



DIVERSITY STUDIES OF GRASSES AROUND ARJUNNAGAR

Varsha S. Khude

Department of Botany, Devchand College, Arjunnagar, Tal. Kagal, Dist. Kolhapur,
Via. Nipani-591 237 (Maharashtra), India.

Introduction

The grass family (poaceae) is a diverse and economically dominant group of monocotyledonous plants. The grasses form a natural homogenous group of plants with remarkably diversity playing a significant role in the lives of human beings and animals. It is difficult to calculate exact number of species of grasses in India. Several workers have contributed to grass flora of India. Jain (1986) reported 266 genera and 1200 sp. for the country. Karthikeyan *et al.* (1989) listed 1254 sp. belonging to 260 genera. The grasses and bamboos of India by Moulik (1997) is the recent book on Indian poaceae. Yadav (2010) recently published "Know your grass genera through hand lens" in which pictorial key for grass genera identification is given. As far as Maharashtra is concern several workers give number of additions to the grass flora of Maharashtra in the form of extended distribution, new records and new description in Cook's (1908) flora of presidency of Bombay. Deshpande and Singh (1986) recorded 397 taxa belonging to 109 genera. Various recently published district floras also reported several regional grass sp. BSI published a floristic account in Flora of Maharashtra state by Sharma *et al.* (1996) in which 373 sp. of grass belonging to 104 genera have been recorded. Very recently, Potdar *et al.* (2012) reported 415 sp. Belonging to 125 genera.

Grasses play important role in mans economic activity they have great economic potential some of them are highly ornamental, grain grasses is the most important which is the major supplier of calories for human nutrition and also for nutrition of animals like rice, wheat, oats, rye barley, maize, sorghum millet and sugarcane. Grasses are good soil binders, moisture conserver, make good turf and laws. Some are of medicinal value, certain yields essential oils, used for paper making, used for miscellaneous uses such as thatching, matting, making ropes, furniture, stuffing for pillows, brooms, cigarette

and cherrot wrappers, Hindu rituals and musical instruments. Grasses constitute major ground cover and make significant contribution to biomass production. They play crucial role in the maintenance of worlds ecosystems and biodiversity.

Despite utmost importance of grasses to mankind the study on grasses continues to be a neglected subject this is mainly because of the feeling that it is a difficult group for identification, small size of floral organs, special terminologies and complicated structure of spikelet's and inflorescence. Study on grassland, wild grasses especially of fodder value have become very important for development of dairy industry, production of meat and restoration of degraded ecosystem. Therefore, there is need for detailed studies on grasses of different phytogeographical regions of the country for their utilisation for human welfare keeping this view in mind in the present investigation an attempt has been made to study the diversity of grasses around arjunnagar, Nipani, which is unexplored area regarding biodiversity of grasses.

Materials and Methods

Study area

Arjunnagar is the west part of Nipani, a small city on the border of Maharashtra and Karnataka on Pune-Bangalore NH4 between Kagal and Sankeshwar, 38 kms away from Kolhapur (Maharashtra) and 73 kms from Belgaum (Karnataka). For the convenience the study area is divided into 5 spots.

During the present taxonomical study on grasses several field trips of short duration have been undertaken for collection of grasses. Over 200 grass specimens were collected from the selected locality during the month between August to March. During the study period the relevant field notes were written on the spot. By using regular drying method collected grasses were properly

Table 1 : Diversity of grasses in the study area.

