

Grasses Diversity of Mandav region (M.P.) India

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ABSTRACT

The sky seems to go on forever! You can look in any direction for miles and see no trees or bushes. It might just seem like a lot of grass, but this place is teeming with life. You are in a grassland biome, grasslands have many names-prairies, pampas, steppes, and savannas. They are all areas where rain isn't predictable. Grasslands receive more rain than deserts and less rain than forests. The rainfall in a grassland doesn't support many trees. Grassland has unique plants and animal. To keep grassland healthy plants and animals work together. Indian grassland have been classified into eight major types and two types Sehima Dichanthium and Dichanthium Cenchrus are present in M.P. Research area - Mandva is situated in the Vindhyan Range at 2,000 feet above sea level. There is a deep ravine which separates it from the Malwa Plateau in Central India. In Dhar District is located at western part of M.P. and lies between latitude 22.3271° N, 75.4053° E at 35 km from Dhar city. Its belong to semi-arid zone and it is bounded villages are Nalcha, Tarapur, Panala, Sulibaedi, Kalighati, Sarai, lunhera khurd, Golpura and faraspura. Grasses are a great economic potential some being very highly ornamental. Over dairy industries dependent on grasses and plays crucial roll in world and eco system and bio-diversity perusal of literature reveals that grass flora of study area is little known major. Hence through the study of grasses in study area is necessary to know the occurrence and distribution of grasses and their economically potentioly.

Keywords: Grasses Diversity, Malwa Region, Economic Potentiality, Frequency of Grasses, Species of Grasses

INTRODUCTION

The sky seems to go on forever! you can look in any directions for miles could see no tree and bushes. It might seems like lot of grass but this place is teeming with life surrounded by a grassland biomes. Grassland have many types prairies pampas, steppes and savanna. There are all area were rain is not predictable. Grassland receives more rain than desert and less rain than forest. The rainfall in a grassland does not support many trees grassland has unique plants and animals to keep grassland healthy, plants and animal work together Indian grassland have been classified into eight major types and two types Sehima Dichanthium and Dichanthium Cenchrus are present in M.P.

Mandav located on the Vindhya Mountain at the height of 2000 feet above Sea level. Even though a small city now thousand years ago it was considered as one of the largest city in the world. The city culture and its historic buildings made it a destination for architecture. There is a deep ravine which separates it from the Malwa Plateau in Central India in Dhar District is located at western part of M.P. and lies between latitude 22.3271° N, 75.4053° E at 35 km from Dhar city. Its belong to semi-arid zone and it is bounded villages are Nalcha, Tarapur, Panala, Sulibaedi, Kalighati, Sarai, lunhera khurd, Golpura and faraspura. It has got avride range of grassland with a major population of tribals which surrounds the area- it fall semi-aridzone of India which cover the area behind the forest and deserts.

The various types of grasses have not been studies yet research are going interest search variety of grasses that is available in the local part of the area. Which has have some additional values in this grasses semi-arid area support the wild life of the area with a large bio-mass. The area of mandav is covered with a hilly terrain spread with grassy plan track. Geographically the area is divided into Malva Plateu and Vindhya scarps in Makhaani valley and Hathini valley and there tribut aries.

Various types of grasses found in Mandu region like *Cyperus rotundus* (Nut Grass), *Cymbopogon martinii*, *Cynodon dactylon*, *Dichanthium annulatum*, *Eleusine Indica*, *Eragrostis pilosa*, *Eragrostis tenella*, *Heteropogon contorius*, *Ishaemum pilosum*, *Penicum virgatun* (Switch Grass), *Pennisetum pedicellatum*, *Saccharum arundinaceae*, *Saccharum spontaneum*, *Sehima nervosum*, *Sorghum vulgare*, *Themeda caudata*, *Themeda quadrivalvis*, *Themeda triandra*, *Vetiveria zizanoides*, *Typha latifolia*.

