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Diversity of Grasses from Rehekuri Sanctuary, Karjat, Dist. Ahmednagar, M.S., India

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ABSTRACT

Grasses constitute a natural homogenous group of plants belonging to the family Poaceae (Gramineae). They are economically the most important of all flowering plants because of their nutritious grains and soil-forming function and they have the most-widespread distribution and the largest number of individuals. During extensive field survey of grasses samples were a total number of 41 genera 66 different grass species have been collected, identified, described and illustrated from the Rehekuri Sanctuary, Karjat. It is found that out of 41 genera of study area, 26 have only one species each (monotypic) it is also noted that the genera which are represented in India by a single species also occur in this region. These are *Achrachne racemosa* and *Apluda mutica*. It also shows that 06 genera have two species each, 03 have 03 species each, 03 have 04 species and 01 genera have 07 species. The poaceae family showed *Setaria*, *Aristida*, *Brachiaria* and *Eragrosti* were found most dominant genera and luxuriantly grow in rainy season and cold climatic conditions. This is first time report from Rehekuri Sanctuary, Karjat of Ahmednagar district of Maharashtra.

Key words : Grasses, Diversity, Poaceae, Survey, Rehekuri Sanctuary.

Introduction

Grasses are one to the largest and most valuable groups of flowering plants, consisting of some 610 genera and about 10,000 species (Cope, 1982). The grasses play an important role in economy of the people of the area. Mainly, grasses are used as fodder in the area; some grasses are used for thatching and for medicinal purpose. There is deterioration of the habitat of grasses due to overgrazing (Muratkar *et al.*, 2012). Grass flora associated with paddy field of Wayanad includes 33 species grasses belonging to 24 genera, which are common throughout the study area. Out of which 33 species 17 grasses are common weeds, 6 species used for grain, 7 of them used in ethnomedicine, some of them are good soil binders, for making brushes and brooms and also

used in paper industry (Dileep, P. and Geetha, G. Nair, 2015). Recently checklist of the grasses of India includes 1506 species plus infraspecific taxa and presents information on types, synonyms, distribution within India (Kellogg *et al.*, 2020)

Important contribution to regional grasses has been made in various recently published district floras. Kamble and Pradhanin 'Flora of Akola' (1988) reported 86 species belonging to 49 genera. Lakshminarasimhan and Sharma in 'Flora of Nasik district' (1991) reported 127 species belonging to 63 genera. Naik in 'Flora of Marathwada' (1998) reported 203 species belonging to 81 genera of grasses for the region. Diwakar and Sharma in 'Flora of Buldhana' (1999) reported 61 species belonging to 44 genera. Yadav and Sardesai in 'Flora of Kolhapur District' (2002) reported 212 species belonging to 87

genera of grasses. Botanical survey of India (Pune) published a floristic account 'Flora of Maharashtra State-Monocotyledones' (Sharma *et al.*, 1996), in which 373 species of grasses belonging to 104 genera have been recorded for the State. Deore (2010) carried out floristic study of Washim district. He reported 63 species of grasses. Potdar *et al.* (2012) reported 415 species distributed in 125 genera of grasses.

The present study was carried out in Rehekuri Sanctuary, Karjat located as south region of Ahmednagar district at 18019'86" N to 18049'86" N latitude and 74043' 20" E to 75013'20" E longitude having a total area of 1,440 km². The Rehekuri Sanctuary is drought prone with less average rainfall. The diverse climatic conditions and ecological habitats of Rehekuri Sanctuary make this area a natural habitat for the growth and development of large number of grasses. Considering these things, the present investigation is trying to focus on the grasses in Rehekuri Sanctuary area of Ahmednagar district of Maharashtra, India.

