Journal of Bioresource Management

Volume 3 | Issue 3 Article 1

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Recommended Citation

Nazir, S., Butt, B. Z., & Navid, A. (2016). A Survey of Weed Varieties in Samanabad, Lahore, *Journal of Bioresource Management, 3* (3).
DOI: https://doi.org/10.35691/JBM.6102.0055
ISSN: 2309-3854 online

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J. Bioresource Manage. (2016) 3(3): 1-5.

A SURVEY OF WEED VARIETIES IN SAMANABAD, LAHORE

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ABSTRACT

A weed is an herbaceous plant that grows as a wild plant, and is considered a hindrance in the growth of preferred vegetation or cumbering the ground, and has no value for beauty or use. However, some weeds have roles in medicine, ecology and many other fields. A survey was conducted in Lahore to observe the weed varieties present in the area of Samanabad. The present study was carried out in May and June 2014.The primary purpose of the study was to gain knowledge about the availability of the total number of species present in this area. We also assessed whether these weeds were directly or indirectly beneficial for humans. Results of this study revealed a total of 33 species belonging to 20 different families which were collected and identified. Weeds were arranged in alphabetical order according to their respective families. Data inventory constitutes family name, botanical name, local name and life form. Results revealed the relative diversity of each family as Poaceae at18.18% and Asteraceae at 15.15%. Out of 33 weed species, 64% were annual, 30% perennial and 6% biennial. The soil of the studied area was a hard, silty loam texture, with a slightly alkaline pH and low electrical conductivity. This study will be helpful in maintaining the flora of the Samanabad region.

Keywords: Survey, data inventory, Samanabad, soil, beneficial, diversity.

INTRODUCTION

A plant that is considered undesirable is known as a weed. Identifying weeds is somewhat subjective. A plant in one situation is not considered a weed if it is grown for some purpose, or it might be an important plant in a specific area. Yet in other area or region, this plant species could be undesirable. In other words, a weed is a plant that nurtures and/or completes its life cycle or is persistent external to the original habitat (Jules, 1979). A weed is an herbaceous plant that grows as a wild plant and is considered as hindering the growth of superior vegetation or cumbering the ground, and has no value for beauty or use (Lesley, 1993). Weeds usually have a negative association, but on the other hand weeds have a large number of benefits or serve other indirect purposes of great importance. Weeds are also used as leafy vegetables, for example, *Amaranthus viridis* (Math), *Digera arvensis* (Kunjru), *Portulaca* species, etc (FAO, 2013).

Areas that are distressed by human intervention (e.g. lawns, agricultural fields, roadsides, and building places) have a few weed species that have modified to grow and reproduce. Because of quick growth and reproduction, the ability to produce seeds that survive or remain in a soil seed bank as dormant seeds for a long time period or have small life cycles with several generations in the same period, weedy characteristics of such plant species frequently provide these benefits over more attractive crop plants(Stephen, 2009). Weeds also enhance soil fertility. For example, the tape root of *Taraxacum* extracts nitrogen and calcium from the soil and roots of clover that contain nitrogen-fixing bacteria that are a direct source of fertile soil. Numerous weeds are also used as food. An example of an edible weed is the dandelion (FAO, 2013).

On the basis of the life cycle, weeds are classified into three categories: annuals, biennials and perennials. Weeds that complete their life cycle within one year are called annual weeds. They sprout from a seed germinate by producing new seeds and die within one year or less. An example of an annual weed is *chenopodium album*. Biennial weeds complete their life cycle in two years. They grow from seeds and produce extensive root systems and a dense collection of leaves in first year. In the following second year, they develop fully, give rise to seeds, and die. *Daucus carota* is an example of a biennial weed. Perennial weeds survive and complete their life cycle in more than two years. They further reproduce by non-reproductive parts including bulbs, tubers and stolons (Singh *et al*., 1996).

Lahore is the capital city of Punjab province and is Pakistan's second largest city, located on the immense alluvial plain on the bank of the River Ravi (Ahmad *et al*., 2012). Lahore is situated between 31°-15′ and 31°- 42′ north latitude, 74°- 01′ and 74°- 39′ east latitude with altitude ranging from 208 to 213 meters (m) ASL (Lahore CDG, 2007). The Samanabad town of Lahore was surveyed for a collection of weeds. All were identified with the help of the books *Lahore District Flora* by Shiv Ram Kashyap and *Grasses and Sedges* by Dr. Sultan Ahmad. All plants were identified by using keys of families present in both books.

