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Original Research Paper

Botany

CAMPUS FLORA OF GOVT. P.G. COLLEGE SENDHWA DIST. BARWANI, M. P., INDIA

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ABSTRACT

Sendhwa tehsil is smallest town of Barwani district & situated in the south west corner of Madhya Pradesh. It is located 16 km from Maharashtra & Madhya Pradesh Border. It is declared as tribal district. The present study was aimed at determining the vascular plant species richness of the Govt. PG College Sendhwa dist. Barwani, Madhya Pradesh campus. For this, the species richness data was obtained by both secondary sources and intensive surveys from 2017–2019. College campus is extended over 9 acres of land. The campus area are the representative of climax vegetation and exhibit the diversity of species such as trees, climbers, epiphyte and other shade loving herbs. Botanical gardens are the storehouses of valuable medicinal and other plants having high economic value. The data from the primary and secondary sources resulted in the documentation of 100 species belonging to100 genera under 42 families. Arboreal species richness recorded till date (100) in the campus accounts for 0.18 % of that of the entire Sendhwa City. There are 100 wild and naturalized species in the 18 sq km which gives species density of 0.18 %. Leguminosae and Poaceae were the dominant dicotyledonous and monocotyledonous families respectively. Although the botanical garden over the past years has lost 80% species, it still houses rare species such as *Cynoglossum zeylanicum (Vahl) Brand*. Considering the rapidly changing urban land use in the city, much attention should be paid towards the conservation of these green spaces, for which such studies provide baseline data.

KEYWORDS : Sendhwa, Floristic studies, vegetation, Botanical garden, Dry deciduous forest.

INTRODUCTION

A Green Campus is a place where environmental friendly practices and education combine to promote sustainable and eco-friendly practices in the campus. The green campus concept offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to environmental, social and economic needs of the mankind (Sen & Keshari 2019).Botanical gardens of Government college campuses of the state are forest fragments of varying sizes, which are communally protected and which usually have a significant religious connotation for the protecting community. Harvesting of the plants is usually prohibited within the campus. All around the globe, different cultures have made use of plants that grew around them. The plant diversity at any site is influenced by species distribution and abundance patterns (Reddy et al.2014). The richness of flowering plants makes India one of the mega diversity countries in the world with four biodiversity hotspots and three mega centers of endemism. India ranked seventh among 17 mega diversity countries of the world and more than 17,000 species of higher plants are reported to India (Anonymous 1993, Shiva 1996). Biodiversity keeps the ecological processes in a balanced state, which is necessary for human survival (Kaur & Sharma 2014).In the present work is designed with an objective to study the floristic diversity and documentation of campus flora.

Study area:

Sendhwa is the headquarters for Sendhwa tehsil, and, the largest town in the district. The name Sendhwa was derived after the rulers Sendhwa at period of holkars (Sisodiya & Sainkhediya 2018) Geographically Sendhwa is located 16 km from Maharashtra & Madhya Pradesh Border .Sendhwa lies between parallel of latitude 21°41 05 N and between parallel of longitudes 75°05 43 E. The area is bounded by the Rajpur tehsil to the north, Warla tehsils in south, Niwali to west, and Khargone district to east .The eastern part of the district is covered by Satpura hill ranges and northern part of Malwa plateau, and Narmada valley. Sendhwa Fort was built in 10 th Century. It is situated in middle of town. It is classical example of 4 directional Gate with Temple at Main entry gate. The land surface attains a maximum altitude of 409 m (1,342 ft) above mean sea level. Demographically Sendhwa had a population of 56,485 (census 2011). Sendhwa has an average literacy rate of 63%, higher than the national average of 59.5.

Methodology

Floristic studies were carried out in the Govt. P. G. College, Sendhwa campus during 2017-2019.Collecting the plant species and data in different seasons. All habitats of the study area surveyed carefully. Plant collection carried out by standard method (Jain and Rao,1977). Plant specimens were preserved by dipping the whole specimens in saturated solution of Mercuric chloride and alcohol. Dry and preserved plants mounted on herbarium sheets by adhesive glue and fevicols. Identification of plants done with the help of flora (Verma et.al., 1993; Sing et al.,2001; Mudgal et al,.1997; Khanna et al., 2001; Oommachan, 1977; Shah, 1978; Duthi, 1960; Gamble, 1915; Hains,1921-1924; Cook, 1903; Hooker, 1872-1897; Naik, 1998) and other taxonomic literature.

