Survey-Analysis

SURVEY OF ETHNO-MEDICINAL WEEDS OF DISTRICT TOBA TEK SINGH, PUNJAB, PAKISTAN.

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ABSTRACT

Objective: The purpose of this study was to document the indigenous folk knowledge of the inhabitants of the different places of the district Toba Tek Singh and to find out the prevalence of weeds that are available maximum in different fields.

Material and Method: Weed communities of wheat, sugarcane, mustard, guava, animal feed and orange were determined using quadrate method at four places of District Toba Tek Singh in seven sites in the month of February in 2012.Ethno-botanical interviews on medicinal plants that are collected in different fields were conducted with traditional medical practitioners along with their common names and their traditional uses.

Result: There are 17 medicinal herbs we have documented in Toba teksingh along with their common names; part use and their ethnomedicinal uses. We have present their relative density, relative frequency and prevalance

KEYWORDS: ETHNOMEDICINAL SURVEY;FOLK MEDICINE; QUADRATE METHOD; INDIGENOUS KNOWLEDGE DISTRICT TOBA TEK SINGH.

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1. INTRODUCTION

From the beginning, human beings have suffered from various ailments. They have to rely on medicinal plants [1,2]. The worth of medicinal plants to the mankind is very well proven. It is assessed that 70 to 80% of the people in the world depend on traditional health care system and mainly on herbal medicines [3, 4, 5].The World Health Organization (WHO) estimates that up to 80% of the world's populations in developing countries depend on locally available plant resources for their primary healthcare, since western pharmaceuticals are often expensive, inaccessible or unsuitable [6]. Medicinal plants therefore have significant role in the primary healthcare systems of indigenous societies as the chief source of medicines for the majority of the rural population [7, 8]. Current research in plant science has concentrated mainly on ethnobotanical and ethnomedicinal surveys to fulfill the enhance demand of herbal products [9].Pakistan is a fairly large country endowed with a variety of climates, ecological zones and topographical regions. [10]. Weed infestation is one of the major weaknesses to Wheat, sugarcane, mustard, guava, animal feed and orange fields. They consume available moisture, nutrients and compete for space and sunlight with crop plants and result in yield reduction [11]. Some of the weeds are used to treat various diseases by traditional health practitioners. Currentstudy was organized to document, collect and number of prevalence of Ethnomedicinal tibb along with ethnomedicinal knowledge about the wild plants of District Toba Tek Singh Pakistan.

Fig 1 Map of Site of survey

2. MATERIALS AND METHODS

Site Description:

Toba Tek Singh is located in central Punjab and occupies 3252 square kilometres.The maximum and minimum temperature when the sample are collected lies between 24.2º and 11º respectively.

Field Survey:

The current study was take on to find out the weeds of different crops such as Wheat, sugarcane, mustard, guava, animal feed, orange fields of four villages of district Toba Tek Singh and the forest of Toba Tek Singh. Four growing localities are NagraPul, Rajana, PirMahal and Phalore. All Locations are within the radius of 20 Km^2 from Toba Tek

Singh were surveyed in the end of February 2012. The latitude and longitude of NagraPul, Rajana, PirMahal, Phalore is about 30.9055019, 72.5137138[12], 30.8557424, 72.554183[13], 30.77, 72.43[14] 30.889262, 72.6465797 [15] respectively. Numbers of sites selected in each village were five. The method used for the present study was Quadrate method [16]. Percentage frequency, density and cover were

calculated easily by taking each quadrate of 1m × 1m. [17]. 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 literature [18]. Data regarding prevalence, absolute and relative frequency, and absolute and relative density of weeds were recorded by applying the following formulas:

Prevalance(%)= No. of sites in which a species occurs/Total No. of sites×100

Absolute frequency (AF)%=No. of quadrates in which a species occurs/Total No. of quadrates×100

Relative frequency (RF)%= Absolute frequency value for a species/Total absolute frequency value for all species ×100

Absolute density (AD)= Total No of individuals of a species in all quadrates/ Total No of quadrate

Relative density (RD)(%)= Absolute density for a species/ Total absolute density for all species×100

3. RESULTS

1. Apiaceae: *CentellaAsiatica* (Linn.) Urban

Common Names: MandiButi

Parts used: Whole Plant

Ethnomedicinal uses: It is used to treat Leucorrhoea

2. Asteraceae: *Cirsiumarvense* (Linn.) Scope

Common Names: Leh

Parts used: Leaves

Ethnomedicinal uses: The juice of the leaves, locally applied, heals wounds.

