Green Audit Report
2022

POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS, SECTOR-11, CHANDIGARH

Post Graduate Government College for Girls, Sector-11, Chandigarh

Solid Waste management in the college campus has been assessed by external and internal committee and a report has been generated to study environmental impact of institution and to fulfil the requirement for the Green Audit.

The solid waste auditing in the college and steps taken by institution to manage the solid waste has been found to be satisfactory.

Date of Analysis: 2019-2022

Signature
Full Name: Dr Vishal Sharma
Designation: Associate Professor
PGGCG-11. Chandigarh

Incharge of the Botany Deptt.
Govt. College for Girls
Sector-11. Chandigarh

Chander Mohan,
C.S.I, M.O.H, M.C.C
Mob: 98725-21264

Signature
Full Name: Sh. Chander Mohan
Designation: C.S.I, M.O.H
Municipal Corporation, Chandigarh

Principal
Post Graduate Government College for Girls,
Sector-11, Chandigarh

Principal
Govt. College for Girls
Sector 11, Chandigarh

Post Graduate Government College for Girls, Sector-11, Chandigarh

Floral diversity in the college campus has been assessed by external and internal committee and a report has been generated to study environmental impact of institution and to fulfil the requirement for the Green Audit.

The floral diversity in the college and steps taken by institution to conserve the floral diversity has been found to be satisfactory.

Date of Analysis:

Signature
Full Name; Dr Vishal Sharma
Designation: Associate Professor
PGGCG-11, Chandigarh

Incharge of the Botany Deptt.
Govt. College for Girls
Sector-11, Chandigarh

Signature
Full Name; Prof. Promila Pathak
Designation: Professor &Chairperson
Botany Department, Panjab University, CHD

Chairperson
Botany Department
P.U. Chandigarh

Principal
Post Graduate Government College for Girls,
Sector-11, Chandigarh

Principal
Post Graduate Govt. College for Girls
Sector 11, Chandigarh

Report of Post Graduate Government College for Girls-11, Chandigarh

About Institution

Ever since its inception in 1956, Post Graduate Government College for Girls, Sector 11,Chandigarh has established incredible traditions and legacies by shaping young, impressionable minds, and nurturing them as discerning individuals and empowered nation builders. The intellectual treasure is supplemented with highly qualified and dedicated academic family, state of the art infrastructure, well-equipped labs, well-stocked library, value-added amenities and periodic launch of innovative and job-oriented courses. We promise 'going beyond the classroom' approach, cultivating a spirit of 'giving back to the society', and garnering the young women for multi-faceted holistic development.Our record of brilliance is reflected from the assessments and acknowledgements by various authorities - selection under Unnat Bharat Abhiyan by the MHRD, Govt. of India; provisions of grants under DST-FIST; award of Three Star Status to the Institution Innovation Council; selection by the Department of Industries, Chandigarh Administration to conduct Entrepreneurship Development Program; winning the Overall trophy in the Panjab University Zonal Youth and Heritage Festival for the ninth consecutive year; Best NSS Unit Award by Panjab University ; Best Environment Society Award by the Chandigarh Administration; "Eat Right Campus" certification by FSSAI with Bain-marie, simplest technique where food being heated with hot water to preserve nutrients during reheating.; signing of MOU with prestigious institutions for providing 'hands on' training to students and enhancing applied research, or selection of faculty members and PG students by CIBioD, Centre for Innovation and Bio-design, PGI Chandigarh for internship to work on innovation and multidisciplinary research; our impeccability spans all platforms. Recently, the Chandigarh MC conducted Swachh ward survey on basis of indicators such a waste segregation, adoption of composting, principles for sustainable zero waste micro-climate.PGGG-11,Chandigarh, adjudged Rank 1 with highest Score (95.5%) in all categories of 35 wards of Chandigarh.

In view of the NAAC circular regarding Green Auditing, the college management decided to conduct internal Green Auditing for which the Green Audit Committee was reconstituted on 04.08.2022.

The members of the Green Audit Committee are mentioned below:

Chairperson: Prof. (Dr.) Anita Kaushal, Principal, Post Graduate Government College for Girls, Sector-11, Chandigarh

Member: Mr. Ajay Kumar Sharma, Dean and Chief Coordinator, Post Graduate Government College for Girls, Sector-11, Chandigarh

Member: Dr Sadhana Verma, Head of Department, Chemistry and Incharge Environment Society

Member: Dr Umesh Bharti, Head of Department, Zoology

Member; Dr Vishal Sharma, Head of Department, Botany

Member: Dr Parul Virk, Department of Environment Science

The institution has policy for the campus micro-climatic eco-restoration and out of the many committees of the institution, 10 are primarily involved with the sustainability of the campus environment (Table 1).

Table-1. Environment related Committees

S.No	Name of Committee	Date
1	Rain water Harvesting Committee	16.11.2005
2	Environment Committee	24.09.2010
3	Green Audit Committee	10.2.2018
4	Floriculture and Landscaping Committee	04.08.2012
5	Renewable Energy Committee	22.08.2012
6	Campus Hygiene Committee(Eat Right Campus)	14.03.2018
7	Cleanliness Committee	12.09.2018
8	Solid Waste Management Committee	19.03.2019
9	Swachhta Committee(Waste segregation)	22.01.2020
10	Plastic free Campus Committee	10.02.2021

The institution has undertaken various environmental activities to achieve the aim of 'Zero waste campus'. The student oriented environment related activities are:

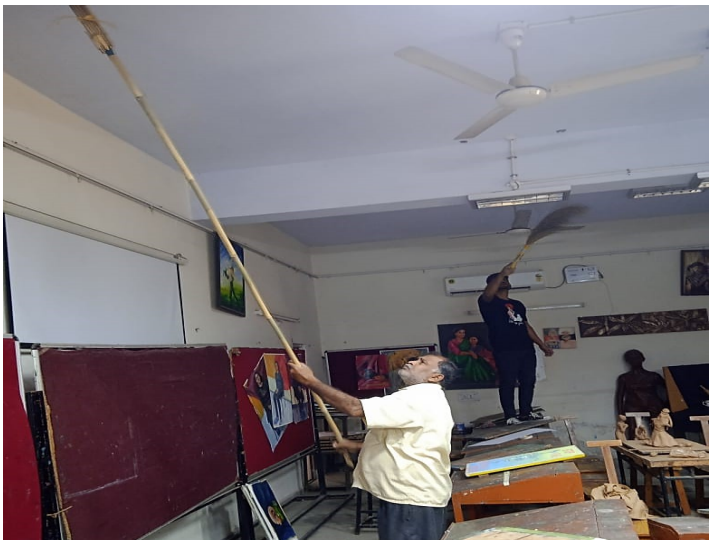
(i) **Cleanathon Report**

Postgraduate Government College for Girls-11, Chandigarh, a NAAC accredited Grade 'A', with CGPA 3.52, organized a cleanliness and fumigation drive in the sprawling campus of 42.6 acres on November 1-5,

2022. The college stands to the fundamentals of prosperity with cleanliness and nurturing the young girls' minds, who are about to set their feet in the world scenario with value based education regarding cleanliness and fumigation, its awareness and benefits.

Cleanliness and Fumigation Drive: The five day cleanliness drive (Nov1-5, 2022) called Cleanathon was launched in college, and one day has been enmarked for scheduled activity. The PGGCG-11, winner of 'Best Maintained Campus 'award for consecutively three years (47^{th},48^{th} and Rose festival, Chandigarh(2019-2022) is the cleanest campus in the area. The college organized its first Cleanathon (28.6.20) on the outskirts of the campus including Hostels, Lawns, Class rooms and Botanical Garden in the scheduled manner, which should have a positive ambience for students in the prevailing Malaria-Dengue session. The cleanliness drive is also conducted in which after the classes, the laboratories of science departments are cleaned. The state of cleanliness remains a power indicator and pillar of the campus sustainable environment, as it protects the students from disease and also protects college infrastructure, electrical equipment, instruments from damage (Figs.1-4).The Cleanathon is a social project in which the hostels and the adjoining areas are also cleaned to promote healthy and hygienic surroundings. The fumigation and cleanliness drive creates the infectionless micro-environment, to avoid the infection sneak into the cleaner and safer campus area (Figs.4-8).

Figs.1-4: Fumigation Drive (Nov, 2, 2022) to create infectionless micro-climate of campus




Figs.5-8: Sanitation Drive (Nov, 1-5, 2022) to create infectionless micro-climate in classrooms and Laboratories

Compilation of Data pertaining to Cleanathon procedure in the Campus

S.No	Cleanathon	Date	Remarks
1	First(1st)	23-28 June,2020	Cleanliness and Sanitation
2.	Second(2nd)	18-23 November,2020	Cleanliness and Sanitation
3.	Third(3rd)	23 -28 August,2021	Cleanliness and Sanitation
4.	Fourth(4th)	27-31 December,2021	Fumigation and Sanitation Composting
5.	Fifth(5th)	20-25 june,2022	Cleanliness and Fumigation
6.	Sixth(6th)	1-5 November,2022	Cleanliness and Fumigation

(ii) Colloquium-An intellectual Interaction

Colloquium, an intellectual discussion, is derived from Latin word which means to talk together. The word conveys a conversation that is both structured and informal, a meeting of minds that is both series and spirited and together make the idea of intellectual freedom possible. Colloquium provides an opportunity to share research and constructive feedback and provides freedom to pick a topic that mirrors your interests and to pursue questions that fire your imagination and meeting for discussion. A colloquium is an academic conference, which occurs bi-annually in the first and last quarter of the year, where the distinguished speakers present papers, analyse and discuss a particular topic and students harvest knowledge by listening to the series of lectures. The Colloquium also showcases student research through poster and oral presentations and provides platform to the undergraduates and postgraduates students to share their views and research and improve their diction and presenting skills. The objectives of colloquium are:

(i) The colloquium provides a friendly interface that allows panel members to serve data inputs and monitor the execution study.

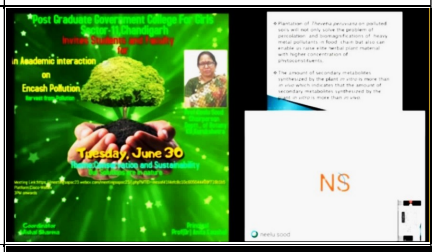
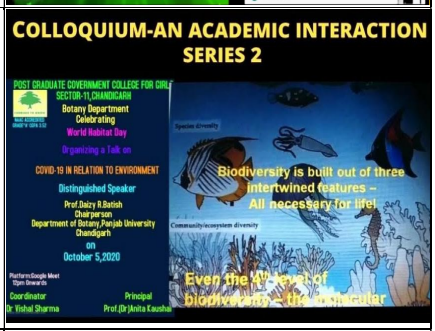
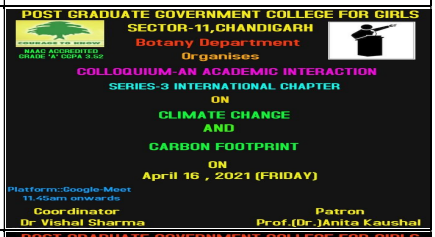
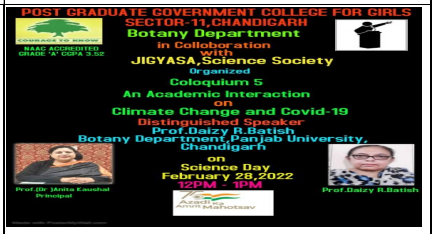
(ii) It has an academic excellence with practical relevance.

(iii) It aims at students with a diverse array of background, which have deep concern for the challenges arising from rapid climate change and to enhance its sustainability and human wellbeing.

(iv) The Colloquium boosts your network, helping you to develop soft skills, communication and time management.

(v) To introduce students to dedicated researchers and diverse group of scholars representing multiple disciplines.
(vi) To introduce students to a range of challenging assignment, digital power point presentations and archival research.

Schedule of Academic Interactions (Series of Lectures) Under Formative Assessments

S.No	Date	Colloquium Series	Level (Strength)	Topic and Distinguished Speaker	Proof
1	June30 2020	Series1	UG&PG 104	**Harvest from Pollution (Encash Pollution)** Prof. Neelu Sood Chairperson, Kurukshetra University Kurukshetra	
2	October5 2020	Series2	UG&PG 102	**Covid-19 in relation to Environment** Prof. Daizy R. Batish, Chairperson, Botany Department Panjab University, Chandigarh Dr. Daizy R. Batish, presently working as Professor in Department of Botany, Panjab University, Chandigarh, has to her credit Rajib Goyal Young Scientist Award in Environment and Research Award for Excellence in Research by UGC, New Delhi	
3	April 16 2021	Series 3 International Chapter	UG&PG 104	**Mitigation Measures to Control GHGs release and Solid waste Management** Dr. Himangana Gupta Postdoctoral Fellow at the University of Tokyo and United Nations University (UNU-IAS)	
4,	May 22,2021	Series 4	UG&PG 100	**Role of Biotechnology in Conservation of Biological Materials** Prof. Raj Kumar Salar, Professor Department of Biotechnology, Chaudhary Devi Lal University, Sirsa, was awarded fellowship research grant from the Govt. of Norway, Japan and Slovak Republic.	
5.	February 29,2022	Series 5	UG&PG 104	**Climate Change and Covid-19** Prof. Daizy R. Batish, Chairperson, Botany Department Panjab University, Chandigarh	

.	June 6,2022	Series 6	UG&PG 104	**"Waste to Wealth" Lecture cum Workshop & Exhibition** Mr Samarth Sharma, Consultant, MGNCRE, Ministry of Education, Government of India. 	 

The institute is pioneer in the environment activities for eco-restoration and environment sustainability and won awards at national and International forum (Table 2):

S.No	Year	Awards
1	2017-2018	01
2	2018-2019	01
3	2019-2020	03
4	2020-2021	04
5	2021-2023	12

Green Audit Report

Topic1: Floristic Composition

Post Graduate Government college,Sector-11,Chandigarh,affiliated to Panjab University, Chandigarh, was established in present campus in 1956 .The college has established itself as an educational hub in region with accreditation of Grade 'A' by NAAC. Apart from records of forest Department, the field surveys were undertaken to study the floristic composition of the campus. The main species of trees are as shown in Table 1.A sprawling campus of 34.93 acres has been meticulously planned in number of functional blocks separated by lush green grass lawns.