RESULT & DISCUSSION

An extensive plant survey was carried out in the Govt. P. G. College, Sendhwa campus during 2017-2019.During the survey more than 150 plants were collected from Govt. P. G. College, Sendhwa campus. Among them 100 plant have been identified. Out of 100 angiospermic plants, 60 species, 60 genera, 38 families are belonging to dicotyledonous while 40 species 40 genera and 04 families belonging to monocotyledons (Table-1). No work is done in the past in this area. Due to various factors such as changing environmental conditions, biotic factors, destruction of habitat etc. biotic factors, destruction of habitat some plant species facing threats for their existence. Conservation of the campus flora is one of the vital segments in the natural resource management. The Govt. PG College Sendhwa; Madhya Pradesh, India shows rich Floristic diversity in respect to the distribution of species, genera and families of both dicotyledons and monocotyledons.Table-2 indicates a list of flowering plants which are found in campus. Before few decades, Govt. P.G. College Sendhwa campus has floristically very rich with diverse habitats. But due to various factors the vegetation of the campus has caused rapid destructions of habitats of the plants. There are 100 wild and naturalized species in the 18 sq km which gives species density of 0.18 %. Leguminosae and

Poaceae were the dominant dicotyledonous and monocotyledonous families respectively and an inventory of all the species recorded is provided.

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Table-1: Distribution of angiospermic plants

Angiosperm		Species	Genera	Families
	Polypetalae	22	22	22
Dicotyledons	Gamopetalae	28	28	11
	Monochlamydeae	10	10	05
	Total	60	60	38
Monocotyledons		40	40	04
	Grand total	100	100	42

Table-2: List of flowering plants of Govt. P. G. College, Sendhwa dist. Barwani, M.P.

