



**OFFICE OF THE ENVIRONMENTAL ADVISORY COMMITTEE  
CUM ENVIRONMENTAL PROTECTION COMMITTEE  
GOVERNMENT DEGREE COLLEGE KULGAM**



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No. GDCK/EAPC/24/

Dated: / /2024

**CERTIFICATE OF AUDIT**

This is to certify that the Environmental Advisory committee cum Environmental Protection Committee of Govt. Degree College Kulgam conducted an Environmental audit of the campus for the year 2024-2025. The audit report consists an exhaustive inspection and investigation of the green initiative planning of the campus in terms of plantation, fauna, waste management, rain water harvesting, energy Conservation, proper solid and liquid waste disposal and other relevant awareness and conservation activities related to the audit. The detailed report is attached with this certificate as an Annexure.

  
04.05.2024

**CONVENER**  
Environmental Advisory committee  
cum  
Environmental Protection Committee  
Govt. Degree College Kulgam

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**Government Degree College, Kulgam**  
**Environmental Audit Report 2024-25**



*Prepared by*

**Environmental Advisory Committee cum Environmental Protection Committee**  
**Government Degree College, Kulgam**



*Department of Environmental Science*  
**Government Degree College, Kulgam**  
&

**Internal Quality Assurance Cell, Government Degree College, Kulgam**

**Prepared by**

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## **Executive Summary**

An environmental audit is also called a green audit is of paramount importance in context of effective environmental governance. The thrust of this audit report is to highlight the adequacy and effectiveness of interventions and approaches made by the college to tackle some important environmental issues in the campus. The findings and recommendations made in this audit report shall enable the administration to take corrective measures and to frame policies in order to improve the environmental efficiency and governance. A brief introductory synopsis on green audit has been formulated in this report. The objective of this report is to evaluate the activities being carried in the campus and provide the suggestions and recommendations for incorporation of environmental concerns in university policies and planning. This audit report will provide baseline data regarding the environmental issues prevailing in the campus, like energy consumption, green belts, solid waste management, wastewater generation etc. for the present report data related to land use was generated from satellite images, data related to electricity consumption, energy consumption, water consumption, fuel wood, solar energy and solid waste was collected from officials records and field survey. The water consumption in the college is about 5.74 litres per person per day. The institute generates about 2.3 quintals of solid waste per day most of in which 27% is compostable and 29% is recyclable in nature. In view of the observation the report recommends various measures to modify the existing system to bring the positive changes to make the campus safe and environment friendly.

## **1. Introduction**

### **1.1 Introduction to environmental audit**

UNEPA defines environmental audit as, "A systematic, documented, periodic and objective review by regulating entities of facility operations and practices related to meeting environmental requirements". It is a tool to assess general practices implemented by organization in term of its impact on environment". It shows strength and weakness of organization towards conservation of environment and function in a manner to minimize its harmful environmental impact.

### **1.2 Need for environmental audit**

Government Degree College lies in the ecologically important area since it is surrounded by ecologically and economically important commercial and agricultural settlements. Since the establishment of the college in the area, there has been significant increase in the developmental activities that have affected overall environmental quality of the area. Now the need of an hour is to develop an eco-friendly approach to carry out the activities of the college as per the environmental norms to make it a college with green campus.

### **1.3 Objectives of environmental audit**

1. To undertake baseline survey regarding implementation of green practices in the campus.
2. To analyse and evaluate the existing solid waste, water consumption and energy use in the campus.
3. To evaluate the potential of resources recovery for solid waste
4. To explore the alternative eco-friendly energy sources to run the academic and administrative activities successfully.
5. To suggest a suitable strategy for the ensuring going green of the campus

### **1.4 About the College**

The Government Degree College Kulgam (GDCK) was established in the year 2004 with a vision to spread value-based education to this vibrant district of fresh water streams in the south of Kashmir Valley. Over the last more than 18 years, GDCK has become the leading higher education institution of the district currently catering education to more than 6000 students including male



and female students for the undergraduate programme. The institution has strived to foster a balance between pursuit of basic knowledge and applying the same to produce skilled workers, entrepreneurs, and professionals. The reputation and pre-eminence of the institution have been key in attracting the students from the distant and far-flung areas of the district. The GDCK's subject combinations are diverse, multidisciplinary, and cut across the traditional boundaries. The college presently offers more than thirty subjects under different programmes including professional (BBA, BCA), non-professional (BA, BSC, BCOM), UGC sponsored Add-on courses, Vocational courses under RUSA, Short-term courses, Skill Enhancement Courses and Ability Enhancement Courses under CBCS and NEP-2020 Schemes. The GDCK has a very beautiful vibrant campus spreading over 100 Kanals of land with an elevated landscape whose beauty is fortified by the peaks of Pir-Panchal mountain range. The college has got Science Block equipped with state-of-the-art laboratories, Arts Block, several classroom blocks, a multipurpose block, an Administration cum library block and a fitness centre. The construction of an auditorium and a separate library block is in the final stage. Believing in fit India slogan, availability of a huge playground enables us to organise most of the sports activities within the college campus. In coherence with Green Energy Initiative, all college buildings are illuminated using solar energy power plant. The college library is enriched with diverse and updated editions of around 30,000 books. Three spacious computer laboratories and a Browsing Centre equipped with state-of-the-art facilities and sufficient power backup are functioning in the college. To access the online resources of learning including e-content, digital libraries, and online learning management system the college campus is Wi-fi enabled. Further, the classrooms and laboratories are installed with digital interactive panels to make the teaching-learning process more effective, attractive, interesting and engage students via online mode. Intriguingly, the campus has recently been empowered by a GSI and a language laboratory. At present the College has 36 permanent and 40 Academic Arrangement faculties. They are highly dedicated, diligent, tenacious, and always open to welcome the quires from the students during the classroom discussions and elsewhere. They are always keen and open to collaborative learning and research. For the 360 degree development of our students the college has dedicated units of NCC (male and female), NSS, incubation and innovation centre besides a multidisciplinary research centre. In the coming years, GDCK aims to position itself among the country's foremost academic institutions. We will focus on building our core research strengths in all frontiers of science, develop exemplary teaching programmes, nurture translational research

and encourage the incubation of successful start-ups. We will continue to empower researchers from our diverse disciplines to work together to solve pressing challenges. We will also continue to carry out activities with direct social impact, such as adopting rural villages and schools, training school teachers, disseminating sustainable rural technologies, and research in areas like climate change, healthcare, water management, and renewable energy. At the same time, we seek to embrace modern professional practices, and take challenges and benchmark ourselves against international standards. As we go ahead to transform this vision into reality, we envisage to create plethora and endless opportunities for students, innovators, teachers, researchers and more in the coming years. We are looking forward to you all stakeholders to join us in this exciting journey.

### 1.5 Campus Layout

Government Degree College Kulgam, commonly known as GDCK, is an academic and professional college in Kulgam district, Jammu and Kashmir, India. It is the oldest institute of higher education in the district and is in the heart of the district.

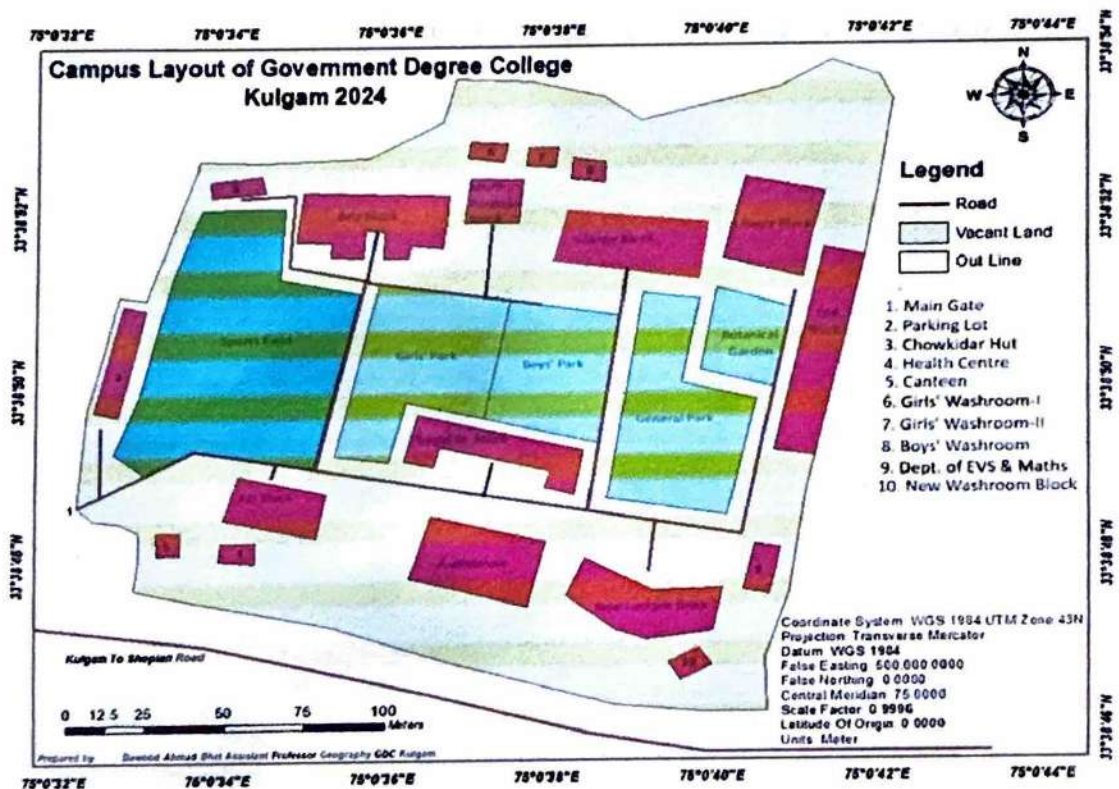


Fig. 1: Layout of the College

## **1.6 Data Base and Methodology**

Data Collection methods include literature review, sample survey and observations. The study has been undertaken to understand the different environmental parameters like, solid waste generation and management, water consumption, energy consumption, and plantation cover details etc. The study is aimed to explore alternatives and opportunities to achieve higher levels of sustainability. The data has been collected using a variety of methods to seek to gain a better understanding of the challenges, opportunities, and alternatives. The data regarding number of staff members, students, consumption coal, firewood, LPG, and electricity has been obtained from the administrative office, IQAC Office, college plumber and college electrician etc. To understand the water consumption and quantifying and characterizing solid waste stream Direct Waste Analysis. It is considered as a scientific as it makes direct examination of the waste generation sources, characteristics such as weight and composition. For the ease of the waste estimation, polythene bags of 10 kg capacity were used to conduct the survey sampling.

## 2. Data analysis

### 2.1 Solid Waste Management Problem

Solid waste is being regarded as the worst type of pollution because it is discernible unlike other types of pollutions and frequently occurring in every passing second. The solid waste management has become a nuisance problem for international, national, and local governments as it is the single largest budget item for most urban centres. Besides the crude open dumping is a common method of waste disposal, which poses a huge potential and real threat to the public health and especially to the quality of environment. Thus, the magnitude of solid waste generation is so high, that the existing levels of technology, manpower and finance are falling short to handle it properly. It has so far, exceeded the earth's natural decomposition and absorption ability. The improper management of waste can contribute to the occurrence of global problems, e.g. global warming, ozone layer depletion and climate change. Once the waste material is buried in a landfill, it releases CH<sub>4</sub>, which often contributes to air pollution and adversely impacts upon human health and the environment. The biodegrading process of waste also causes the formation of leachate, which has the potential to pollute underground water. In this regard, the mechanism of integrated solid waste management tries to minimize the quantum of waste disposal through methods like, inter alia, reducing, reusing, recycling, recovering, composting, and incineration, etc. It has been used in efforts to ensure environmental purity and sustainable management of resources.