Table1: Trees /shrubs diversity of Post Graduate Government. College For Girls-11, Chandigarh

	Botanical Name (Common Name)	Family
1	*Abrus precatorius*(Ratti)	Fabaceae
2	*Acorus calamus*(Vacha)	Acoraceae
3	*Adhatoda vasica*(Vasaka)	Acanthaceae
4	*Adina codifolia*(Kurmi)	Rubiaceae
5	*Albizzia lebbeck* (Siris)	Mimosaceae
6	*Aloe barbedensis*(Ghrit Kumari)	Asphodelaceae
7	*Alstonia scholaris*(Saptaparni; Scholar tree)	Apocynaceae
8	*Andrographis paniculata*(Kalmegh)	Acanthaceae
9	*Anthocephalus chinensis*(Kadamb)	Rubiaceae
10	*Annona squamosa* (Sitaphal; custard apple)	Annonaceae
11	*Asparagus officinalis*(Asparagus)	Asparagaceae
12	*Asparagus racemosus*(Satavari)	Asparagaceae
13	*Artocarpus lakoocha*(Lakooch)	Moraceae
14	*Artocarpus heterophyllus*(Kathal;Jack tree)	Moraceae

15	*Azadirachta indica*(Neem)	Meliaceae
16	*Bacopa monnieri*(Brahmi)	Asparagaceae
17	*Bambusa vulgaris*(Bamboo)	Poaceae
18	*Barleria prionites*(Kala Bansa)	Acanthaceae
19	*Bougainvillea sp(*Bouganvillea)	Nyctaginaceae
20	*Bauhinia purpurea*(Gulabi Kachnar)	Fabaceae
21	*Bauhinia variegate*(Kachnar)	Fabaceae
22	*Bombax ceiba(=Salmalia,*Silk Cotton *)*	Malvaceae
23	*Butea frondosa* (Dhak)	Fabaceae
24	*Butea monosperma(Palash)*	Fabaceae
25	*Cactus and Succulents*	Cactaceae
26	*Callistemon viminalis*(Bottle Brush)	Myrtaceae
27	*Carissa congesta*(Karonda)	Apocynaceae
28	*Casuarina equisetifolia*(Jangli Saru)	Casuarinaceae
29	*Catharanthus roseus*(Sadabahar)	Apocynaceae
30	*Cestrum* noctuum(Raat Ki Raani)	Solanaceae
31	*Cestrum diurnum*(Din Ka Raja)	Solanaceae
32	*Citrus limon*	Rutaceae
33	*Citrus sinensis*(Narangi)	Rutaceae
34	*Clitoria ternatea*(Aparajita)	Fabaceae
35	*Coleus barbatus*(Patharchat)	Lamiaceae
36	*Chukrasia tabularis*(Indian Redwood)	Meliaceae
37	*Cinnamomum tamal*(Tejpatta)	Lauraceae
38	*Curcuma longa*(Haldi)	Zingiberaceae
39	*Cymbopogon citratus*(Lemon grass)	Poaceae
40	*Cycas circinalis*(Queen Sago)	Cycadaceae
41	*Cycas revoluta*(Sago Palm)	Cycadaceae
42	*Dalbergia sissoo(*Shisham)	Fabaceae
43	Datura *alba*(Dhatura)	Solanaceae
44	*Delonix regia(*GulMohar)	Fabaceae
45	*Dendrocalamus strictus*	Poaceae
46	*Eclipta alba*(Bhringaraj)	Asteraceae
47	*Emblica officinalis*(Amla)	Euphorbiaceae
48	*Eriobotrya japonica*(Loquat)	Myrtaceae

49	*Eucalyptus hybrida*	Myrtaceae
50	*Ficus benghalensis*(Banyan)	Moraceae
51	*Ficus carica*(Anjeer)	Moraceae
52	*Ficus glomerata*(Gular)	Moraceae
53	*Ficus infectoria*(Pilkhan)	Moraceae
54	*Ficus panda*	Moraceae
55	*Ficus religiosa*(Peepal	Moraceae
56	*Ficus virens*(Pakhar)	Moraceae
57	*Grevillea robusta*(Silver Oak)	Proteaceae
58	*Hamelia patens*(Read Head)	Rubiaceae
59	*Hibiscus rosa-sinensis(*Gurhal)	Malvaceae
60	*Ixora coccinea* (Jungle ceranium*)*	Rubiaceae
61	*Jacaranda mimosifolia*(Nili Gulmohar)	Bignoniaceae
62	*Lawsonia inermis* (Henna*)*	Lathyraceae
63	*Litchi chinensis*(Litchi)	Sapindaceae
64	*Lagerstroemia speciosa (Pride of India)*	Lathraceae
65	*Madhuca indica*(Mahua)	Sapotaceae
66	*Mangifera indica*(Mango)	Anacardiaceae
67	*Manilkara zapota(Chiku)*	Sapotaceae
68	*Mentha x piperita*(Peppermint)	Lamiaceae
69	*Michelia champa*(Champa)	Magnoliaceae
70	*Mimosa pudica* (Lajwanti)	Fabaceae
71	*Mimusops elengi*(Maulsiri)	Sapotaceae
72	*Moringa oleifera(*Moringa)	Moringaceae
73	*Morus alba(*Shahtoot)	Moraceae
74	*Murraya koenigii*(Curry patta)	Rutaceae
75	*Nerium oleander(Kaner)*	Apocynaceae
76	*Nyctanthes arbor-tristis*(Harshingar)	Nyctanthaceae
77	*Ocimum basilicum*(Kali Tulsi)	Lamiaceae
78	*Ocimum gratissimum*(Ram Tulsi)	Lamiaceae
79	*Ocimum sanctum*(Tulsi)	Lamiaceae
80	*Plumeria alba(White Frangipani)*	Apocynaceae
81	*Polyalthia longifolia*((Asoka Tree)	Annonaceae
82	*Pinus roxburghii*	Pinaceae
83	*Psidium guajava*(Guava)	Myrtaceae

84	*Pterospermum acerifolium*(Kanak Champa)	Sterculiaceae
85	*Punica granatum* (Pomegranate)	Lythraceae
86	*Putranjiva roxburghii*(Putranjiva)	Euphorbiaceae
87	*Roystonea regia*(Royal Palm)	Arecaceae (Palmae)
88	*Saraca indica*	Caesalpinaceae
89	*Schleichera oleosa(Kusum)*	Sapindaceae
90	*Syzygium aromaticum*.(Clove)	Myrtaceae
91	*Syzygium cumini*(Jamun)	Myrtaceae
92	*Tabernaemontana divaricta*(Crape Jasmine)	Apocynaceae
93	*Tecoma argentea*(Yellow Tabebuia)	Bignoniaceae
94	*Tecoma capensis*(Honey Suckle)	Bignoniaceae
95	*Terminalia arjuna*(Arjun)	Combretaceae
96	*Terminalia bellirica(*Behera)	Combretaceae
97	*Terminalia chebula (*Harad)	Combretaceae
98	*Thuja compacta* (Vidya tree)	Cupressaceae
99	*Tinospora cordifolia* (Giloe)	Menispermaceae
100	*Vitex negundo*(Nirgundi)	Verbenaceae
101	*Withania somnifera*(Ashwagandha)	Solanaceae
102	*Ziziphus mauritiana*(Ber)	Rhamnaceae