sn	*family*	*genera*	*Botanical name*
1.	*Annonaceae*	*Annona*	*Annona reticulata L.*
2.	*Menispermaceae*	*Cissampelos*	*Cissampelos pareira L.*
3.		*Cocculus*	*Cocculus hirsutus (L.) Theob.*
4.		*Tinospora*	*Tinospora sinensis (Lour.) Merr.*
5.	*Papaveraceae*	*Argemone*	*Argemone Mexicana L.*
6.	*Cleomaceae*	*Cleome*	*Cleome gynandra L.*
7.	*Polygalaceae*	*Polygala*	*Polygala arvensis Willd.*
8.	*Dipterocarpaceae*	*Shorea*	*Shorea robusta Gaerth f.*
9.	*Malvaceae*	*Abutilon*	*Abutilon indicum (L.) Sweet*
10.		*Bombax*	*Bombax ceiba L.*
11.		*Corchorus*	*Corchorus olitorius L.*
12.		*Sida*	*Sida acuta Burm. F.*
13.		*Triumfetta*	*Triumfetta malebarica J.Koenig ex Rottb.*
14.	*Malpighiaceae*	*Hiptage*	*Hiptage benghalensis (L.) Kurz*
15.	*Zygophyllaceae*	*Tribulus*	*Tribulus terrestris L.*
16.	*Oxalidaceae*	*Biophytum*	*Biophytum reinwardtii (Zucc.) Klotzsch.*
17.	*Rutaceae*	*Aegle*	*Aegle marmelos (L.) Correa*
18.	*Simaroubaceae*	*Ailanthus*	*Ailanthus excelsa Roxb.*
19.	*Meliaceae*	*Azadirachta*	*Azadirachta indica A.Juss.*
20.		*Melia*	*Melia azedarach L.*
21.	*Rhamnaceae*	*Ziziphus*	*Ziziphus mauritiana Lam.*
22.	*Sapindaceae*	*Cardiospermum*	*Cardiospermum halicacabum L.*
23.	*Anacardiaceae*	*Mangifera*	*Mangifera indica L.*
24.	*Leguminosae*	*Aeschynomene*	*Aeschynomene aspera L.*
25.		*Butea*	*Butea monosperma (Lam.) Taub.*
26.		*Clitoria*	*Clitoria ternatea L.*
27.		*Crotalaria*	*Crotalaria albida Roth .*
28.		*Dalbergia*	*Dalbergia sissoo DC.*
29.		*Desmodium*	*Desmodium dichotomum (Willd.) DC.*
30.		*Indigofera*	*Indigofera tinctoria L.*
31.		*Pongamia*	*Pongamia pinnata (L.) Pierre*
32.		*Tephrosia*	*Tephrosia pumila (Lam.) Pers.*
33.		*Zornia*	*Zornia gibbosa Span.*
34.		*Cassia*	*Cassia fistula L.*
35.		*Senna*	*Senna alata (L.) Roxb.*
36.		*Tamarindus*	*Tamarindus indica L.*
37.		*Acacia*	*Acacia leucophloea (Roxb.) Willd.*
38.		*Albizia*	*Albizia lebbeck (L.) Benth.*
39.		*Mimosa*	*Mimosa rubicaulis Lam.*
40.		*Pithecellobium*	*Pithecellobium dulce (Roxb.) Benth.*
41.	*Myrtaceae*	*Syzygium*	*Syzygium cumini (L.) Skeels*
42.	*Onagraceae*	*Ludwigia*	*Ludwigia octovalvis (Jacq.) P.H.Raven*
43.	*Cucurbitaceae*	*Citrullus*	*Citrullus colocynthis (L.) Schrad.*
44.		*Coccinia*	*Coccinia grandis (L.) Voigt*
45.		*Ctenolepis*	*Ctenolepis garcini (L.) C.B.Clarke*
46.	*Apiaceae*	*Centella*	*Centella asiatica (L.) Urb.*
47.	*Rubiaceae*	*Spermadictyon*	*Spermadictyon suaveolens Roxb.*
48.	*Compositae*	*Ageratum*	*Ageratum conyzoides (L.) L.*
49.		*Blumea*	*Blumea fistulosa (Roxb.) Kurz*
50.		*Conyza*	*Conyza japonica (Thunb.) Less. ex Less.*
51.		*Cyathocline*	*Cyathocline purpurea (Buch.-Ham. Ex Don) Kuntze*
52.		*Eclipta*	*Eclipta prostrata (L.) L.*
53.		*Sonchus*	*Sonchus asper (L.) Hill*
54.		*Tridax*	*Tridax procumbens (L.) L.*
55.		*Xanthium*	*Xanthium strumarium L.*

