

# PRELIMINARY SURVEY OF SEDGE AND GRASS FLORA OF GSGPG COLLEGE CAMPUS, DAMOH (MP) AND THEIR MEDICINAL USES

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**ABSTRACT :-** Gyanchandra Shrivastava Government Post Graduate College, Teen Gulli Chouraha, Damoh (MP) is located in Sagar-Jabalpur road, on the mid of city and just pathway near Railway station. The college spreads over 11 acres of land. The vegetation of the college campus is of a dry, mixed deciduous types, sedges and grasses form an important component of its wild flora. Although sedges and grasses represent the main wild plant component of the vegetation of college campus they have never been studied so far. Taking into consideration taxonomic diversity of sedges and grasses and their functional role in the restoration of ecosystem, biogeochemical cycling and their medicinal uses, a preliminary survey of sedge and grass species was conducted in the college campus from July 2021 to December 2022. The study revealed a total of 1 genus and 2 species of sedges and 17 genera and 22 species of grasses. Many of these sedge and grass species have known medicinal uses.

**KEYWORDS -** Sedges, Grasses, Medicinal Uses.

## **INTRODUCTION :-**

Damoh is a district of Madhya Pradesh located in central India. Damoh is a part of **Bundelkhand** region, it is situated between 23.50° north latitude and 79.33° east longitude. Its total geographical area is 7306 sq KM. the district surrounded by Sagar, Narsinghpur, Jabalpur Panna and Katani district. **Gyanchandra Shrivastava Government postgraduate(GSGPG) college Damoh** was established in 1952 and lead college of district. It is one of the premier college established to impart & provide in the field of higher education for the deserving candidates and prove to be milestone on the part of progress. It is coeducational government institute, which is located in the rural part of Damoh played a pioneering role in the field of higher education.

Total area of college campus is 11 acres of land covered by a boundary wall on all sides. Flora of college campus comprises of variety of annual and perennial weeds in addition to large number of cultivated plant species. Sedges and grasses form a major component of college campus flora. Both annual and perennial grasses and other grasses like species are observed. Most of these species are wild in addition to two species of cultivated grasses in college Botanical garden, Ground and Campus. Taking into consideration the taxonomic diversity of grasses and sedges, their functional role in the restoration of ecosystem, biogeochemical cycling and their various ethno botanical uses, present study was initiated.

The term “Grasses” commonly refers to monocotyledonous, annual and perennial herbs with narrow leaves growing from the base and having fibrous roots. They include both the “true grasses”, from the Poaceae family and the sedges from Cyperaceae family. The true grasses include cereals, bamboo and the turf grasses, while sedges include many grass-like non grass plants particularly, wild marsh and grassland plants from Cyperaceae family.

Poaceae and Cyperaceae are the two largest families of Monocotyledonous. Cyperaceae is represented by 70-80 genera and 4000 species distributed throughout the world. The Family Poaceae comprises of about 11,290 species in approximately 707 genera worldwide. Grasses and sedges are the dominant vegetation in many habitats, including grassland, marshes, reed swamp etc., and they form important part of almost every other ecosystem. Grasslands are among the largest ecosystems in the world. Their area is estimated at 52.5 million square Kilometers, or 40.5 percent of the terrestrial area excluding Greenland and Antarctica. Grasses are very

important source of food and fodder. Many types of animals including many herbivorous mammals and insects are dependent on these grasses and grass like plants as their main food. In addition they also find their use in ethno medicinal and various religious practices. Many of grasses and sedges find their mention in ancient Indian medicine literature.

From the ecological point of view also they are very important as good soil binders as they make a carpet over the soil thus preventing soil erosion. They also add lot of Soil Organic matter (SOM), thus increasing fertility of soil. In addition they also play important role in biogeochemical cycling of Carbon, Nitrogen and Phosphorus. They are an important component of the urban and suburban landscapes in most parts of the world. Despite the importance of grasses to humans in various ways, the grasses remain to be less studied plant groups as compared to other flowering plants especially in India. This may be due to difficulty in identification because of their small size of floral organs and complicated structure of inflorescence. Some important works on diversity of grasses in Indian include “A Handbook of some South Indian Grasses” by Achariyar and C. Tadulinga (1921).

**AIM OF STUDY: –**

This study is very important, as it will form baseline for further research on identified species and their ecological and other ethnobotanical uses.

**REVIEW OF LITERATURE :-**

Many of these sedge and grass species have known medicinal uses study by Achariyar and Tadulinga, 1921, “The Bombay Grasses” by Blatter, (1935), “The Grasses of Burma, Ceylon, India and Pakistan” by Bor. (1961); “The Grass flora of India” by Jain, (1986); “Grasses of North-Eastern India” by Shukla, (1996), and “Important grasses of Eastern Ghats”; Moulik, (2000). Damoh city is a sub hilly area. It is situated on the banks of Rajanagar lack with an area of around 36 km<sup>2</sup>, there is large diversity of grass species growing in Damoh district as part of wild flora. In spite of the great diversity of the grass species very less research work has been done in this direction. Earlier sedge and grass flora from different parts of India and abroad have been studied by Bhat and Narayan, 2001; Ravi and Mohanan, 2002; Desai R, 2013; Ullah Z. et al.; 2015; Dashahre et.al. 2020; Subramaniam et. al. 2021.

**METHODS AND MATERIALS :-**

Primary data was obtained by extensive and exhaustive field survey conducted in different areas of college campus from July 2021 to December 2022. Study included all parts of college campus. Different sedge and grass species were collected in polythene bags to conserve moisture. These specimens were taken to laboratory for herbarium preparation. Specimens after drying in plant press were pasted on the herbarium sheets. After field survey and herbarium preparation, identification of collected plant specimens was done using available literature and confirmed with the help of experts.

