



A SURVEY ON BIODIVERSITY OF FLORA IN GOVT. K.R.G.P.G. (AUTO.) COLLEGE CAMPUS, GWALIOR MADHYA PRADESH INDIA

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Abstract

The present study deals with the identification and documentation of flora of K.R.G.P.G. college campus, Gwalior. The college campus sprawling over 13 hectares with mostly green areas including almost 11 gardens. Most of the trees are naturally grown and some of the trees, shrubs and herbs planted obviously to control pollution and for the beautification of the campus. Incidentally some part of the campus is covered with rich diversity of Ashok (Saraca Asoca) which includes in medicinal plants. In view of recent demand on medicinal plants, the entire bio rich campus was scanned to collect the biodiversity data. Interestingly more than 115 plant species of trees, shrubs, xerophytes, herbs, cactus along with some faunas were identified using relevant scientific literature and subsequently the data was evaluated in the present paper. During the present study the floral diversity observed in Govt. K.R.G.P.G. (Auto.) College, Gwalior. Study has been done for a period from March 2023 to March 2024. There are 115 diversity including Herb (16%), Shrub (42%), Xerophytes (2%), Cactus (2%), Trees (38%) observed during survey. Among all these species of floral diversity the highest species abundance are shrubs and trees. The trees species accounting mostly Ashok, Neem, Peepal, Amaltas, Arjun, Banyan etc. Due to this floral diversity college campus are evergreen with clean air zone (AQIC).

Keywords: Herbs, Shrubs, Trees, Diversity, College, Flora, Biodiversity.

INTRODUCTION

Flora is the simplest list of plants that grow in a certain area. They are organisms that cannot move and spend their entire lives in one place under any conditions (Ramachandran et al., 1988). The fundamental characteristics of plant species, such as frequency, abundance, density, basal cover, relative frequency, relative density, relative dominance, IVI, and RIVI, are revealed by phytosociological study. Using floristic

composition analysis to characterize different vegetation types is phytosociology's ultimate goal. The diversity of plant species is reflected in the local flora. The majority of the species have good therapeutic value, which can be examined through research on phytosociology. Researchers' focus has recently shifted to ethnomedicines due to the use of some medicinal plants in traditional medicine. (Qureshi and colleagues, 2014).

Flora is an important natural blessing that has always been necessary for nature to function. The basis for real plant learning is the method for experimentation and has moved from one age to the next after being improved and included (Khan et al., 2013). A worldwide watch list of flora maintained by plant taxonomists provides general information on plants.

A comprehensive list of plant species that are growing in a certain area is called flora. Taxonomy is a synthetic discipline (Stuessy, 1990) which draws data from various branches of biology, namely, morphology, anatomy, embryology, palaeobotany, palynology, cytology, genetics, cytogenetics, chemistry, reproductive biology and ecology. While traditional plant taxonomy is exclusively based on morphological features, in the last fifty years or so, by using the knowledge and techniques of other disciplines of biology, more integrated approaches are being taken to elucidate different issues of plant classification as well as phylogeny and evolution.

The primary ways that immediate human usage alters the land are through horticulture, pasturization, forestation, and improvement.

Due to these techniques, the typical natural habitat is diminished, leaving less space for surrounding species (Qureshi et al., 2010). The accessibility of plants in the typical natural habitat has been significantly impacted by the idealized cultivated plants' replacement of non – cultivated species surrounding.

The main ways that immediate human usage alters the land are through horticulture, pasteurization, forestation, and improvement. Due to the reduction of the typical natural habitat, there is less space available for neighboring species (Qureshi et al., 2010). Flora is the simplest list plants that grow in a certain area. They are organisms that cannot move and spend their entire lives in one place under any conditions (Ramchandra et al., 1998).