### 2.2 Magnitude of waste generation in the Campus

The colleges and other higher education institutes are becoming important landmarks of the urban landscape in Kashmir valley. The college has about 3403 student enrolment for the year 2024-25. In addition, there are about 40 teachers and 40 non-teaching members in the college. On an average, college generates about 42 Kg of waste/day. The per capita waste generation of is 0.012 kgs/, which is quite modest.

**Table 1: Magnitude of waste generation in college**

<b>Total Enrollment Including Teaching and Non-Teaching Staff</b>	<b>Per Capita Waste Generation Per Day (in Kg.)</b>	<b>Daily Waste Generation in Quintals</b>	<b>Annual Waste Generation in Quintals</b>
3483	0.012	2.3	27.6

### 2.3 Composition of solid waste generated

The base of successful planning for a waste management programme depends up on the availability of reliable information about the quantity. Effective waste management through analysis of waste composition studies is important for numerous reasons, including the need to estimate material recovery potential, to identify sources of waste generation, to facilitate design of processing equipment, to estimate physical and chemical properties of the waste. From the Table 2, it is evident that about 27% of the total waste generated from the college campus is compostable in nature, including wastage of fruit, food, vegetable and garden clippings etc. Among the compostable items garden waste is dominant which constitute about 16 % of the total weight generated. The discarded edible items generated from college canteen and other building constitutes about 9% of the total waste stream. This uneaten food can be given as donations to the needy people, or it can be used as valuable feed for animals and poultry. Among the recyclable material, paper is the most dominant source of waste, which accounts for about 15% of the total waste generation. Paper waste comprising of print paper, notebooks, trash pages, wrappers, tissue papers, and packing etc. Cardboard constitutes about 2% of the total waste stream. Card waste arises due to procurement of the electronic items like computers, laptops, fridges, printers and other items and gadgets which are heavy packed in cardboard. Moreover, students also use card pads as support for writing examinations. Plastic and polythene constitute about 1% each of the total waste streams. Glass and metal waste constitute very minute proportion in the total waste. Glass waste is generally generated from the college health centre. Waste miscellaneous waste category constitute about 44% of the total weight of the waste stream, in which dust sweepings make about 30% by weight. Ash content is another major constituent of the waste stream, which makes about 9% of the waste stream. This is because that during winter season to conduct the examinations about 25 coal bukharies are use on daily basis and because of which huge quantity of ash is generated on daily basis.

**Table 2: Composition of solid waste generated in the GDCK campus.**

Waste item Category	Daily waste generation in Quintals	% of weight
Compostable like Food garden waste	0.2709	27
Recyclable like, Paper, Cardboard, Glass, metal, Plastics polythene	0.2908	29
Miscellaneous like, dust Sweeping, cloth, Wood, Ash	0.4408	44
Total	1.0025	100

Having dust bins in campus is essential step to start waste management practices and throwing waste in these bins constitutes good civic habit among students. Presently there are about 30 dust bins with each one having between 15-100 kg of solid waste holding capacity. However, the distribution of the dust bins is highly haphazard over the space. Most of the dust bins are not clearly visible. Presently there is no vision of waste segregation at source, therefore all the waste is dumped is mixed and dumped together. Currently all the Waste is burnt in campus, and some is being decomposed in the waste pits. Therefore, it is strongly recommended to relocate the location of dust bins and start the segregations of waste at the source for ensuring proper waste management in the campus.

### 3. Water audit

Water audit refers to the conducting of periodic exercises to determine water supplied into distribution system as well as water lost and/or used within the distribution system. Water audit is aimed to establish the water consumption pattern in the individual sections, benchmark the consumption levels with respect to best international practices, explore various pollution prevention and wastewater minimization opportunities. Water audits also provide a platform to establish the performance of the existing water distribution systems as well as wastewater collection and treatment facilities and explore various wastewater recycling programs.

**Table 3: Total Water storage capacity in the college campus**

Source of Water	No of water tanks to hold the water	Storage capacity in liters
PHE (Jal Shakti) Bore well.	30	30, 000

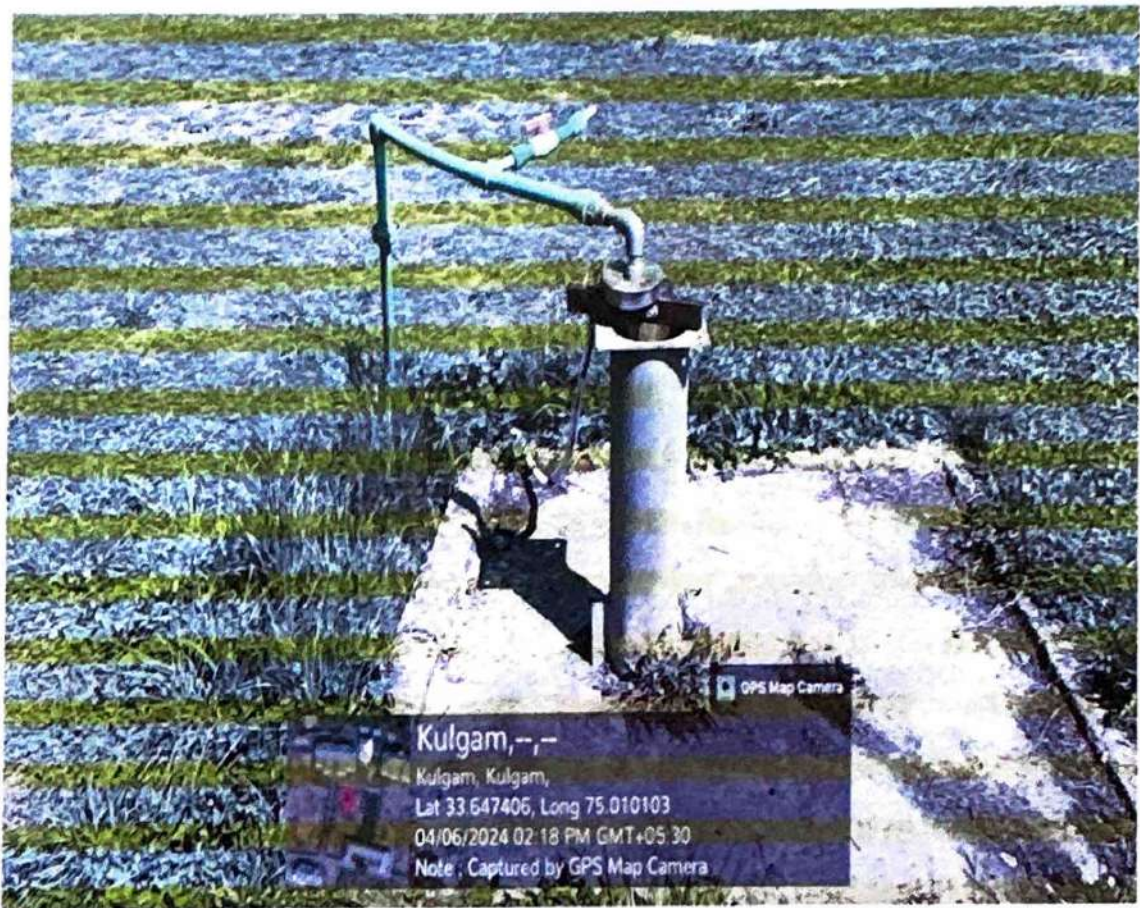
The college is entirely dependent the uses the Jal Shakti (formerly known as PHE) and borewell for water supply and ground water to meet the water consumption of its students and staff members for various purposes like drinking, washing and irrigation etc. to the college. The college has 30

tanks with a capacity of 30, 000 liters of water holding capacity, out of which 20, 000 liters are consumed on daily basis.

**Table 4: Magnitude of water consumption**

Total Enrollment including teaching and non-teaching staff	Per capita water consumption per day	Daily water consumption
3483	5.74 liters	20,000 liters

The rate of water computation is significantly higher in the college i.e. 5.74 liters/persons/day. Therefore, looking at the nature of the water source and intensity of water consumption rate it is strongly recommended the college should start rainwater harvesting especially for ground water recharge.



**Fig.2: Borewell in the college**

#### 4. Energy audit

Energy audit According to the definition in the ISO 50002 standard, an energy audit is a systematic analysis of energy use and energy consumption within a defined energy audit scope, in order to identify, quantify and report on the opportunities for improved energy performance. Energy Audit is the key to a systematic approach for decision-making in energy management. It attempts to balance the total energy inputs with its use and serves to identify all the energy streams in a facility. It quantifies energy usage according to its discrete functions. The energy is utilized in the campus for transportation, lighting, space heating and cooling, running of lab instruments, appliances, water heating, ground water pumping, cooking, etc. The data regarding the energy consumption is given in Table 5. The data indicated that the college utilises renewable as well as non-renewable energy sources to meet its energy needs.

**Table: 5: Sources of energy of college**

S. No.	Source of Energy	Consumption/ Potential/installed capacity
1	Solar	50 KWp installed capacity
2	Hydel power	63 KV Potential/installed capacity
3	Coal	50 tonnes/year
4	Firewood	25 quintals/year
5	LPG	50 cylinders (882 litre)/year
6	Diesel	500 litres/year

**4.1 Hydel power:** Hydel power is most popular form of energy used in Kashmir valley and our college is no exception to it. Being the Renewable and Eco-friendly resource its consumption rate day by day. The college has a sanctioned load of 20 KW hydel power, and college consumes approximately 2850 units of electricity per month costs Rs. 58, 688/month, to run machinery and academic activities smoothly.





**Fig.3: Genset facility of the college**



**Fig.4: College main electricity transformer**



**Fig. 5. Solar Power Installed in the campus.**

**4.2: Coal:** The college uses peat variety of coal, to keep classrooms, offices and examination halls warm during the bone chilling cold winter season. It is evident that the college consumes about 50 tonnes of coal annually for this purpose. To ensure power burning of the coal, wood is used as catalyst. College uses about 25 quintals of firewood annually for these purposes. However, it is not good source of energy because it produces many harmful gases such as Carbon dioxide and Carbon monoxide etc. This also reduces the flow of oxygen which causes breathing problems which can be potentially harmful to human beings.



**Fig.5. College shed used to store hard Coal**

**4.3: Liquid Petroleum Gas:** it is another source of energy used in the college. It is called liquefied gas because it is easily transformed into a liquid. It is highly flammable gas in college commonly heating purpose during bone chilling winter season. As per the table 5 the college uses about 50

cylinders (882 litres LPG)/year. In addition, the college uses about 500 litres of diesel annually in order to run its buses and power generator.

#### 5. Plantation audit (Compiled by Dr. Shaukat Ahmad Pala, Assistant Professor, Botany)

The college campus is very green. It has a good plantation cover too. Besides parks, roadsides are also flanked with deodar trees. The diversity of different vegetation types is given in table 6.