MATERIALS AND METHOD

Study Area

Samanabad is a town of Lahore city. It is situated between the latitude 31º 34.33' and longitude 74º 17.99'. The region is characterized by a severe climate difference in rainfall and temperature. The average annual temperature is estimated to be about 24°C (Dogar, 2008).

The study was conducted during May to June 2014 in order to investigate a variety of weeds.

Plant Sampling

Specimens of each plant were collected. Plant specimens were placed directly into a clean plastic bucket or clean paper bag. Any soil or residue from the leaf blade was removed with a clean, dry, soft bristle brush. The collected specimens were placed within a sheet of folded newspaper with the roots, stem, leaves and flowers set in a natural position showing the diagnostic anatomical features. The covered plants were dried by placing them in blotters and compressing them in a press. The press usually contained many plants. It was placed in a hot and dry location after pressing to ensure good drying. After pressing, these specimens were mounted on herbarium sheets.

Plant Identification

Plant identification is the matching of a specimen plant to an identified taxon. After complete drying, the specimens were identified by observing the morphology and anatomical features, such as composition, arrangement, shape, margin, tip and base, of the stem, root, leaves, and. Flower such as floral parts, inflorescence, and fruit type. Plants collected were identified with the help of the books *Lahore District Flora* by Prof. Shiv Ram Kashyap, Punjab University Lahore, and *Grasses and Sedges* by Dr. Sultan Ahmad, Professor of botany, Government College Lahore. The scientific names of these specimens were entered on the voucher list after identification. Then we made the dichotomous keys of distinct features of each specimen.

Soil Sampling

Soil samples were collected from the depth profile 0.7 centimeters (cm). The composite soil samples represented the 3

sites. The collected soil samples were gently crushed and sieved using a 2 millimeter (mm) sieve then brought to the laboratory packed in polythene bags. Soil texture, pH and electrical conductivity were determined from water and soil testing in the laboratory of the Soil Fertility Research Institute.

RESULTS

The data collected during the study are arranged in alphabetical order of the family name (Table 1).

Soil Analysis

Soil sample analyses were

Table 1: The weed varieties recorded in Samanabad area during the study

Family Names	Botanical Names	Local Names	Life Forms
Amaranthaceae	*Amaranthus viridis* L.	Chulai	Annual
Apiaceae	*Anethum graveolens* L.	Soya or Dill	Annual
Asteraceae	*Blumea membranacea* DC	Almish	Annual
	Cirsium arvense (L.) Scop.	Barham dandi	Perennial
	Conyza canadensis (L.) Cronquist	Canadian horseweed	Annual
	Eclipta alba (L.) Hassk	Bhangra	Annual
	*Parthenium hysterophorus*L.	Parthenium	Biennial
Brassicaceae	*Coronopus didymus* (L.) Sm.	Jangli hala	Annual
	Rorippa indica(L.) Hiern	Variable-leaf yellow-cress	Perennial
Cannabaceae	*Cannabis sativa* L.	Bhang	Perennial
Chenopodiaceae	*Chenopodium album* Linn	Bathoo	Annual
Convolvulaceae	*Convolvulus arvensis* L.	Lehli	Perennial
Cyperaceae	*Cyperus rotundus* L.	Purple nutsedge	Perennial
Euphorbiaceae	*Euphorbia hirta* L.	Dudhi	Annual
	Euphorbia prostrate (Aiton)	Hazaar dani	Annual
Fabaceae	*Melilotus indicus* (L.)	Senji	Annual
Labiateae	*Launaea procumbens* Roxb.	Sufaid	Perennial
Malvaceae	*Malvestrum coromandelianum* (L.) Garcke	Damhani	Annual
Oxalidaceae	*Oxalis corniculata* Linn.	Khatkal	Biennial
Poaceae	*Bothriochloa pertusa*(L.) A. Camus	Silver grass	Perennial
	Cynodon dactylon (L.) Pers	Bermuda grass	Perennial
	Digitaria sanguinalis (L.)	Crabgrass or summer grass	Annual
	Eragrostis cilianensis (All.)	Stink-grass	Annual
	Poa annua L.	Annual bluegrass	Annual
	Polypogon monspeliensis (L.) Desf.	Annual bread-grass	Annual
Polygonaceae	*Polygonum plebejum* R.Br	Hazardani	Annual
	Rumex dentatus L.	Jangli palak	Annual
Portulaceae	*Portulaca oleracea* L.	Lunak or Purslane	Annual
Scrophulariaceae	*Veronica anagallis aquatic* L.	Water speedwell	Perennial
Solanaceae	*Nicotiana plumbaginifolia* Viv.	Jangli Tambakoo	Annual
	Solanum nigrum L.	Mako	Annual
Tropaeolaceae	*Tropaeolum majus* L.	Nasturtium	Annual
Verbenaceae	*Phyla nodiflora* (Linn.) Greene	Jal-booti	Perennial