3. Asteraceae: *Carthamusoxycantha*M. Bieb.

Common Names: Poli, Carthamus

Parts used: Seed

Ethnomedicinal uses: Grind seed flour is used to treat ulcer problems.

4. Asteraceae: *Xanthium strumarium*Linn.

Common Name: ChhotaDhatura, Cocklebur

Parts used: Roots, fruit & Seeds

Ethnomedicinal uses: Stomach diseases, demulcent, smallpox and dysentery.

5. Asteraceae: *Sonchusasper*

Common Name: Asgandh, dodak

Parts used: Whole plant

Ethnomedicinal uses: Whole plant is ground and powder is applied on burns

6. Asteraceae: *Partheniumhysterophorous* L.

Common Names: KainchMainch, Nightshade

Parts used: Leaf

Ethnomedicinal uses: Abnormal and painful secretions from ears.

7. Brassicaceae: *Coronopusdidymus (Linn.) Smith*

Common Names: JangliHalon

Part used: Whole Plant

Ethnomedicinal uses: Used as cooling and refrigerant. The plant is used as fumigants for insect repellent.

8. Chenopodiaceae: *ChenopodiumFicifolium*

Common Names: Bathu

Parts used: Whole Plant

Ethnomedicinal uses: Jaunduce

9. Chenopodiaceae: *Chenopodium album* L.

Common Names: Bathu, Goose Foot

Parts used: Whole Plant

Ethnomedicinal uses: Jaundice

10. Convolvulaceae: *Convolvulus arvensis*L.

Common Names: Vahri, Bind Weed

Parts used: Whole Plant

Ethnomedicinal uses: Constipation, control dandruff.

11. Euphorbiaceae: *Euphorbia helioscopia*Linn.

Common Name: Chattridodak, Lun spurge

Parts used: Whole plant

Ethnomedicinal uses: Cathoratic, Antihelminthic, Purgative.

12. Fabaceae: *Lathyrusaphaca Linn*.

Common Name: JangliMatar

Parts used: Whole plant

Ethnomedicinal uses: Whole plant is ground and powder is applied on burns

13. Liliaceae: *AsphodelustenuifoliusCavan*

Common Names: Piazi

Parts used: Seeds

Ethnomedicinal uses: Seeds are given in piles.

14. Malvaceae :Malvastrumtricuspidatum

Common Name: Khasi

Parts used: Bark

Ethnomedicinal uses: It is used as masticatory i.e to promote the secretion of saliva.

15. Oxalidaeae: *Oxalis Corniculata*Linn.

Common Name: Khutibooti, Yellow oxalis

Parts used: Leaves

Ethnomedicinal uses: Diarrhoea&dysentry.

16. Poaceae: Cynodondactylon

Common Name: KhabbalGhass

Parts used: Whole Plant**Ethnomedicinal uses**: It is used as Diuretic. Infusion of roots for stopping

bleeding from piles. Juice of plant is used in wound infection. Blood purifier.