**Table 6: Some Common Plants in GDC Kulgam Campus**

S. No	Name of plant
1.	<i>Rumex obtusifolius</i>
2.	<i>Poa annua</i>
3.	<i>Plantago major</i>
4.	<i>Plantago lanceolata</i>
5.	<i>Trifolium repens</i>
6.	<i>Trifolium pratense</i>
7.	<i>Cynodon dactylon</i>
8.	<i>Conyza canadensis</i>
9.	<i>Malva domestica</i>
10.	<i>Capsella bursa pastoris</i>
11.	<i>Sisymbrium loeselii</i>
12.	<i>Ranunculus</i> spp
13.	<i>Convolvulus arvensis</i>
14.	<i>Solanum nigrum</i>
15.	<i>Urtica dioica</i>
16.	<i>Berberis lycium</i>
17.	<i>Fragaria vesca</i>
18.	<i>Artemisia absinthium</i>
19.	<i>Prunella vulgaris</i>
20.	<i>Viola odorata</i>
21.	<i>Santolina</i> sps
22.	<i>Euphorbia helioscopia</i>
23.	<i>Chenopodium album</i>
24.	<i>Portulaca oleracea</i>
25.	<i>Setaria viridis</i>
26.	<i>Oxalis corniculatus</i>
27.	<i>Rubia cardifolia</i>
28.	<i>Tribulus terrestris</i>
29.	<i>Erodium Cicutarium</i>
30.	<i>Gallium aparine</i>
31.	<i>Stellaria media</i>
32.	<i>Anagallis arvensis</i>
33.	<i>Bromus japonicus</i>
34.	<i>Malva rotundifolia</i>
35.	<i>Lotus corniculatus</i>
36.	<i>Medicago sativa</i>
37.	<i>Geranium ocellatum</i>
38.	<i>Nepeta cataria</i>
39.	<i>Rumex nepalensis</i>
40.	<i>Impatiens amphorata</i>
41.	<i>Caucalis leptophylla</i>

42.	<i>Cyperus rotundus</i>
43.	<i>Siegesbeckia orientalis</i>
44.	<i>Polygonum amplexicaulis</i>
45.	<i>Polygonum tubulosum</i>
46.	<i>Xanthium strumarium</i>
47.	<i>Galinsoga parviflora</i>
48.	<i>Marrubium vulgare</i>
49.	<i>Cousinia microcarpa</i>
50.	<i>Centaurea iberica</i>
51.	<i>Digitaria Marginata</i>
52.	<i>Setaria verticillata</i>
53.	<i>Dryopteris spp</i>
54.	<i>Adiatum vensutum</i>
55.	<i>Valeriana jatamansi</i>
56.	<i>Eragrostis nigra</i>
57.	<i>Coronopus didymus</i>
58.	<i>Caucalis spp</i>
59.	<i>Canabis sativa</i>
60.	<i>Datura stromonium</i>
61.	<i>Amaranthus spp</i>
62.	<i>Mentha sps</i>
63.	<i>Ranunculus repens</i>
64.	<i>Sonchus oleraceus</i>
65.	<i>Eleusine Indica</i>
66.	<i>Panicum repens</i>
67.	<i>Paspalum conjugatum</i>
68.	<i>Anthemis cotula</i>
69.	<i>Robinia pseudoacacia</i>

70.	<i>Platanus orientalis</i>
71.	<i>Juglans regia</i>
72.	<i>Salix sps</i>
73.	<i>Cedrus deodara</i>
74.	<i>Pinus sps</i>
75.	<i>Cupressus sps</i>
76.	<i>Jinko biloba</i>
77.	<i>Malus pumila</i>
78.	<i>Aesculus indica</i>
79.	<i>Tagetes sps</i>
80.	<i>Chrysanthemum spp</i>
81.	<i>Dianthus spp</i>
82.	<i>Gladiolus spp</i>
83.	<i>Viola tricolor</i>
84.	<i>Morus alba</i>
85.	<i>Rosa sps</i>
86.	<i>Corydalis spp</i>
87.	<i>Achillia melifolium</i>
88.	<i>Alcea rosea</i>
89.	<i>Anemostrum obtusilobum</i>
90.	<i>Forsythia suspensa</i>
91.	<i>Iris sps</i>
92.	<i>Inula racemosa</i>
93.	<i>Brassica compestris</i>
94.	<i>Wealdsteinia fragaroides</i>
95.	<i>Galium aparine</i>
96.	<i>Ramphospermun arvense</i>
97.	<i>Rubus niveus</i>

98.	<i>Veronica persica</i>
99.	<i>Ageratum conyzoides</i>
100	<i>Lolium perene</i>
101	<i>Bergenia ciliata</i>
102	<i>Arctium lapa</i>
103	<i>Aesculus indica</i>
104	<i>Ulmus spp</i>
105	<i>Prunus armeniaca</i>
106	<i>Tulipa clusiana</i>
107	<i>Glyceria maxima</i>
108	<i>Bellis perenis</i>
109	<i>Polygonum aviculare</i>
110	<i>Euphorbia peplus</i>
111	<i>Gladiolus sps</i>
112	<i>Lavandula angustifolia</i>
113	<i>Ginko biloba</i>

**Photographs depicting the Flora (Plantation) of the Campus**



J2W5+VX8 Degree College Park, Degree  
Collge Rd, Kulgam, 192231

Lat: 33.6470052

Lon: 75.0098743

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*Cedrus deodara*



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Collge Rd, Kulgam, 192231

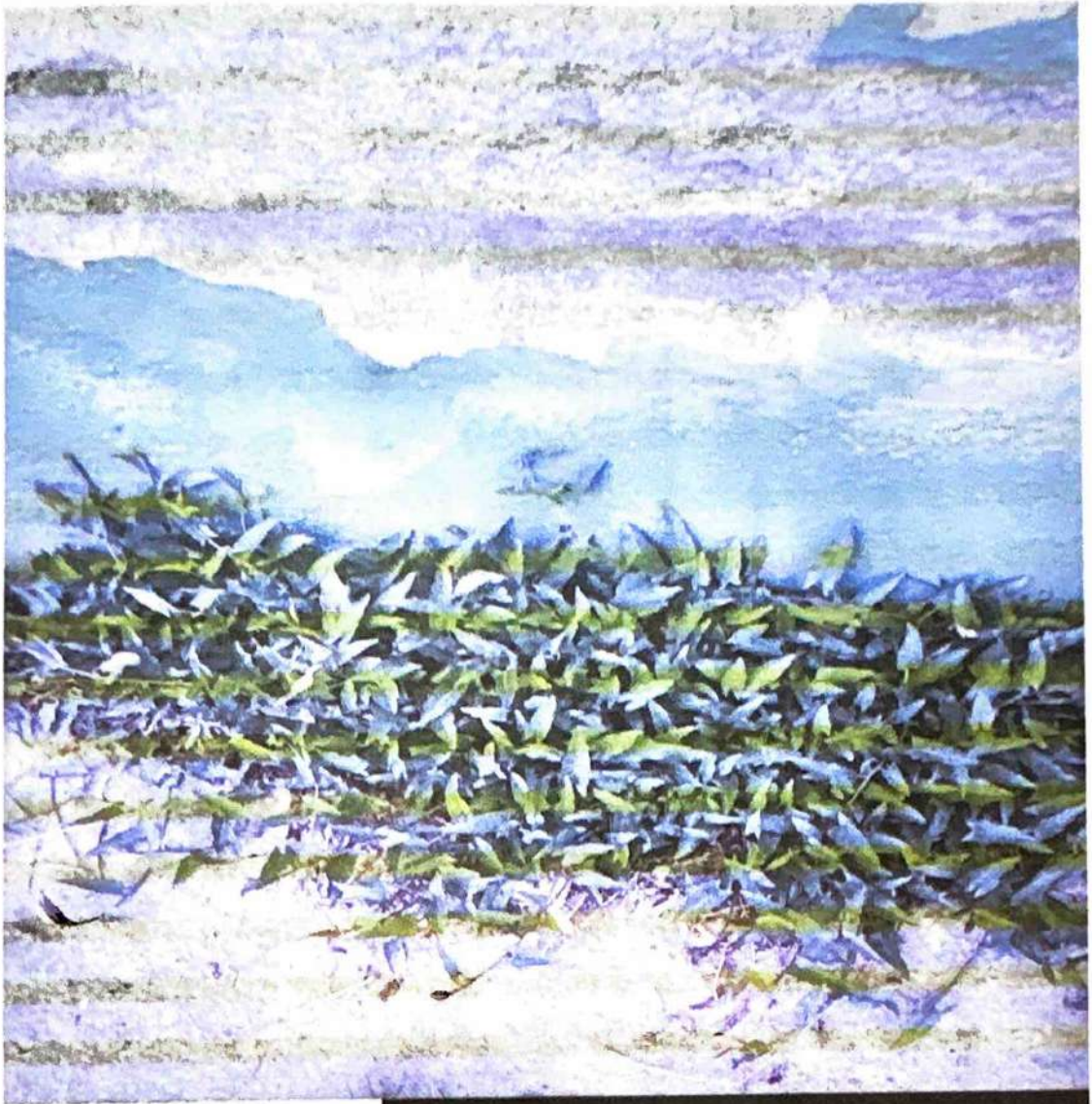
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*Cupressus* spp





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*Convolvulus arvensis*



J2W5+VX8 Degree College Park, Degree  
College Rd, Kulgam, 192231

Deputy Comm  
Office

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80 Degrees

Google

*Rosa* sps



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*Valeriana jatamansi*



J2X6+385, Degree Collge Rd, Kulgam,  
192231

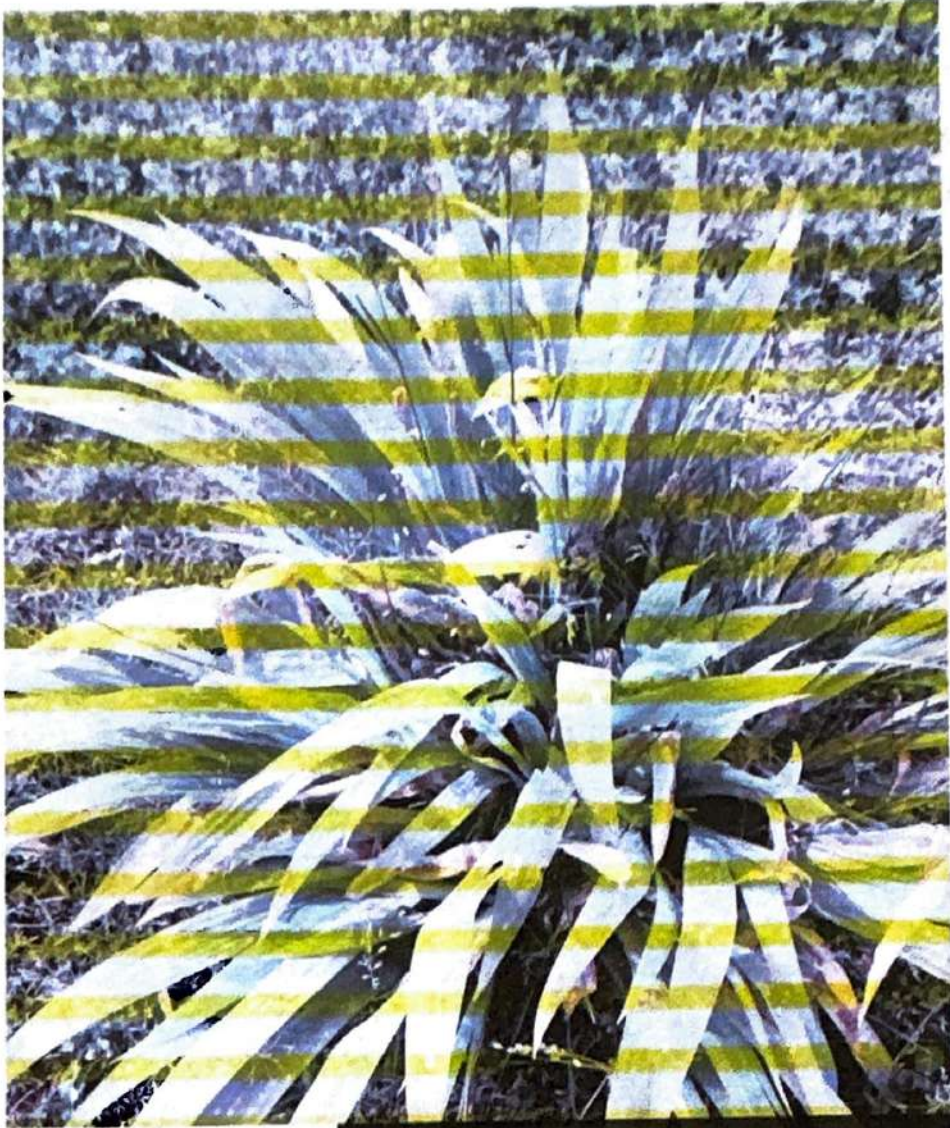
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Degree Collge  
RANIPORA