Biodiversity provides a variety of environmental services from its species that are essential at the global, regional, and local level. The production of oxygen, reduction of carbon dioxide, maintaining the water cycle and controlling soil, water and air pollution are some important services of plants. Therefore, there is a lot of demand for database of plants and animals all over the world especially from biodiversity rich countries as there are a number of economically and medicinally important plants available, which are untapped till now. In view of this, we selected K.R.G.P.G. college campus as an experimental area for studying the flora of campus.

STUDY AREA

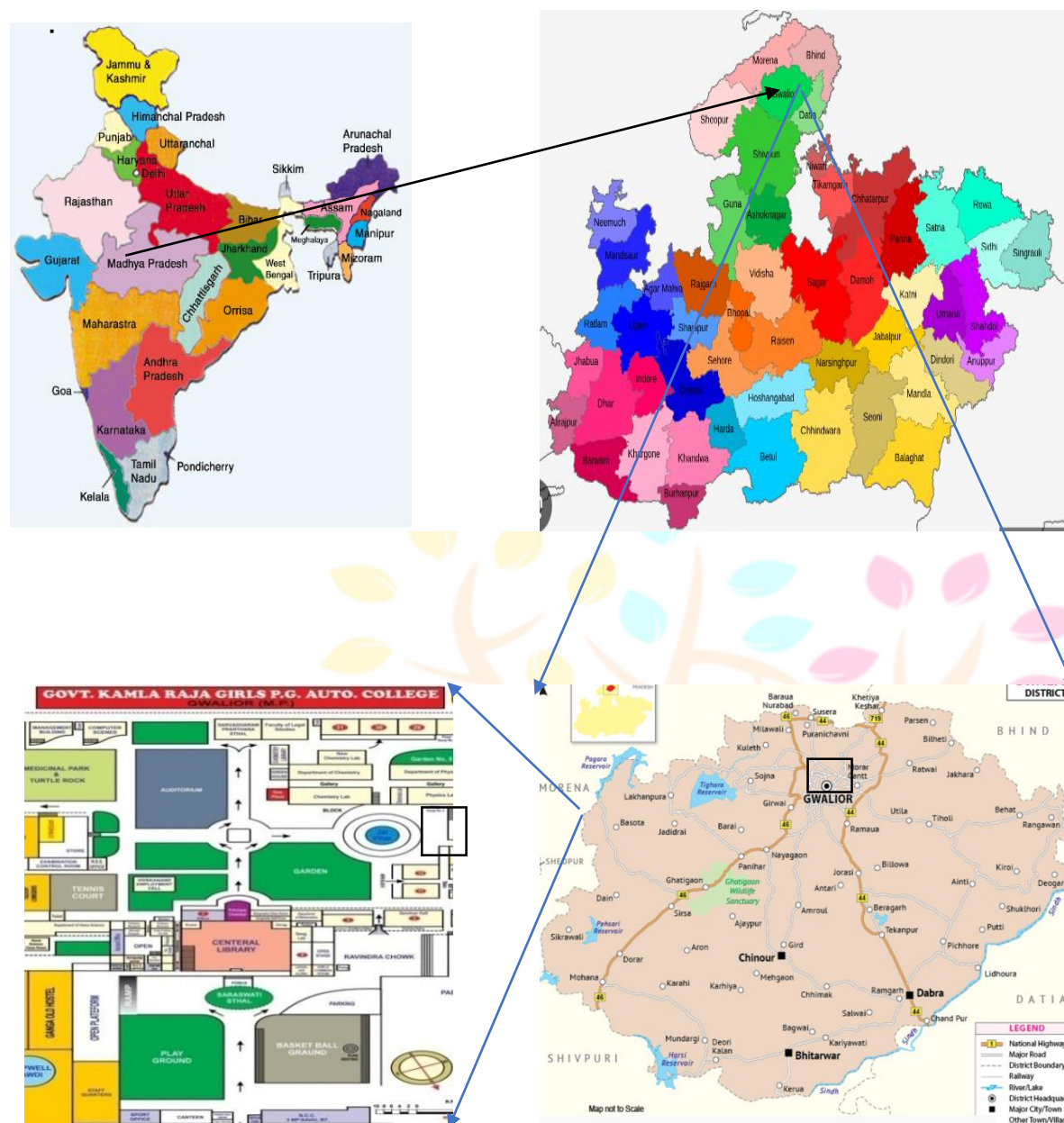
The 13-hectare site of the Govt. Kamla Raja Girls Post Graduate (Autonomous) College in Gwalior was founded in 1937. It is located in front of Kampoo Lashkar Gwalior's Kamla Raja Hospital. Because of its

