



MEDICINAL GRASS RESOURCES FROM SAMBHAL DISTRICT OF ROHILKHAND REGION (U.P.), INDIA

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Abstract

Grasses are the members of Poaceae (Gramineae) family which are the most vital part in our life as food, medicine, cattle-fodder and many different things. Sambhal district is represented by 6 subfamilies and 14 tribes of family Poaceae. Subfamily Panicoideae (24 species) had the highest number of species followed by Chloridoideae (9 species), Pooideae (5 species) and Bambusoideae (1 species), Ehrhartoideae (1 species), Arundinoideae (1 species) each, while Centothecoideae, Aristidoideae, Anomochlooideae, Danthonioideae, Pharoideae, and Puelioideae are not represented in this area. We recorded total 41 species out of which 18 grass species used in fungal infection, fever, haematuria, urinary diseases, intestinal worm, asthma, jaundice, cough, wounds, snakebite, rheumatism etc.

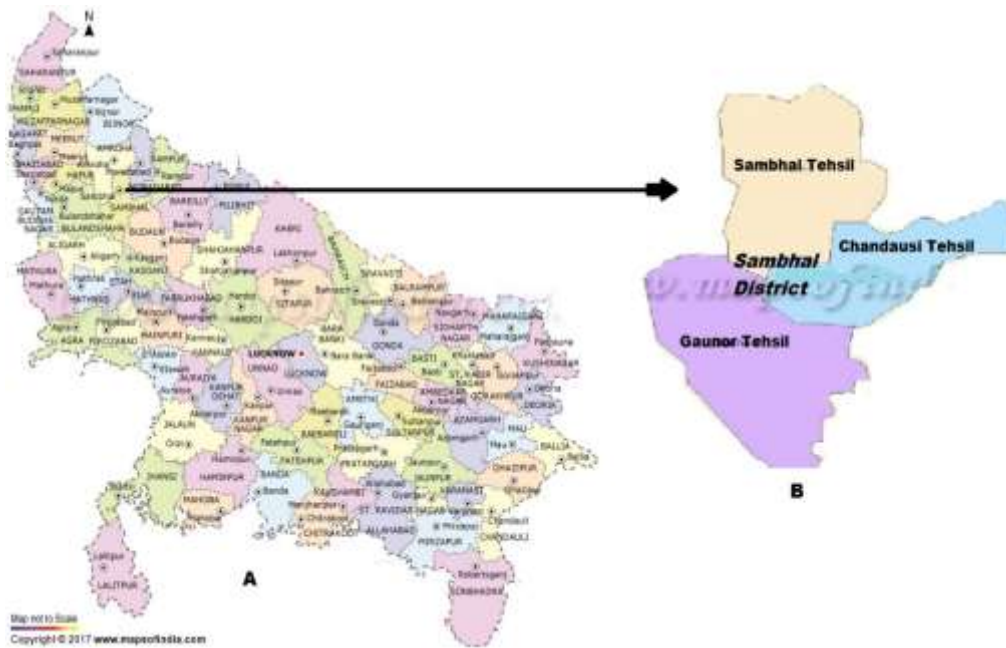
Key words: Grasses, diseases, medicinal value, Sambhal District.

I. INTRODUCTION

Poaceae or Gramineae is a large and nearly ubiquitous family of monocotyledonous flowering plants known as grasses. Poaceae includes the cereal grasses, bamboos and the grasses of natural grassland and cultivated lawns and pasture. The grass family is one of the most widely distributed and abundant groups of plants on Earth. Grasses are found on almost every continent and are absent only from Antarctica. Grasses are the signature of Poaceae with more than 10,290 species (Clark, 2004; Clayton *et al.*, 2012). It is the fourth largest family of flowering plants, surpassed only by Asteraceae (24,000 species), Orchidaceae (20,000 species) and Fabaceae (18,000 species). Some notable work on Indian grasses are done by Achariyar and Tadulinga (1921), Blatter (1935), Bor (1960), Duthie (1883,88), Raizada (1961,66) Singh (1971), Jain *et al.*, (1975) Vedprakash *et al.* (1978), Roy (1984), Uniyal *et al.* (1994), Shukla (1996), Moulik (1997, 2000), Singh (2001), Reddy (2002), Shulka and Sinha (2004), Kumar and Yadav (2005), Sharma *et al.* (2007), Singh (2007), Kandwal (2009), Rao *et al.* (2009), Chaudhary *et al.* (2012), Parmar *et al.*, (2012) Sheshadri, (2013), Gorade and Data (2014), Beena(2015) and Malik (2015).

