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The sedges and grasses of district Saharanpur (U.P.), India

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Abstract
The communication represents the study of sedges and grasses, which is the result of extensive survey and exploration of sedges and grasses of Saharanpur district form the period of January 2008 to December 2011. A total number of 110 species of Cyperaceae and Gramineae (Poaceae) have been collected from this area. Out of 110 species of these two families belonging to 64 genera, 77 species belong to Gramineae (Poaceae) and 33 species belong to Cyperaceae.

Keywords: Sedges, Grasses, Saharanpur district

INTRODUCTION

The district Saharanpur is primarily an agricultural area. It is the northernmost district of Uttar Pradesh state, India. The district lies between 29º34'45" to 30º21'30" North latitude and 77º9'46" to 78º14'45" East longitude. The total area of the district is 3,689 square kilometres. The entire Saharanpur district is a part of the Yamuna-Ganges Doab region. The river Yamuna forms its boundary in the west which separates it from Karanl and Yamunanagar districts of Haryana. In the east lies the district of Haridwar in the state of Uttarakhand. To its south is the district Muzaffarnagar.

Topography

The whole district lies in the Doab of Yamuna and Ganges. It has an average elevation of 269 metres. The shiwalik hills rise above it on the northern frontier, the rest of the district is almost plain. The land of the region is very fertile and suitable for growing almost all kinds of crops. The topographic features of the area depends on the permanent and seasonal rivers, canals and ponds.

Rivers, Canals and Waterways

The river Yamuna flows through the western part of the district. The other rivers are Hindon, Solani, Ratmau and Nagdev, which run through the district and submerge either in Yamuna or in Ganges. In addition to these rivers, upper Gangetic canal and madhya Ganga canal with their tributaries are supplying water to larger part of the district for agricultural activities. The eastern Yamuna canal and Deoband branch of upper Ganga canal flow across the district, which are the main source of recharge to shallow aquifers in the adjoining areas. The eastern Yamuna canal receives its water from river Yamuna itself at Saharanpur. Besides the rivers and canals, so many permanent and temporary tanks, ponds, tube wells and ditches are found in the district.

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Geology and Soil

Due to its situation in Doab region, the soil of the district is formed of silt transported by the two rivers Ganges and Yamuna. The soil is of alluvial nature composed of a variety of materials including fine particles of silt, clay and gravels of sand. It is basically divided into two types, Khadar and Bangar.

1. **Khadar –** The river basin area is called khadar. It is mainly divided into Ganga khadar and Yamuna Khadar.
   a. **Ganga Khadar –** This area is found towards east. The two tributaries of Ganga, Ramau and Sonali formed it. This area extends upto Deoband.
   b. **Yamuna Khadar –** This area is found in the left side of river Yamuna. It extends upto 2-12 km of Nakur tehsil area.

2. **Bangar –** This area covers the maximum area of the district. The whole area is almost flat and plain. The slope is slightly towards the southern side. The water level is high making water easily available for farming and cultivation.

Climate

The climate of the district is varied. The district experiences South-East monsoon during the summer. During winter rain occurs due to retreating monsoon. However, the area touching Shiwalik hills receives more rainfall. The intensity of the rainfall decreases from northern east to southern west. The average temperature in June is 35.3ºC and in January 13.9ºC. It is sub-humid region especially the upper Ganga plain areas. Humidity is more in the western area as compared to the eastern region of Saharanpur.

MATERIALS AND METHODS

A total number of 33 species of sedges of Cyperaceae and 77 species of Gramineae (Poaceae) have been collected from district Saharanpur. These plants have been collected in flowering and fruiting stages as far as possible. The plant specimens were identified with the assistance of available floras and nomenclature was also updated with the help of available literature [1,2,3,4,5,6,7,8,9,10,11 and 12].

RESULTS AND DISCUSSION

Common species of Cyperaceae and Gramineae (Poaceae) which appear in the district are given in table 1. This study is the result of four years (January 2008 to December 2011) of extensive survey and exploration of sedges and grasses of Saharanpur district.A total number of 110 species of Cyperaceae and Gramineae (Poaceae) have been collected from the district. Out of 110 species of these two families belonging to 64 genera, 77 species belong to Gramineae (Poaceae) (54 genera) and 33 species belong to Cyperaceae (10 genera).