**Table (1)- Lists of sedge and grass species identified from college campus arrange the along with Name of species, Family, Common name, status and their medicinal uses.**

S. N.	Name of species	Family	Common name	Cultivation status	Medicinal uses
1	<i>Bothriochloa pertusa</i>	Poaceae	Indian blue grass	Wild	Used as fodder & soil erosion, Diabetic
2	<i>Brachiaria ramosa</i>	Poaceae	Brown top millet	Wild	Stabilize the soil and reclaim polluted soil
3	<i>Brachiaria reptans</i>	Poaceae	Running grass	Wild	Leave used to treat anemia
4	<i>Cenchrus prieurii</i>	Poaceae	Large spike buffalo grass	Wild	Leaves used for antibiotic, paste applied externally for infection
5	<i>Cenchrus setigerus</i>	Poaceae	Bird wood grass	Wild	Root astringent, Snake bite, Jaundice, diuretic
6	<i>Chloris barbata</i>	Poaceae	Swollen finger grass	Wild	Seeds used as substitute cereals during scarcity and famine
7	<i>Cyperus rotundus</i>	Cyperaceae	Coco grass	Wild	Plants used for fodder

8	<i>Cyperus difformis</i>	Cyperaceae	Rice sedge	Wild	Skin disordered, fever, diabetes
9	<i>Cyanodon dactylon</i>	Poaceae	Bermuda grass	Wild	Leaves used to cure dropsy, Root used for hysteria, Leaf for piles and bleeding, Vomiting
10	<i>Cymbopogon citriatus</i>	Poaceae	Lemon grass	Cultivated	As flavoring agent, hypertensive, anticonvulsant, Antiseptic
11	<i>Cymbopogon martinii</i>	Poaceae	Indian geranium	Cultivated	For treating ringworm
12	<i>Dactyloctenium aegyptium</i>	Poaceae	Crowfoot grass	Wild	Grain used as medicine for stomach
13	<i>Desmostachya bipinnata</i>	Poaceae	Big card grass	Wild	Asthma, Kidney stone, very important in ethno religious practice in Hindu
14	<i>Digitaria ciliaris</i>	Poaceae	Wild carb grass	Wild	For forage, Soil against erosion
15	<i>Digitaria sanguinalis</i>	Poaceae	Hairy finger grass	Wild	Plant is used in a treat of gonorrhea.
16	<i>Eleusine indica</i>	Poaceae	Indian goose grass	Wild	Treat influenza, and hypertension
17	<i>Elymus repens</i>	Poaceae	Quack grass	Wild	Root s are boiled and consumed for diabetes
18	<i>Eragrostis cilianensis</i>	Poaceae	Stink grass	Wild	Root decoction used against flu
19	<i>Microstegium ciliatum</i>	Poaceae	Brown top grass	Wild	Preferred as fodder grass
20	<i>Oplismenus burmanii</i>	Poaceae	Basket grass	Wild	Leaves used as pain killer
21	<i>Penicum antidotale</i>	Poaceae	Blue panic grass	Wild	Antibacterial property in leaves used as disinfectant in small pox,
22	<i>Paspalidum flavidum</i>	Poaceae	Yellow water crown grass	Wild	Leave used as antiseptic, antioxidant activity, infections
23	<i>Setaria pumila</i>	Poaceae	Yellow bristle grass	Wild	Seeds are used for flour & acidity
24	<i>Setaria viridis</i>	Poaceae	Green bristle grass	Wild	Seeds diuretic, febrifuge, emollient tonic

### RESULTS AND DISCUSSION :-

In this preliminary investigation, a total of 02 species, belonging to 01 genus of sedges and 22 species belonging to 17 genera of grasses were identified. Out of these plant species 22 sedge and grass species were wild and 02 species of grasses are cultivated in college campus as shown in Table 1. These recorded sedge and grass species form an important part of the ecosystem and provide food to large number of graminivorous including many species of insects, birds, rodents etc.

Many species of these identified sedges and grasses are known to have various Ethno botanical uses in addition to their role in various ecological processes is also shown in table 1. In addition, many identified species are known to have ethno medicinal uses for curing various ailments, Jain (1991). Earlier also ethno botanical and ethno medicinal properties of various grass and sedge species have been reported from different parts of the world {Simpson and Ingles, 2001, Chaudhri et. al., 2013, Harun et. al., 2017, Udari et. al. 2018}.

### CONCLUSION :-

Based on the result of the study that the 24 species of grasses and sedges that were found in **Gyanchandra Shrivastava Govt. P. G. College Damoh** campus, the following –

1. The campus is maintained for conservation, education, enjoyment and a sport, that provides natural habit for insects, birds and human life, connect the community of natural human race and gives the chances to understand greenery in the campus.
2. Protection should always in the mind of the people in terms of the important role of grasses and sedges such as water storage of the continuing flow of the water shed and to sustained to needs of communities the nearby areas.
3. Monitoring the endangered and locally rare plant species {grass and sedge} using standardized protocol to improve the survival of residual vegetation.

Biodiversity is the major source of raw materials for the stability of the ecosystem, fodder, herbal medicine, source of food etc. the vegetation structure of study area is gradually deteriorating due to anthropogenic activities as well as over exploitation of flora. So these species need special attention on priority basis in view of the conservation of these dwindling, disappearing, keystone species, as well as sustainable development for the future generation.

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