II. STUDY AREA

Sambhal district (28.58°N and 78.55°E) was carved out of Moradabad district in September 2011. It consists of three tehsils- Sambhal and Chandausi, taken from Moradabad, and Gunnaur, taken from Badaun. It is a part of the Ganga-Ramganga doab of Rohilkhand region in U.P. The maximum and minimum atmospheric temperatures are 41.6°C and 3.8°C respectively. The average rainfall varies between 800 to 1000 mm. The relative humidity is up to 90% in monsoon season and in drier part of the year it decreases to less than 20%. There are a few sporadic references of the collections of angiosperms from Sambhal by T. Thomson and H. B. Naithani in the *Flora of Upper Gangetic Plain and the adjacent Siwalik and sub Himalayan tracts* (Duthie, 1903-1929) and *Supplement to the Flora of Upper Gangetic Plain* (Raizada, 1966) respectively. Thereafter neither documentation nor medicinal value of grasses done from the area. Therefore, we have attempted, for the first time to prepare a list of grasses with their medicinal value used by rural people of Sambhal district (fig 1.) of Rohilkhand region of Uttar Pradesh.



“Fig. 1 Map of Uttar Pradesh (A) and Sambhal district (B)

III. MATERIALS AND METHODS

Fields rips were made in all three tehsils of Sambhal district during 2015-16 to collect grass specimens and available literature by Clifford and Watson (1977), Jain (1986), Gould and Shaw (1988), Clark (2004), Anonymous (2007) and Singh (2007) have been consulted for identification of species. All specimens were dried, preserved and deposited in the Herbarium, Department of Botany, Hindu College, Moradabad (U.P.). In all cases, however the identification of grasses was finally confirmed by matching them in the herbarium of the FRI Dehradun and BSI Allahabad. Valuable information regarding medicinal uses were collected on the basis of interviews with experienced people of various communities, local medicine men (Vaidya) and old ladies (Midwife) and also consulting available literature by Mitra and Mukherjee (2005), Srivastava (2006) and Kavya *et al.* (2013). Common species of Gramineae (Poaceae) which appear in the district are given in Table 1. as per Grass phylogeny working group (2001).

IV. RESULTS AND DISCUSSION

We recorded total 41 species from the study area which fall under six subfamilies and 14 tribes. Subfamily Panicoideae represented by 24 species followed by Chloridoideae with 9 species, Pooideae by 5 species whereas Bambusoideae, Ehrhartoideae and Arundinoideae with one species each. Subfamily Centothecoideae, Aristidoideae, Anomochlooideae, Danthonioideae, Pharoideae, and Puelioideae are not represented in this area. Out of 41 taxa, 18 are used in fungal infection, fever, haematuria, urinary diseases, intestinal worm, asthma, jaundice, cough, wounds, snakebite, rheumatism etc (Table 2).

Table 1. Grasses of Sambhal District (U.P.)

S.No	Botanical Name	Subfamily	Tribe	Field status
1.	<i>Arachne racemosa</i> (Heyne) Ohwi	Chloridoideae	Eragrostideae	wild
2.	<i>Arundo donax</i> L.	Arundinoideae	Arundineae	wild
3.	<i>Avena sterilis</i> L. var. <i>cultra</i>	Pooideae	Poeae	cultivated
4.	<i>Bambusa arundinacea</i> Willd.	Bambusoideae	Bambuseae	cultivated
5.	<i>Brachiaria ramosa</i> (L.) Stapf.	Panicoideae	Paniceae	wild

6.	<i>Cenchrus ciliaris</i> L.	Panicoideae	Paniceae	wild
7.	<i>Chloris inflata</i> Link.	Chloridoideae	Cynodonteae	wild
8.	<i>Coix lacryma-jobi</i> L.	Panicoideae	Andropogoneae	wild
9.	<i>Cymbopogon citratus</i> Stapf	Panicoideae	Andropogoneae	cultivated
10.	<i>Cynodon dactylon</i> Pers.	Chloridoideae	Cynodonteae	wild
11.	<i>Dactyloctenium indicum</i> Boiss.	Chloridoideae	Cynodonteae	wild
12.	<i>Desmostachya bipinnata</i> Stapf	Chloridoideae	Chlorideae	wild
13.	<i>Dichanthium annulatus</i> Stapf	Panicoideae	Andropogoneae	wild
14.	<i>Digitaria setigera</i> Roth.	Panicoideae	Paniceae	wild
15.	<i>Echinochloa colonam.</i>	Panicoideae	Paniceae	wild
16.	<i>Eragrostis pilosa</i> (L.)P. Beauv.	Chloridoideae	Eragrostideae	wild
17.	<i>Eragrostis tenella</i> (L.) P. Beauv.	Chloridoideae	Eragrostideae	wild
18.	<i>Hemarthria compressa</i> (L. f.) R. Br.	Panicoideae	Andropogoneae	wild
19.	<i>Heteropogon contortus</i> L.	Panicoideae	Andropogoneae	wild
20.	<i>Hordium vulgare</i> L.	Pooideae	Triticeae	cultivated
21.	<i>Imperata cylindrica</i> (L.) Rauschel.	Panicoideae	Andropogoneae	wild
22.	<i>Oryza sativa</i> L.	Ehrhartoideae	Oryzae	cultivated
23.	<i>Panicum miliare</i> Lamk.	Panicoideae	Paniceae	wild
24.	<i>Panicum typheron</i> Schult.	Panicoideae	Paniceae	wild
25.	<i>Panicum antidotale</i> Retz.	Panicoideae	Paniceae	wild
26.	<i>Phalaris minor</i> (L.) Retz.	Pooideae	Poeae	wild
27.	<i>Pennisetum americanum</i> (L.) Leeke	Panicoideae	Paniceae	cultivated
28.	<i>Poa annua</i> L.	Pooideae	Poeae	wild
29.	<i>Sachharum benghalense</i> Retz.	Panicoideae	Andropogoneae	wild
30.	<i>Sachharum officinarum</i> L.	Panicoideae	Andropogoneae	cultivated
31.	<i>Saccharum spontaneum</i> L.	Panicoideae	Andropogoneae	wild
32.	<i>Setaria glauca</i> L.	Panicoideae	Paniceae	wild
33.	<i>Setaria verticellata</i> (L.) P. Beauv	Panicoideae	Paniceae	wild
34.	<i>Sorghum vulgare</i> Pers.	Panicoideae	Andropogoneae	cultivated
35.	<i>Sorghum halepense</i> (L.) Pers	Panicoideae	Andropogoneae	wild
36.	<i>Sporobolus marginatus</i> Hochst. ex A. Rich.	Chloridoideae	Eragrostideae	wild
37.	<i>Tragus roxburghii</i> Panigrahi	Chloridoideae	Cynodonteae	wild
38.	<i>Triticum aestivum</i> L.	Pooideae	Triticeae	cultivated
39.	<i>Urochloa panicoides</i> Beauv	Panicoideae	Paniceae	wild
40.	<i>Vetiveria zizanioides</i> (L.) Nash	Panicoideae	Andropogoneae	wild
41.	<i>Zea mays</i> L.	Panicoideae	Andropogoneae	cultivated

