



Study of plants diversity in Govt Ghanshyam Singh Gupt Post Graduate College Balod (C.G.) campus

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Abstract

District Balod is located on (Dalli–Rajhara road) Durg-Manpur National highway 930. It is famous for their tribal population, culture and dense forest cover presence of various plant species in particular area helps to understand the diversity and nature of that area. Increasing population and changing lifestyle lead extensive commercial exploitation of the natural resources and loss of biodiversity. Therefore, documentation of biodiversity is mandatory to develop the strategies of conservation and management. This present research paper deals with the detailed Study of plants diversity in A tropical deciduous forest area of Govt Ghanshyam Singh Gupt College. College campus are very large area, its cover about 44 acre and out of city near Tandula Dam. Study of college campus vegetation and data collection period are between August 2016 to October 2017. We find 54 Family in 168 types of plant species, those grasses 59, trees 37, shrubs 15, herbs 37 climber species 08 Gymnosperm 3, Aquatic Plants 8 (Angiosperm 6 and Pteridophyta 3) recorded. Ecological analysis shows that Poaceae, Fabaceae, Asteraceae, Acanthaceae and Euphorbiaceae were dominant family and low present families are cactaceae, Lythraceae, Piperaceae respectively. Our study area college campus and college Garden where many ornamental plants and medicinal plants. My study show college campus diversity represent area diversity.

Keywords: diversity, *Dominant species*, etc.

Introduction

Increasing population and changing lifestyle lead extensive commercial exploitation of the natural resources and loss of biodiversity. Therefore, documentation of biodiversity is mandatory to develop the strategies of conservation and management. A tropical deciduous forest area of Govt. Ghanshyam Singh Gupt P.G. College Balod which is situated in located for Durg-Manpur National highway 930. College near 500 meter Chhattisgarh 104 year old Tandula dam and surrounded to forest range. Balod Dist is located in South north center Chhattisgarh state and its location is between latitude 20.73 North and longitudes 81.20 East. Studied covers areas prominent in cultivated Aquatic garden, Botanical garden and Pot garden other part is the unused area contains herbs and grasses in forest nature. The studied area consists of perennial trees, cultivated shrubs, ornamental plants as well as different types of weeds. Floral represent diversity It includes ornamental, medicinal and economically important plants. Plants were mostly identified with the help of Hooker's classification system. The present work is observation based data collection in various seasons. The Plants species is identified by data analysis and morphology. The Govt. Ghanshyam S.G P.G. College Balod plant species are differentiated into Trees, herbs, shrubs, climbers and aquatic plants then identified as per family. Also the cultivated and wild plants have been separated in the observation.

The diversity in the area is directly influenced by the climatic conditions. The climate represents hot & humid atmosphere during March to mid-June and temperature ranges Between 33

to 47 degree Celsius. In this period most of the perennial trees show flowering. During Rainy season from July to September month herbs were most dominant. Humidity reached maximum in September to October month. The observation period was 2016-2017 54 Family in 168 types of plant species trees 37, shrubs 15, herbs 37 climber species 08 Gymnosperm 3, Aquatic Plants 8 (Angiosperm 6 and Pteridophyta 3) recorded. In addition 59 species are grasses and Weed plants.

Materials and Methods

The field study was carried out during September 2016 to October 2017 in the College campus. Methodology survey covers two steps as follows:

- 1. Field survey** - Select various study area, vegetation survey, Photo collection and E-herbarium. We collect various Wild Grass and Weed in College campus and data analyzed.
- 2. Literature Collection** - The main aim of the survey was to collect information about college campus there Tree, Herb, Shrub, Weed, Grass, aquatic and Ornamental including Gardening species. Collected plants are identified by Botanical name, Family and Habitat. The collection of Different plants in college campus and collect their photographs. Diversity of area include useful plants, ornamental, wild as well as exotic weeds most of the plants are the soil binders. Data collection by help of college students. Photographs and herbarium will also helpful for identification. The identification was also done based on literature study (Hooker, 1875)