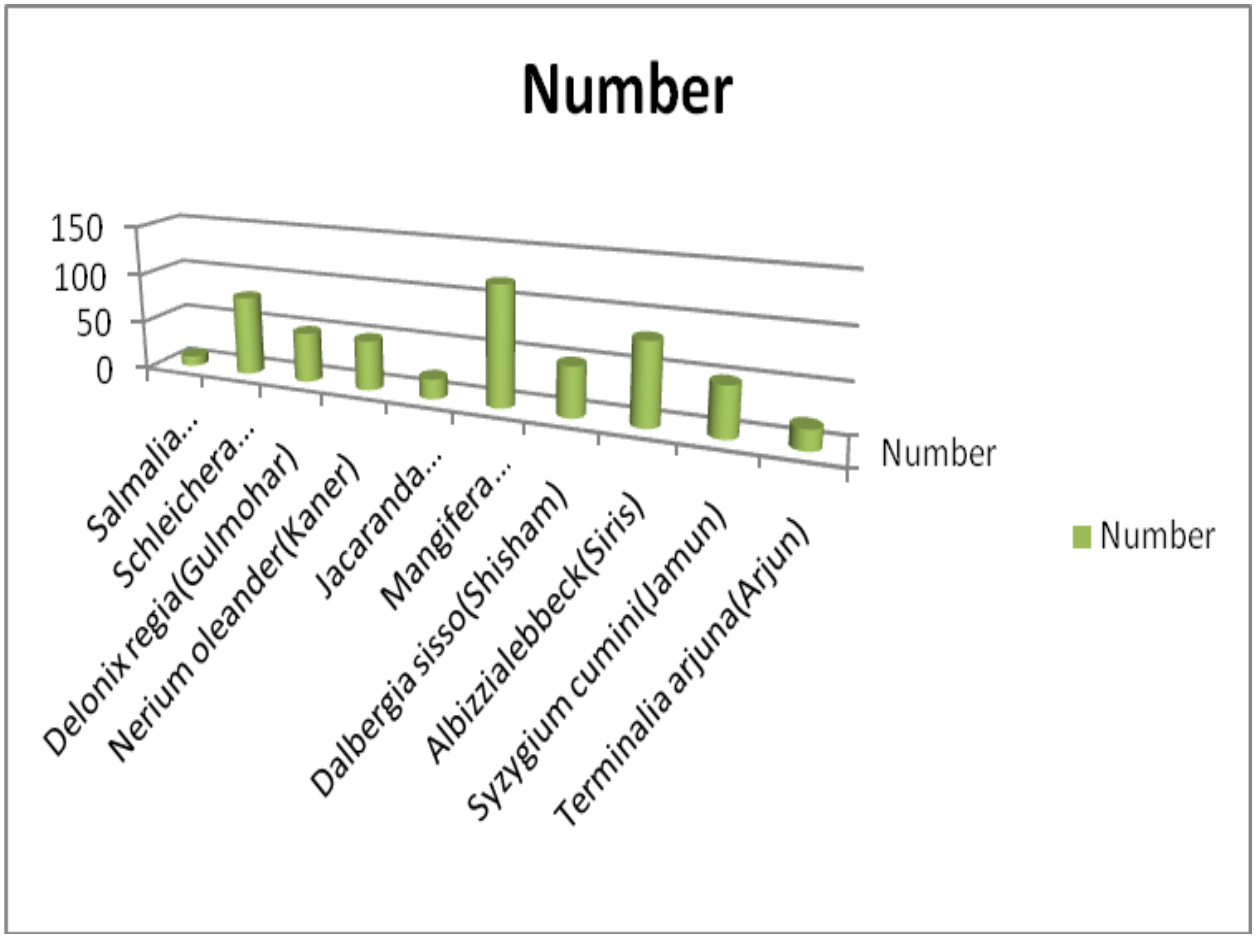


Fig1:Floristic composition(Trees) of the College Campus

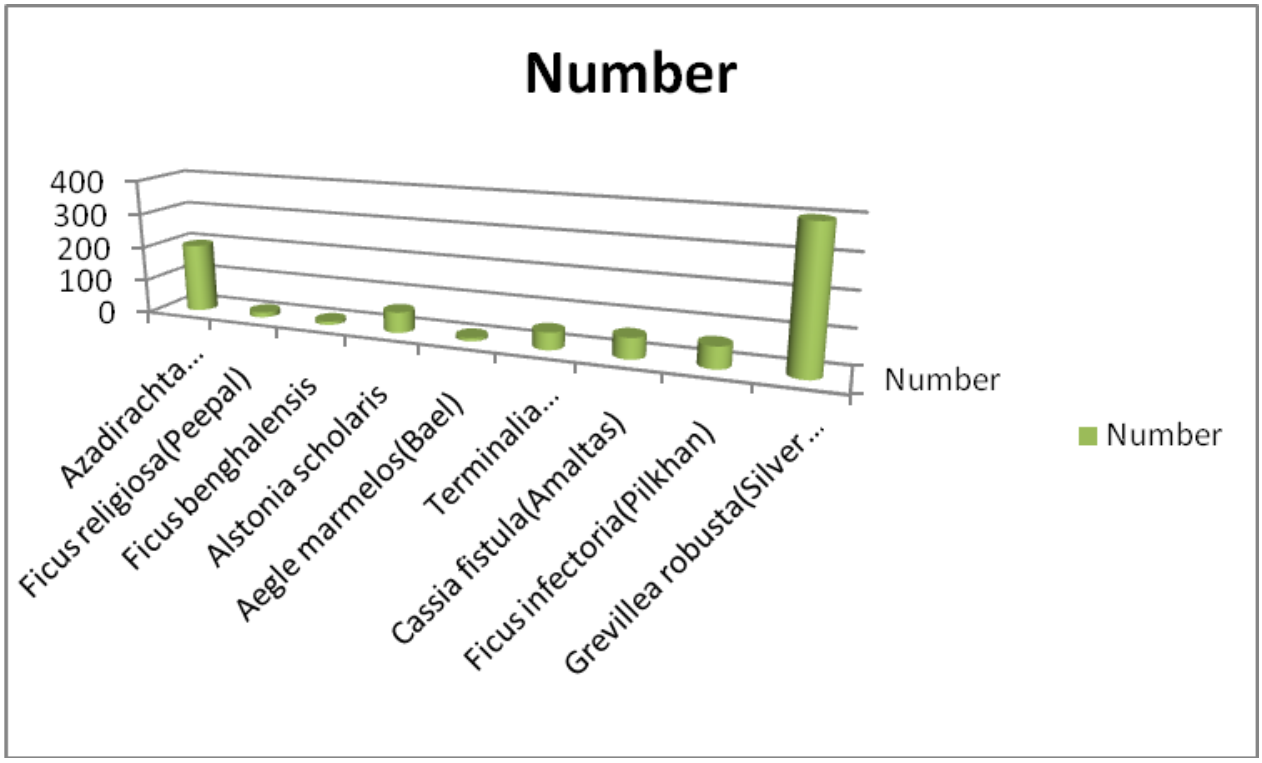


Fig2:Floristic composition(Trees) of the College Campus

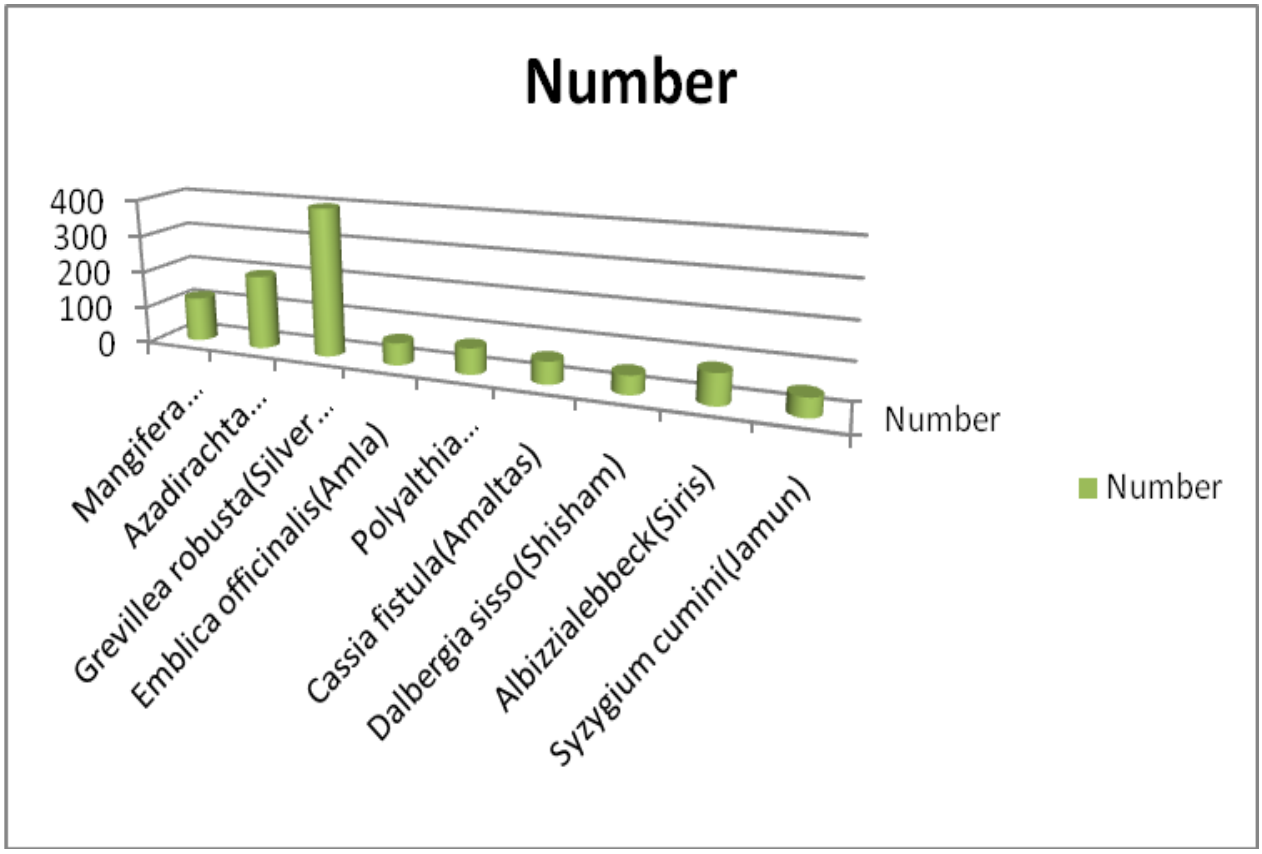


Fig3:Floristic composition of most abundant trees of the College campus

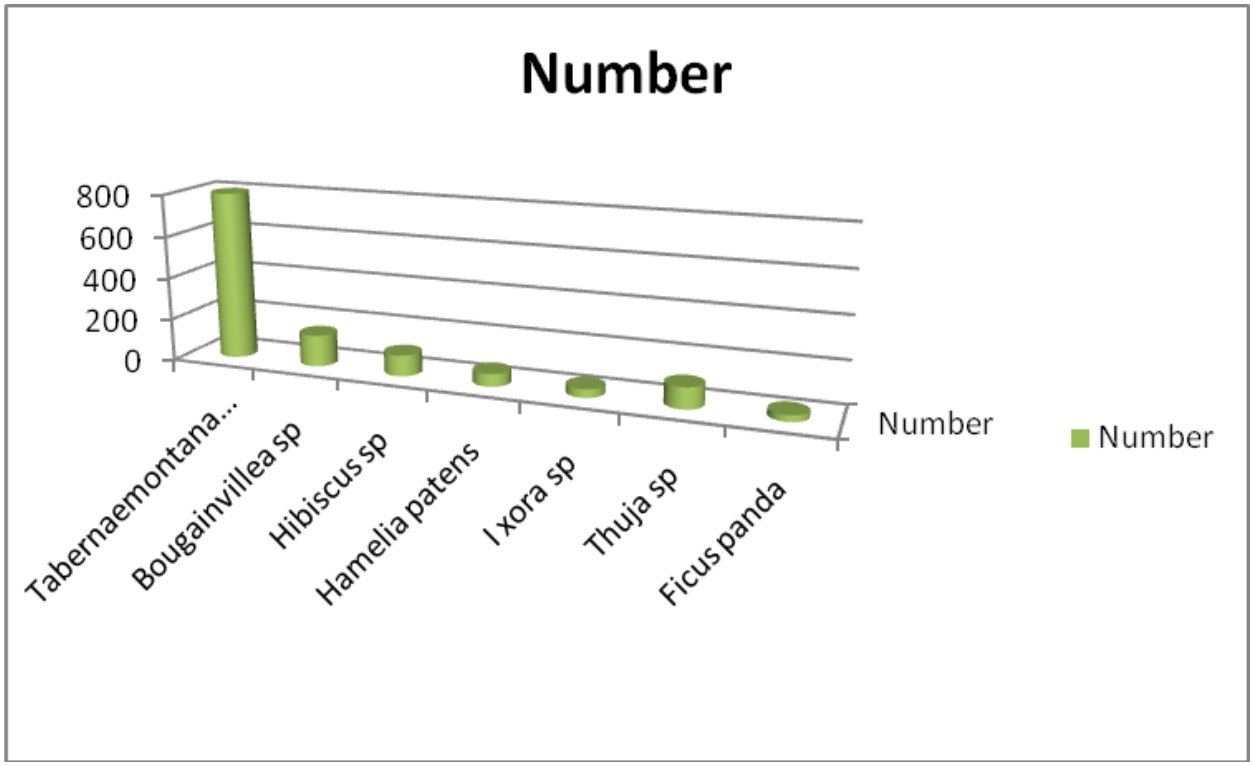
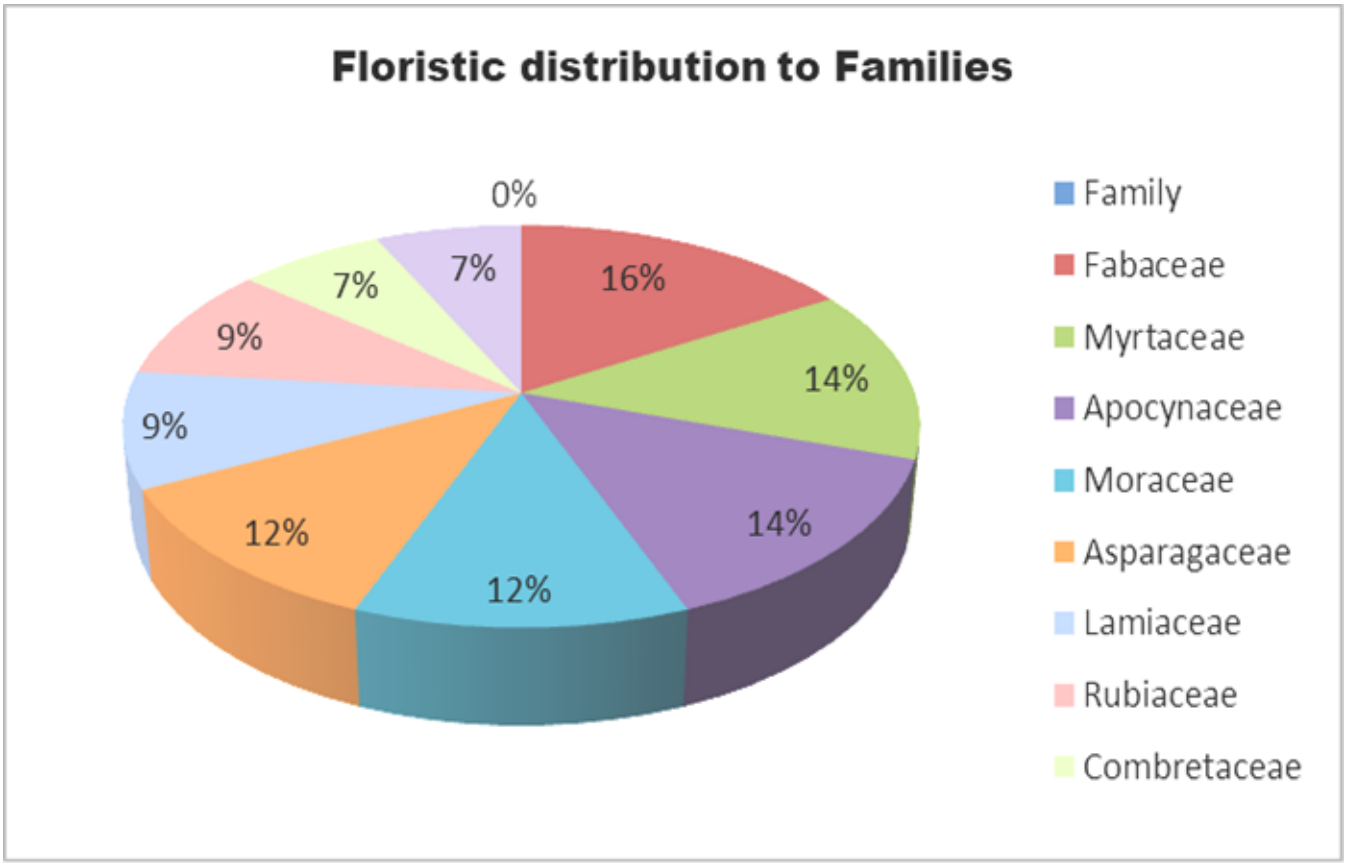
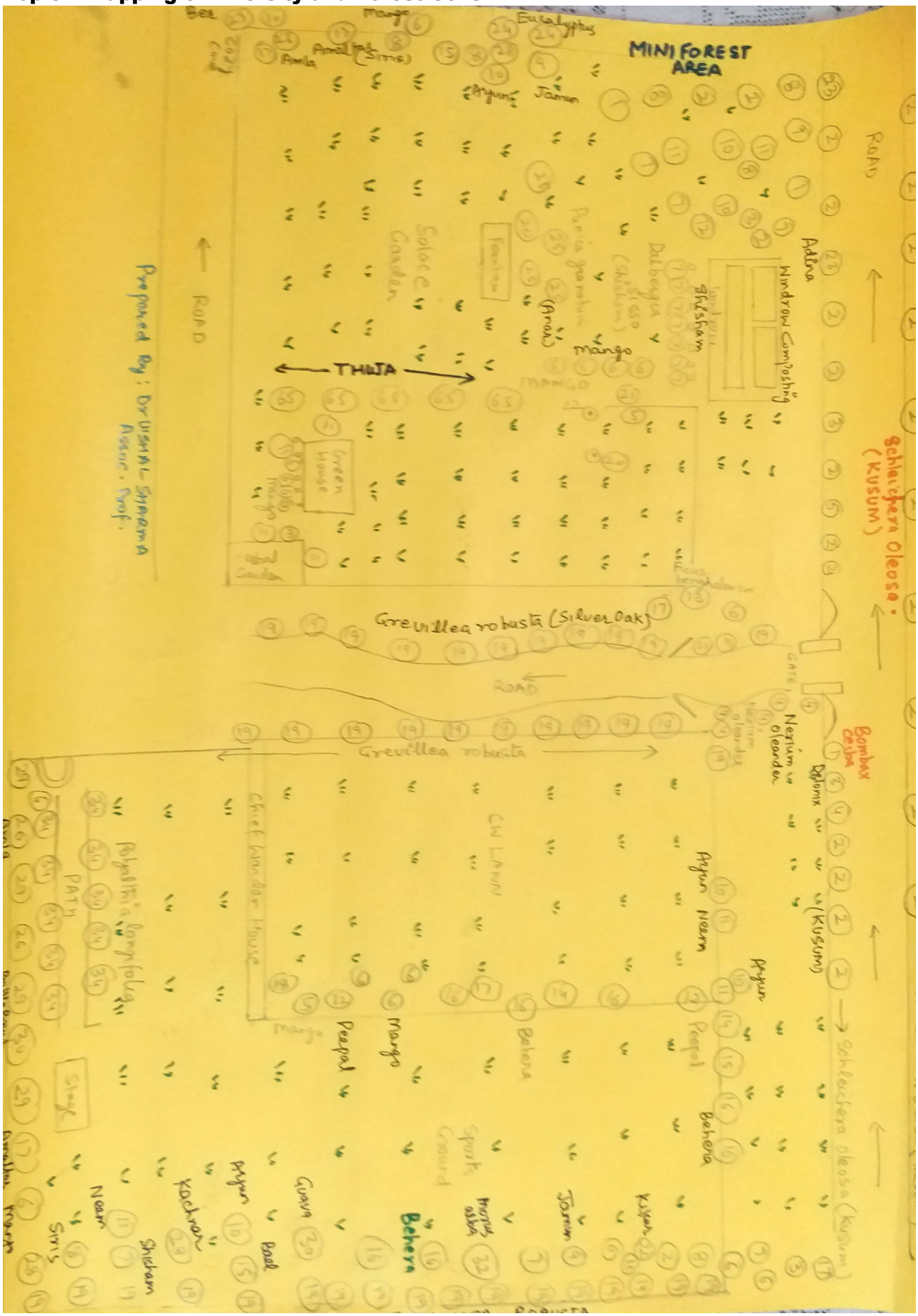