academic accomplishments, facilities, and financial resources, the college enjoys a significant position and a strong reputation among higher education institutions not only in Madhya Pradesh but also in other Northern Indian states. Situated at 26° 11' 26.37" N latitude and 78° 9' 16.15" E longitude is the Govt. Kamla Raja Girls Post Graduate College, Gwalior campus. The College's 53714 square meter campus is made up of 22484 square meters of built space that are home to structures. Total 13892 sq. meters area is covered with greenery which is approximately 25% of the campus. 13525 sq. meters area of the campus is used as play ground and reaming 5740 sq. meters area is used for miscellaneous purposes. The college is affiliated to Jiwaji university, Gwalior and Recognized by UGC under Section 2(f) and 12 (b) of the Act, 1956. The National assessment and accreditation commission awarded the college “B” grade in 2010 and it is also re accredited awarded the college grade “A” in 2016. Govt. Kamla raja girls post graduate (autonomous) college, Gwalior is a biggest girl’s college of Chambal Shambhag in (M.P.) about more than 12,000 girls are study in different stream like that Art, Commerce, Science and Law. The college campus are rich in flora. The college campus sprawling over 13 hectares with mostly green areas including different gardens: Apala Garden, Bangbhatt garden, Gargi Garden, Ghosa garden, Jeevak garden, Maitreyi garden, Nagarjun, Saraswati Garden, Medicinal Garden consists of some old trees along with shrubs, herbs, xerophytes, cactus, trees.

Fig : 1 Map of K.R.G.P.G. College



Research Through Innovation

Fig: 2 Location of K.R.G.P.G. (Auto.) College:

Materials and Method

Direct observation of plants growing freely around the college were done to ensure a proper and more accurate plant survey. The collected plant samples were identified in the herbarium of the Department of Botany. A comprehensive guidebook or mobile app for identifying local plant species. Systematically walk through different habitats on the campus, such as lawns, gardens, wooded areas, and natural patches. Record all plant species encountered, noting species names, abundance, flowering times, and any distinctive features. Observe plant characteristics such as leaf shape, flower structure, colour, and arrangement. Analyse the diversity of plant species across different habitats and seasons.

Result And Discussion

The survey conducted on the K.R.G.P.G. Autonomous College campus associated with rich flora of trees, shrubs, herbs, xerophytes, cactus encompassing a total of 115 plant species, with the counting of (18) herbs, (49) shrubs, (2) xerophytes, (2) cactus, (44) trees. Among all trees the most commonly observed tree were

the Indian mostly found Ashok trees (*Saraca Asoca*), Fan Palm (*Chamaerops*), Neem (*Azadirachta indica*), Sagon (*Tectona grandis*), Amaltash (*Cassia fistula*).

