in the evening which improves eye sight. The powder of dry flowers is used for stomach pain. The roots are soaked in water and extract is used for liver Complaints.

Asafotodus tenuifolius : Liliaceae
Common Name : Basri
Parts used : Seeds
Ethnomedicinal uses : Seeds are used in piles.

Chenopodium ficifolium : Chenopodiaceae
Common Names : Bathu
Parts used : Whole Plant
Ethnomedicinal uses : Jaundice

Chenopodium album L.: Chenopodiaceae
Common Names : Bathu
Parts used : Whole Plant
Ethnomedicinal uses : It is used in Jaundice.

Convolvulus arvensis : Convolvulaceae
Common Names : Naaro
Parts used : whole plant
Ethnomedicinal uses : Four grams of the powder of dried plant is mixed with 1 gram molasses (*Gurr*) and globules of 250 mg made. One or two globules are given with milk to cure constipation at night. The paste made up of leaves is applied on boils and inflammation. Six gram fresh plant is grinded with 7 black

peppers in water. This mixture is given for a week in bleeding piles.

Desmostachya bipinnata : Poaceae
Common Names : Dab
Parts used : Leaf
Ethnomedicinal uses : Decoction of leaf is used to treat fever.

Fumaria indica : Papaveraceae
Common Names : Shahtra papra
Parts used : Whole plant
Ethnomedicinal uses : The whole plant is used in fever, as liver tonic for hepatic illness. Fresh plant is crushed and obtained juice is given orally for blood purification. Shoots are used for diarrhoea, blood purifier and as cooling agent.

Heliotropium dasycarpum : Boraginaceae
Common Name : Sagdaroo
Parts used : Leaves
Ethnomedicinal uses : It is used for eye diseases.

Launaea procumbens: Asteraceae
Common Name : Lassi Bhattar
Parts used : Leaves
Ethnomedicinal uses : The whole plant is grinded in water along with candy (*Misri*) and is used orally for painful micturation.

12. Melilotus parviflora : Fabaceae
Common Names : Sinji
Parts used : Whole plant
Ethnomedicinal uses : Seeds are suggested in infantile diarrhoea and bowel illnesses. It is emollient and is externally applied as poultice on swellings.

Morus album : Moraceae
Common Name : Sufaid Toot
Parts used : Root, leaves
Ethnomedicinal uses : The fruits are laxative and emollient and is used for cleaning throat, as cooling agent and astringent.

Oxalis corniculata : Oxalidaceae
Common Name : Khuti booti, Khatti methi
Parts used : Leaves
Ethnomedicinal uses : It is used for Diarrhoea & dysentery.

***Polygonum plebejum* : Polygonaceae**

Common Names : Hind rani

Parts used : Whole Plant

Ethnomedicinal uses : The plant is dried, powdered and taken internally in pneumonia. The locals used the root in bowel complaints.

***Prosopis glandulosa* : Fabaceae**

Common Names : Devi

Parts used : Leaves & Fruits

Ethnomedicinal uses : The paste of leaves and fruit is applied to relieve the pain related with bone fracture in animals.

***Tamarix aphylla* : Tamaracaceae**

Common Name : Athel Pine

Parts used : Roots & Leaves

Ethnomedicinal uses : It is effective for tuberculosis, leprosy, smallpox, Useful traditional phytotherapy for jaundice and all contagious diseases.

***Withania somnifera* : Solanaceae**

Common Names : Asghand

Parts used : Whole Plant

Ethnomedicinal uses : It is used as aphrodisiac. Fruit is diuretic. Tubers are used in bronchitis and ulcer.