Grasses are a great economic potential some being very highly ornamental. They are considered to be of important groups that provide grains which are valuable for human being and nutrition for animals the staple crops like rice, wheat, oat, barle, sorghum, millets are also grasses sugarcane, bamboos are also came under grasses and the economy of the country dependent on this groups. Many grasses are known for their fodder, medicinal and other value like thatching matting making ropes and paper production. Over dairy industry is dependent on grasses and plays crucial role in world and eco system and bio diversity perusal of literature reveals that grass flora of study area is little known major. Hence through the study of grasses in study area is necessary to know the occurrence and distribution of grasses and their economically potentially.

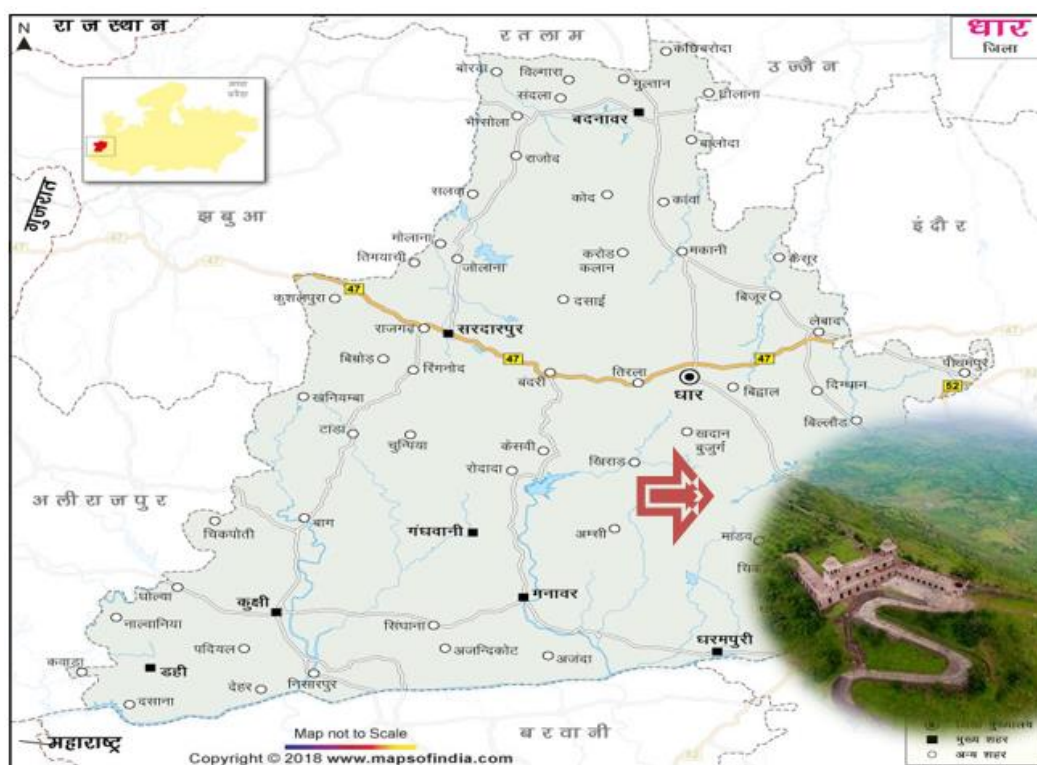


Fig. 1: Map of Research Area: Madhav grass land area

The Grass family (Poaceae) is a diverse and ecologically dominant group of monocotyledonous plants. The grasses form a natural homogenous group of plants with remarkable diversity playing a significant role in the lives of human beings and animals. Grasses are wide spread than other families of flowering plants and the existence of human life and quality would be impossible without grasses. It is estimated that 10,000 to 11,000 species of grasses belonging to 700 genera are distributed in the world.

MATERIAL METHODS

1. Study area will be surveyed regularly by well planned schedule to collect and record the grasses. Field records will be maintained. Grasses will be collected from all habitats. Grasses found on bunds, cultivated fields and on wall will also be recorded. Plant collection and preservation will be carried out by customary methods.
2. Qualitative and quantitative distribution method.
3. Latest up-to-date nomenclature of ICBN will be incorporated for correct and changed name. Tropicos, IPNI and plant list, www.organization will be clicked and consulted.
4. Threatened taxa will be assessed through IUCN category.
5. Seeds of wild cultivated crops will be collected and send to NBPGR, New Delhi.