Observation

Table 1: Grass & Weed

S N.	Botanical name	Family
1	<i>Achyranthes aspera</i> Linn.	Amaranthaceae
2	<i>Aerva lanata</i>	Acanthaceae
3	<i>Ageratum conyzoides</i>	Asteraceae
4	<i>Agropyron repens</i>	Poaceae
5	<i>Allmania nodiflora</i>	Amaranthaceae
6	<i>Andrographis paniculata</i>	Acanthaceae
7	<i>Argemone mexicana</i>	Papaveraceae
8	<i>Aristida purpurea</i>	Poaceae
9	<i>Asteracantha longifolia</i>	Acanthaceae
10	<i>Blumea lacera</i>	Asteraceae
11	<i>Brachiaria Plantaginea</i>	Poaceae
12	<i>Cassia alata</i>	Caesalpinaceae
13	<i>Cassia tora</i>	Fabaceae
14	<i>Celosia argentea</i>	Amaranthaceae
15	<i>Cenchrus ciliaris</i>	Poaceae
16	<i>Chenopodium album</i>	Amaranthaceae
17	<i>Chloris barbata</i>	Poaceae
18	<i>Chloris virgata</i>	Poaceae
19	<i>Clitoria ternatea</i>	Fabaceae
20	<i>Croton bonplandianum</i>	Euphorbiaceae
21	<i>Cynodon dactylon</i>	Poaceae
22	<i>Cyperus polystachyos</i>	Cyperaceae
23	<i>Dichanthium annulatum</i>	Poaceae
24	<i>Eclipta alba</i>	Asteraceae
25	<i>Eclipta prostrate</i>	Asteraceae
26	<i>Emilia sonchifolia</i>	Asteraceae
27	<i>Eragrostis pilosa</i>	Poaceae
28	<i>Eragrostis tenella</i>	Poaceae
29	<i>Euphorbia hirta</i>	Euphorbiaceae
30	<i>Heteropogon contortus</i>	Poaceae
31	<i>Hygrophila schulli</i>	Acanthaceae
32	<i>Hyptis suaveolens</i>	Lamiaceae
33	<i>Isachne globosa</i>	Poaceae
34	<i>Iseilema vaginiflorum</i>	Poaceae
35	<i>Merremia gangetica</i>	Convolvulaceae
36	<i>Mimosa pudica</i>	Mimosaceae
37	<i>Oldenlandia corymbosa</i>	Rubiaceae
38	<i>Oxalis corniculata</i>	Oxalidaceae
39	<i>Parthenium hysterophorus</i>	Asteraceae
40	<i>Peperomia pellucida</i>	Piperaceae
41	<i>Phyllanthus niruri</i>	Euphorbiaceae
42	<i>Rumex dentatus</i>	Polygonaceae
43	<i>Scoparia dulcis</i>	Plantaginaceae
44	<i>Setaria glauca</i>	Poaceae
45	<i>Sida acuta</i>	Malvaceae
46	<i>Sida cordifolia</i>	Malvaceae
47	<i>Sida rhombifolia</i>	Fabaceae
48	<i>Solanum nigrum</i>	Solanaceae
49	<i>Solanum xanthocarpum</i>	Solanaceae
50	<i>Sporobolus diander</i>	Poaceae
51	<i>Themeda laxa</i>	Poaceae
52	<i>Themeda quadrivalvis</i>	Poaceae
53	<i>Themeda triandra</i>	Poaceae
54	<i>Tribulus terrestris</i>	Zygophyllaceae
55	<i>Tridax procumbens</i>	Asteraceae
56	<i>Vernonia cinerea</i>	Asteraceae
57	<i>Vernonia divergens</i>	Asteraceae
58	<i>Wedelia trilobata</i>	Asteraceae
59	<i>Zornia gibbosa</i>	Fabaceae