Table 2. Medicinal uses of some grasses of Sambhal district (U.P.)

1. *Apluda mutica* L. (Local name-Panoi) Fl. & Fr.: Sept – Feb.
-Paste of whole plant is applied to cure fungal infection in mouth of children.
2. *Bambusa arundinacea* Willd. (Local name -Bans) Fl. & Fr.: Not seen.
-Decoction made from white pulp inside the culm is used for haematuria.
3. *Cenchrus ciliaris* L. (Local name- Kusha) Fl. & Fr.: Throughout the year.
-Root paste is taken orally to eliminate tapeworm from stomach.
4. *Coix lacryma-jobi* L. (Local name-Vaijanti) Fl. & Fr.: Aug.-Dec.
-Seeds powder mixed with sugar is used to treat ailments of the lungs, large intestines, spleen and stomach.
5. *Cymbopogon citratus* Stapf (Local name- Lemon ghas) Fl. & Fr.: Jan – March.
-Leaf infusion is used for reducing fever and general digestive aid.

6. *Cynodon dactylon* Pers. (Local name-Doob ghas) Fl. & Fr.: All the year round.
-Root decoction is used orally to stop burning sensation during urination.
7. *Dactyloctenium indicum* Boiss. (Local name-Bhobra) Fl. & Fr.: June- Sept.
-Seeds decoction is taken in joint pains.
8. *Desmostachya bipinnata* Stapf (Local name- Dab) Fl. & Fr.: June – Nov.
-Root decoction is given to treat asthma and root paste is used along with milk against rheumatism.
9. *Dichanthium annulatus* Stapf. (Local name- Zargha) Fl. & Fr.: Aug – Jan.
-Ash of inflorescence along with honey is given to children in cough.
10. *Echinochloa colonam.* L. (Local name- Shama) Fl. & Fr.: Oct – Dec.
-Root paste is applied externally over wounds and inflammations.
11. *Eleusine indica* (L.) Gaertn. (Local name- Phulwa) Fl. & Fr.: July – Oct.
-The whole plant especially the root is used for the treatment of hypertension and influenza.
12. *Heteropogon contortus* L. (Local name- Bawali ghas) Fl. & Fr.: Oct – March.
-Root paste is given orally in snake bite.
13. *Hordium vulgare* L. (Local name- Jow) Fl. & Fr. Jan – March
-Seeds are used to cool the body and persons suffering from jaundice.
14. *Panicum antidotale* Retz. (Local name- Bansi) Fl. & Fr.: June-Nov.
-The ash of plant mixed with cow's butter is applied on burnt part for cooling and healing.
15. *Phalaris minor* (L.) Retz. (Local name- Chirya ka bajra) Fl. & Fr.: Feb.- April.
-Leaf juice is used for Ear- ache.
16. *Saccharum spontaneum* L. (Local name- Sarkanda) Fl. & Fr.: Sept – Jan.
-Root decoction is used as diuretic.
17. *Setaria glauca* L. (Local name- Bandra) Fl. & Fr.: June – Dec.
-Seeds decoction is taken orally to cure fever.
18. *Sorghum halepense* (L.) Pers (Local name- Baru) Fl. & Fr.: July – Dec.
-Whole plant is used for the treatment of stomach ache, epilepsy and decoction of seeds is used against diarrhoea.

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