Brief Review of the work already done in the field:

Pioneer works on grasses of India have been carried out by several work (Duthie, 1883; Symonds, 1886; Gamble, 1896, Fischer, 1934). "Grasses of Burma, Ceylon and Pakistan" by N.L.Bor (1960) is the main standard reference work on Indian grasses. Later on several workers have contributed to grass flora of India.

Important works include that of Tiwari (1954), Patunkar (1980), Kartikeyan *et al.*(1989), Moulik (1997), Yadav (2010), Kabeer and Nair (2009). Recently several research papers have also been published on grasses. (Patel *et al.*, 2012; Ray and Sainkhediya, 2012; Reddy and Rao, 2009; Singh *et al.*, 2009; Purohit and Sharma, 2012; Ravi Prasad, 2011. The flora of Madhya Pradesh has been published in three volume and one supplement by Verma *et al.*(1993), Mudgal *et al.*(1997), Singh *et al.*(2001) and Khanna *et al.*(2001).Verma and Chandra (1981) published cyperaceae of M.P. and Roy (1984) documented grasses of MP Flora of western Tribal Madhya Pradesh by Sanvatsar (1996) deals with 1156 plant species of flowering plants. Perusal of literature reveals that grass flora of study area is little known and meager. Hence thorough study of grasses in the study area is necessary to know the occurrence and distribution of grasses and their economic potentiality.

Observation:

List of grasses will be very helpful for botanist, Planner, Researchers, Economic potential of different grass species will be very much helpful for grassland management, restoration of degraded soil and ecosystem. Survey of wild relatives of cultivated crops will be of great significant in crop protection and improvement. Various type of grasses present in mandu region like *Cyperus rotundus* (Nut Grass), *Cymbopogon martinii*, *Cynodon dactylon*, *Dichanthium annulatum*, *Eleusine Indica*, *Eragrostis pilosa*, *Eragrostis tenella*, *Heteropogon contortus*, *Ishaemum pilosum*, *Penicum virgatum* (Switch Grass), *Pennisetum pedicellatum*, *Saccharum arundinaceae*, *Saccharum spontaneum*, *Sehima nervosum*, *Sorghum vulgare*, *Themeda caudata*, *Themeda quadrivalvis*, *Themeda triandra*, *Vetiveria zizanioides*, *Typha latifolia*.

Table1 – List of grasses studied around the area of Mandav region

S.N.	Local Name	Vernacular Name	Botnical Name	Family
1	Kamrond	Punaai	<i>Apluda mutica</i>	Poaceae
2	Fulera Karamron	Fulera	<i>Bothriochloa pertusa</i>	Poaceae
3	Chendi	Chendi	<i>Brachiaria eruciformis</i>	Poaceae
4	Phopati	Phopati	<i>Bouteloua rigidiseta</i>	Poaceae
5	Bharbhusi	Bharbhusi	<i>Eragrostis Tenella</i>	Poaceae
6	Rosa	Rosa	<i>Cynodon martinii</i>	Poaceae
7	Duub	Duub	<i>Cynodon dactylon</i>	Poaceae
8	Dhman Ghass	Dhman Ghass	<i>Cenchrus ciliaris</i>	Poaceae
9	Rosa	Rosa	<i>Cymbopogon schoeanthus</i>	Poaceae
10	Aakhrot Ghass	Aakhrot Ghass	<i>Cyperus rotundus</i>	Poaceae
11	Sinka	Choti Marveli	<i>Dichanthium annulatum</i>	Poaceae