OBSERVATION TABLE:

LIST OF HERBS OBSERVED IN GOVT. K.R.G.P.G. (AUTONOMOUS) COLLEGE, GWALIOR

S. NO.	COMMON NAME	SCIENTIFIC NAME	PLANT TYPE
1..	ALOE VERA	Aloe vera	Herb
3.	PATHARCHATTA	Kalanchoe pinnata	Herb
4.	Arrowhead plant	Syngonium podophyllum	Herb
5.	Inchplant	Tradescantia zebrina	Herb
6.	Irish moss	Sagina subulata	Herb
7.	lilyturf plant	Liriope	Herb
8.	Mondo grass	Ophiopogon japonicus	Herb
9.	Arrowhead plant	Syngonium podophyllum	Herb
10.	Crinum Lily	Crinum asiaticum	Herb
11.	Red-Little ruby	Alternanthera dentata	Herb
12.	Spider plant	Chlorophytum comosum	Herb
13.	Banana	Musa	Large evergreen Herb
14.	Elephant ear plant	Colocasia	Large evergreen Herb
15.	Flex lily	Dianella tasmanica	Herb
16.	Golden pandanus	Pandanus Veitchii	Herb
17.	Lily Turf	Ophiopogon intermedius	Herb
18.	Purple heart	Tradescantia pallida	Herb

LIST OF SHRUBS OBSERVED IN GOVT. K.R.G.P.G. (AUTONOMOUS) COLLEGE, GWALIOR

S.NO.	COMMON NAME	SCIENTIFIC NAME	PLANT TYPE
1.	Copperleaf plant	Acalypha wilkesiana	SHRUB
2.	GREEN HAWAIIAN TI PLANT	Cordyline fruticose	SHRUB
3.	GUDHAL	Hibiscus	SHRUB
4.	Red KANER	Nerium Indicum	Shrub
5.	RED HAWAIIAN TI PLANT	Cordyline fruticose	Shrub
6.	ROSE	Rosa	Shrub
7.	CHRISTMAS BUSH	Alchornea cordifolia	Shrub
8.	CROTON	Codiaeum variegatum	Shrub
9.	GREEN HAWAIIAN TI PLANT	Cordyline fruticosa	Shrub
10.	INDIAN SHOT	Canna indica	Shrub
11.	LUCKY BAMBOO	Dracaena sanderiana	Shrub

12.	MOGRA	Jasminum sambac	Shrub
13.	Maxican petunia	Ruellia angustifolia	Shrub
14.	MORPANKHI	Platycladus orientalis	Shrub
15.	ORANGE JASMINE	Murraya paniculata	Shrub
16.	RED HAWAIIAN TI PLANT	Cordyline fruticosa	Shrub
17.	SINDOOR	Bixa Orellana	Shrub
18.	TULSI	Ocimum tenuiflorum	Shrub
19.	YELLOW KANER	Cascabela thevetia	Shrub
20.	Champa	Plumeria	Shrub
21.	Corn plant	Dracaena fragrans	Shrub
22.	Dragon tree	Dracaena draco	Shrub
23.	GREEN HAWAIIAN TI PLANT	Cordyline fruticosa	Shrub
24.	Green hedge	Alternanthera	Shrub
25.	Heavenly bamboo	Nandina domestica	Shrub
26.	Indian shot	Canna indica	Shrub
27.	Lady palm	Rhapis excelsa	Shrub
28.	Aralia balfouriana	Polyscias scutellarin	Shrub
29.	CROTON	Codiaeum variegatum	Shrub
30.	Song of india	Dracaena reflexa	Shrub
31.	Weeping fig	Ficus benjamina	Shrub
32.	Areca palm	Dypsis lutescens	Shrub
33.	Baramasi	Catharanthus roseus	Shrub
34.	Firebush	Hamelia patens	Shrub
35.	Jasmine	Jasminum	Shrub
36.	Jungle geranium	Ixora coccinea	Shrub
37.	Rheo	Tradescantia spathacea	Shrub
38.	Zanzibar Croton	Codiaeum Variegatum	Shrub
39.	Copperleaf plant	Acalypha wilkesiana	Shrub
40.	LUCKY BAMBOO	Dracaena sanderiana	Shrub
41.	Nagdon plant	Euphorbia Tithymaloides	Shrub
42.	Narrow leave dragon tree	Dracaena angustifolia	Shrub
43.	Pomegranate	Punica granatum	Shrub
44.	casuarina topiary	Casuarina equisetifolia	Shrub
45.	Common boxwood	Buxus sempervirens	Shrub
46.	Red hedge	Photinia fraseri	Shrub