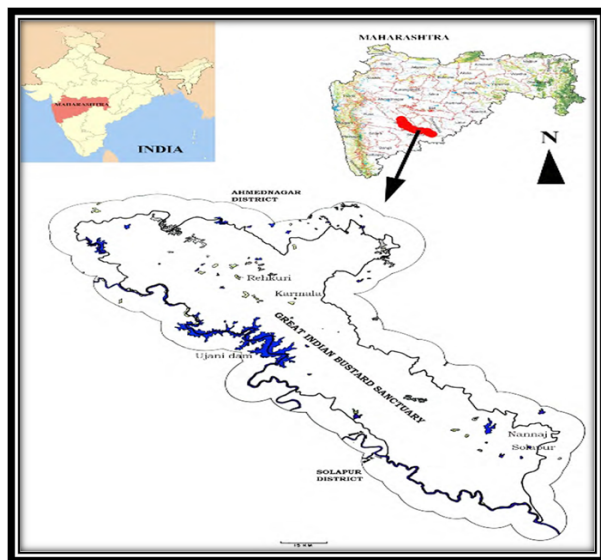


Plate 1. Location of Study Area

Materials and Methods

The survey and collection of grasses was carried out from Rehekuri Sanctuary, Karjat area during rainy season from 2020 to 2022. While survey and collection, habitat, habit, flowering period and morphological differences of grasses were recorded. Field photography of grasses was also done. Detailed morphological studies were carried down under

dissecting microscope and different morphological characters were observed and their identification was confirmed by flora of Maharashtra (Singh and Kartikeyan, 2000), Grasses of Maharashtra (Potdar *et al.*, 2012), Flora of Kolhapur District (Yadav and Sardesai, 2002).

Results and Discussion

Present investigation emphasizes on study of Rehekuri Sanctuary, Karjat of Ahmednagar district of Maharashtra. Taxonomically a total number of 41 genera 66 different grass species have been collected, identified, described and illustrated from the Rehekuri Sanctuary, Karjat. The recorded grasses had medicinal, food, fodder, ornamental values.

When distribution of species within genera is considered, it is found that out of 41 genera of study area, 26 have only one species each (monotypic) for the area. These are- *Acrachne*, *Andropogon*, *Apluda*, *Avena*, *Bothriochloa*, *Cenchrus*, *Chloris*, *Chrysopogon*, *Cynodon*, *Dichanthium*, *Dinebra*, *Echinochloa*, *Eleusine*, *Hackelochloa*, *Ischaemum*, *Iseilema*, *Lophopogon*, *Melanocenchris*, *Panicum*, *Paspalidium*, *Paspalum*, *Pennisetum*, *Poa*, *Sorghum*, *Tetrapogon* and *Tragus*. It is also noted that the genera which are represented in India by a single species also occur in this region. These are *Achrachne racemosa* and *Apluda mutica*. Also shows that 06 genera have two species each, 03 have 03 species each, 03 have 04 species and 01 genera have 07 species. The most dominant genera *Setaria*, *Aristida*, *Brachiaria* and *Eragrostis*.

Conclusion

The present study has been concluded that, Rehekuri Sanctuary, Karjat of Ahmednagar district of Maharashtra having tremendous diversity among grasses. The poaceae family showed *Setaria*, *Aristida*, *Brachiaria* and *Eragrosti* were found most dominant genera and luxuriantly grow in rainy season and cold climatic conditions. These grasses having very important potential applications like medicinal, food, fodder and ornamental values.

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Cynodon dactylon (L) Pers.



Dinebra retroflexa (Vahl) Panz.



Dichanthium annulatum (Forssk.) Stapf.



Dactyloctenium aegyptium L. Willd.



Echinochloa colonum (L.) Link.



Themeda quadrivalvis (L.) Kuntze

Plate 2. Grasses diversity from Rehekuri Sanctuary Karjat of Ahmednagar District.

Table 1. Species diversity of grasses in Rehekuri Sanctuary, Karjat of Ahmednagar District