12	Chinyari	Chinyari	Digitaria sanguinalis	Poaceae
13	Makra	Makra	Desmotacnya aegyptium	Poaceae
14	Kusha	Kusha	Desmotacnya Bipinnata	Poaceae
15	Fuler	Fuler	Eragrostis pilosa	Poaceae
16	Bhabhushi	Bhabhushi	Eragrostis tenella	Poaceae
17	Jungli rice	Jungli rice	Echinoch'oa Colonum	Poaceae
18	Sukli	Sukla	Heteropogon contorius	Poaceae
19	Kunda	Kunda	Ishaemum pilosum	Poaceae
20	Reghass	Reghass	Lolium perenne	Poaceae
21	Dinnanath	Dinnanath	Pennisetum pedicellatum	Poaceae
22	Guli Danda	Guli Danda	Phalaris minor	Poaceae
23	Munj	Munj	Saccharum arundinaceae	Poaceae
24	Kans	Kans	Saccharum spontaneum	Poaceae
25	Puniya	Puniya	Sehima nervosum	Poaceae
26	Baaru	Baaru	Sorghum vulgare	Poaceae
27	Junwari	Junwari	Sorghum halepense	Poaceae
28	Durra	Durra	Sorghum bicoour	Poaceae
29	Jungli Ganna	Jungli Ganna	Saccharum spontaneum	Poaceae
30	Jungli Rai	Jungli Rai	Sawa Echinochloa colonut	Poaceae
31	Muniyari	Gunar	Themeda caudata	Poaceae
32	Gunher	Gunher	Themeda quadrivalvis	Poaceae
33	Guned	Guned	Themeda triandra	Poaceae
34	Khas	Khas	Vetiveria zizanoides	Poaceae

Name of Villages Maximum/Minimum representation of the grasses around research area- Mandav region

S.N.	Name of the Village	Grasses Species found
1	Avaliya	*****
2	Bharudpura	*****
3	Faraspura	*****
4	Golpura	*****
5	Hugli	*****
6	Jirapur	*****
7	Kalighati	*****
8	Kakad Khoo	*****
9	lunhera khurd	*****
10	Nalcha	*****
11	Nilkhanteswar	*****
12	Panala	*****
13	Sarai	*****
14	Sulibaedi	*****
15	Tarapur	*****

Note - *Numbers of Grasses species present in Mandav region local villages.

In Grassland area of Mandu region (M.P.) Sehmiadichanthium type. Dominant species are Sehmiadichanthium sulcatum, Sehmiadichanthium nervosum, Dicnanthium annulatum, Chrysopogon monatanus, Themeda quadrivalvis. Other common species are like Ischaemum rogosum, Iseilema laxum, Heteropogon contortus.

There are some grasses are present in nearby water bodies in mandu region Dactyloctenium aegyptium, Setaria verticillata, Lolium perenne, Panicum virgatum, Eleusina indica, Cyperus esculentus, Bothriochloa ischaemum.



Fodder Grass



Grazing Grass for animals



Grasses provide shelter for tribal people

RESULTS AND DISCUSSION

The grass family is undoubtedly the most important plant family to mankind, agriculturally, economically and ecologically. It provides the major cereal crops and most of the grazing for wild and domestic herbivores. Various type of grasses found in Mandu region like *Cyperus rotundus* (Nut Grass), *Cymbopogon martinii*,

Cynodon dactylon, *Dichanthium annulatum*, *Eleusine indica*, *Eragrostis pilosa*, *Eragrostis tenella*, *Heteropogon contortus*, *Ishaemum pilosum*, *Penicum virgatum* (Switch Grass), *Pennisetum pedicellatum*, *Saccharum arundinaceae*, *Saccharum spontaneum*, *Themeda caudata*, *Themeda quadrivalvis*, *Themeda triandra*, *Vetiveria zizanioides*, *Typha latifolia*.

Present studies helpful for conservation of rare and less frequent species screening of economically important grasses like fodder essential oil will be helpful for industrialists which are directly related to the economy for upliftment of tribals and ruler people. Grassland are fragile. But why by working together, we will be able to enjoy the benefits of grasslands for years to come.

CONCLUSION

To conclude with the research paper the work of variety of grasses available area of the nearby the area of Mandav. Brought in a great amount of knowledge that this grasses had a lot of medicinal values and many were use as fodder for animals. Some as use of as thatched roof for the houses of the tribal people. Still research are going on various aspects of the grasses available in the Mandav region, This study was a small attempt to wider range of the properties available in tribal area.