LIST OF XEROPHYTES OBSERVED IN GOVT. K.R.G.P.G. (AUTONOMOUS) COLLEGE, GWALIOR

S. NO.	COMMON NAME	SCIENTIFIC NAME	PLANT TYPE
1.	Agave	Agave angustifolia	Xerophytic
2.	Mother in low tongue	Dracaena trifasciata	Xerophytic

LIST OF CACTUS OBSERVED IN GOVT. K.R.G.P.G. (AUTONOMOUS) COLLEGE, GWALIOR

S. NO.	COMMON NAME	Scientific Name	PLANT TYPE
1.	CROWN OF THORN	Euphorbia milii	Cactus
2.	Dragon bone cactus	Euphorbia lactea	Cactus

LIST OF TREES OBSERVED IN GOVT. K.R.G.P.G. (AUTONOMOUS) COLLEGE, GWALIOR

S. NO.	COMMON NAME	SCIENTIFIC NAME	PLANT TYPE
1.	Amaltas	Cassia fistula	Tree
2.	Amla	Phyllanthus emblica	Tree
3.	ASHOK	Saraca asoca	Tree
4.	Bottle brush	Callistemon	Tree
5.	Curry tree	Murraya koenigii	Tree
6.	Fan palm	Livistona chinensis	Tree
7.	Jamun	Syzygium cumini	Tree
8.	Kachnar	Bauhinia variegata	Tree
9.	Kadumb	Neolamarckia cadamba	Tree
10.	Kathal	Artocarpus heterophyllus	Tree
11.	Lemon	Citrus limon	Tree
12.	Maulshree	Mimusops Elengi	Tree
13.	Peepal	Ficus religiosa	Tree
14.	Red gulmohar	Delonix regia	Tree
15.	BLUE GULMOHAR	Jacaranda Mimosifolia	Tree
16.	CURRY TREE	Murraya koenigii	Tree
17.	FAN PALM	Chamaerops humilis	Tree
18.	GUAVA	Psidium guajava	Tree
19.	MANGO	Mangifera indica	Tree
20.	SAGO PALM	Cycas revoluta	Tree
21.	Banyan	Ficus benghalensis	Tree
22.	Bel	Aegle marmelos	Tree
23.	Blackboard tree	Alstonia scholaris	Tree
24.	Harsingar	Nyctanthes arbor-tristis	Tree
25.	Neem	Azadirachta indica	Tree
26.	Baheda	Terminalia bellirica	Tree
27.	Cinchona	Cinchona pubescens	Tree
28.	Imli	Tamarindus indica	Tree
29.	Indian almond	Terminalia catappa	Tree
30.	Pakhad	Ficus virens	Tree
31.	Shisham	Dalbergia sissoo	Tree
32.	Arjun	Terminalia arjuna	Tree
33.	Chirol	Holoptelea integrifolia	Tree
34.	Sahjan	Moringa oleifera	Tree
35.	Bakayan	Melia azedarach	Tree
36.	Blackboard trees	Alstonia scholaris	Tree
37.	Kassod	Senna siamea	Tree
38.	Shahtoot	Morus Alba	Tree
39.	Yellow gulmohar	Peltophorum pterocarpum	Tree
40.	Bottle palm	Hyophorbe lagenicaulis	Tree
41.	Gular	Ficus racemosa	Tree