Fig4:Floristic composition of most abundant Shrubs of the College campus

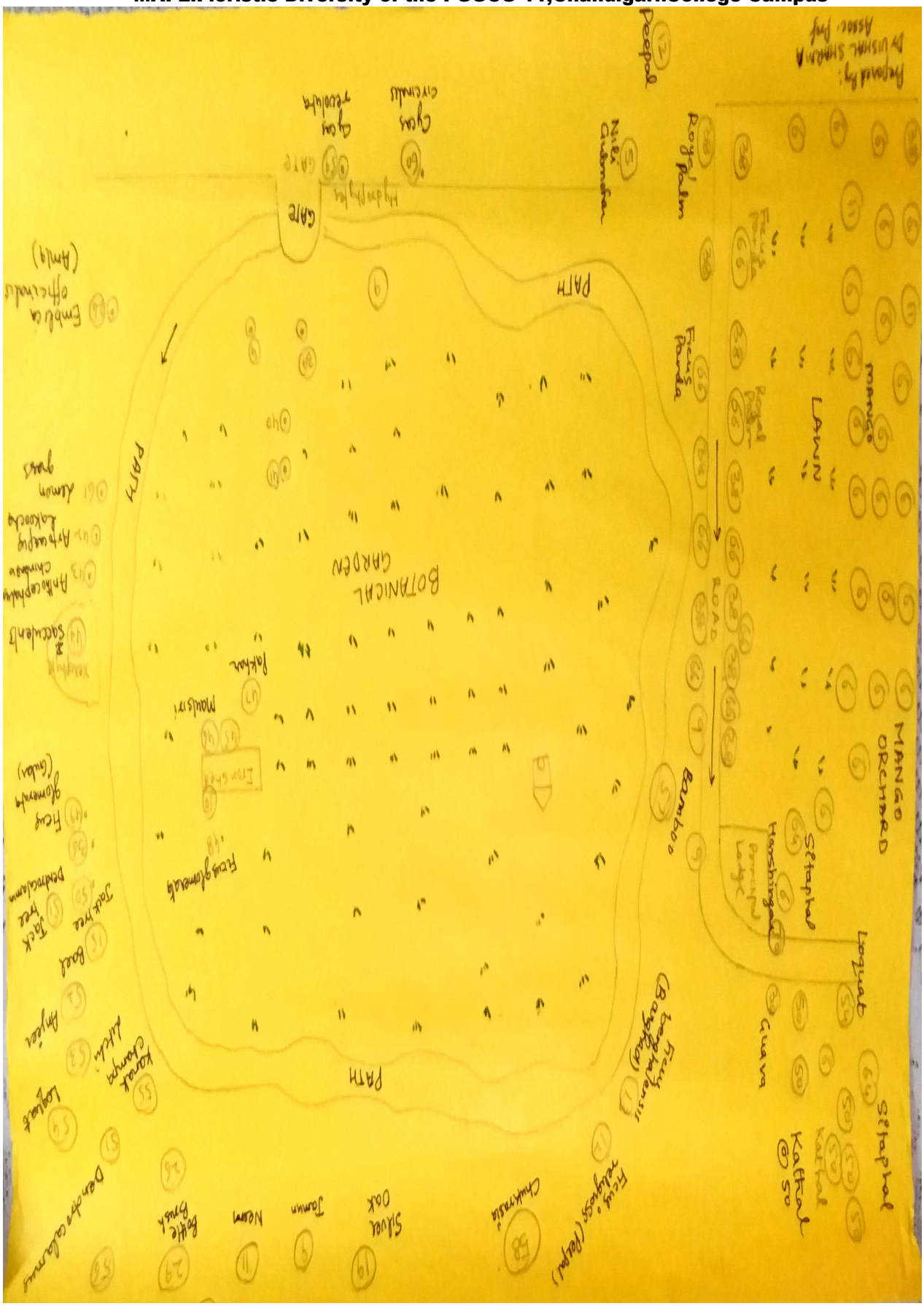
The floristic composition of the college is given in Table1, and the histograms(Figs.1-4) and the maps are prepared in coorelation with the floristic composition given in Table-1 and the floristic composition is replicated in the maps at the location these trees are present in the college camus(Maps2-3).



Topic 2:Mapping of Diversity and Forest Cover



MAP2:Floristic Diversity of the PGGCG-11,ChandigarhCollege Campus



MAP 3: Floristic Diversity of the Botanical Garden and Mini Forest Area (Plant Conservation Site) of Post Graduate Government College For Girls-11, ChandigarhCollege Campus

TOPIC 3: Solid Waste Management-Practice and Procedure

The paradigm of 'waste to energy, mitigation of carbon and its sequestration is relegated to a secondary level which conversely results in India discarding 68.8 million tonne in landfills and comes third after China and US in total GHGs emission. Conforming to these, the college highlights the use of adept schemes for successful co-composting of food, fruit and green waste, with a mechanism to mitigate carbon leakage in the developing countries. The work is a pioneer attempt to produce bio-stable, organoleptic and agronomic feasible organic compost evaluating the physicochemical parameters using the two stage composting (TSC) comprising bioreactor and windrows using mixture of raw materials: 50%green waste (60% leaves, 35%grass clippings and 5%tree branches), 50%food and fruit waste of total 300 per day , to produce compatible compost in 110 days in TSC, hence making the college fully organic. The high quality final compost has 40^{o}C temperature, 7.6 pH, 42% moisture content, 3.36ds/m electrical conductivity and 25 C/N ratio.The main objective of practice is to analyse and overview the configuration technology, analytical parameters and feasibility of net zero energy improving building resilience, to achieve de-carbonisation target to limit the global temperature rise to 1.5^{O}C, to meet the goals of the Paris agreement to avoid catastrophic impacts of climate change. The inference of study is the mitigation of carbon leakage of 346.7 metric ton CO_2 and generating 564 quintals organic compost to achieve sustainable zero waste future. The concept of circular economy, restorative and regenerative system by design has contributed to a paradigm shift in the transformation of Waste-to-Energy (WtE) which the management of municipal solid waste. The present study entails ascertaining how WtE can serve as a circular economy tool toward carbon foot print benefits and climate change mitigation. The study bagged **United Nations SDG Action Award 2020 and** finalists **UN Green Gown International Awards** 2022.

Composting procedure

The present model has devised two strategies (i) Single stage windrow composting (SSC) (ii) Two stage windrow composting **(TSC),** to highlight best organic waste management strategies to achieve co-composting of food, fruit and green waste using aerobic windrow composting to reduce their volume and mass and achieve carbon foot print benefits.

1. Single Stage Composting (SSC)

The energy efficiency initiatives mitigate the carbon foot prints and energy requirement of the building. The composting process was carried out in batch-wise operation in the open site windrow composting plant (30.7583° N, 76.7841° E) of 0.5 TPD capacity situated in the campus of Post Graduate Government College for Girls, Sector-11, Chandigarh. The windrow plant consists of screening facilities, solid waste separator, charging and composting units.where the organic wastes are accumulated in 3x4m brick lined charging unit with basal bulking agent (green waste) layer, which sequentially alternates with food, fruit and vegetable waste (30cm each) in three different layers. The repetition of the layers is done till the cumulative pile reaches 1.5m height. The piles in windrows are turned manually on 6th and 11th day to generate micro-positive pressure making windrows aerobic.

2. Two stage Composting (TSC)

In TSC, a mechanical -manual integration, the organic waste is initially added to a bioreactor 'FOODIE' for and after 7days the semi-digested organic cakes are de-confined from the bioreactor and transferred to windrow composting plant. The cakes are added to square 64m^{2}open site windrow composting plant and follow the same procedure as above in SSC.

Advantages of the practice

(i) The existing solid waste management practice in the campus includes segregation of waste at source into dry waste, wet waste, E-waste and medical waste through coded dustbins (Blue, green, red and black), placed at prominent places in the college and hostels (Figs.7-10). The waste thus generated within campus is collected from labelled dustbins placed at various locations and shifted to the windrow plant site located in the campus for composting.

(ii) The practice provides a better insight on the feasibility, applicability and reproducibility of the single stage windrow composting and two stage composting technology to ensure the efficiency and effectiveness of TSC in producing bio-fertilizer. The two-stage composting (TSC) is used as an alternative process in solid waste management and this new technology can reduce the composting time, land area and GHG emission

(iii) Every region on earth is generating dry waste (grass, leaves) and wet waste (Vegetable and fruit peelings) in bulk and their dispensing and management is a global problem. The practice is aimed at converting waste into organic compost with C:N ratio 25:1, which is best for agronomic practices

(iv) The organic compost generated increased the yield of agronomic and floriculture crops and in this era of increasing population, the both aspects help in the development of the nation.
(v) The blue prints are prepared regarding the standardization of temperature, humidity, C:N ratio in single stage and two stage composting and these blue prints are replicated with ease, irrespective of area and country.
(v) The problems solved due to the bioconversion of solid waste and its management are:

- Unscientific land filling
- Maintaining soil fertility
- Avoiding a breeding grounds for mosquitoes, casual organism of many diseases
- Saving precious Farm yard Manure (FYM), which are used in Agriculture fields and in Biogas Plants for sustainable development
- The need of market is the organic compost to have more yield, and protect human race from bio-magnification of pesticides and weedicides. The organic compost is used as an alternative renewable source of energy saving the non-renewable fossil fuels (Coal, Petroleum, Diesel etc.).
- The micro-climate of campus has become moderate, as reduction in landfills and dumping sites has reduced the emission of greenhouse gases (GHGs).
- The concept of circular economy (CE), restorative and regenerative system by design has contributed to a paradigm shift in the transformation of Waste-to-Energy (WtE) in the management of municipal solid waste. The practice entails ascertaining how WtE can serve as a circular economy tool toward carbon foot print benefits and climate change mitigation.

(vi) The computation of the meteorological data pertaining to the city average minimum and maximum temperature fluctuations ranges from 0.63-1.78^{0}C due to urban heat island effect, a most documented phenomenon of climate change. However, the campus micro-climate has a moderate effect as the temperature remains on the negative side of fluctuation (i.e 1.5^{0}C less than the city temperature), primarily due to 56.84% green area with tree basal area of 55% which results in evaporative cooling and mitigation of greenhouse gases due to aerobic windrow composting of campus solid waste, which prevents micro-climatic global warming, hence improving building resilience, to achieve de-carbonization target to limit the global temperature rise to 1.5^{O}C, to meet the goals of the Paris agreement to avoid catastrophic impacts of climate change.

Awards: The Third Party Verification

The college is a pioneer in waste management practices in country as well as in Asia. The college work on solid waste management has been acclaimed at National and International forum as follows:

1 The work was acclaimed by United Nations and bagged United Nations (UN), Sustainable Development Goals (SDG) Action award in Individual category ("Environment Sustainability") for the practice on Solid waste management (UNDP), an excellent community outreach in Covid-19 era. The present Solid waste windrow project study is the second after Mumbai to get this award and shared stage with actor Sonu Sood and Philanthropist S. P. S. Oberoi for their exemplary and humanitarian work during Covid-19.
2. Skoch awards, instituted in 2003, is the highest honour in the county, which recognise projects and institutions that go extra mile to make India a better nation and covers the best of efforts in capacity building, empowerment and excellence in technology, based on extensive documentation based on desk and secondary research followed by an evaluation presentation to the eminent jury of domain. Skoch are competitive awards, which recognise leadership and excellence in accelerating socio-economic changes and benchmark of best practice in the fields of technology and inclusive growth. The institute is a pioneer among the colleges/institutes in the country to be the winner of 66 Skoch order of merit-Semi-finalists and joined the selected group finalists like CM Haryana, Madhya Pradesh, Rajasthan, HAL, SAIL, Ministry of Rural development, Government of India.
3. The college work on solid waste management"Windrow composting-An Aerobic Bio-Conversion and Stabilization of Municipal Solid waste (MSW) in Chandigarh" was recognised and awarded in category of 'Climate Change and Sustainability of Health care System' in 26th International Congress of IFHE-International Award 2020 organised by IFHE (International Federation of Health Care Engineering) in Italy(Jan24-28,2021).
4. Green Champion Award –Swachhta Action Plan- Exemplary Performance Award-2020-2021

The college was awarded Green Champion Award (2020-2021) by Mahatma Gandhi National Council of Rural Education (MGNCRE), Department of Higher Education, Ministry of Education, Government of India for its contribution to contribution to the field of Swachhta aspects and practice and figured in the India Today's list of 400 prominent colleges in the country for work on environment sustainability.

5. The Rose festival of Chandigarh is one of the biggest rose shows held in the country. It is a colourful bonanza which showcases the diverse beauty of flowers. At the same time, the festival has also made efforts to ensure that such diversity and heterogeneity is reflected at the organization level, and to spread awareness about the need to preserve nature The institute has been conferred with the Best Maintained Campus in 47th, 48th and 50th Rose Festival in Section H (Category H3) since the year 2018 till the present year 2022; a creditable achievement by the Government institute. The flowers in the all competitions are raised through waste generated compost.an excellent **'Best of Waste scenario'**.

6. The institute work on solid waste management "Windrow Composting-An aerobic Bio-conversion and Stabilization of Municipal Solid Waste (MSW) in Chandigarh" was awarded as Innovative Environment Project by Confederation of Indian Industry (CII) in their 8th edition of National Awards on July 20-30,2021 for their Carbon foot print Benefit.

7. The institute was acclaimed and awarded in "Innovation in Recycling process and Technology" Category, in the Business World prestigious award "Recycling for Greener Tomorrow Conclave Awards 2022 on January 16, 2022.