Table 2: Ornamental & Gardening species

S/N.	Botanical name	Vernacular name	Family	Habit
60	<i>Acalypha wikesiana</i>	Kuppi	Malvaceae	Shrub
72	<i>Aloe Vera</i>	Grheetkumari	Liliaceae	Herb
69	<i>Althaea officinalis</i>	Hollyhock	Malvaceae	Herb
70	<i>Antigonon leptopus</i>	Ice-cream flower	Polygonaceae	Herb
101	<i>Asparagus racemosus</i>	Sataver	Asparagaceae	Climbing Herb
61	<i>Aucuba japonica</i>	Aucuba	Garryaceae	Shrub
73	<i>Barleria prionitis</i>	Keshariya	Acanthaceae	Herb
74	<i>Bryophyllum pinnatum</i>	Bryophyllum	Uglyhuridthis	Herb
75	<i>Carex phyllocephala sparkler</i>	Palm sedge	Cyperaceae	Herb
103	<i>Caryota Urens</i>	Salfi	Arecaceae	Tree
77	<i>Catharanthus roseus</i>	Sadasuhagan	Apocynaceae	Herb
79	<i>Celosia argentea</i>	Silver cocks comb	Amaranthaceae	Herb
80	<i>Chrysanthemum indica</i>	Sevnti	Compositae	Herb
100	<i>Cissus quadrangularis</i>	Hadjod	Vitaceae	Climbing herb
82	<i>Clitoria ternatea</i>	Aparajiita	Fabaceae	Herb
83	<i>Coleus blumei</i>	Coleus	Lamiaceae	Herb
68	<i>Crinum Latifolium</i>	Sudarshan	Amaryllidaceae	Herb
62	<i>Croton Spp.</i>	Croton	Euphorbiaceae	Shrub
81	<i>Curcuma longa</i>	Haldi	Zingiberaceae	Herb
71	<i>Cynodon Italian</i>	Dube Italia grass	Poaceae	Herb
85	<i>Dahlia Pinnata</i>	Daheliya	Compositae	Herb
95	<i>Epipremnum aureum</i>	Money plant	Araceae	Climbing herb
86	<i>Hedyotis corymbosa</i>	Davana Patta	Rubiaceae	Herb
63	<i>Hibiscus rosa-sinensis</i>	China rose	Malvaceae	Shrub
98	<i>Ipomoea quamoclit</i>	Kamlata	Convolvulaceae	Climbing herb
99	<i>Ipomoea Spp.</i>	Morning Glory	Convolvulaceae	Climbing herb
64	<i>Ixora coccinea</i>	Rukhmani	Rubiaceae	Shrub
84	<i>Jasminum angustifolia</i>	Mongra	Oleaceae	Herb
87	<i>Jasminum auriculatum</i>	Juhi	Oleaceae	Herb
88	<i>Lagerstroemia indica</i>	Parash	Lythraceae	Herb
89	<i>Lilium species</i>	Lily	Malvaceae	Herb
102	<i>Magnolia champaca</i>	Champa	Magnoliaceae	Tree
65	<i>Nerium indicum</i>	Red kaner	Apocynaceae	Shrub
78	<i>Opunita Spp.</i>	Nagfani	Cactaceae	Herb
76	<i>Papaver somniferum</i>	Red variety	Papaveraceae	Herb
96	<i>Piper betle</i>	Betel	Piperaceae	Climbing Herb
92	<i>Polianthes tuberosa</i>	Rajnigandha	Asparagaceae	Herb
97	<i>Portulaca grandiflora</i>	Lonica	Portulacaceae	Climbing herb
66	<i>Rosa rubiginosa</i>	Rose	Rosaceae	Shrub
93	<i>Ruellia simplex</i>	Bluebell	Acanthaceae	Herb
94	<i>Tagetes erecta</i>	Marigold	Compositae	Herb
67	<i>Thevetia peruviana</i>	Kaner yellow	Apocynaceae	Shrub
90	<i>Tradescantia pallida</i>	Purple Heart	Commelinaceae	Herb
91	<i>Tradescantia spathacea</i>	Oyster plant	Commelinaceae	Herb

Table 3: Trees in Campus

S.N.	Botanical name	Vernacular name	Family
104	<i>Acacia melanoxylon</i>	Australian babul	Fabaceae
105	<i>Acacia nilotica</i>	Babul	Mimosaceae
106	<i>Aegle marmelos</i>	Bel	Rutaceae
107	<i>Annona squamosa</i>	Sitaphal	Annonaceae
108	<i>Artocarpus integrifolia</i>	Jack fruit	Moraceae
109	<i>Azadirachta indica</i>	Neem	Meliaceae
110	<i>Bambusa arundinacea</i>	Bans	Poaceae
111	<i>Borassus flabellifer</i>	Palm	Aracaceae
112	<i>Calotropis gigantea</i>	Madar	Asclepiadaceae
113	<i>Carica papaya</i>	Papita	Caricaceae
114	<i>Cassia fistula</i>	Amaltas	Fabaceae
115	<i>Cassia hirsuta</i>		Fabaceae
116	<i>Cocos nucifera</i>	Nariyal	Aracaceae

117	<i>Dalbergia sissoo</i>	Shisham	Fabaceae
118	<i>Delonix regia</i>	Gulmohar	Fabaceae
119	<i>Eucalyptus lanceolatus</i>	Nilgiri	Myrtaceae
120	<i>Ficus benghalensis</i>	Bargad	Moraceae
121	<i>Ficus religiosa</i>	Peepal	Moraceae
122	<i>Gmelina arborea</i>	Khamar	Verbenaceae
123	<i>Grewia asiatica</i>	Palas	Malvaceae
124	<i>Holorrhoea antidyenterica</i>	Koriya	Apocynaceae
125	<i>Lawsonia inermis</i>	Mehandi	Lythraceae
126	<i>Malia azedarach</i>	Mahaneem	Meliaceae
127	<i>Mangifera indica</i>	Aam	Anacardiaceae
128	<i>Mitragyna parvifolia</i>	Mundi	Rubiaceae
129	<i>Phyllanthus emblica</i>	Amla	Euphorbiaceae
130	<i>Pongamia pinnata</i>	Karanj	Fabaceae
131	<i>Prunus dulcis</i>	Almond	Rosaceae
132	<i>Psidium guajava</i>	Amrud	Myrtaceae
133	<i>Sapindus mukorossi</i>	Ritha	Sapindaceae
134	<i>Saraca indica</i>	Ashok	Caesalpiniaceae
135	<i>Syzygium jambolana</i>	Jamun	Myrtaceae
136	<i>Tectona grandis</i>	Sagon	Verbenaceae
137	<i>Terminalia alata</i>	Saja	Combretaceae
138	<i>Ziziphus jujuba</i>	Ber	Rhamnaceae