Sr. No.	Name of Plant	Habit	Flowers	Uses	Family
1.	<i>Acrachne racemosa</i> (B. Heyne ex Roth) Ohwi	Herb	Sept.– Oct.	Food & Fooder	Poaceae
2.	<i>Andropogon pumilus</i> Roxb.	Herb	Jul.– Dec.	Medicinal	Poaceae
3.	<i>Apluda mutica</i> L.	Herb	Sept.– Dec.	Medicinal	Poaceae
4.	<i>Aristida adscensionis</i> L.	Herb	Sept.– Dec.	Food & Fooder	Poaceae
5.	<i>Aristida funiculata</i> Trin. & Rupr.	Herb	Sept. – Dec.	Food & Fooder	Poaceae
6.	<i>Aristida hystrix</i> L. f.	Herb	Sept. – Dec.	Food & Fooder	Poaceae
7.	<i>Aristida redacta</i> Stapf.	Herb	Sept.– Dec.	Food & Fooder	Poaceae
8.	<i>Avena fatua</i> L.	Herb	Jun. –Jul.	Food & Fooder	Poaceae
9.	<i>Bothriochloa bladhi</i> (Retz.) S.T.Blake	Herb	Sept. – Dec.	Food & Fooder	Poaceae
10.	<i>Brachiaria distachya</i> (L.) Stapf.	Herb	Sept.– Nov.	Food & Fooder	Poaceae
11.	<i>Brachiaria aeruciformis</i> (Sm.) Griseb.	Herb	Sept.– Nov.	Food & Fooder	Poaceae
12.	<i>Brachiaria ramosa</i> (L.) Stapf.	Herb	Jul. – Sept.	Medicinal	Poaceae
13.	<i>Brachiaria retans</i> L.	Herb	Jul.– Sept.	Food & Fooder	Poaceae
14.	<i>Cenchrus ciliaris</i> L.	Herb	Jul. – Sept.	Food & Fooder	Poaceae
15.	<i>Chloris gayana</i> Kunth ex Stapf	Herb	Jul. – Sept.	Food & Fooder	Poaceae
16.	<i>Chrysopogon fulvus</i> (Spreng.) Chiov.	Herb	Aug. – Sept.	Food & Fooder	Poaceae
17.	<i>Cymbopogon jwarancusa</i> (Jowes.) Schult	Herb	Jul. – Oct.	Medicinal	Poaceae
18.	<i>Cymbopogon martini</i> (Roxb.) S. Watson	Herb	Jul. – Oct.	Medicinal	Poaceae
19.	<i>Cynodon dactylon</i> (L) Pers.	Herb	Aug. – Oct.	Medicinal	Poaceae
20.	<i>Dactyloctenium aegyptium</i> L.Willd.	Herb	Aug. – Oct	Medicinal	Poaceae
21.	<i>Dactyloctenium aristatum</i> Link	Herb	Aug. – Oct	Fodder	Poaceae
22.	<i>Dichanthium annulatum</i> (Forssk.) Stapf.	Herb	Aug. – Oct	Fodder	Poaceae
23.	<i>Digitaria ciliaris</i> (Retz.) Koeler.	Herb	Aug. – Oct	Fodder.	Poaceae
24.	<i>Digitaria sanguinalis</i> (L.) Scop.	Herb	Aug. – Oct	Fodder.	Poaceae
25.	<i>Dinebra retroflexa</i> (Vahl) Panz.	Herb	Aug. – Oct	Fodder	Poaceae
26.	<i>Echinochloa colonum</i> (L.) Link.	Herb	Aug. – Sept.	Medicinal	Poaceae
27.	<i>Eleusine indica</i> (L.) Gaertn.	Herb	Jul. – Sept.	Medicinal	Poaceae
28.	<i>Eragrostiella bifaria</i> Vahl.	Herb	Jul. – Sept.	Food & Fooder	Poaceae
29.	<i>Eragrosti ellabrachyphylla</i> (Stapf) Bor.	Herb	Jul. – Sept.	Food & Fooder	Poaceae
30.	<i>Eragrostis cilianensis</i> (All.) Asch. & Graebn.	Herb	Sept. – Oct.	Fodder	Poaceae
31.	<i>Eragrostis gangetica</i> (Roxb.) Steud	Herb	Sept. – Oct.	Medicinal	Poaceae
32.	<i>Eragrostis pilosa</i> (L.) P. Beauv.	Herb	Sept. – Oct.	Fodder	Poaceae
33.	<i>Eragrostis viscosa</i> (Retz.) Trin.	Herb	Sept. – Oct.	Fodder	Poaceae
34.	<i>Hackelochloa granularis</i> (L.) Kuntze.	Herb	Sept. – Oct.	Fodder	Poaceae
35.	<i>Heteropogon contortus</i> (L.) P. Beauv. ex Roem. & Schult.	Herb	Sept. – Oct.	Medicinal	Poaceae
36.	<i>Heteropogon triticeus</i> (R. Br.) Stapf ex Craib	Herb	Sept. – Oct.	Food & Fooder	Poaceae
37.	<i>Ischaemum afrum</i> (J.F. Gmel.) Dandy.	Herb	Jul. – Sept.	Food & Fooder	Poaceae
38.	<i>Iseilema antheperoides</i> Hack.	Herb	Sept. – Oct.	Food & Fooder	Poaceae
39.	<i>Lophopogon tridentatus</i> (Roxb.) Hack.	Herb	Aug. – Oct.	Food & Fooder	Poaceae
40.	<i>Melanocenchris jacquemontii</i> Jaub. & Spach	Herb	Aug. – Oct.	Food & Fooder	Poaceae
41.	<i>Oropetium roxburghianum</i> (Steud.) S.M. Phillips	Herb	Aug. – Sept.	Food & Fooder	Poaceae
42.	<i>Oropetium thomaeum</i> (L. f.) Trin.	Herb	Aug. – Sept.	Food & Fooder	Poaceae
43.	<i>Oropetium villosulum</i> Stapf ex Bor.	Herb	Aug. – Sept.	Food & Fooder	Poaceae
44.	<i>Panicum hippothrix</i> K. Schum. ex Engl.	Herb	Jul. – Oct.	Food & Fooder	Poaceae
45.	<i>Paspalidium flavidum</i> (Retz.) A. Camus.	Herb	Aug. – Oct.	Fodder	Poaceae
46.	<i>Paspalum distichum</i> L.	Herb	Jun.– Sept.	Fodder	Poaceae
47.	<i>Pennisetum pedicellatum</i> Trin.	Herb	Aug.-Oct.	Fodder	Poaceae
48.	<i>Poa annua</i> L.	Herb	Jun.- Oct.	Fodder	Poaceae
49.	<i>Sehima ischaemoides</i> Forssk.	Herb	Jul. – Oct.	Food & Fooder	Poaceae
50.	<i>Sehima sulcatum</i> (Hack.) A. Camus.	Herb	Jul. – Oct.	Food & Fooder	Poaceae
51.	<i>Setaria glauca</i> (L.) Beauv.	Herb	Jul. – Oct.	Food & Fooder	Poaceae