8. The Green Gown International Awards in partnership with Association of Common with Universities (ACU), AUF, International Association of Universities (IAU) and United Nations Environment Program (UNEP), recognized the International Sustainability initiatives being undertaken across the world. The ethos of the awards is to ensure the lessons and examples of good practice. Green Gown International Award, a prestigious award of UK, is the leading global environmental authority which promotes the coherent implementation of environmental dimensions of sustainable development, announced finalists shortlisted from 19 countries and the work "Windrow Composting: Stabilization of Municipal Solid Waste (MSW) in Chandigarh for Sustainable Zero Waste Future**",** was shortlisted as one of the finalists of United Nations Green Gown International Awards 2022,a pioneer project from India.

9. On Environment Day (June 5, 2022), the National Environmental Science Academy, New Delhi has conferred 'Green Technology Innovative Awards-2022 to the institute in International Conference on Agriculture Science and at ICAR-IGFRI, Jhansi, Uttar Pradesh, for the contribution in the field of mitigation of Carbon footprints and Green awards for Innovation & Environment Awareness at World Environment Expo (Pragati Maidan, New Delhi).

10. Recently, awarded "Green Technology Award 2022" in ESDA World Environment Summit (WES) organized by United Nations Environment Program (UNEP) with Ministry of Environment and Climate Change ,Government of India and in association with CSRI-NEERI,CSRD JNU and foreign partner, Maldives, Nepal and Switzerland and Indian counterpart (NABARD) at Vallabhbhai Patel Chest Institute at Delhi University, New Delhi on October 16,2022.

पीजीजीसीजी-11 में अब हर शनिवार को मनाया जाएगा नो प्लास्टिक डे

चंडीगढ़। पोस्ट ग्रेजुएट गवर्नमेंट कॉलेज फॉर गर्ल्स सेक्टर 11 में पर्यावरण दिवस पर नो प्लास्टिक डे : बी पार्ट ऑफ द सॉल्यूशन की शुरुआत की गई। अब कॉलेज हर शनिवार को नो प्लास्टिक डे मनाएगा। इसका मकसद है युवाओं और आम लोगों को प्लास्टिक के खतरे के बारे में बताना। नॉन बायोडिग्रेडेबल प्लास्टिक प्रोडक्ट पर्यावरण के लिए सबसे बड़ा खतरा है। इस कॉलेज को हाल ही में मिनिस्ट्री ऑफ एजुकेशन की ओर से ग्रीन चैंपियन अवार्ड मिला है। कॉलेज की प्रिंसिपल प्रो अनीता कौशल के अनुसार ऐसी चोट में करीब 170 किलो सॉलिड वेस्ट प्रतिदिन होता है जिसमें से 17.6 फीसदी प्लास्टिक वेस्ट है। इसी को कंट्रोल करने के लिए हर शनिवार अब नो प्लास्टिक डे मनाया जाएगा।

प्लास्टिक प्रदूषण के खिलाफ की वर्चुअल रैली

चंडीगढ़। पोस्ट ग्रेजुएट गवर्नमेंट कॉलेज फॉर गर्ल्स के वनस्पति विज्ञान ने वीरवार को प्लास्टिक प्रदूषण के खिलाफ वर्चुअल रैली निकाली। इसमें छात्रों, शिक्षण संकायों और सफाई कर्मचारियों ने भाग लिया। प्लास्टिक प्रदूषण कम करने के प्रेरक कदम के रूप में करीब 100 छात्रों ने पोस्टर व नारों के साथ हिस्सा लिया। कॉलेज प्राचार्या प्रोफेसर डॉ. अनीता कौशल ने छात्रों को प्रोत्साहित किया और पर्यावरण की बहाली के लिए प्लास्टिक के कम से कम उपयोग पर जोर दिया। ब्यूरो

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न्यूज बीफ

अंतर्राष्ट्रीय प्लास्टिक बैग मुक्त दिवस मनाया

चंडीगढ़, 3 जुलाई (आशीष)। उच्च शिक्षा निदेशालय के तत्वावधान में शिक्षा संस्थानों ने शनिवार को प्लास्टिक बैग नहीं पर एक अभियान शुरू किया। 3 जुलाई को अंतर्राष्ट्रीय प्लास्टिक बैग मुक्त दिवस के रूप में मनाया जाता है।

यह एक वैश्विक पहल है जिसका उद्देश्य प्लास्टिक बैग के उपयोग को खत्म करना है। पोस्ट ग्रेजुएट गवर्नमेंट कॉलेज फॉर गर्ल्स, सेक्टर-11 की प्रिंसीपल प्रो. अनीता कौशल ने कहा कि अभियान ने संस्थानों में लगभग 17.6 फीसदी प्लास्टिक कचरे के प्रबंधन के लिए प्लास्टिक बैग को कम करने, पुन: उपयोग, रि-साइकिल प्लास्टिक बैग को बढ़ावा दिया है। अभियान का उद्देश्य पर्यावरण को सरक्षित करने के सरकारी प्रयासो का समर्थन करना और पर्यावरण की बहाली पर परिवारो के बीच ज्ञान जागरूकता मे सुधार करना है। इस दौरान 50 हजार से अधिक छात्रो और कॉलेजो के शिक्षण और गैर-शिक्षण कर्मचारियो ने एकल उपयोग प्लास्टिक और प्लास्टिक की वस्तुओ के नकारात्मक प्रभावो को कम करने का सकल्प लिया।

स्वच्छता एक्शन प्लान | **बिजली की 30 से 32 फीसद कम खपत के लिए मिला सम्मान**

जीसीजी-11 को मिला ग्रीन चैंपियन अवॉर्ड

जासं, चंडीगढ़ : पोस्ट ग्रेजुएट गवर्नमेंट कालेज फार गर्ल्स (जीसीजी) सेक्टर-11 को ग्रीन चैंपियन अवार्ड मिला है। यह अवॉर्ड महात्मा गांधी नेशनल काउंसिल आफ रूलर एजुकेशन, मिनिस्ट्री आफ एजुकेशन भारत सरकार की तरफ से स्वच्छता एक्शन प्लान के तहत दिया गया है। अवॉर्ड में कालेज को पांच हजार रुपये कैश अवॉर्ड के साथ प्रशस्ति पत्र हासिल हुआ है। गवर्नमेंट आफ इंडिया की तरफ से अवॉर्ड घोषित होने के बाद मंगलवार को डायरेक्टर स्कूल एजुकेशन आरएस बराड़ ने अवार्ड प्रिंसिपल डा. अनीता कौशल को हैंडओवर किया ।

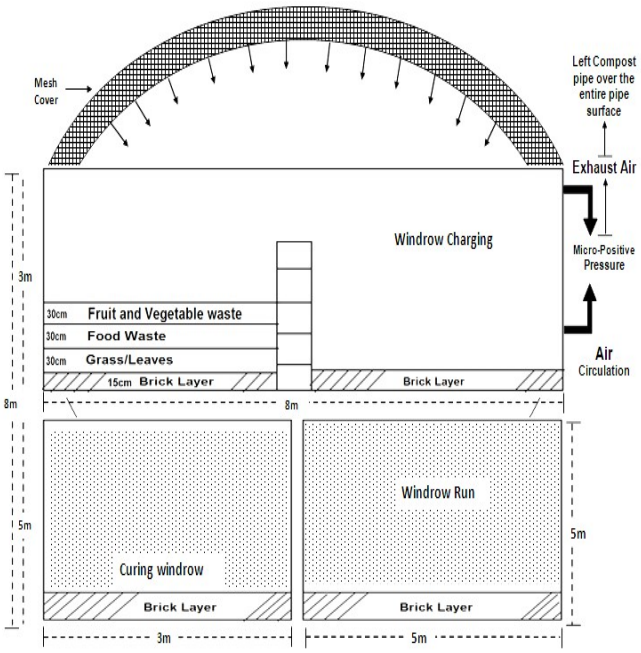
यह किया है कालेज ने : जीसीजी-11 ने एनर्जी सेविंग की दिशा में काम किया और 30 से 32 फीसद बिजली की खपत कालेज कैंपस में कम करके दिखाई है। इस प्रोजेक्ट के लिए कालेज के लेक्चरर डा. विशाल शर्मा ने काम किया है। बिजली के अलावा कूड़ा निपटान और जल संरक्षण की दिशा में भी कालेज कैंपस में काम किया गया है, जिसके लिए एमएचआरडी पहले भी कालेज को सम्मानित कर चुकी है। कूड़ा निपटान के लिए सीआइआइ भी कालेज को बेस्ट प्रैक्टिस में चुन चुकी है।

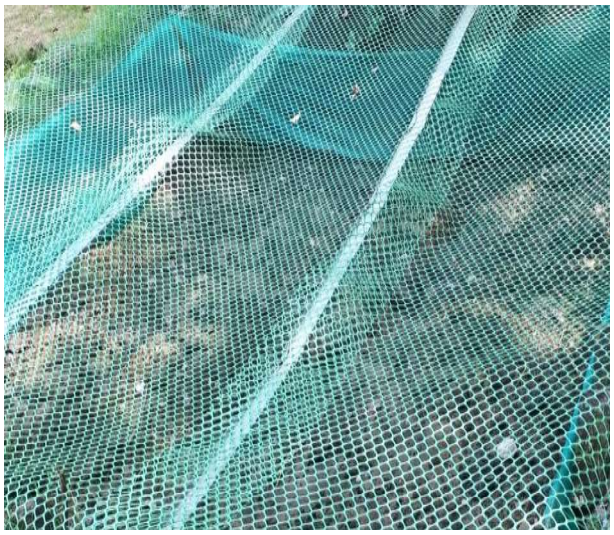
बिजली बचाने के लिए पोस्ट ग्रेजुएट गवर्नमेंट कालेज फॉर गर्ल्स सेक्टर-11 को ग्रीन चैंपियन अवॉर्ड मिला। यह अवॉर्ड गवर्नमेंट ऑफ इंडिया की तरफ से मंगलवार को डायरेक्टर हायर एजुकेशन आरएस बराड़ ने प्रिंसिपल अनीता कौशल को सौंपा ●जागरण

एक हजार आवेदन में जीसीजी को मिला पहला स्थान : ग्रीन चैंपियन अवार्ड पाने के लिए चंडीगढ़ सहित पंजाब से एक हजार से ज्यादा आवेदन गए थे । जिसमें से जीसीजी-11 को पहला स्थान मिला है। कालेज प्रिंसिपल डा. अनीता कौशल ने बताया कि पर्यावरण की सुरक्षा के लिए सहयोग जरूरी है।

यह रहा है खास

यूनाइटेड नेशन (यूएन) कमरे में चलने वाले एसी का तापमान 26 स्वास्थ्य के लिए बेहतर घोषित कर चुकी है। डा. विशाल बीते तीन सालों से कालेज कैंपस में चलने वाले एसी का तापमान 26 तक चला रहे है । डा. विशाल के अनुसार यदि एसी का तापमान 26 डिग्री तक रहता है तो सबसे पहले बिजली की खपत 30 से 32 फीसद कम होगी और कमरे में बैठने के लिए बेहतरीन माहौल मिल सकेगा । कमरे में ऑक्सीजन का स्तर ठीक रहेगा और ऑक्सीजन का स्तर ठीक रहने से शरीर में थकान और सुस्ती नहीं आएगी और इंसान सामान्य लाइफस्टाइल जी सकता है ।





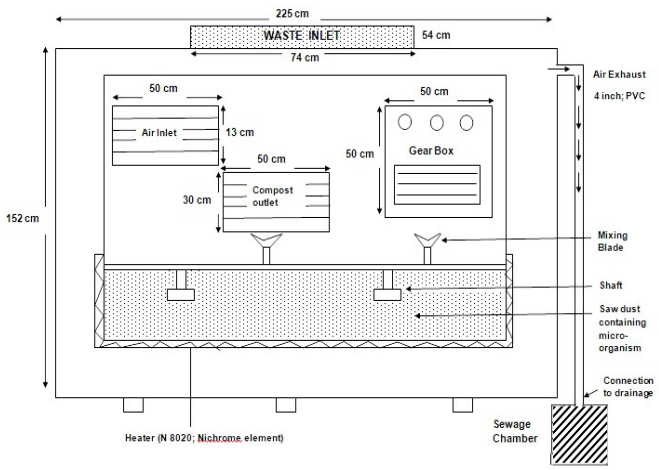


Fig.1.Design of Windrow composting plant;Fig.2-Layout windrow composting plant in PGGCG-11,Chandigarh;Figs.3-4-Field layout of membrane covered charging and curing windrow unit(0.5 TPD);Fig.5-Outlay of Bioreactor; Fig.6-Bioreactor 'Foodie' Figs.7-10;Segregation of waste

Challenges faced during the Composting process

1. Solid waste auditing The first and foremost if the solid waste auditing, which plays an important role in devising the composting strategy i.e Layout designing ,sizing and capacity.
2. Segregation: The segregation at source presents a major challenge, as composite culture is dumped in landfills which results in greenhouse gases (GHGs) emission. It also hampers the composting process.
3. House hold composting: The major obstacle stands in way of household composting is the misconception that the composting is smelly and attract flies and maggots.
4. Budgetary constraint: The budget limitations concerning community composting can be addressed by starting low cost windrow composting.
5. Designing of the windrow plant: While designing the plant, its economic aspect and land saving has to be kept in mind.
6. Maintenance: Due to financial constraint, manual turning has to be done on every 6^{th} and 11^{th} day.

7. Standardizing the compost monitoring the physico-chemical parameters (Temperature, pH,Moisture content, Electrical conductivity and C/N ratio) to make compost feasible to floriculture and Landscaping operation.