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REFERENCES

- Ahmed Althaf K, Kabeer and Nair V J(2009) Flora of Tamilnadu, Grasses, BSI, Kolkata.
- Ambastia Nirbhay (2016) Flora of Gautam Buddha Wildlife Sanctuary, Hazaribag, Jharkhand
- Bor, N.L. 1960 The Grasses of Bwima, Ceylon, India and Pakistan, Pergamon Press, London.
- Bor N.L. 1993 Common Grasses of the united provinces.
- Clayton W.D. and Renvoize S.A. (1989). Genera Graminum : Grasses of the world Kew Bull. Addit. Ser. 13.
- Chirstensen G. Victoria (2019) Grassland Biomes around the world.
- Duthie, J.F. (1883). A list of the grasses of N.W. India, Indigenous and cultivated Roorkee.
- Fischer CEC (1934). Gramineae, in J.S. Gamble's flora of Madras. Pt. X PP 1689 - 1864.
- Gamble, J.S. (1896). The Bambuseae of British India, Anna Roy Bot. Gard. Calcutta 7 : XVII, 133.
- Kabeer, K.A. and V. J. Nair (2009). Flora of Tamilnadu - Grasses, BSI Kolkata.
- Kartithikeyan S, Jain S.K., Nayar MP and M. Sanjappa (1989). Flora Indicae Enumeration : Monocotyledonae, BSI, Colcutta.
- Moulik, S. (1997). The Grasses and Bamboos of India. Vol. 1 and 2 Scientific Publishers, Jodhpur.
- Mudgal V, KhannaKK and Hajra PK. (1997): Flora of Madhya Pradesh, BSI Publication, Calcutta, India 2.
- Naik, V.N. (1998). Flora of Marathwada District, AmrutPrakashan, Aurangabad MS Vol. 1 - 2.
- Patel Yatin, DabgarYB and Joshi DN (2012); Distribution and diversity of Grass species in Banni Grassland, Kachh Dist. GujratIJSRR, 1 (1) 43 - 56.
- Patunkar, B.W. (1980) Grasses of Marathwada, Scientific Publishers, Jodhpur.
- PurohitChandan Singh and SumanC.Sharma, (2012).A Checklist of Grasses of North West Rajasthan. J.E. Co. Tax. Bot. Vol. 36, No 1, 166 - 176.
- Rao, Ravi Prasad, B.P. Priyadarshine and K.V. Subbaihali (2011). Andropogonlividus (Poaceae) : A new distribution record for Andhra Pradesh. J. Eco. Tax. Bot. Vol 35, No. 3.
- Ray S, and Saikhediya J. (2012). Diversity of Grasses in Nimar region, Madhya Pradesh Indian. J of plant sciences Vol. 1, 144 - 152.
- Roy, G.P. (1984). Grasses of Madhya Pradesh Series - 4, Botanical Survey of India, Colcutta.
- Samvatsar, S. (1996). The flora of Western Madhya Pradesh, Jodhpur.
- Sing NP, KhannaKK, Mudgal V and Dixit RD (1997). Flora of Madhya Pradesh, BSI Publication, Calcutta, India 3.
- Singh Ajay, Priyanka Singh, Yogini Devi, Ansari A.A. (2009). Grass weeds of cultivated fields in South Eastern Uttar Pradesh, J. Eco. Tax. Bot. Vol. 33 No. 1.
- SinhaBK and ShuklaBK (2007). Synoptic flora of Khargone district Madhya Pradesh. Journal of Economic and Taxonomic Botany India 31 (2).
- SinhaBK and ShuklaBK (2009). Synoptic flora of Khargone district Madhya Pradesh. Journal of Economic & Taxonomic Botany India 33 (1).
- Mandu Tourism Pramotion Council, (2019). Mandav Kal ka Kolahal Aaj ki Khamoshi
- Sharma P. D. (2016). Ecology and Environment
- BOR N.L. (1993) Common Grasses of the united provinces.