Table 1. Continued ...

Sr. No.	Name of Plant	Habit	Flowers	Uses	Family
52.	<i>Setaria intermedia</i> Roem. & Schult.	Herb	Jul. – Oct.	Medicinal	Poaceae
53.	<i>Setaria pumila</i> (Poir.) Roem. and Schult.	Herb	Jul. – Oct.	Medicinal	Poaceae
54.	<i>Setaria verticillata</i> (L.) P. Beauv.	Herb	Jul. – Oct.	Food & Fooder	Poaceae
55.	<i>Setaria viridis</i> (L.) P. Beauv.	Herb	Jul. – Oct.	Medicinal	Poaceae
56.	<i>Sorghum hetepense</i> (L.) Pers.	Herb	Jul. – Oct.	Medicinal	Poaceae
57.	<i>Sporobolus arabicus</i> Boiss.	Herb	Jul. – Oct.	Food & Fooder	Poaceae
58.	<i>Sporobolus coromandelianus</i> (Retz.) Kunth	Herb	Jul. – Oct.	Food & Fooder	Poaceae
59.	<i>Sporobolus spicatus</i> (Vahl) Kunth.	Herb	Jul. – Oct.	Food & Fooder	Poaceae
60.	<i>Tetrapogon tenellus</i> (J. Koenig ex Roxb.) Chiov.	Herb	Jul. – Oct.	Food & Fooder	Poaceae
61.	<i>Themeda laxa</i> (Andersson) A. Camus.	Herb	Jul. – Dec.	Food & Fooder	Poaceae
62.	<i>Themeda quadrivalvis</i> (L.) Kuntze	Herb	Jul. – Dec.	Medicinal	Poaceae
63.	<i>Themeda triandra</i> Forssk.	Herb	Jul. – Dec.	Oranamenatal	Poaceae
64.	<i>Tragus mongolorum</i> Ohwi.	Herb	Jul. – Oct.	Food & Fooder	Poaceae
65.	<i>Tripogon bromoides</i> Roth.	Herb	Jul. – Oct.	Food & Fooder	Poaceae
66.	<i>Tripogon jacquemontii</i> Stapf.	Herb	Jul. – Oct.	Food & Fooder	Poaceae

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