80 Degrees

Google

*Prunella vulgaris*



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Commission  
Office Kul  
RANIPORA

80 Degrees

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*Iris* spp



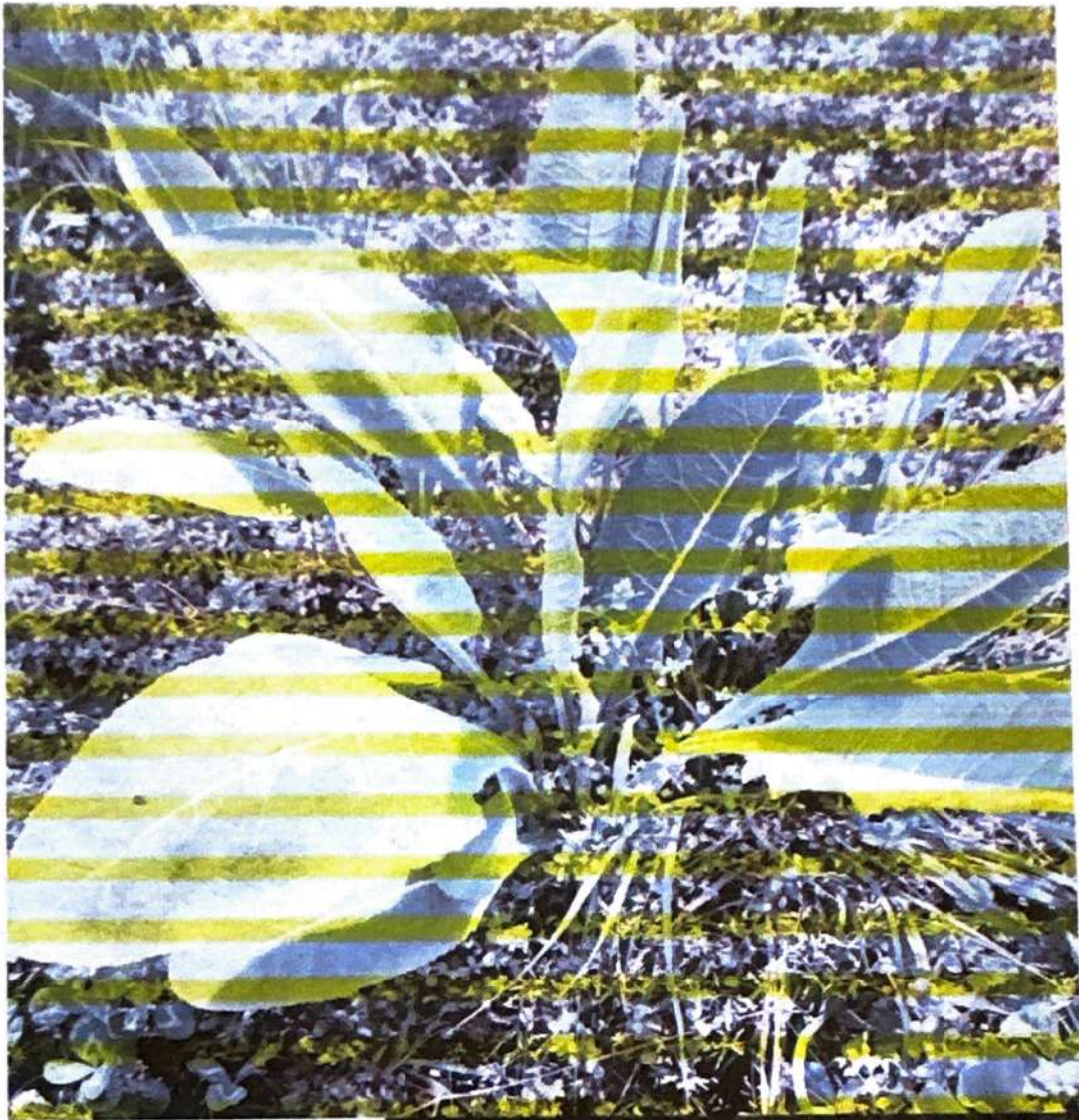
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*Santolina* spp



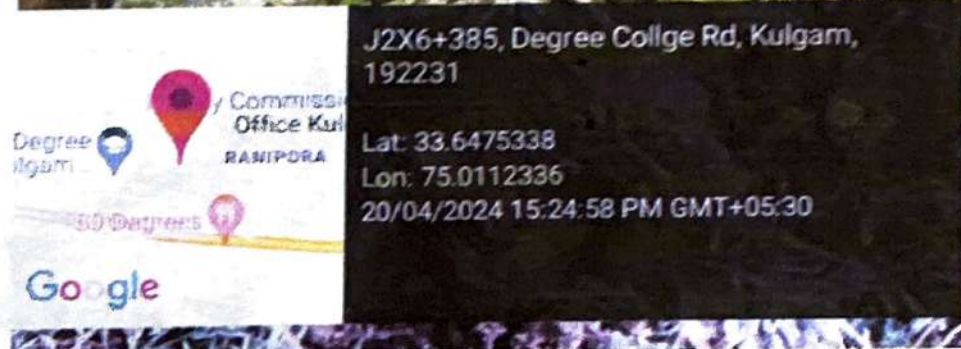
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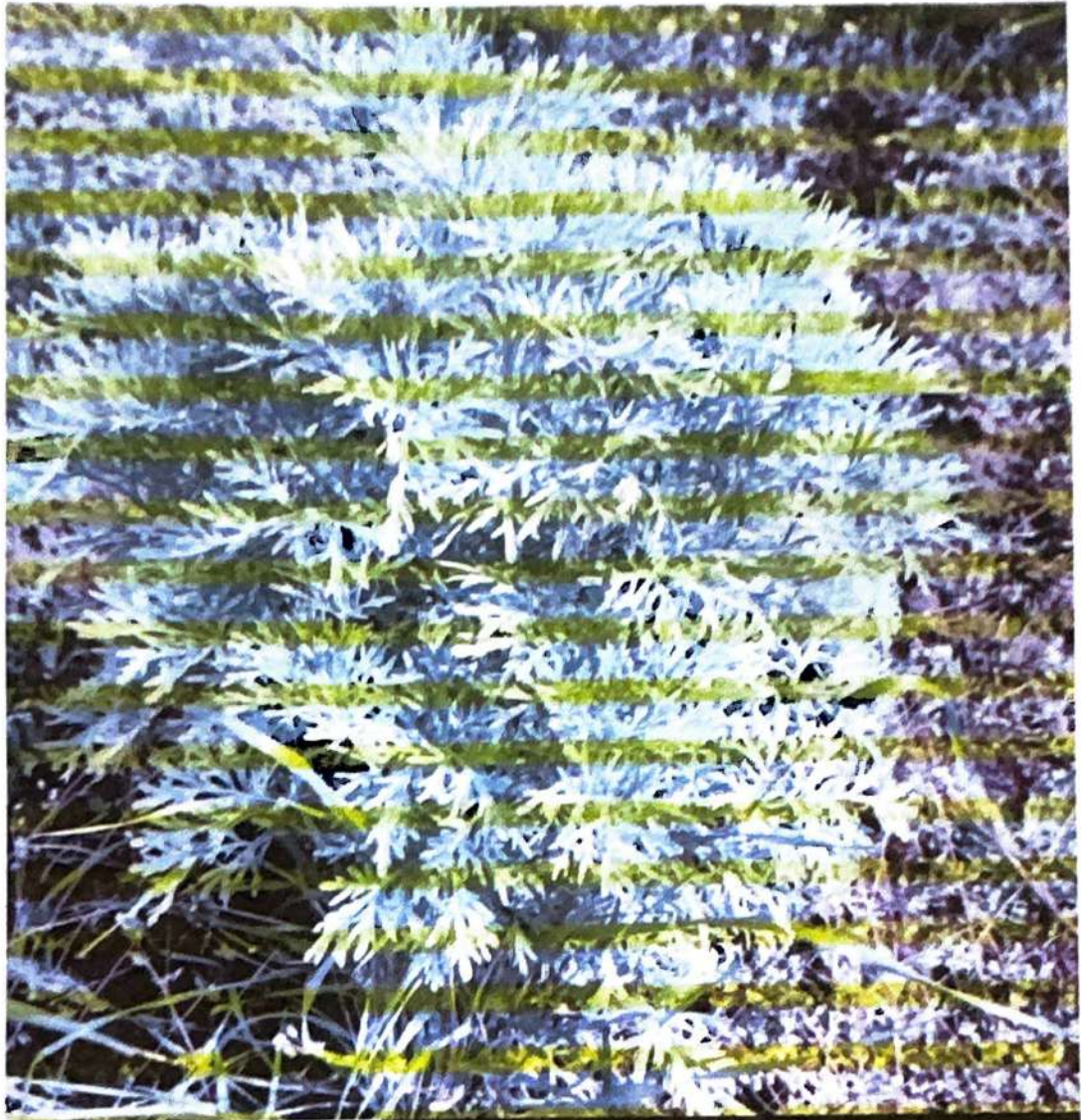
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*Inula racemosa*