Table2: Total Waste Generated:

S.No	Number of Day Scholar	Total Faculty (Teaching &Non-Teaching	Collection of Solid Waste	Total waste Generated
DAY SCHOLAR@50gram/day				
1.	3462	196	3658x50 gram	182.9Kg/day
HOSTELERS@200 gram /day				
2.	797	4	801x200 gram	160.2 Kg/day

Total waste to be generated as per Strength and formula of MGNCRE, GOI:

182.9+160.2=343.1

Plastic waste=72 Kg

Wet waste=343.1-72=271.1 Kg/day ----------1

Waste Generated in Month of February, 2022

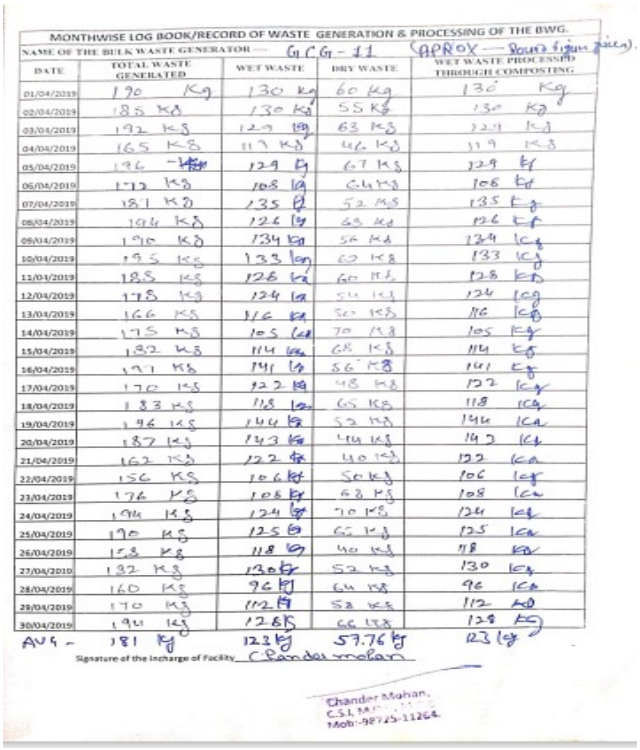
Wet waste generated per Day (Actual)= 3760/24=156.66
Wet waste generated as per strength (Formula; as depicted in reference 1)=271.1
Wet waste Saved from generation=114.4 kg/day

Waste Generated in Month of March, 2022

Wet waste generated per Day=4305/27=159.44
Wet waste generated as per strength (Formula; as depicted in reference 1)= 271.1
Wet waste Saved from generation=117.7 kg/day (Computation of yearly date in Summary enclosed below:

Total Solid Waste Generated as per MGNCRE Formula (8133x12) = 97596
Total waste actually generated: 79800
Waste Generation Less: 97596-79800=48596 kg (Reduced with constant Workshops, Survey and Awareness of Stakeholders).

SOLID WASTE AUDITING



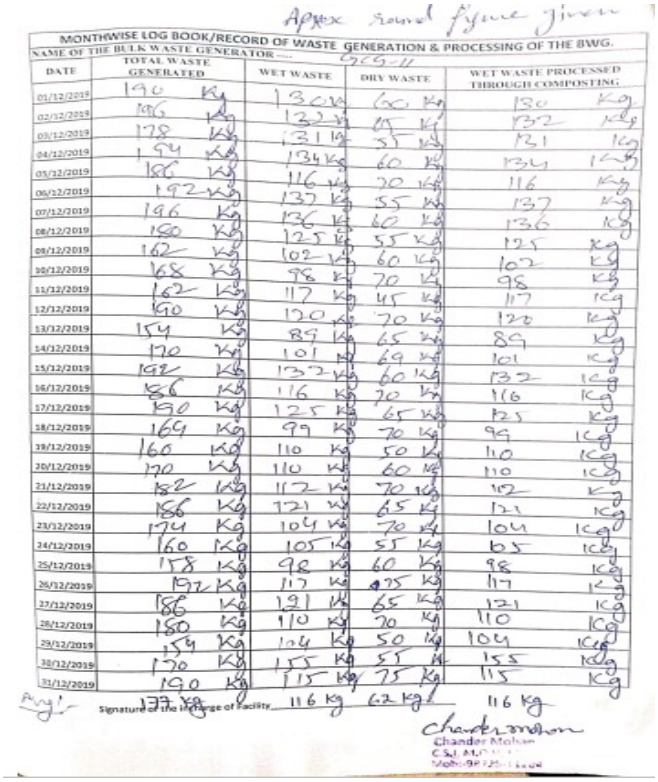
MONTHWISE LOG BOOK/RECORD OF WASTE GENERATION & PROCESSING OF THE BWG.

NAME OF THE BULK WASTE GENERATOR — GCG-11 (APROX — Round figure given)

DATE	TOTAL WASTE GENERATED	WET WASTE	DRY WASTE	WET WASTE PROCESSED THROUGH COMPOSTING
01/04/2019	190 Kg	130 kg	60 Kg	130 Kg
02/04/2019	185 KG	130 KG	55 KG	130 KG
03/04/2019	192 KG	129 KG	63 KG	129 KG
04/04/2019	165 KG	119 KG	46 KG	119 KG
05/04/2019	196 KG	129 KG	67 KG	129 KG
06/04/2019	172 KG	108 KG	64 KG	108 KG
07/04/2019	181 KG	135 KG	52 KG	135 KG
08/04/2019	186 KG	126 KG	60 KG	126 KG
09/04/2019	190 KG	134 KG	56 KG	134 KG
10/04/2019	195 KG	133 KG	62 KG	133 KG
11/04/2019	188 KG	128 KG	60 KG	128 KG
12/04/2019	178 KG	124 KG	54 KG	124 KG
13/04/2019	166 KG	116 KG	50 KG	116 KG
14/04/2019	175 KG	105 KG	70 KG	105 KG
15/04/2019	182 KG	114 KG	68 KG	114 KG
16/04/2019	197 KG	141 KG	56 KG	141 KG
17/04/2019	170 KG	122 KG	48 KG	122 KG
18/04/2019	183 KG	118 KG	65 KG	118 KG
19/04/2019	196 KG	146 KG	50 KG	146 KG
20/04/2019	187 KG	143 KG	44 KG	143 KG
21/04/2019	162 KG	122 KG	40 KG	122 KG
22/04/2019	156 KG	106 KG	50 KG	106 KG
23/04/2019	176 KG	108 KG	68 KG	108 KG
24/04/2019	194 KG	124 KG	70 KG	124 KG
25/04/2019	190 KG	125 KG	65 KG	125 KG
26/04/2019	158 KG	118 KG	40 KG	118 KG
27/04/2019	182 KG	130 KG	52 KG	130 KG
28/04/2019	160 KG	96 KG	64 KG	96 KG
29/04/2019	170 KG	112 KG	58 KG	112 KG
30/04/2019	194 KG	128 KG	66 KG	128 KG
AVG -	181 Kg	123 Kg	57.76 Kg	123 Kg

Signature of the Incharge of Facility — Chander mohan

Chander Mohan,
C.S.I. M...
Mob:-98725-11264



Approx round figure given

MONTHWISE LOG BOOK/RECORD OF WASTE GENERATION & PROCESSING OF THE BWG.

NAME OF THE BULK WASTE GENERATOR — GCG-11

DATE	TOTAL WASTE GENERATED	WET WASTE	DRY WASTE	WET WASTE PROCESSED THROUGH COMPOSTING
01/12/2019	190 Kg	130 Kg	60 Kg	130 Kg
02/12/2019	186 Kg	132 Kg	54 Kg	132 Kg
03/12/2019	178 Kg	131 Kg	47 Kg	121 Kg
04/12/2019	194 Kg	134 Kg	60 Kg	134 Kg
05/12/2019	186 Kg	116 Kg	70 Kg	116 Kg
06/12/2019	192 Kg	137 Kg	55 Kg	137 Kg
07/12/2019	196 Kg	136 Kg	60 Kg	136 Kg
08/12/2019	180 Kg	125 Kg	55 Kg	125 Kg
09/12/2019	162 Kg	102 Kg	60 Kg	102 Kg
10/12/2019	168 Kg	98 Kg	70 Kg	98 Kg
11/12/2019	162 Kg	117 Kg	45 Kg	117 Kg
12/12/2019	190 Kg	120 Kg	70 Kg	122 Kg
13/12/2019	154 Kg	89 Kg	65 Kg	89 Kg
14/12/2019	170 Kg	101 Kg	69 Kg	101 Kg
15/12/2019	192 Kg	137 Kg	55 Kg	137 Kg
16/12/2019	186 Kg	116 Kg	70 Kg	116 Kg
17/12/2019	190 Kg	125 Kg	65 Kg	125 Kg
18/12/2019	169 Kg	99 Kg	70 Kg	99 Kg
19/12/2019	160 Kg	110 Kg	50 Kg	110 Kg
20/12/2019	170 Kg	110 Kg	60 Kg	110 Kg
21/12/2019	182 Kg	112 Kg	70 Kg	112 Kg
22/12/2019	186 Kg	121 Kg	65 Kg	121 Kg
23/12/2019	174 Kg	104 Kg	70 Kg	104 Kg
24/12/2019	160 Kg	105 Kg	55 Kg	105 Kg
25/12/2019	158 Kg	98 Kg	60 Kg	98 Kg
26/12/2019	192 Kg	117 Kg	75 Kg	117 Kg
27/12/2019	186 Kg	121 Kg	65 Kg	121 Kg
28/12/2019	180 Kg	110 Kg	70 Kg	110 Kg
29/12/2019	154 Kg	104 Kg	50 Kg	104 Kg
30/12/2019	170 Kg	155 Kg	55 Kg	155 Kg
31/12/2019	190 Kg	115 Kg	75 Kg	115 Kg
Avg -	177 Kg	116 Kg	62 Kg	116 Kg

Signature of the Incharge of Facility — chander mohan

Chander Mohan
C.S.I. M...
Mob:-98725-11264

MONTHWISE LOG BOOK/RECORD OF WASTE GENERATION &PROCESSING OF THE BWG

NAME OF THE BULK WASTE GENERATOR- POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS-11,CHANDIGARH;MONTH: January 2020

DATE	TOTAL WASTE GENERATED(kg)	WET WASTE (Kg)	DRY WASTE (Kg) (Windrow Plant)	WET WASTE PROCESSED THROUGH COMPOSTING((Kg)) (APPROX-ROUND FIGURE GIVEN) "Foodie" Composting Machine
1·1·20	190	124	65	124 Kg
2·1·20	164	120	44	120 "
3·1·20	178	134	44	134 "
4·1·20	194	126	68	126 Kg
6·1·20	192	130	62	130"
7·1·20	196	130	66	130Kg
8·1·20	180	122	58	122Kg
9·1·20	162	126	36	126 "
10·1·20	168	124	44	124 Kg
11·1·20	162	122	40	122 Kg
13·1·20	154	118	36	118 Kg
14·1·20	170	121	49	121 Kg
15·1·20	192	140	52	140 Kg
16·1·20	186	128	58	128 Kg
17·1·20	190	132	58	132 Kg
18·1·20	164	128	36	128 Kg
20·1·20	160	133	27	133 Kg
21·1·20	165	122	43	122 "
22·1·20	170	118	52	118 Kg
23·1·20	182	112	70	112 Kg
24·1·20	186	136	50	130 Kg
25·1·20	160	116	44	116 Kg
27·1·20	192	146	46	146 Kg
28·1·20	186	126	60	126 Kg
29·1·20	180	146	34	146 "
30·1·20	158	126	29	126 Kg
31·1·20	144	116	28	116 Kg
AVERAGE	4722/27 = 174.89	126.78	1299/27 = 48.11	126.78

Signature of the Incharge of Facility

MONTHWISE LOG BOOK/RECORD OF WASTE GENERATION &PROCESSING OF THE BWG

NAME OF THE BULK WASTE GENERATOR- POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS-11,CHANDIGARH;MONTH: Dec 2020

DATE	TOTAL WASTE GENERATED(kg)	WET WASTE (Kg)	DRY WASTE (Kg)	WET WASTE PROCESSED THROUGH COMPOSTING((Kg)) (APPROX-ROUND FIGURE GIVEN) Windrow Plant
1·12·20	18Kg	—	18Kg	18Kg
2·12·20	15Kg	—	15Kg	15Kg
3·12·20	10Kg	—	10Kg	10Kg
4·12·20	16Kg	—	16Kg	16Kg
5·12·20	20Kg	—	20Kg	20Kg
7·12·20	20Kg	—	20Kg	20Kg
8·12·20	18Kg	—	18Kg	18Kg
9·12·20	20Kg	—	20Kg	20Kg
10·12·20	15Kg	—	15Kg	15Kg
11·12·20	10Kg	—	10Kg	10Kg
12·12·20	15Kg	—	15Kg	15Kg
14·12·20	22Kg	—	22Kg	22Kg
15·12·20	20Kg	—	20Kg	20Kg
16·12·20	18Kg	—	18Kg	18Kg
17·12·20	15Kg	—	15Kg	15Kg
18·12·20	16Kg	—	16Kg	16Kg
19·12·20	20Kg	—	20Kg	20Kg
21·12·20	18Kg	—	18Kg	18Kg
22·12·20	15Kg	—	15Kg	15Kg
23·12·20	10Kg	—	10Kg	10Kg
24·12·20	12Kg	—	12Kg	12Kg
25·12·20	10Kg	—	10Kg	10Kg
26·12·20	8Kg	—	8Kg	8Kg
28·12·20	12Kg	—	12Kg	12Kg
29·12·20	10Kg	—	10Kg	10Kg
30·12·20	15Kg	—	15Kg	15Kg
31·12·20	8Kg	10Kg	18Kg	28Kg
AVERAGE	15·04	10Kg	15·04	15·41

Added to composting machine as Bulking agent

Added to composting machine as Bulking agent

Added to composting machine as Bulking agent

Signature of the Incharge of Facility

MONTHWISE LOG BOOK/RECORD OF WASTE GENERATION &PROCESSING OF THE BWG

Approx Round figure Given

NAME OF THE BULK WASTE GENERATOR- POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS-11,CHANDIGARH;MONTH: January 2021