done by using parameters such as soil texture, pH and Electrical Conductivity (EC) from water and soil testing in the laboratory of the Soil Fertility Research Institute. The results of the soil are given in Table 2.

Table 2: The properties of soil sample obtained from selected sites of the study area

Parameters	Site 1	Site 2	Site 3
Soil Texture	Silty loam	Silty loam	Silty loam
pH value	7.6	7.6	7.5
Electrical conductivity	2.3	2.3	2.3

DISCUSSION

A total of 33 weed species from 31 genera and 20 angiosperm families were collected from the Samanabad area. Only two species were dicotyledons. The rest were monocotyledons. The major families were Poaceae and Asteraceae. The relative diversity of Poaceae and Asteraceae was 18.18% and 15.15%, while the remaining families were represented by only a single species (Table 1). The dominant species of the Samanabad areas was *maranthus virdis,*which was grown everywhere.

Soil is an active natural body on the plane of the earth in which plants grow. It contains mineral and organic materials and soil fauna (Brady, 1974). The pH of soil was 7.6 and electrical conductivity was 2.3 □S/m. Soil pH is the measure of the acidity or alkalinity of a soil. The value of pH ranges from 0.0 to 14.0. 0.0 to 7 is acid and 8 to 14.0 are alkaline. The value 7.0 is neutral and means neither acidic nor alkaline.

Soil pH determines the relationship between plants and soil. Soil pH is important because it affects several soil factors that influence plant growth (Perry, 2003). Soil electrical conductivity is the measure that associates with soil properties that affect crop and productivity. In the soil, the electrical conductivity reading shows the level of ability the soil water has to carry an electrical current (Grisso *et al*., 2009).

A survey of weeds native to wheat fields was done in 1979. The study was carried out in 19 districts of Punjab. Results revealed the presence of *Chenopodium album* widely in all districts (Saeed *et al*., 1979).

REFERENCES

Ahmad SR, Khan MS, Khan AQ, Ghazi S, Ali S (2012). Sewage water intrusion in the groundwater of Lahore, its causes and protections. Pak. J. Nutr. 11(5), 484-488.

Brady NC (1974). The Nature and Properties of Soils. New York: MacMillan. pp. 639.

Dogar B (2008). Lahore: 20 Localities Getting Contaminated Water. Newspaper, The Nations.

FAO (2013). Importance of weeds or benefits or advantages derived from weeds, Food and Agriculture Organization.

Grisso AM, Holshouser D, Thomason W (2009).Precision Farming Tools: Soil Electrical Conductivity.

Jules J (1979). Horticultural Science (3rd ed.). San Francisco: W.H. Freeman. pp. 308.

Lahore CDG (2007). Solid Waste Management Plan 2007-2021. Lahore, Pakistan.

Lesley B (1993). The New shorter Oxford English dictionary on historical principles. Oxford Eng.]: Clarendon.

Perry L (2003). University of Vermont Extension.Department of Plant and Soil Science.

Saeed SA, Ahmad NA, Sadiq M ((1979). Density and frequency of weeds in wheat fields of the Punjab province Pakistan. Pak J of Agri Sci. 26, 85-90.

Singh SK, Rai PK, Mehta S, Gupta RK, Watal G (2009). Curative effect of *Cynodondactylon*against STZ induced hepatic injury in diabetic rats. Ind. J. Clin. Biochem. 24, 410-413.

Stephen SG (2009). Plant Foraging: Two Case Studies.