Table 1. Prevalence, Frequency and density of weeds in fields of Rajhanpur

BOTANICAL NAMES	Prevalence	Absolute Frequency	Relative Frequency	Absolute Density	Relative Density
<i>Aerva persica</i>	35	22.5	1.63	0.45	1.45
<i>Melilotus parviflora</i>	90	75	5.45	1.5	4.86
<i>Pisum sativum</i>	15	11.66	0.84	0.35	1.13
<i>Polygonum plebejum</i>	35	24.16	1.75	0.48	1.15
<i>Withania somnifera</i>	60	45	3.27	1.35	4.37
<i>Siellaria medea</i>	25	12.50	0.90	0.25	0.81
<i>Alhagi maurorum</i>	80	70	5.08	1.4	4.53
<i>Salsola baryosma</i>	85	74.16	5.38	2.22	7.19
<i>Fumaria indica</i>	80	66.66	4.84	0.83	2.69
<i>Cenchrus pennisetiformis</i>	100	94.16	6.84	1.88	6.09
<i>Prosopis glandulosa</i>	35	29.16	2.11	0.58	1.88
<i>Abutilon indicum</i>	45	34.16	2.48	1.02	3.30
<i>Heliotropium dasycarpum</i>	40	32.50	2.36	0.65	2.10
<i>Chenopodium ficifolium</i>	70	58.33	4.23	1.16	3.76
<i>Anagalis arvensis</i>	25	15	1.09	0.45	1.45
<i>Chenopodium album</i>	65	48.33	3.51	0.96	3.11
<i>Chenopodium morale</i>	55	42.50	3.08	0.85	2.75
<i>Convolvulus arvensis</i>	100	92.50	6.72	1.85	5.99
<i>Poa annua</i>	60	51.66	3.75	1.03	3.33
<i>Launea procamben</i>	85	75.83	5.51	1.51	4.89
<i>Oxalis corniculata</i>	30	18.33	1.33	0.55	1.78
<i>Morus album</i>	35	30.83	1.99	0.82	2.65

P=Prevalence; **AF**=Absolute frequency; **RF**=Relative frequency;
AD=Absolute density; **RD**=Relative density; **C**=Cover

4. DISCUSSION:

The Study undertaken helped us to identify a few common and a few uncommon medicinal plants which are till date used to treat many disorders and ailments in Rajhanpur District of Pakistan. The Study has also concluded that even though western medicines are accessible, still people of this region heavily relies on the Folklore medicines for their basic needs and this practice is helping in passing on the valuable ethnomedicinal information from generation to generation. But there is a need of documentation of this vast information base as Western medicine is growing its reach day by day which endangers these valuable information.

5. IMAGES OF MEDICINAL PLANTS OF RAJHANPUR, PAKISTAN.



Anagallis arvensis



Abutilon indicum



Alhagi maurorum



Asafotodus tenuifolius



Chenopodium ficifolium



Chenopodium album L



Fumaria indica



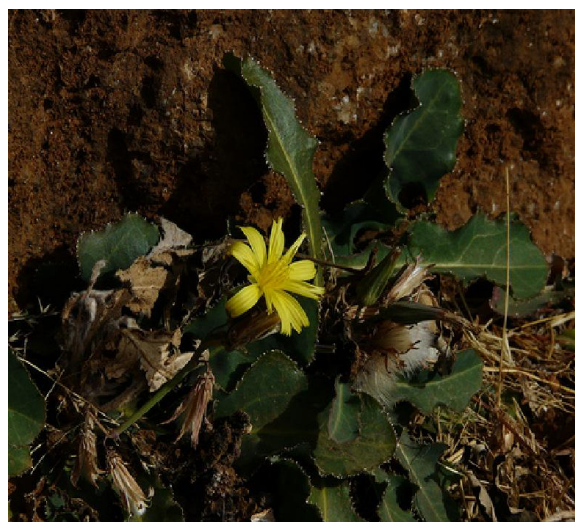
Convolvulus arvensis



Heliotropium dasycarpum



Desmostachya bipinnata



Launaea procumbens



Melilotus parviflora



Prosopis glandulosa



Oxalis corniculata



Tamarix aphylla



Polygonum plebejum



Withania somnifera

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