56.	Sapotaceae	Madhuca	Madhuca longifolia var. latifolia (Roxb.) Chev.
57.	Oleaceae	Nyctanthes	Nyctanthes arbor-tristis L.
58.	Apocynaceae	Nerium	Nerium oleander L.
59.		Tabernaemonta	Tabernaemontana divericata (L.) R.Br. ex Roem. & Schu.
60.		Calotropis	Calotropis gigantea (L.) Dryand.
61.		Pergularia	Pergularia daemia (Forssk.) Chiov.
62.	Gentianaceae	Canscora	Canscora diffusa (Vahl) R.Br. ex Roem. & Schult.
63.		Enicostema	Enicostema axillare (Poir. ex Lam.) A.Raynal
64.		Exacum	Exacum tetragonum Roxb.
65.	Boraginaceae	Cynoglossum	Cynoglossum zeylanicum (Vahl) Brand
66.	Convolvulaceae	Ipomoea	Ipomoea hederifolia L.
67.	Solanaceae	Datura	Datura stramonium L.
68.		Physalis	Physalis minima L.
69.		Solanum	Solanum anguivi Lam.
70.		Withania	Withania somnifera (L.) Dunal
71.	Acanthaceae	Barleria	Barleria cristata L.
72.	Verbenaceae	Lantana	Lantana aculeata L.
73.	Lamiaceae	Hyptis	Hyptis suaveolens (L.) Poit.
74.		Leucas	Leucas aspera (Willd.) Link
75.		Ocimum	Ocimum basilicum L.
76.	Nyctaginaceae	Boerhavia	Boerhavia diffusa L.
77.	Amaranthaceae	Achyranthes	Achyranthes aspera L.
78.		Amaranthus	Amaranthus viridis L.
79.		Celosia	Celosia argentea L.
80.	Euphorbiaceae	Acalypha	Acalypha indica L.
81.		Euphorbia	Euphorbia hirta L.
82.		Jatropha	Jatropha curcas L.
83.	Phyllanthaceae	Phyllanthus	Phyllanthus emblica L.
84.	Moraceae	Ficus	Ficus hispida L.f.
85.		Ficus	Ficus religiosa L.
86.	Asparagaceae	Asparagus	Asparagus racemosus Willd.
87.	Commelinaceae	Commelina	Commelina benghalensis L.
88.	Cyperaceae	Bulbostylis	Bulbostylis barbata (Rottb.) Clarke
89.		Cyperus	Cyperus alopecuroides Rottb.
90.	Poaceae	Andropogon	Andropogon pumilus Roxb.
91.		Apluda	Apluda mutica L.
92.		Arundo	Arundo donax L.
93.		Bambusa	Bambusa bambos (L.) Voss
94.		Cynodon	Cynodon dactylon (L.) Pers.
95.		Dactyloctenium	Dactyloctenium aegyptium (L.) Willd.
96.		Digitaria	Digitaria ciliaris (Retz.) Koeler
97.		Dinebra	Dinebra retroflexa (Vahl) Panz.
98.		Eragrostis	Eragrostis ciliaris (L.) R.Br.
99.		Heteropogon	Heteropogon contortus (L.) Beauv. ex Roem. & Schul.
100.		Tripogon	Tripogon jacquemontii Stapf

REFERENCES

1. Anonymous, 1993.Conservation on Biological diversity. Mexico
2. Cook T, 1903.Flora of the presidency of Bombay.BSI Publications Calcutta, India.1-3
3. Duthi JF, 1960.Flora of the upper Gangetic plains.BSI Publications Calcutta, India.2
4. Gamble JS, 1915.Flora of the presidency of Madras.1-3
5. Hains HH, 1921-1924.The Botany of Bihar and Orissa.BSI Reprint, Calcutta, India.1-3
6. Hooker JD,1892-1897.Flora of British India.BSI Publication, Calcutta, India.1-7
7. Jain SK and Rao RR, 1976.A Handbook of Herbarium methods. Today & tomorrow publ. Dehli.
8. Kaur & Sharma 2014. Diversity and Phytosociological Analysis of Tree Species in Sacred Groves of Vijaypur Block, Samba (J&K). Int. J.Sc.& Res.6:3.859-862.
9. Khanna KK, Kumar A, Dixit RD and Singh NP, 2001. Supplementary flora of Madhya Pradesh. BSI Publications, Calcutta, India.
10. Mudgal V,Khanna KK and Hajara P K, 1997. Flora of Madhaya Pradesh.2.
11. Naik VN, 1998. Flora of Marathwada. Amrut prakashan, Aurangabad, India.1-2
12. Oommachan M 1997.Flora of Bhopal J. K. Jain brothers Bhopal, India.
13. Reddy, B. ; Rao, VH. Redy VB and Rao,VV 2014. Diversity and richness of herb species in peddagattu, the proposed site for uranium mining, Nalgonda district, Telangana state, India. Global Journal of Multidisciplinary Studies. 11:(3).197-204.
14. Sen M & Keshari KK 2019. Green campus report. Directorate of Technical Education, 4th Floor, Satpura Bhawan Bhopal 462004 (MP). Pp.1-4.
15. Shah GL, 1978.Flora of Gujarat state. University press, SP University, Gujarat, India.1-2
16. Shiva MP,1996. Inventory of forest resources for sustainable management and biodiversity conservation. Indus publishing company, New Delhi.
17. Sisodiya & Sainkhediya 2018. Sendhwa kile ka Etihas.SRF Res.foundation, Jabalpur, M.P. India.
18. Verma DM, Balakrishnan, NP and Dixit RD, 1993. Flora of Madhya Pradesh. BSI Publication, Calcutta, India.1.