17. Solanaceae: *Solanumnigrum*L.

Common Names: KainchMainch, Nightshade

Parts used: Leaf

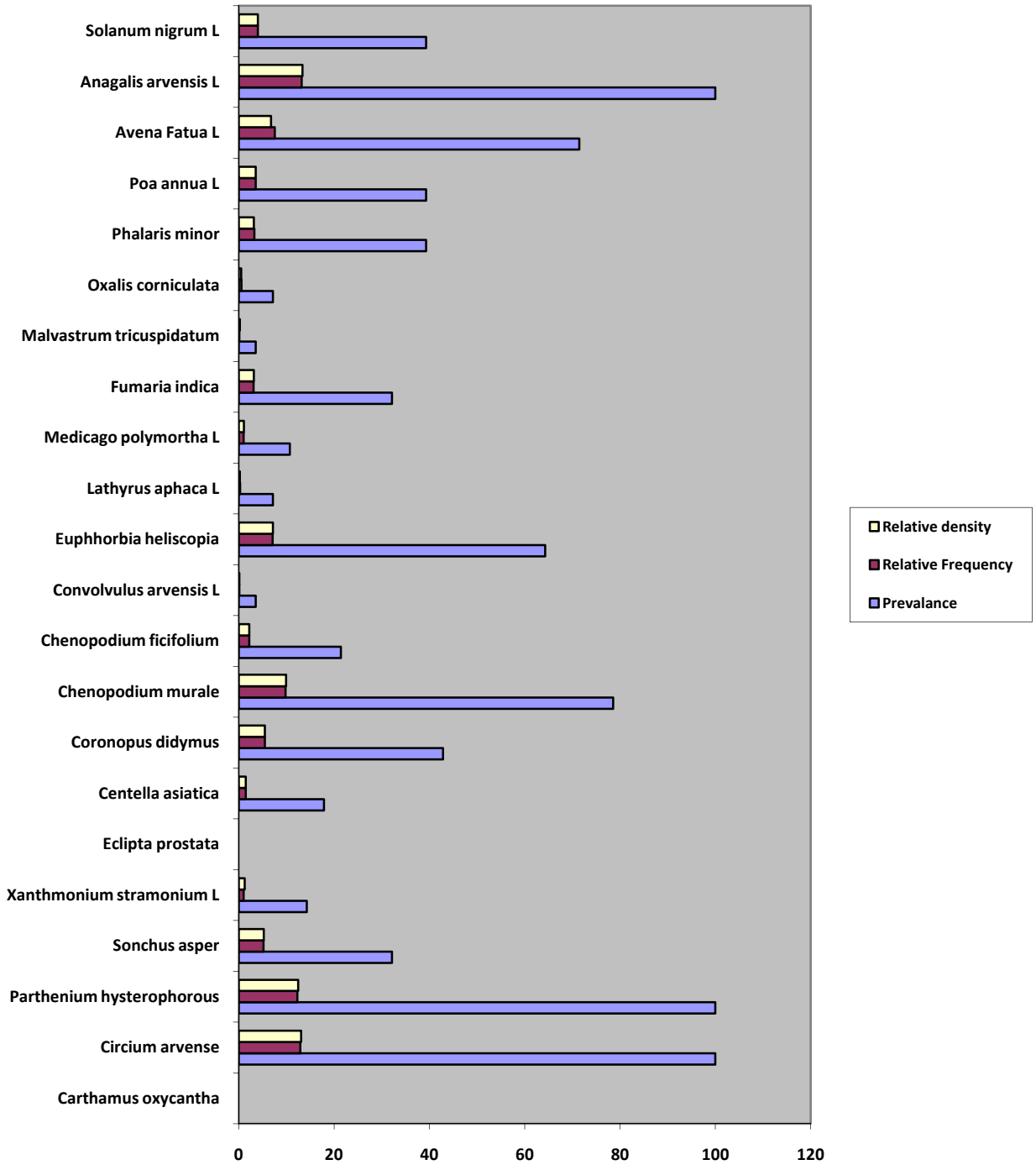
Ethnomedicinal uses: Abnormal and painful secretions from ears.

Table 1. Prevalence, Frequency and density of weeds in fields of Toba Tek Singh

Species	**Family**	**P** (%)	**AF** (%)	**RF** (%)	**AD**	**RD** (%)
CarthamusoxycanthaM. Bieb	Asteraceae	0	0	0	0	0
Cirsiumarvense L.	"	100	62.14	12.90	1.24	13.08
Partheniumhysterophorous L.	"	100	59.28	12.31	1.18	12.44
Sonchus asper (L.) Hill	"	32.14	25	5.19	0.50	5.27
Xanthium stramonium L.	"	14.28	5	1.03	0.12	1.26
Ecliptaprostrata(L.)	"	0	0	0	0	0
Centellaasiatica (Linn.) Urban	Apiaceae	17.85	7.14	1.48	0.14	1.47
Coronopusdidymus (L.) Smith	Brassicaeae	42.85	26.42	5.48	0.52	5.48
Chenopodium album L.	Chenopodicaeae	21.42	14.28	2.96	0.28	2.95
Chenopodiummurale	"	78.57	47.14	9.79	0.94	9.91
Chenopodiumficifolium	"	21.42	10.71	2.22	0.21	2.21

Convolvulus arvensis L.	Convolvulaceae	3.57	0.71	0.14	0.01	0.10
Euphorbia. heliscopia L.	Euphorbiaceae	64.28	34.28	7.12	0.68	7.17
Lathyrusaphaca Linn	Fabaceae	7.14	1.42	0.29	0.02	0.21
Medicagopolymorpha Linn	"	10.71	5.0	1.03	0.10	1.05
Fumaria indica (Hausskn.) Pugsley.	Fumariaceae	32.14	15	3.11	0.30	3.16
Malvastrumtricuspidatum.	Malvaceae	3.57	0.71	0.14	0.02	0.21
Oxalis corniculata L.	Oxalidaceae	7.14	2.85	0.59	0.05	0.52
Cynodondactylon Pers.	Poaceae	28.57	12.14	2.52	0.24	2.53
Phalaris minor Retz.	"	39.28	15.71	3.26	0.30	3.16
Poaannua L.	"	39.28	17.14	3.56	0.34	3.58
AvenaFatua Linn	"	71.42	36.42	7.56	0.64	6.75
Anagallisarvensis L.	Primulaceae	100	63.57	13.20	1.27	13.39
Solanumnigrum L.	Solanaceae	39.28	19.28	4.0	0.38	4.00