*Lavandula angustifolia*



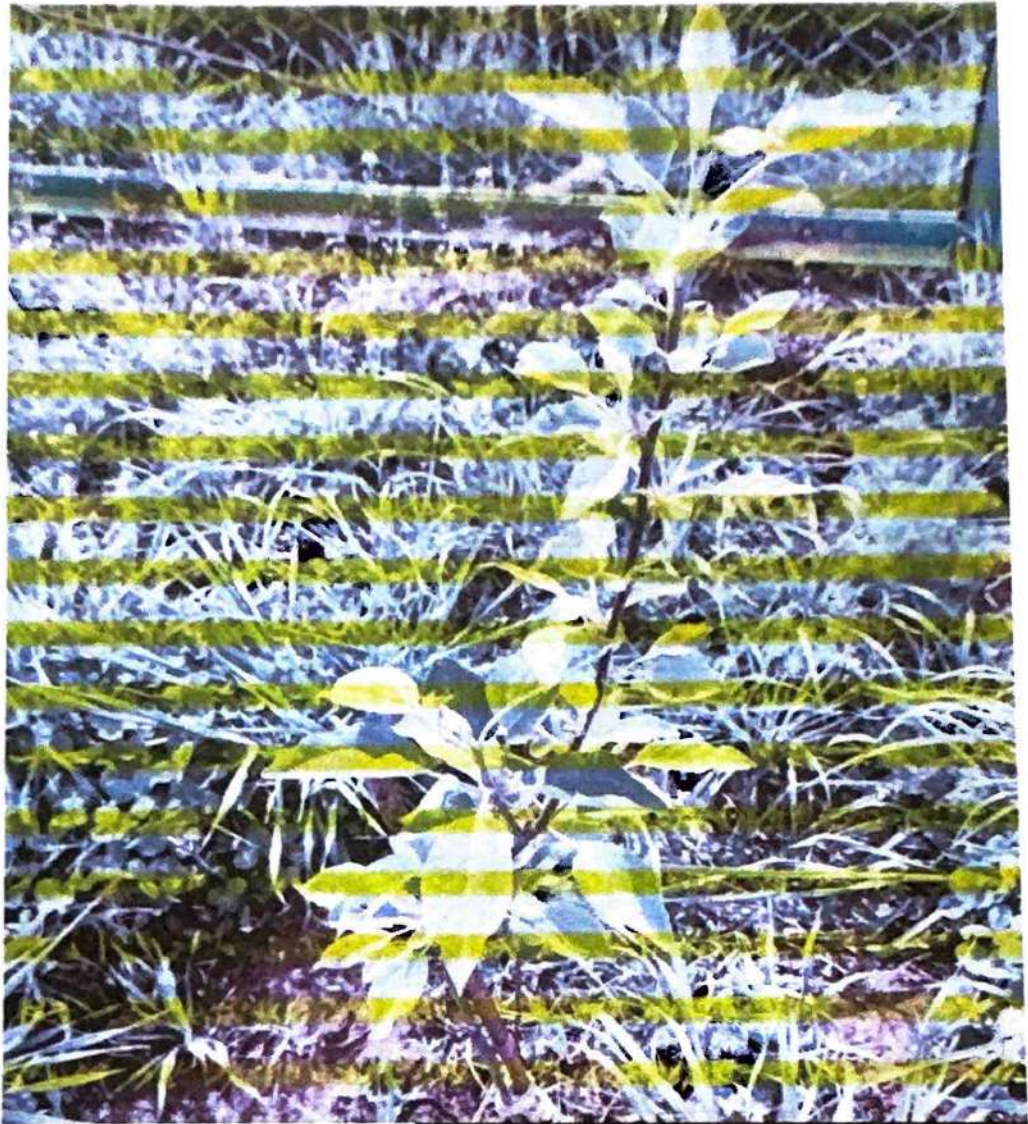


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*Artemisia absinthium*



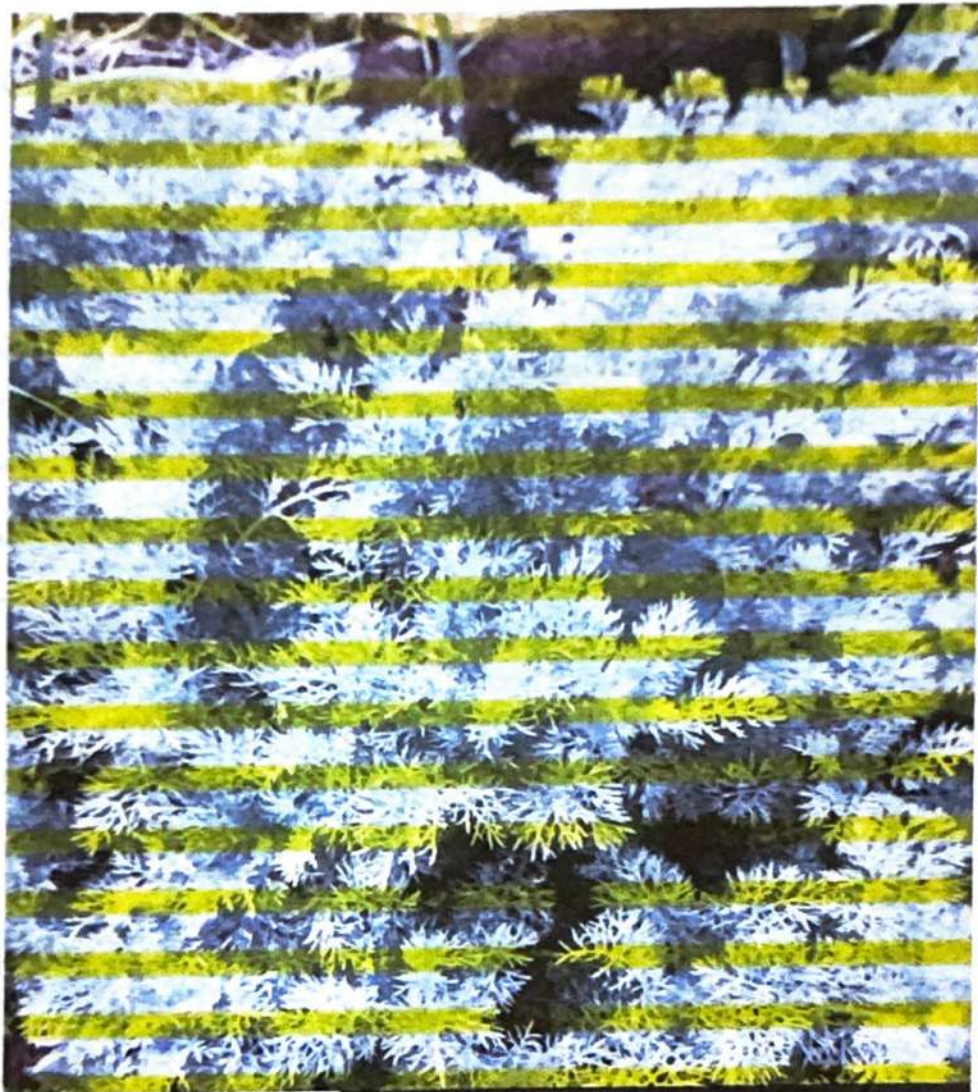
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*Malus pumila*



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*Anthemis cotula*



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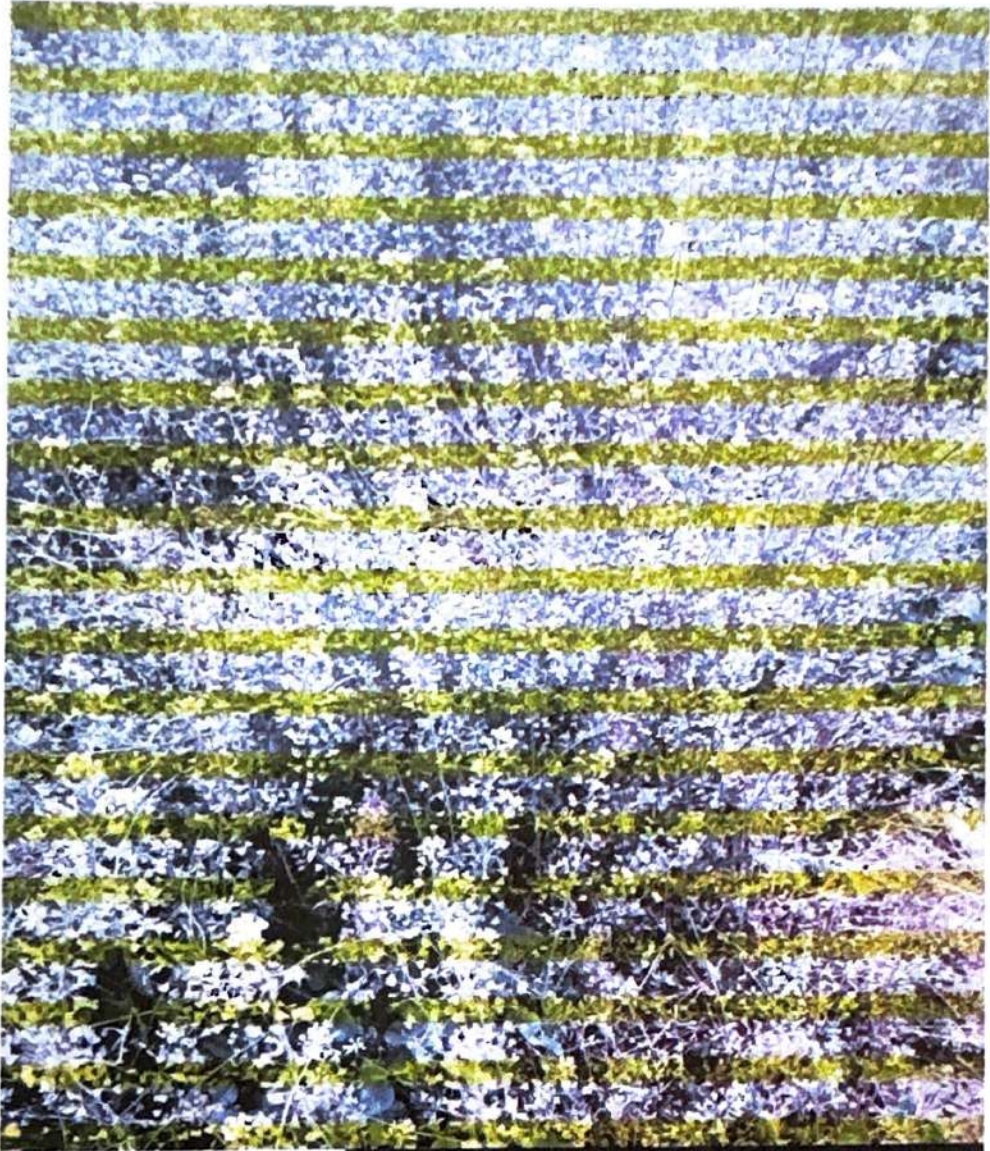
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*Polygonum amplexicaule*