42.	Indian Bael	Aegle marmelos	Tree
43.	Sal	Shorea robusta	Tree
44.	Weeping fig	Ficus benjamina	Tree



1. Lilyturf plant



2. Elephant ear plant



1. Morpankhi



2. Rose



3. Banana



4. Alovera



3. Gudhal



4. Tuls



5. Purple heart



5. Jasmine

Fig:1. PLATES OF HERBS**Fig:2. PLATES OF SHRUBS**

1. Fan palm



2. Sahjan



3. Amaltash

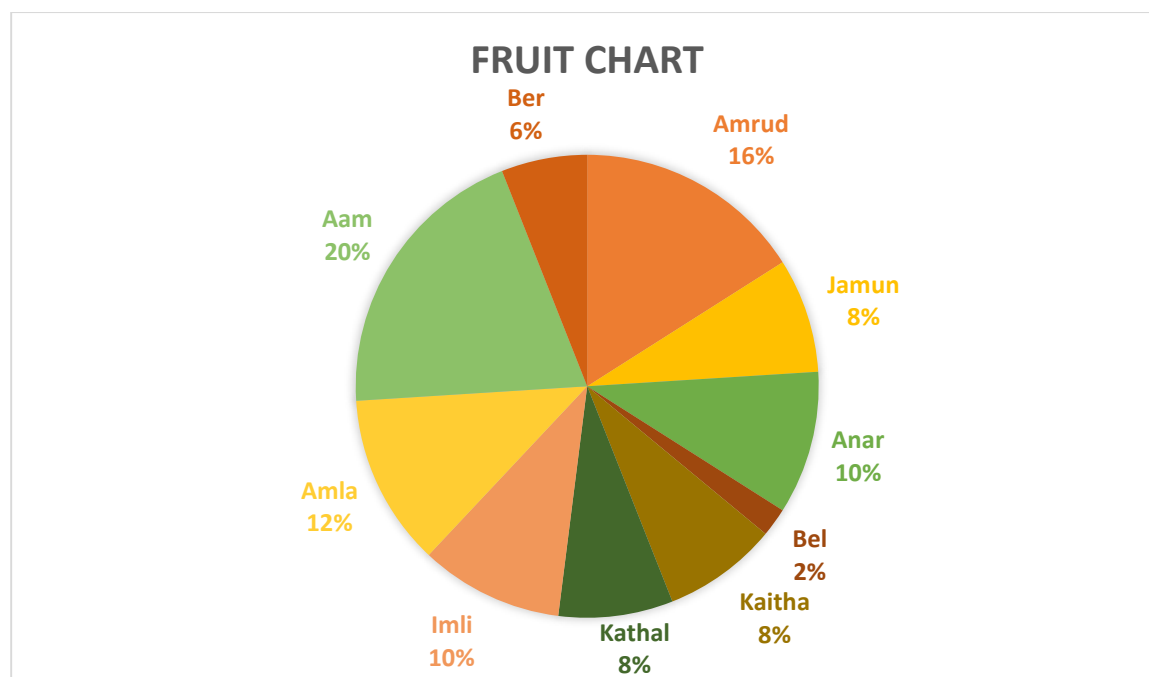


3. Neem



4. Peepal

Fig:3. PLATES OF TREES

Fig 3: List of Fruits observed in K.R.G.P.G. (Auto.) College.

CONCLUSION

Biodiversity provides a immense environmental services from its species, which are important at the global, regional and local levels. On the other hand, the mega diversity nations have developed the technology by exploitation of species leading to destruction of biodiversity; India is capable of doing so. During the present study the floral diversity observed in Govt. K.R.G.P.G. (Auto.) College, Gwalior. Study has been done for a period from March 2023 to March 2024. There are 115 diversity including Herb (16%), Shrub (42%), Xerophytes (2%), Cactus (2%), Trees (38%) observed during survey. Among all these species of floral diversity the highest species abundance are shrubs and trees. The trees species accounting mostly Ashok, Neem, Peeple, Amaltas, Arjun, Banyan etc. Due to this floral diversity college campus are evergreen with clean air zone (AQIC). Preserving this natural heritage is not just a national duty but a global imperative. India's biodiversity offers lessons in resilience and coexistence, vital for our planet, s future. Continue efforts, and policy initiatives are essential to ensure the enduring legacy of India's diverse flora.

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