Table 4: Other flowering plant

S/N.	Botanical name	Vernacular name	Family	Habit
139	<i>Abutilon indium</i>	Kanghi	Malvaceae	Shrub
140	<i>Calotropis gigantea</i>	Madar	Asclepiadaceae	Herb
141	<i>Calotropis procera</i>	Aak	Asclepiadaceae	Herb
142	<i>Cicer arietinum</i>	Chhana	Fabaceae	Herb
143	<i>Citrus limonum</i>	Lemon	Rutaceae	Shrub
144	<i>Datura alba</i>	Dhatura	Solanaceae	Herb
145	<i>Datura metal</i>	Dhatura	Solanaceae	Herb
146	<i>Lantana camara</i>	Machhimudhi	Verbenaceae	Herb
147	<i>Lawsonia alba</i>	Mehndi	Lythraceae	Shrub
148	<i>Mentha longifolia</i>	Pudina	Lamiaceae	Herb
149	<i>Ocimum sanctum</i>	Tulsi	Lamiaceae	Herb
150	<i>Phyllanthus reticulatus</i>	Kale madhu ka per	Phyllanthaceae	Shrub
151	<i>Pisum sativum</i>	Pea	Fabaceae	Herb
152	<i>Ricinus Communis</i>	Arandi	Euphorbiaceae	Shrub
153	<i>Senna alata</i>	Christmas candles	Fabaceae	Shrub
154	<i>Sida rhombifolia</i>	Atibala	Malvaceae	Herb
155	<i>Tinospora cordifolia</i>	Gilloy	Menispermaceae	Climbing herb
156	<i>Vitex negundo</i>	Mewari	Verbenaceae	Shrub

Table 5: Gymnosperm

S/N	Botanical name	Vernacular name	Family
159	<i>Araucaria excelsa</i>	Christmas tree	Coniferae
158	<i>Cycas revoluta</i>	Cycas	Cycadaceae
157	<i>Thuja Spp.</i>	Vidya Patti	Cupessaceae

Table 6: Aquatic Garden (Hydrophytes)

S/N	Botanical name	Kingdom
161	<i>Azola caroliniana</i>	Pteridophyta
168	<i>Eichhornia crassipes</i>	Angiosperm
167	<i>Hydrilla verticillata</i>	Angiosperm
165	<i>Ipomoea aquatica</i>	Angiosperm
162	<i>Marsilea vilosa</i>	Pteridophyta
163	<i>Monochoria vaginalis</i>	Angiosperm
166	<i>Nymphoides indica</i>	Angiosperm
160	<i>Salvinia molesta</i>	Pteridophyta
164	<i>Trapa natans</i>	Angiosperm

Results

Study of plants diversity in Govt Ghanshyam Singh Gupt Post Graduate College Balod (C.G.) Campus included Tree, Herb, Shrub, Grass & Weed, Gardening Hydrophytes and Ornamental & Gardening (pot) species and other some species Pteridophyta, Gymnospermic plants. A total number of 168 plant species belonging to varied 52 families with different habits were recorded. They were the major vegetation in the surrounding of college campus. Ecological analysis shows that Poaceae, Fabaceae, Asteraceae, Acanthaceae and Euphorbiaceae were dominant family and low present families are cactaceae, Lythraceae, Piperaceae respectively. Our study area college campus and college Garden where many ornamental plants and medicinal plants. My study show college campus diversity represent area diversity.

Discussion

Biodiversity survey study was aimed for identification of different tress, Grass, other Wild spices, aquatic plant and ornamental plants in Govt Ghanshyam Singh Gupt Post Graduate College, Balod campus. To simply work and to identify plants easily the campus was divided into natural field near Tandula Dam, College Campus, Botanical garden and which plans grow in pot. In our study we selected some plants for vegetative propagation and some plants are planted in different areas of the campus and monitored for proper growth.

Conclusions

Govt Ghanshyam Singh Gupt Post Graduate College campus Balod is rich of plant diversity. college campus make green belts of Balod city and also help keep area pollution free. Due to unplanned and uncontrolled urban sprawl the natural ecosystems get fragmented and have patchy distribution in the form of small and large green spaces in the urban landscape. Hence, it is necessary to link the various green spaces of urban areas to form green corridors. The public should also be involved in various activities related to environment awareness and protection, as well as in the development of green spaces in and around cities. Such activities, in association with sustainable urban planning will help increase biodiversity in the cities and improve the quality of life for all residents.

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