DATE	TOTAL WASTE GENERATED(kg)	WET WASTE (Kg)	DRY WASTE (Kg)	WET WASTE PROCESSED THROUGH COMPOSTING((Kg)) (APPROX-ROUND FIGURE GIVEN) Windrow Plant
1·1·21	10	05	05	05 Kg
2·1·21	16	08	08	8 "
4·1·21	13	06	07	6 Kg
5·1·21	18	10	08	10 Kg
6·1·21	22	12	10	12 Kg
7·1·21	18	12	06	12 Kg
8·1·21	18	12	06	12 Kg
9·1·21	16	11	05	11 Kg
10·1·21	18	10	08	10 Kg
12·1·21	20	12	08	12 Kg
13·1·21	22	10	12	10 Kg
14·1·21	16	06	10	06 Kg
15·1·21	20	08	12	08 Kg
16·1·21	18	06	12	06 "
18·1·21	16	04	12	04 "
19·1·21	14	4	10	04 Kg
20·1·21	12	4	08	04 "
21·1·21	10	04	06	04 "
22·1·21	16	06	10	06 "
23·1·21	18	06	12	06 Kg
25·1·21	26	04	16	04 Kg
26·1·21	10	04, 8	6	9 Kg
27·1·21	18	10	8	10 Kg
28·1·21	12	4	8	4 Kg
29·1·21	16	6	10	6 Kg
30·1·21	22	10	12	10 Kg
AVERAGE	16·5 = 7.46	194/26	29.04	7.46

Composting

Bulking agent- "Foodie"

Signature of the Incharge of Facility

MONTHWISE LOG BOOK/RECORD OF WASTE GENERATION &PROCESSING OF THE BWG

NAME OF THE BULK WASTE GENERATOR- POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS-11,CHANDIGARH; 2021;MONTH: December 2021

DATE	TOTAL WASTE GENERATED(kg)	WET WASTE (Kg)	DRY WASTE (Kg)	WET WASTE PROCESSED THROUGH COMPOSTING((Kg)) (APPROX-ROUND FIGURE GIVEN) Windrow Composting Plant CTSC
1·12·21	140	120	20	120 Kg
2·12·21	148	126	22	126 Kg
3·12·21	152	128	24	128 Kg
4·12·21	138	120	18	120 Kg
6·12·21	160	140	20	140 Kg
7·12·21	138	120	18	120 Kg
8·12·21	130	112	18	112 Kg
9·12·21	126	114	12	114 Kg
10·12·21	128	112	16	112 Kg
11·12·21	124	110	14	110 Kg
13·12·21	158	140	18	140 Kg
14·12·21	148	130	18	130 Kg
15·12·21	152	140	12	140 Kg
16·12·21	140	126	14	120 Kg
17·12·21	136	120	16	120 Kg
18·12·21	128	112	16	112 Kg
20·12·21	152	136	16	136 Kg
21·12·21	130	112	18	112 Kg
22·12·21	142	122	20	122 Kg
23·12·21	128	116	12	116 Kg
24·12·21	142	128	14	128 Kg
25·12·21	140	126	14	126 Kg
27·12·21	156	138	18	138 Kg
28·12·21	142	130	12	130 Kg
29·12·21	148	130	18	130 Kg
30·12·21	150	140	10	140 Kg
31·12·21	146	132	14	132 Kg
AVERAGE	141.56	125.2	16.36	125.2

CTSC

TSC Windrow Composting Plant (i) Bioreactor (ii) WC

SSC (WCP)

TSC (i) Bioreactor (ii) WC

Signature of the Incharge of Facility

31/12/21

MONTHWISE LOG BOOK/RECORD OF WASTE GENERATION &PROCESSING OF THE BWG

NAME OF THE BULK WASTE GENERATOR-Khukhrain Bhawan,Plot No.1,Sector-35D ,CHANDIGARH: 2022January 2022

DATE	TOTAL WASTE GENERATED(kg)	WET WASTE (Kg)	DRY WASTE (Kg)	WET WASTE PROCESSED THROUGH COMPOSTING(Kg) (APPROX-ROUND FIGURE GIVEN)	
1·1·22	40	28	12	28Kg	
3·1·22	42	32	10	32Kg	Windrow Composting (SSC)
4·1·22	38	29	09	29kg	
5·1·22	40	29	11	29kg	
6·1·22	36	28	08	28kg	
7·1·22	38	28	10	28kg	
8·1·22	34	26	08	26Kg	
10·1·22	38	29	09	29kg	
11·1·22	40	28	12	28kg	
12·1·22	38	29	09	29kg	
13·1·22	42	30	12	30kg	TSC (WC; 100 DAYS)
14·1·22	44	36	08	36kg	
15·1·22	42	32	10	32kg	
17·1·22	46	38	08	38kg	
19·1·22	28	18	10	18kg	
19·1·22	40	28	12	28kg	
20·1·22	42	29	13	29kg	
21·1·22	40	28	12	28kg	
22·1·22	32	22	10	22kg	
24·1·22	36	28	08	28kg	
25·1·22	30	18	12	18kg	SSC (WC; 2nd)
26·1·22	34	22	12	22kg	
27·1·22	36	28	08	28kg	
28·1·22	28	18	10	18kg	
29·1·22	30	22	08	22kg	
31·1·22	32	24	08	24kg	
AVERAGE	766	707	259	707	

Signature of the Incharge of Facility

MONTHWISE LOG BOOK/RECORD OF WASTE GENERATION &PROCESSING OF THE BWG

NAME OF THE BULK WASTE GENERATOR- POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS-11,CHANDIGARH; 2022;MONTH: November 2022

DATE	TOTAL WASTE GENERATE D(kg)	WET WASTE (Kg)	DRY WASTE (Kg)	WET WASTE PROCESSED THROUGH COMPOSTING(Kg) (APPROX-ROUND FIGURE GIVEN)	
1·11·22	110	102	08	102kg	
2·11·22	116	110	06	110kg	
3·11·22	114	108	06	108 kg	
4·11·22	118	108	10	108kg	TSC
5·11·22	110	104	06	104kg	(Two stage Composting)
7·11·22	118	110	08	110kg	
8·11·22	112	104	08	104kg	
9·11·22	114	108	06	108kg	
10·11·22	118	108	10	108kg	
11·11·22	116	110	06	110kg	
12·11·22	110	104	06	104kg	
14·11·22	120	110	10	110kg	
15·11·22	114	106	08	106kg	
16·11·22	110	104	06	104kg	
17·11·22	112	104	08	104kg	
18·11·22	116	108	08	108kg	SSC (Single stage Composting)
19·11·22	108	102	06	102kg	
21·11·22	122	110	12	110kg	
22·11·22	118	110	08	110kg	
23·11·22	116	108	08	108kg	
24·11·22	118	108	10	108kg	
25·11·22	114	106	08	106kg	
26·11·22	112	106	06	106kg	
28·11·22	122	110	12	110kg	TSC (Two stage Composting)
29·11·22	120	110	10	110kg	
30·11·22	118	110	08	110kg	
AVERAGE	2996	2788	208	2788	

Signature of the Incharge of Facility

Topic 4: Vermi Composting

PGGCG-11, Chandigarh is carrying out vermicomposting in four pits below ground level inoculated with red earthworms (*Eisenia fetida*). The entire leaf litter of the college is periodically being added to the pits (10x3x2 feet) along with farm yard manure (FYM). Cow dung and chopped dried leafy materials are mixed in the proportion of 1:1 and are kept for partial decomposition for 15 – 20 days. A layer of 20cm of chopped dried leaves/grasses is kept as bedding material at the bottom of the bed and middle layer 10 cm of cow dung. Red earthworm (1500-2000) is released on the upper layer of bed. Bed is kept moist by sprinkling of water (daily), and it should be turned once after 30 days for maintaining aeration and for proper decomposition. Compost gets ready in 60 days. The finished product is 40-50% of the raw materials. Every 2-3 months the black and granular vermi-compost is being harvested, sieved, graded and utilized

Total Greenery of the campus (PGGCG-11, CHD)

Total Area of Campus: 1521600 Sq.ft

Covered Area (Building Area):603485.88 Sq.ft **(39.66%)**

Total Green Area = 918114.12 Sq.ft (60.34%)

Water Harvesting Area =21666.5 Sq.ft

Windrow Composting Plant and Bioreactor=1496 Sq.ft

Vermicomposting=344.4 Sq.ft

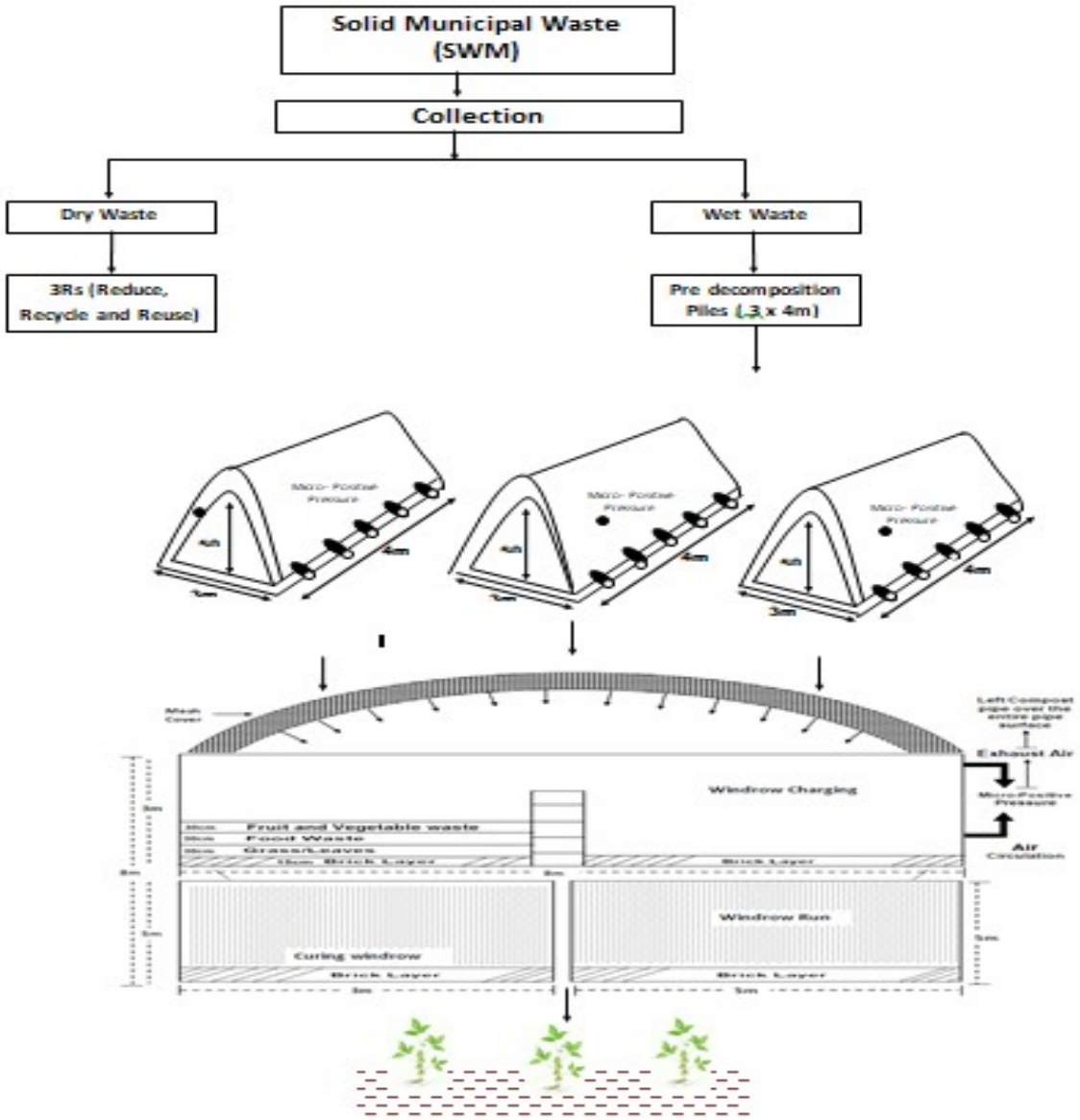
Total Area for Greenery and Environment Services including Water Harvesting, Windrow Composting plant and Bioreactor=**918114.82+21666.5+1496+344.4=941621.02**

Percentage of Greenery and Environment Services including Water Harvesting, Windrow Composting plant and Bioreactor =941621.72/1521600x100=61.88%

Basal Tree cover Area=504962.77(55%)

Topic 5: Audit of Campus Green Infrastructure, site planning and layout

(i)Layout of Windrow plant



(ii)Rainwater Harvesting Unit

POST GRADUATE GOVERNMENT COLLEGE FOR GIRLS, SECOR 11, CHANDIGARH

RAIN WATER HARVESTING UNIT

FILTRATION TANK

(35 ft x 11.5 ft x 6 ft)

RAINWATER TRAP UNIT

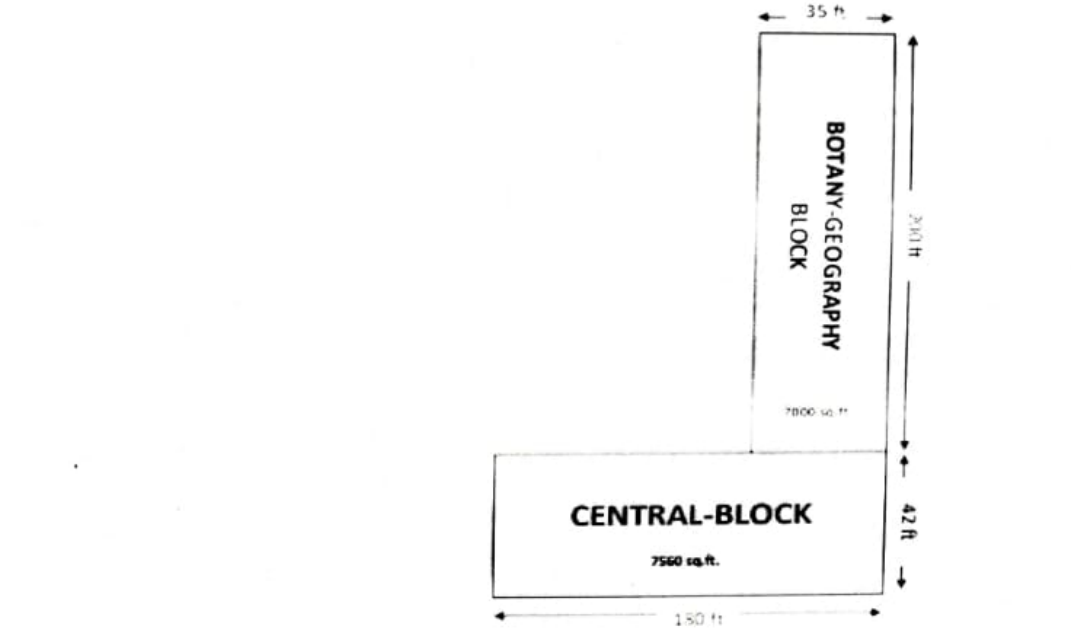
(3 ft x 3 ft x 3 ft)