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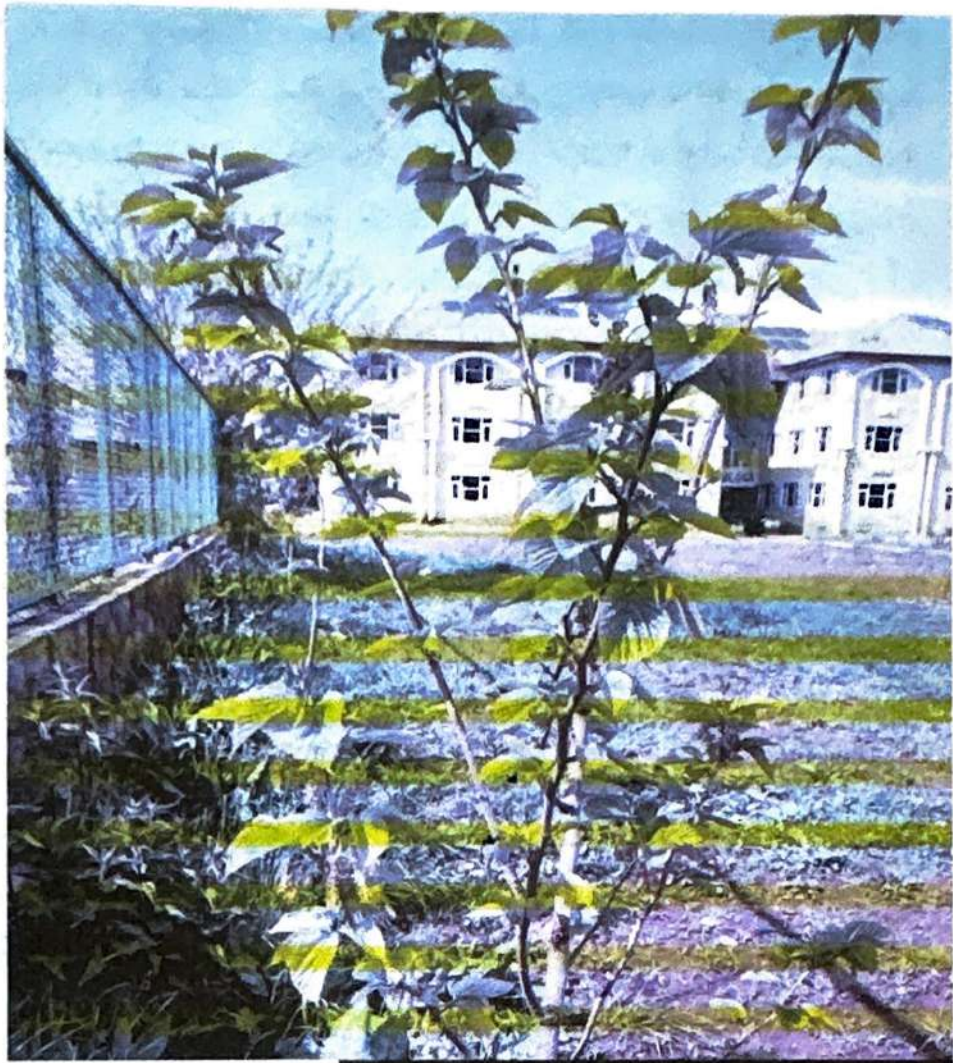
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*Capsella bursa-pastoris*



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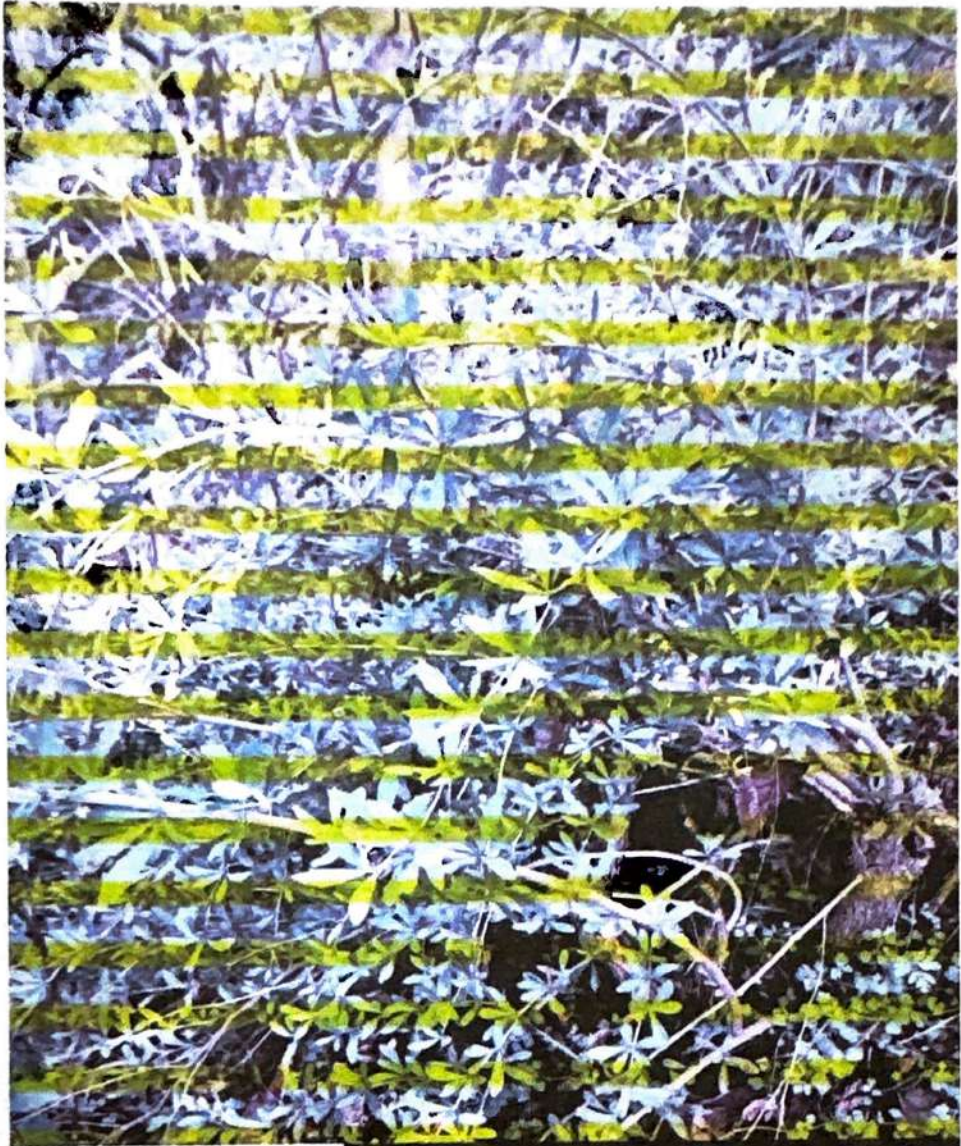
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*Morus alba*



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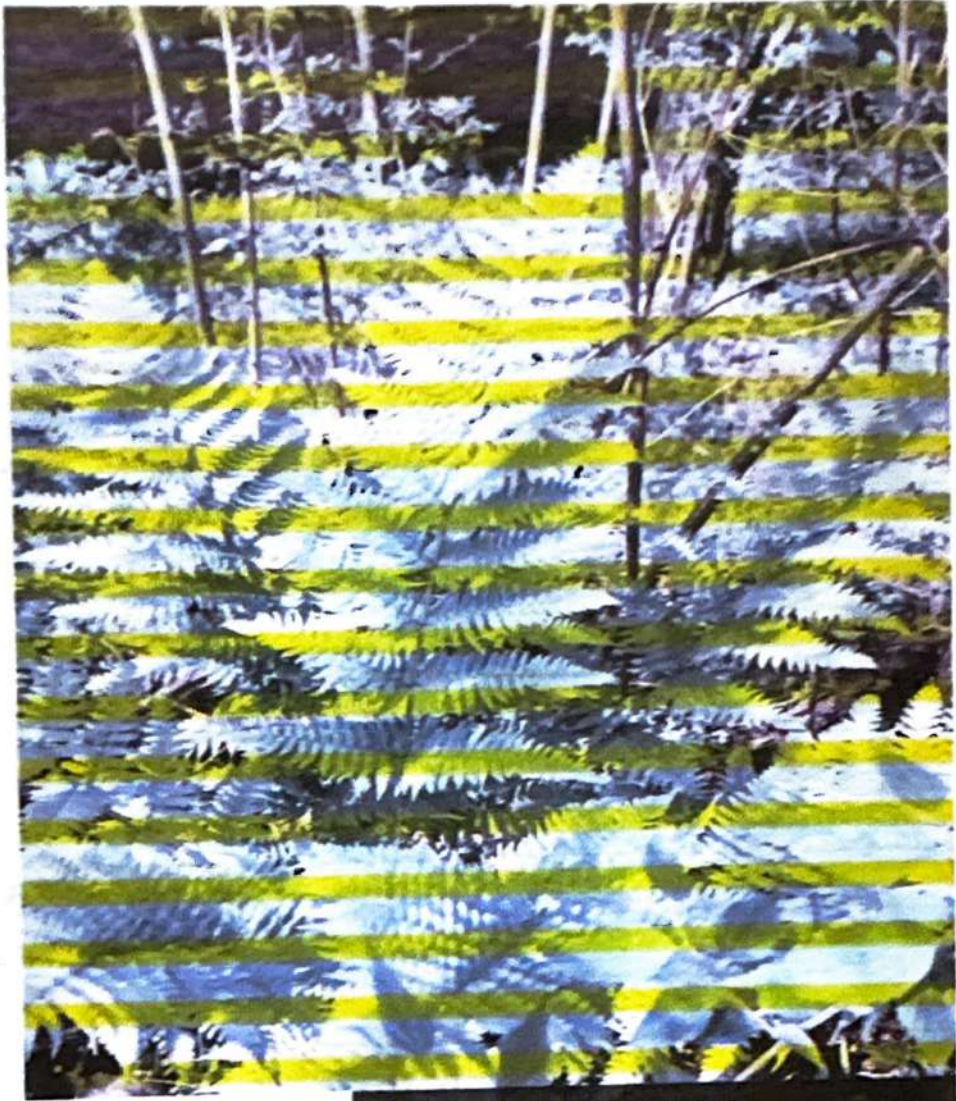
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*Berberis lyceum*