S. no.	Name of the taxa	Spot no. around Arjunnagar				
		I	II	III	IV	V
1	<i>Apluda mutica</i>	+	+	-	-	+
2	<i>Aristida funiculata</i>	+	-	+	+	+
3	<i>Aristida stocksii</i>	+	-	+	+	-
4	<i>Arthraxon hispidus</i>	+	+	+	-	+
5	<i>Arthraxon hispidus</i> var. <i>Santapau</i>	-	-	+	-	+
6	<i>Arundinella pumila</i>	+	+	+	-	-
7	<i>Chloris barbata</i>	+	+	+	+	+
8	<i>Chloris dolichostachya</i>	+	+	+	+	+
9	<i>Chloris pycnatrix</i>	+	+	+	+	+
10	<i>Chloris virgata</i>	+	+	+	+	+
11	<i>Chrysopogon castaneus</i>	+	-	+	-	-
12	<i>Cymbopogon martini</i>	+	-	-	+	+
13	<i>Cynodon radiatus</i>	-	+	-	+	+
14	<i>Cynodon barberi</i>	+	+	+	-	-
15	<i>Cynodon dactylon</i>	-	+	+	+	+
16	<i>Dactyloctenium aegyptium</i>	-	+	+	-	-
17	<i>Dendrocalamus strictus</i>	+	+	-	-	+
18	<i>Dichanthium annulatum</i>	+	+	+	+	-
19	<i>Dichanthium caricosum</i>	+	+	+	+	+
20	<i>Dichanthium caricosum</i>	+	+	+	+	+
21	<i>Digitaria ciliata</i>	+	-	+	-	+
22	<i>Digitaria ischaemum</i>	+	+	-	+	+
23	<i>Digitaria longiflora</i>	+	+	+	+	-
24	<i>Digitaria stricta</i>	+	+	+	+	+
25	<i>Dimeria connivens</i>	+	-	+	+	-
26	<i>Dimeria ornithopoda</i>	-	+	+	+	-
27	<i>Dinebra retroflexa</i>	+	+	+	-	-
28	<i>Eleusine indica</i>	+	-	+	+	+
29	<i>Eragrostis cilianensis</i>	+	+	+	+	-
30	<i>Eragrostis gangetica</i>	+	+	+	+	+
31	<i>Eragrostis tenella</i>	-	+	-	+	+
32	<i>Heteropogon contortus</i>	+	+	+	+	-
33	<i>Imperata cylindrical</i>	+	+	+	-	+
34	<i>Lophopogon tridentatus</i>	+	-	+	+	-

*Table 1 continued...**Table 1 continued...*

35	<i>Microchloa indica</i>	-	-	+	+	+
36	<i>Oryza sativa</i>	+	+	+	-	-
37	<i>Pennisetum pedicellatum</i>	+	+	+	-	-
38	<i>Pennisetum purpureum</i>	+	+	+	-	+
39	<i>Saccharum spontaneum</i>	-	-	-	-	-
40	<i>Setaria verticillata</i>	+	+	+	-	+
41	<i>Vetiveria zizanioides</i>	+	-	-	-	-
42	<i>Zea mays</i>	-	-	-	-	+

processed, poised and the specimen were mounted on herbarium sheets and deposited in the herbarium of botany department after confirmation of their identity.

The grasses collected have been described, illustrated and photographed, spikelets were dissected under microscope. For classification and identification the method given by Potdar *et al.* (2012) has been adopted.

Results and Discussion

In the present study, 42 species of 26 genera were found in the study area during the study period. Table 1 represents the diversity of grasses in the studied locality.

References

- Deshpande, U. R. and N. P. Singh (1989). *Grasses of Maharashtra an annotated inventory*. Mittal publications, New Delhi.
- Jaik, S. K. (1986). The grass flora of India – A synoptic Account of uses and Phytogeography. *Bull. Bot. Surv. India*, **28** : 229-240.
- Karthikeyan, S., S. K. Jain, M. P. Nayar and M. Sanjappa (1989). *Florae indicae Enumeratio : Monocotyledonae*, BSI Calkatta.
- Moulik, S. (1997). *The grasses and bamboos of India*. Vol. 1 and 2. Scientific Publisher, Jodhpur.
- Potdar, G. G., C. B. Salunkhe and S. R. Yadav (2012). *Grasses of Maharashtra*, Shivaji University Publication, Kolhapur.
- Sharma, B. D., S. Karthikeyan and N. P. Singh eds. (1996). *Flora of Maharashtra state Monocotyledons*. BSI Calkatta.
- Yadav, S. R. (2010). *Know your grass genera through hand lens*. Shivaji University Publication, Kolhapur.