Total roof top area for rain water harvesting

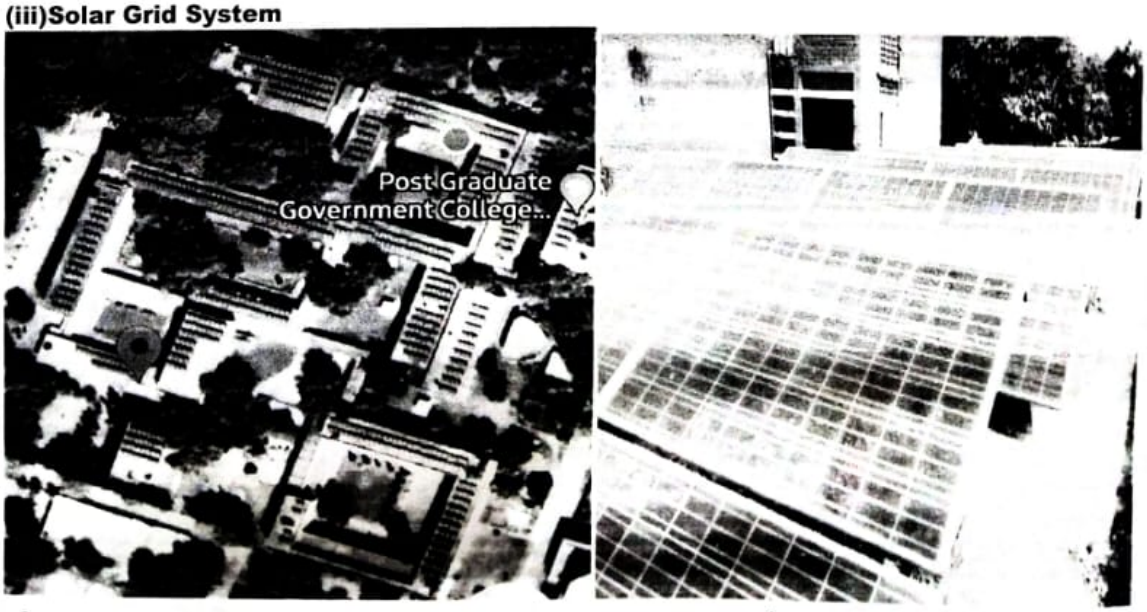
Botany Geography Block:	7000 sq. ft.
Central Block:	7560 sq. ft.
BCA Block:	6506 sq. ft.
TOTAL AREA:	**21,066 sq. ft.**

Total rainwater trap units connected to above said rooftop area: 22

Rain Water Harvesting UNIT
Roof Top Measurements in Blocks



(iii)Solar Grid System



Principal
Post. Graduate Govt. College for Girls
Sector 11, Chandigarh

BIRD MAPPING AT POST GRADUATE GOVT. COLLEGE FOR GIRLS, SECTOR-11, CHANDIGARH

Birds play an essential role in the functioning of the world's ecosystems causing a direct impact on human health, economy and food production.They occupy many levels of trophic webs, from mid-level consumers to top predators. Birds help to maintain sustainable population levels of their prey and predator species and, after death, provide food for scavengersanddecomposers.Many birds are important in plant reproduction through their services as pollinators or seed dispersers. Post Graduate Govt College for Girls, Sector-11, organised a bird watching activity under the supervision of Dr.Umesh Bharti, Department of Zoology to familiarise the students of MSc Zoology with the habits and day today activities of birds visiting the campus of college. They recorded the following birds in the campus in the month of October. Every month the record will be made.

1. Common name– Grey bellied cuckoo

Scientific name-*Cacomantispasserinus*

Classification-:

Kingdom- Animalia

Phylum- Chordata

Class- Aves

Order- Cuculiformes

Family- Cuculidae

Genus- Cacomantis

Species- C. passernius

Location- found near hostel -4 in PGGCG-11, Chandigarh

(Submitted by –JyotiRustagi ;Msc zoology ; Rollno- 12982)

Habits and habitat – the species prefer light woodland and cultivated areas. This species breeds in tropical southern Asia from India and Sri Lanka to South China and Indonesia.

- Comments- .One of smaller cuckoos, a total length of 23 cm.
- White patches are present on wings.
- Adults are mainly grey with white lower belly and undertail.
- Some females are dark brown in color.
- The juveniles resembles female but is of duller colour.
- They show brood parasitism.

Diet- feeds on variety of insects and caterpillar. They produce a sound pee- pip-pee- pee… ..

2. Common name: Common ground dove

Scientific name: *Columbinapasserina*

Classification:

Kingdom:Animalia

Phylum:Chordata

Class: Aves

Order:Columbiformes

Family:Columbidae

Genus:Columbina

Location in college: Near cafe shop of college on wires. Time: Around 2:40 pm (By: AkankshaBharol MSc-1st zoology, Roll No 12963)

Habits:

. It feeds predominantly on tiny seeds of grasses, weeds and crop milk.

. It breeds nearly year round but breeding appears to peak in response to resource availability.

. It has a less tendency to form flocks and appears to have a relatively limited repertoire of social behaviours.

. It builds flimsy nests and lay 2 eggs.

. Nestlings have rapid growth rates and can fly as early as 11 days post hatching.

3. **Commonname– Grey bellied cuckoo**

Scientific name-*Cacomantispasserinus*

Classification-: Kingdom- Animalia

Phylum- Chordata

Class- Aves

Order- Cuculiformes

Family- Cuculidae

Genus- Cacomantis

Species- C. passernius

Location- found near hostel -4 in PGGCG-11 ,chandigarh (Submitted by –JyotiRustagi ; Msc zoology ; Rollno- 12982)

Habits and habitat – the species prefer lightwoodland and cultivated areas.This species breeds in tropical southern Asia from India and Sri lankato South China and Indonesia.

- Comments- .One of smaller cuckoos, a total length of 23 cm.
- White patches are present on wings.
- Adults are mainly grey with white lower belly and undertail.
- Some females are dark brown in color.
- The juveniles resembles female but is of duller colour.
- They show brood parasitism.

Diet- feeds on variety of insects and caterpillar and they produce a sound pee- pip-pee- pee…

4. **Common Name: Indian rose ringed parakeet**

Scientific Name: *Psittaculakrameri*

Classification:

Kingdom: Animalia

Phylum: Chordata

Class: Aves

Order: Psittaciformes

Family: Psittaculidae

Genus: Psittacula

Species: P. krameri

Location in the College: Near main gate of college (Parwinder Kaur, Roll no. – 12981MSc. Zoology 1st year)

Time: around 9:00 am

Habits: 1) Usually feed on buds, fruits, vegetables, nuts, berries, and seeds.

2) Breeding season: These parrots typically breed between February and March.

3) Nesting Cavities: Old holes previously excavated by woodpeckers or barbets work well for these medium sized birds.

4) Egg Laying: Females lay an average clutch of between two and six small, whitish eggs. For the three weeks after laying, she incubates her eggs. Parental care is done by both father and mother.

5) They are herbivorous and non migratory species.

6) Both males and females have the ability to mimic human speech

5. **Common Name: Red Wattled Lapwing**

Classification:

Kingdom: Animalia

Phylum: Chordata

Class: Aves

Order: Chardriiformes

Family: Charadiidae

Genus: Vanellus

Species: indicus

LOCATION: College Playground, near stage, PGGCG 11(Simran, M. Sc Zoology I 12968)

HABIT AND HABITAT: Usually keeps in pairs or trios in well watered open country, ploughed fields, grazing land and margins

Occasionally firm large flocks ranging from 26 to 200 birds.

COMMENTS:

•Measures 30 to 35 cms in length and weighs 110 to 230 grams. Wingspan: 80 to 85 cms.

•A prominent white patch runs from the sides of the crown to the flanks along the sides of the neck.

•Bill is reddish with black tip.

•Male and female are similar in plumage.

•Diet: Consists mainly of insects, Beetles, ants, termites, butterflies, small gastropods. Also feed on seeds, grains and other plant matter.

•Reproduction: Breeding season is from March to September (In India)

These are monogamous and highly territorial. Prefer nesting sites close to water.

Both of the pair takes part in best building, incubation and care of chicks. The chicks hatch out in about 25 days.

6. **Common Name:Teetar or BhooraTeetar**

Classification:

Kingdom: Animalia

Phylum: Chordata

Class: Aves

Order: Galliformes

Family: Phasianidae

Genus: Francolinus

Species: pondicerianus

LOCATION IN PGGCG 11 - Near parking, Beside compost pit. TIME (2:20 pm)GUNJAN HOODA (12960)

•Grayish brown game birds with short stubbed tail. Usually seen in small groups

•Males are larger than females and have an anchor shaped black mark on throat.

•Resident in drier areas mostly plains throughout India upto about 1500ft. in the Himalayas.

•Normally found foraging on bare or low grass covered ground in shrubs.

•Feed on seeds, grains, insects particularly termites and beetles.

•Fast runners. They take to wing only when surprised in bushes.

•Average life span is 8 years

7. **Common Name – Yellow footed green pigeon**

Zoological Name – *Treronphoenicoptera*

CLASSIFICATION:

Kingdom – Animalia

Phylum – Chordata

Class – Aves

Order – Columbiformes

Family – Columbidae

Genus – Treron

Species-T.phoenicoptera

Location- In garden backside of hostel number 4, PGGCG-11(Timing-5:30pm) (Pooja Yadav

Roll number-12970)

Habit and habitat

•They prefer semi evergreen forests, deciduous forest, wooded habitats and secondary forests up to 800 meter. They commonly found in road side trees particularly Banyan and Peepal trees. Also visits gardens even inside towns.

•They also found in a wide range of wooded habitats including dry and moist deciduous forest, secondary growth, scrubland, groves of trees in open country, agricultural land, villages, overgrown gardens and tree lined roads.

•They are social birds. They found in pairs or small groups (up to 5 to 10 Individuals) and sometime large groups. They are gregarious and arboreal, only rarely descending to the ground.

•The flight is noisy, swift, strong, and direct, and the call is a series of about ten beautiful, mellow, musical whistles, which usually give the first indication of their presence in a locality.

•Yellow footed green pigeons are herbivores. They feed on various fruits, berries and crops. They also feed on buds, shoots and various grains.

- They forage in flocks. In the early morning they are often seen on the tops of emergent trees in dense forest areas. At the time of resting, they often perch on the highest branches of a tall tree in pairs or small groups.

8. **Common name- Sath Bhai**

Scientific name–*Argyastriata*

Classification

Kingdom - Animalia

Phylum - Chordata

Class - Aves

Order - Passeriformes

Family -Leiothrichidae

Genus - Argya

Species –A. straiata

Location- On roof of tuck shop;Time – 2:15 pm (Bhawna Sharma Rollno. – 12984)

Habits

•These are gregarious and social.

•These feed mainly on insects but also eat grains, nectar and berrirs.

•They are long lived and have been noted to live as long as 16.5 years in capitivity.

•Young birds have a dark iris. Older birds have a pale creamy colour iris.

•These breed throughout the year. Peak breeding is noted between March- April and July – September.

•These lay 3-4 eggs (can be 7) and are deep grey in colour.

9.**Common name: Indian myna**

Scientific name :*Acridotherestristis*

Classification

Kingdom : Animalia

Phylum. : Chordata

Class : Aves

Order. : Passeriformes

Family. : Sturnidae

Genus. : Acridotheres

Species. : Tristis

Location in college : hostel entrance gate Time : 2:30 pm (Hiteshi Vaidya, 12972)

•The common myna is brown with a black head .It has a yellow bill, legs and brown eye skin.

•Habitat: it is closely associated with human habitation

•They are accomplished scavengers , feeding on almost anything, including insects , fruits and vegetables, scraps and even fledging sparrows.

•They mate for life and compete for nesting sites. Favoured location are walls , ceilings of buildings ,tree hollows etc.

10. COMMON NAME : Common Pigeon/ Rock Dove

SCIENTIFIC NAME : Columba livia

*CLASSIFICATION :

Kingdom - Animalia

Phylum - Chordata

Class - Aves

Order - Columbiformes

Family - Columbidae

Genus– Columba

LOCATION : Hostel number 4 window legde PGGCG-11(PRACHI GUPTA, Roll No. – 12957)

HABITAT : Has a restricted natural resident range in Western and Southern Europe, North Africa and South Asia.Naturally occur on cliffs, usually on coasts but also found on artificial cliff faces created by apartment buildings.

HABITS:

- Often found in pairs during the breeding season but usually gregarious.
- They are generally monogamous with two young/ squabs per brood.
- Feed on the ground in flocks/ individually.
- They are scavengers.
- Two prominent black bars distinctive on it's pale grey wings.
- When disturbed, a pigeon in group will take off with a noisy clapping sound that is a cue for others in the flock to take flight.
- They are able to dip their bills into water and drink continuously without having to tilt their heads back like in most birds.
- Best in flimsy platform of straw and sticks, often laid on window ledges of buildings.
- Breed at anytime of the year but peak times are spring and summer.

11. Common Name: **Pigeon;Dove; white rock dove**

SCIENTIFIC NAME: - *Columba livia*

CLASSIFICATION

KINGDOM – Animalia

PHYLUM - Chordata

CLASS - Aves

ORDER - Columbiformes

GENUS - Columba

LOCATION IN PGGCG -11- Near parking, TIME 12:45PM (POONAM, ROLL NO.12987)

HABITS :

- Small pigeon {7.6 to 8.4 inches}
- Found in pairs, groups, flocks
- Fly in rapid, undulating motion
- Found commonly in streets and ground
- Breeding occur from October and January; March and June

Dr. Umesh Bharti
Zoology Department
PGGCG-11
Chandigarh

Prof. (Dr) Anita Kaushal
Principal
PGGCG-11
Chandigarh

Principal
Post. Graduate Govt. College for Girls
Sector 11, Chandigarh