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



HISTOGRAM OFSPIECES PRESENT IN TOBA TEK SINGH

4. DISCUSSION

We have document the indigenousfolk knowledge of the inhabitants of the different places of the district Toba Tek Singh. This knowledge will be beneficial to explore their phytochemical and pharmacological potential in future. We have developed the histogram of species present in Toba teksingh and present their relative density, relative frequency and prevalence. We have found that %age prevalance is maximum in *Circiumarvense* followed by *Partheniumhysterophorus* and *chenopodiummurale*. *Carthamusoxycantha*and *eclipta prostate* did not show any Prevalence, relative frequency and density.

REFERENCES

[1] Sofowora, A., 1982. Medicinal Plants and Traditional Medicinal in Africa. John Wiley and Sons, New York.

[2] Hill, A.F., 1989, Economic Botany: A Text Book of Useful Plants and Plant Product, 2nd Edn., McGraw Hill Book Company, Inc., New York.

[3] Farnsworth, N. R.; Akerele, O. and Bingel, A. S. (1985). Medicinal plants in therapy. *Bulletinof the World Health Organisation*, 63: 965 – 981.

[4] Pei Shengji. (2002). Ethnobotany and modernisation of Traditional Chinese Medicine.In: Paper at a workshop on Wise Practices and Experimental learning in the Conservation andManagement of Himalayan Medicinal Plants, Katmandu, Nepal.

[5] Shanley, P. and Luz, L. (2003). The impacts of forest degradation on medicinal plant use and implication for health care in Eastern Amazonia. *BioScience*, 53 (6): 573 – 584.

[6] Muthu C, Ayyanar M, Raja N, Ignacimuthu S: Medicinal plants used be traditional healers in Kancheepuram District of Tamil Nadu, India. J EthnobioEthnomed 2006, 2:43.

[7] WHO: Traditional medicine. Fact sheet No 134 2003.

[8] Hamayun M, Khan MA, Begum S: Marketing of medicinal plants of Utror-Gabral Valleys, Swat, Pakistan. J Ethnobot leaflets SIUC, USA; 2003.

[9] D. K. Koche, R. P. Shirsat, Syed Imran, Mohd. Nafees,A. K. Zingare* and K. A. Donode, Ethnobotanical and Ethnomedicinal Survey of Nagzira Wild Life Sanctuary, District Gondia (M.S.) India- Part I,Ethnobotanical Leaflets 12: 56-69, 2008.

[10] Hussain K, Shahazad A, Hussnain SZ (2008). AnEthnobotanical Survey of Important WildMedicinal Plants of Hattar District Haripur, Pakistan. Ethnobotanical Leaflets 12: 29-35, 2008.

[11] Khan, I., G. Hassan, M.I. Khan and I.A. Khan. 2004. Efficacy of some new herbicidal molecules on grassy and broadleaf weeds in wheat-II. *Pak. J. Weed Sci. Res*., 10(1-2): 33-38.

[12]http://wikimapia.org#lat=30.9055019&lon=72.5137138&z=15&l=44&m=b&v=8&search=rajana

[13].http://wikimapia.org#lat=30.8557424&lon=72.554183&z=15&l=44&m=b&v=8

[14].http://wikimapia.org#lat=30.77&lon=72.43&z=13&l=44&m=b&v=8&search=pir%20mahal

[15].http://wikimapia.org#lat=30.889262&lon=72.6465797&z=14&l=44&m=b&v=8&search=rajana\

[16] Clements, F.E,. 1905. Research Methods in Ecology. University Publ, Co., Lincola.334p.

[`17] Oosting, H. J. 1956. The Study of Plant Communities.An introduction to plant ecology.2nd ed. W. H. Freeman and Company, London.

[18] Ali, S.I. and M. Qaiser. 1995-2007. *Flora of Pakistan*.(*Fascicles*), Department of Botany,

University of Karachi.

[19] Nasir, E. and S.I. Ali. 1972-1994. *Flora of Pakistan*. National Herbarium, NARC.,

Islamabad. Department of Botany, University of Karachi, Karachi. (Fascicles).

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