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*Dryopteris spp*





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*Fragaria* spp



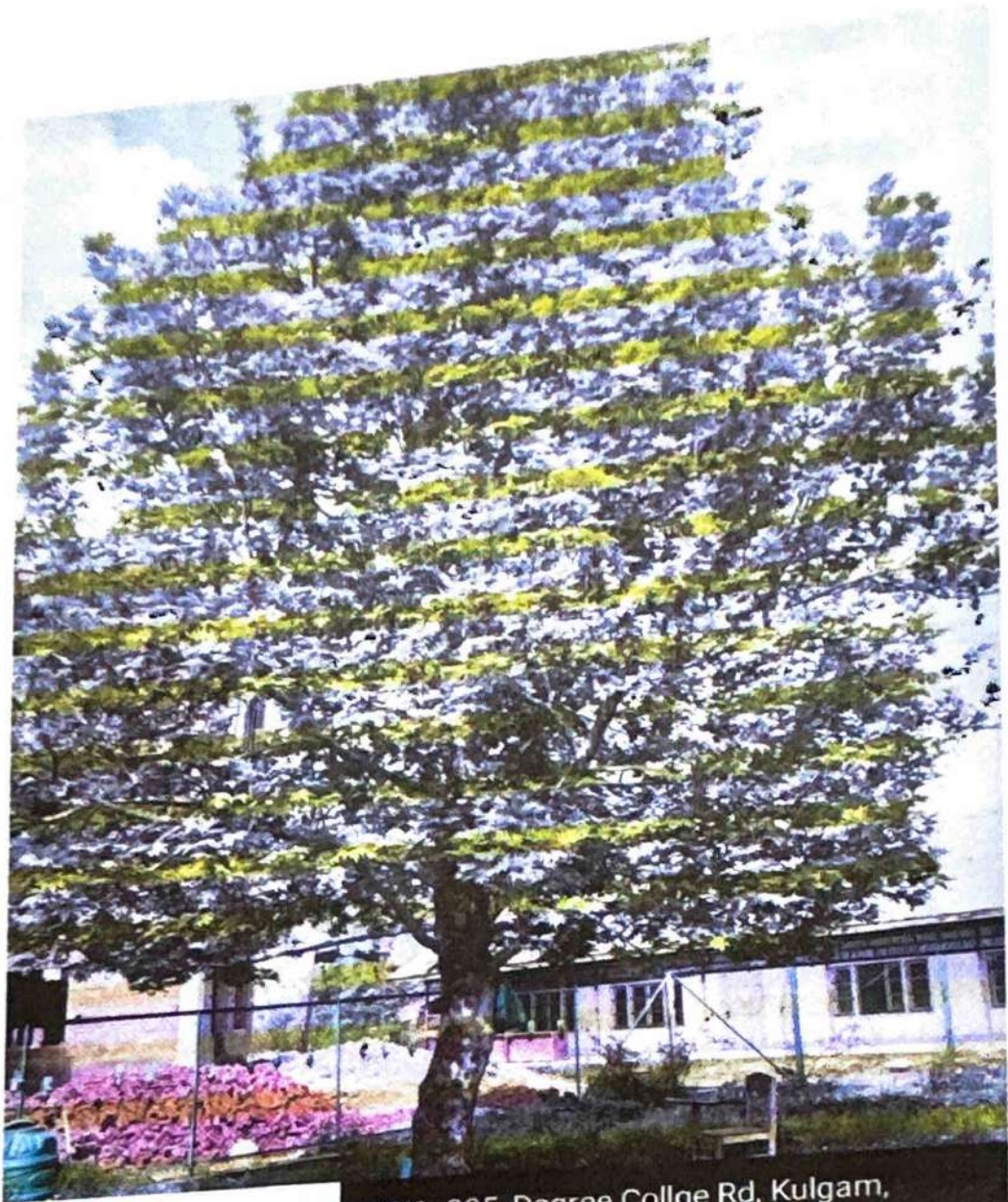
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*Mentha arvensis*



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*Platanus orientalis*

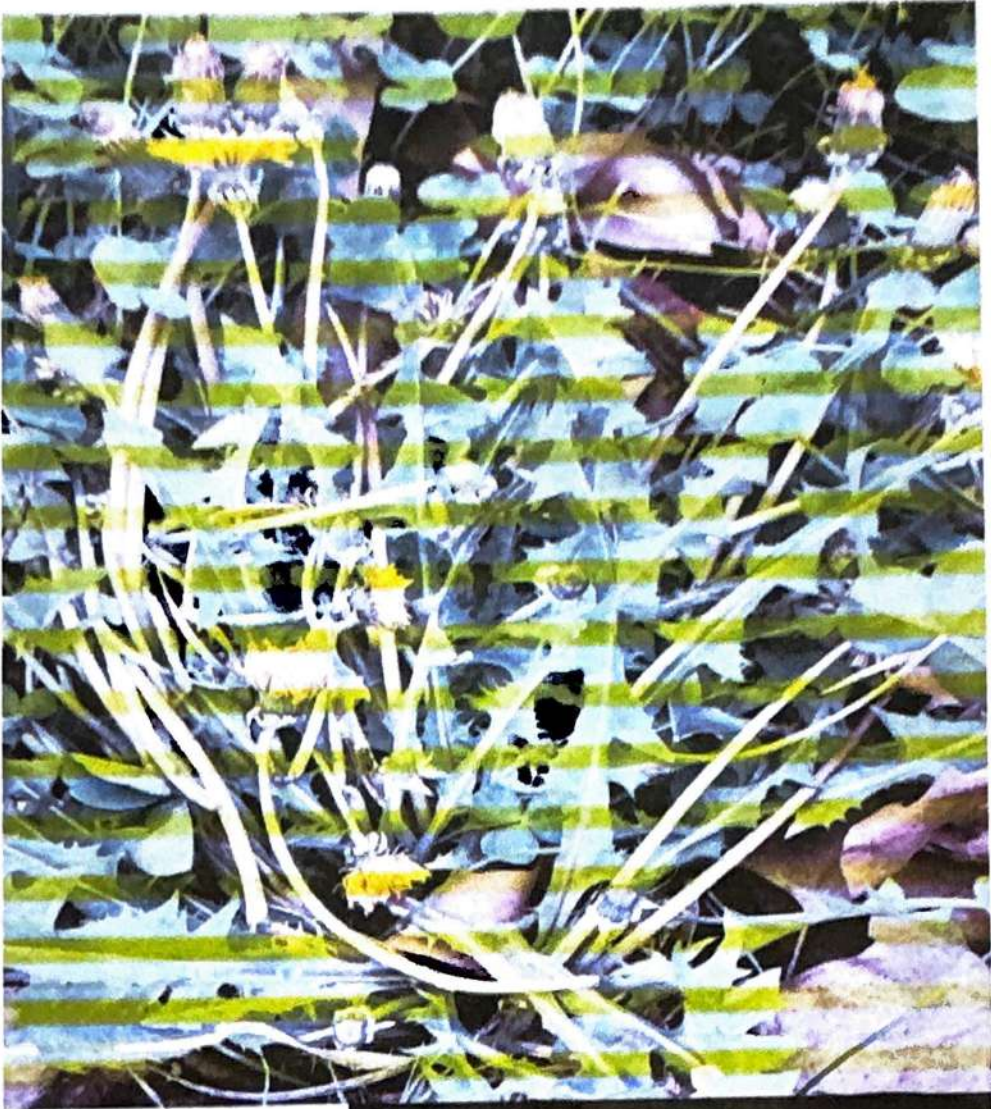


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*Trifolium repens*



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*Taraxacum officinale*



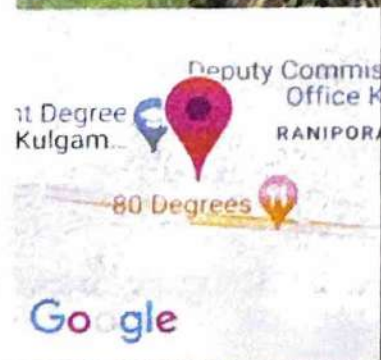
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*Ginkgo biloba*



J2W6+H8Q, Kulgam, 192231

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*Arctium lapa*



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*Galium aparine*





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*Juglans regia*



J2W6+H8Q, Kulgam, 192231

Lat: 33.646746

Lon: 75.0106347

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*Urtica dioica*

**6. Fauna in the Campus (Compiled by: Dr. Aijaz Ahmad Wachkoo (Assistant Professor, Zoology))**

**Animal Fauna of GDC Kulgam**

**Mammalia**

**Herpestidae**

*Herpestes edwardsii* (Grey or Common Mongoose)

**Histricidae**

*Hystrix indica* (Indian Crested Porcupine)

**Muridae**

*Microtus leucurus* (Blyth's Mountain Vole)

*Rattus pyctoris* (Himalayan Rat)

*Mus musculus* (House Mouse)

*Rattus rattus* (House Rat or Black Rat)

**Soricidae**

*Suncus murinus* (House Shrew or Grey Musk Shrew)

**Vespertilionidae**

*Plecotus austriacus* (Grey Long-Eared Bat)

**Canidae**

*Canis lupus familiaris* (domestic dog)

**Felidae**

*Felis catus* (house cat)

**Aves**

**Corvidae**

*Corvus splendens* (House Crow)

*Corvus corax* (Northern Raven)

*Urocissa flavirostris* (Yellow-billed Blue Magpie)

**Paridae**

*Parus cinereus* (Cinereous Tit)

**Pycnonotidae**

*Pycnonotus leucogenys* (Himalayan Bulbul)

**Hirundinidae**

*Hirundo rustica* (Barn Swallow)

**Cettiidae**

*Cettia fortipes* (Brownish-flanked Bush Warbler)

**Acrocephalidae**

*Acrocephalus concinens* (Blunt-winged Warbler)

**Passeridae**

*Passer domesticus* (House Sparrow)

**Emberizidae**

*Emberiza cia* (Rock Bunting)

**Columbidae**

*Columba livia* (Common Pigeon)

*Streptopelia decaocto* (Eurasian Collared-dove)

**Tytonidae**

*Tyto alba* (Barn Owl)

**Strigidae**

*Bubo bubo* (Eurasian Eagle-owl)

**Upupidae**

*Upupa epops* (Common Hoopoe)

**Sturnidae**

*Acridotheres tristis* (Common Myna)

*Sturnus vulgaris* (Common Starling)

**Accipitridae**

*Milvus lineatus* (Black-eared Kite)

*Gyps himalayensis* (Himalayan Vulture)

**Falconidae**

*Falco tinnunculus* (Common Kestrel)

## Reptilia

### Scincidae

*Asymblepharus himalayanus* (Himalaya ground skink)

## Amphibia

### Ranidae

*Euphlyctis cyanophlyctis* (Indian skipper frog or skittering frog)

*Hoplobatrachus tigerinus* (Indian bullfrog)

## Insecta

### I. Coleoptera (Beetles)

#### Cerambycidae

1. *Aeolesthis sarta* (Solsky, 1871) (Apple Stem Borer)
2. *Glenea beesoni* Heller, 1926 (Saperdini wood borer)

#### Chrysomelidae

1. *Altica himalayensis* (Chen, 1936) (Flea beetle)

#### Coccinellidae (Ladybird beetles)

1. *Adalia tetraspilota* Hope, 1831
2. *Aiolocaria hexaspilota* Hope, 1831
3. *Chilocorus bijugus* Mulsant, 1853
4. *Coccinella septempunctata* Linnaeus, 1758
5. *Coccinella undecimpunctata* Linnaeus, 1758
6. *Harmonia eucharis* Mulsant, 1853
7. *Oenopia conglobata* Linnaeus, 1758
8. *Pharoscymnus flexibilis kashmirensis* Kapur, 1956
9. *Platynaspidium saundersi* Crotch, 1874
10. *Priscibrumus uropygialis* Mulsant, 1853

### Curculionidae

1. *Acidodex parractrostris* (Marshall, 1916) (Walnut weevil)
2. *Polygraphus major* Stebbing, 1903 (Bark Beetle)
3. *Scolytus nitidus* Schedl, 1936 (Bark Beetle)
4. *Scolytus kashmitrensis* Schedl, 1957 (Bark Beetle)

### Dermestidae

1. *Anthrenus himalayensis* Hava, Wachkoo & Maqbool, 2018

## **2. Diptera**

### Coccidae

1. *Parthenolecanium corni* (Bouché, 1844) (Lecanium scale)

### Conopidae

1. *Myopa confusa* Stuke, 2004
2. *Sicus indicus* Kröber, 1940

### Megamerinidae

1. *Megamerina dolium* (Fabricius, 1805)

### Stratiomyidae

1. *Lastopa himalayensis* Brunetti, 1907
2. *Sargus mactans* Walker, 1859
3. *Stratiomys brunettii* Yattoo, Maqbool & Wachkoo 2023