Table 1. Sedges and Grasses of District Saharanpur (U.P.), India

S. No.	Botanical Name	Local Name	Family	Flowering & Fruiting	Habit
1.	*Apluda mutica* Linn.	Send	Gramineae	September – March	Herb
2.	*Aristida funiculata* Trin.	Bachai	Gramineae	September – December	Herb
3.	*Arundo donax* Linn.	Narsal	Gramineae	September – February	Herb
4.	*Avena sativa x sterilis* Bor.	Jai	Gramineae	January – April	Herb
5.	*Brachiaria ramosa* (Linn.) Stapf	Makra Ghas	Gramineae	May – October	Herb
6.	*Bulbostylis barbata* (Rottb.) Clarke	Piazi	Cyperaceae	August – November	Herb
7.	*Carex fedia* Nees	Motha	Cyperaceae	February – April	Herb
8.	*Carex wallichiana* Sprengel	Motha	Cyperaceae	February – April	Herb
9.	*Cenchrus biflorus* Roxb.	Anjan	Gramineae	July – October	Herb
10.	*Chrysopogon fulvus* (Spreng.) Chiov.	Zargha	Gramineae	August – October	Herb
11.	*Coix lacryma-jobi* Linn.	Sankuru	Gramineae	September – January	Herb
12.	*Cymbopogon jwarancusa* (Jones) Schult	Lakhvee	Gramineae	April – June	Herb
13.	*Cynodon dactylon* (Linn.) Pers.	Doob Ghas, Doobra	Gramineae	January – December	Herb
14.	*Cyperus alopecuroides* Rottb.	-	Cyperaceae	July – November	Herb
15.	*Cyperus flabelliformis* Rottb.	Nagarmotha	Cyperaceae	November – May	Herb
16.	*Cyperus iria* Linn.	Motha	Cyperaceae	June – October	Herb.
17.	*Cyperus rotundus* Linn.	Motha	Cyperaceae	July – November	Herb
18.	*Dactylotenium aegytium* (Linn.) Beauv.	Makra	Gramineae	May – October	Herb
19.	*Dendrocalamus stricutus* (Roxb.) Nees	Bans	Gramineae	-	Shurb
20.	*Desmostachya bipinnata* (Linn.) Stapf.	Durva	Gramineae	June – November	Herb
21.	*Digitaria bicornis* (Lam.) Roemer & Schultes ex Loudon	-	Gramineae	August – October	Herb
22.	*Echinochloa colona* (Linn) Link.	Sawank	Gramineae	June – October	Herb
23.	*Eleocharis palustris* (Linn.) R. Br.	-	Cyperaceae	September – November	Herb
24.	*Fimbristylis bisumbellata* (Forsk.) Bubani	-	Cyperaceae	August – November	Herb
25.	*Hackelochloa granularis* (Linn.) Kuntze.	Trinpali	Gramineae	August – November	Herb
26.	*Inperata cylindrica* (Linn.) Beauv.	Siru	Gramineae	June – October	Herb
27.	*Isachne albens* Trin.	-	Gramineae	August – December	Herb
28.	*Leptochloa chinensis* (Linn.) Nees.	-	Gramineae	July – November	Herb
29.	*Leptochloa panicea* (Retz.) Ohwi	-	Gramineae	August – November	Herb
30.	*Poa annua* Linn.	-	Gramineae	August – November	Herb
31.	*Rottoboellia exaltata* Linn.	Bhursali	Gramineae	February – May	Herb
32.	*Saccharum officinarum* Linn.	Ganna, Ekh	Gramineae	November – April	Herb
33.	*Saccharum spontaneum* Linn.	Munj	Gramineae	October – January	Herb
34.	*Schoenoplectus roylie* (Ness) Ovczinn. & Cyukav.	-	Cyperaceae	February – June	Herb
35.	*Scirpus grossus* Linn.	-	Cyperaceae	August – November	Herb
36.	*Thysanolaena maxima* (Roxb.) Kuntze.	Nastura	Gramineae	October – February	Herb
37.	*Triticum aestivum* Linn.	Gehun	Gramineae	February – May	Herb
38.	*Urochloa panicoides* Beauv.	-	Gramineae	July – November	Herb
39.	*Vetiveria zizanioides* (Linn.) Nash.	Khas	Gramineae	August – November	Herb
40.	*Zea mays* Linn.	Makka	Gramineae	July – November	Herb

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