### Syrphidae

1. *Asarkina incisuralis* (Macquart, 1855)
2. *Betasyrphus isaaci* (Bhatia, 1933)
3. *Chrysotaxum baphyrum* Walker, 1849
4. *Graptomyza flavonotata* Brunetti, 1917
5. *Episyrphus balteatus* (De Geer, 1776)
6. *Eristalinus aeneus* (Scopoli, 1763)
7. *Eristalinus arvorum* (Fabricius, 1787)
8. *Eristalinus megacephalus* (Rossi, 1794)
9. *Eristalinus sepulchralis* (Linnaeus, 1758)
10. *Eristalis arbustorum* (Linnaeus, 1758)
11. *Eristalis tenax* (Linnaeus, 1758)
12. *Eupeodes bucculatus* (Rondani, 1857)
13. *Eupeodes corollae* (Fabricius, 1794)
14. *Sphaerophoria bengalensis* Macquart, 1842

15. *Sphaerophoria indiana* Bigot, 1884
16. *Sphaerophoria rueppellii* (Wiedemann, 1830)
17. *Syrpitta pipiens* (Linnaeus, 1758)
18. *Syrphus ribesii* (Linnaeus, 1758)
19. *Syrphus torvus* Osten Sacken, 1875
20. *Syrphus vitripennis* Meigen, 1822

### **Tephritidae**

1. *Bactrocera invadens* Drew, Tsuruta & White, 2005 (Fruit Fly)

### **Ulidiidae**

1. *Myennis octopunctata* (Coquebert, 1798)

## **3. Hemiptera**

### **Aphididae**

1. *Aphis pomi* de Geer, 1773 (Green apple aphid)
2. *Aphis punicae* Passerini, 1863 (Pomegranate aphid)
3. *Brachycaudus helichrysi* (Kaltenbach 1843) (Peach leaf curl aphid)
4. *Chromaphis juglandicola* (Kaltenbach, 1843) (Small walnut aphid)
5. *Eriosoma lanigerum* (Hausmann, 1802) (Woolly apple aphid)
6. *Hylopterus pruni* (Geoffroy, 1762) (Mealy plum aphid)
7. *Panaphis jugandis* (Goeze, 1778) (Dusky-veined large walnut aphid)
8. *Pterochloroides persicae* (Cholodkovsky, 1899) (Peach stem aphid)

### **Diaspididae**

1. *Quadraspidiotus perniciosus* Comstock, 1881 (San Jose scale)

### **Psyllidae**

1. *Cacopsylla bidens* (Šulc, 1907) (Pear psyllid)

## **4. Hymenoptera**

### **Apidae**

1. *Apis cerana indica* (Fabricius, 1798)
2. *Bombus rufofasciatus* Smith, 1852
3. *Bombus tunicatus* Smith, 1852
4. *Bombus asiaticus* Morawitz, 1875

### **Formicidae**

1. *Chronoxenus myops* (Forel, 1895)

2. *Formica fusca* Linnaeus, 1758
3. *Formica sanguinea* Latreille, 1798
4. *Lasius niger* (Linnaeus, 1758)
5. *Lepisiota bipartita* (Smith, 1861)
6. *Nylanderia indica* (Forel, 1894)
7. *Messor himalayanus* (Forel, 1902)
8. *Messor instabilis* (Smith, F., 1858)
9. *Monomorium sagei* Forel, 1902
10. *Myrmica aimonissabaudiae* Menozzi, 1939
11. *Myrmica cachmiriensis* Forel, 1904
12. *Myrmica smythiesii* Forel, 1902
13. *Myrmica longisculpta* Bharti & Sharma, 2011
14. *Pheidole sagei* Forel, 1902
15. *Stenamma kashmirensis* Baroni Urbani, 1977
16. *Temnothorax desioi* (Menozzi, 1939)

#### Ichneumonidae

1. *Protichneumon pisorius* (Linnaeus, 1758)

#### 5. Lepidoptera (Butterflies & Moths)

##### Butterflies

1. *Aglais cashmirensis aesis* (Frushtorfer, 1912) (Indian Tortoiseshell)
2. *Albulina omphisa* (Moore, [1875]) (Dusky Green Underwing)
3. *Catopsilia pyranthe* (Linnaeus, 1758) (Mottled Emigrant)
4. *Colias erate* (Esper, 1805) (Pale Clouded Yellow)
5. *Danaus chrysippus* (Linnaeus, 1758) (Plain Tiger)
6. *Deudorix epijarbas* Fruhstorfer, 1912 (Anar Butterfly)
7. *Eurema andersoni* (Moore, 1866) (One Spot Grass Yellow)
8. *Eurema laeta* (Boisduval, 1836) (Spotless Grass Yellow)
9. *Hyponphele pulchella* (C and R Felder, [1867]) (Tawny Meadowbrown)
10. *Ixias marianne* (Crammer, [1779]) (White Orange Tip)
11. *Ixias pyrene* (Linnaeus, 1764) (Yellow Orange Tip)
12. *Junonia orithya* (Linnaeus, 1758) (Blue Pansy)
13. *Lampides boeticus* (Linnaeus, 1767) (Pea Blue)
14. *Lycaena panava* (Westwood, 1852) (White-Bordered Copper)
15. *Parnara guttatus mangala* (Moore, [1866]) (Straight swift)



16. *Pieris brassicae nepalensis* (Gray, 1846) (Large Cabbage White)
17. *Pontia daplidice daplidice* (Linnaeus, 1758) (Bath White)
18. *Vanessa indica indica* (Herbst, 1794) (Indian Red Admiral)

### Moths

1. *Acronicta rumicis* (Linnaeus, 1758) (Knot grass moth)
2. *Agrotis ipsilon* (Hufnagel, 1766)
3. *Agrotis segetum* (Denis & Schiffermüller, 1775)
4. *Anomis sabulifera* (Guenée, 1852)
5. *Bombyx mori* (Linnaeus, 1758)
6. *Dichagyris flammata* (Denis & Schiffermüller, 1775)
7. *Garella musculana* (Erschov, 1874)
8. *Garella ruficirra* (Hampson, 1905) (Walnut Fruit Borer)
9. *Grapholita molesta* (Busck, 1964) (Oriental fruit moth)
10. *Helicoverpa armigera* (Hübner, [1808])
11. *Leucinodes orbonalis* Guenée, 1854
12. *Malacosoma indicum* (Walker, 1855) (Tent caterpillar)
13. *Mythimna separata* (Walker, 1865)
14. *Rhopobota naevana* (Hübner, 1817) (Blackheaded Fireworm)
15. *Sesamia inferens* (Walker, 1856)
16. *Spodoptera littoralis* (Boisduval, 1833)
17. *Xestia ashworthi* (Doubleday, 1855)
18. *Xestia c-nigrum* (Linnaeus, 1758)

### 6. Acarina (Mites)

#### Eriophyidae

1. *Eriophyes erineus* Nalepa, 1926 (Walnut Erineum mite)

#### Tetranychidae

1. *Panonychus ulmi* (Koch, 1836) (European red mite)
2. *Tetranychus urticae* Koch, 1836 (Two spotted spider mite)

## 7. Summary and Recommendations

This audit report is a pioneering attempt made by the college towards the eco-friendly approach to carry on its activities as per environmental norms.

- ❖ To run academic and administrative work successfully, the institute requires a huge amount of energy, a large proportion of which is fulfilled by hydel power electricity supplied by Power Development Department (PDD) of Govt. of J&K. However, Firewood, Coal and LPG is used during winters for heating purpose in working places and in classrooms to conduct examinations.
- ❖ The college generates a huge amount of solid waste consisting of a large portion of biodegradable as well as recyclable in nature. Facility for collection of wastes and disposal is provided by the institute itself. Presently no segregation of waste source practised. However, college has constructed a compost pit to decompose organic waste by composting and the manure produced is used for different purposes.
- ❖ In a single day the college consumes a large quantity of water for various purposes in the campus. The water is stored in small tanks and the per capita water usage is about 5.74 litres water per day per person. The water used once turns into waste are disposed and drained directly into the drainage system and some portion also goes underground without treatment. There is every possibility that this may cause ground water contamination in the campus.
- ❖ Due to the paucity of land, college should go for vertical construction of structures instead of acquiring more land for construction. This would preserve the green spaces and enhance recharging of the water table.
- ❖ Coal usage should be reduced, owing its potential impacts on health and environment and should be replaced by alternative sources energy like, Solar, LPG etc.

- ❖ Proper vehicle Parking should be provided to the teachers and students at the entry point of the campus, in order to prevent noise and air pollution and hassle free movement in the campus.
- ❖ The institute utilizes a large quantity of water on daily basis and the demand is met by Jalshakti (formerly known as PHE). There is an urgent need to carry the detailed analysis of the water chemistry in the campus to ensure the proper health standards. Besides there is an urgent need to make more arrangements of rainwater harvesting in the campus, which in turn can be used for irrigation purpose specifically. Furthermore, the wastewater generated should be recycle for irrigation purposes on priority basis.
- ❖ Solid waste is a major source of pollution in the campus and need to be managed in a proper scientific way in order to reduce its harmful environmental impacts. The daily generated solid waste piles up in heaps over the period. Presently all daily collected is not managed scientifically which pollutes the environmental quality and affects the aesthetic beauty of the campus. The need of the hour is starting waste segregation at source, for which more colour coded dustbins should be installed at important location. Also ensure the complete ban on the use of polythene in the campus. Lastly the college needs augment the composting process to deal with the biodegradable component of the daily generated solid waste.
- ❖ Plantation of the campus should be preserved, and proper numbering of the trees should be carried for better understanding of their phytology.

### Acknowledgements

Acknowledgements are due to the following for facilitation in compiling this audit report.

1. Principal, GDC Kulgam.
2. Department of Environmental Science, GDC Kulgam.
3. Department of Botany, GDC Kulgam.
4. Department of Zoology, GDC Kulgam.
5. Department of Geography, GDC Kulgam.
6. Department of BCA, GDC Kulgam.
7. Department of IT, GDC Kulgam.



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 KULGAM, JAMMU & KASHMIR- 192231  
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 Fax No: 01931-260177

No: GDCK/Estt./24/138

Dated: 23/03/2024


**ORDER**

In suppression of all the orders on the subject, the Environmental Advisory Committee cum Environmental Protection Committee of the college is hereby constituted with the following composition.

S. No.	Name	Department	Status
1.	Principal	Administration	Chairperson
2.	Dr. Gowhar Hamid Dar	Environmental Science	Convener
3.	Prof. Shamim Ahmad Hakim	BCA	Co-Convener
4.	District Forest Officer Kulgam or his representative	Forest Department	External Member
5.	District Officer, Pollution Control committee Kulgam or his representative	J&K Pollution Control committee	External Member
6.	Executive Officer Municipal Committee Kulgam or his representative	District Municipal Committee Kulgam	External Member
7.	Dr. Aijaz Ahmad Wachkoo	Zoology	Member
8.	Dr. Showkat Ahmad Pala	Botany	Member
9.	Dr. Ayaz Mehmood	Chemistry	Member
10.	Dr. Dawood Ahmad Bhat	Geography	Member
11.	Dr. Sajad Hussain	Economics	Member
12.	Prof. Sharik Mushtaq	BCA	Member
13.	Prof. Zahoor Ahmad Thoker	Education	Member
14.	Dr. Aadil Hamid	Environmental Science	Member
15.	Zahid Mubarak	Environmental Science	Student Representative
16.	Benayat UI Islam	Environmental Science	Student Representative

The mandate of the committee shall be.

1. To conduct the environmental audit (Internal/External) of the campus on regular basis.
2. To suggest measures regarding the development of green campus.
3. The committee may co-opt any other member as deemed appropriate.

  
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 Kulgam

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  2. Concerned.
  3. Master file/Office records.