# GREEN AUDIT REPORT

## KAPTIPADA DEGREE COLLEGE, NUASAHI, MAYURBHANJ

PRESENTED BY:

DEPARTMENT OF BOTANY



# ACKNOWLEDGEMENT

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# ABSTRACT

The project" green Audit" aims to analyse the environmental correlation, which will have an impact on the eco-friendly ambience. The main objective of the project "green audit" is to promote the environment management and conservation in our college campus. In our project we had focus on counting the status of floras in our campus basing upon three categories–Tree, Herb and Shrub, calculating the oxygen produced by the floras and the carbon dioxide emitted by total persons, vehicles and electronic gadgets per week in an approximate value. We prepared an estimated data consisting of 853 numbers of plants (trees, herbs and shrubs) and 692 persons in our campus having 4 (four)acres of area. So as per our study and calculation, amount of oxygen released by the total plants and the carbon dioxide released by the total persons, vehicles and electronic gadgets are1851010 and 19000 litres per week respectively. By comparing the values of production of $O_2$ to $CO_2$ we concluded that the amount of $O_2$ is enormous as compared to the amount of $co_2$ produced in the campus. This concluded that our campus environment is an quite green environment.

# INTRODUCTION

Green Audit is a process of systematic identification , quantification, recording, reporting and analysis of components of environmental diversity of institute. It aims to analyse environmental practice swithin and outside of the concerned place, which will have an impact on the eco-friendly atmosphere. Green Audit is usefull tool for college to determine how and where they are using the most energy or water or resources.

It can create health consciousness and promote environmental awareness, values and ethics. It could also be stated that institutional self-enquiry is a natural and necessary out growth of a quality educational institution. It is part of corporate social responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through carbon foot print reduction measures.

# OBJECTIVES

The main objective of the Green Audit Is to promote the environment management and conservation in the Kaptipada Degree College, Nuasahi, Mayurbhanj.

In Recenttime, the Green Audit of an institution has been becoming a paramount important for self-assessment of the institution which reflects the role of the institution in mitigating the present environmental problems. Our environment is clean since its inception. Therefore, the purpose of the present green audit is to identify, quantify, describe and prioritize framework.

The main objectives of carrying out Green Audit are in order to perform green audit included different tools such as preparation of physical inspection of the campus observation and review of the documentation data analysis, measurements and recommendations.

- Review Back ground information
- Green area management
- Energy conservation
- Oxygen level &Emission of Carbon Dioxide

# MATERIAL METHOD

The project was done in our college by the students with assistance of HOD of Botany Department Mrs. Sujata Pradhan and faculties members of Botany department of Kaptipada Degree College, Nuasahi, Mayurbhanj. Three groups of students each having 4 students or participants. We measured both length &width of all the plants using a measurement tape identified them with the help of e-florabook, then categorized them into trees, herbs and shrubs. Then we analysed which one was a flowering plant or which one was a non–flowering plant. Later we prepared a list according to their square feet &campus area. We also made the final list of students trength according the data we have.

| | |
|---|---|
| **CAMPUS AREA** | **4 acres** |
| **STUDENTS TRENGTH** | 650 Nos |
| **STAFF** | 42 Nos |
| **TOTAL PERSONS** | 692 Nos |

| Table-1 | | | | | | |
|---|---|---|---|---|---|---|
| **ANALYSIS** | | | | | | |
| **Sl No.** | **Plant Name** | **No. Of Plants** | **Plant Type** | **Length** | **Width** | **Flowering/ Non-Flowering** |
| 1 | Azadirachta Indica (neem) | 20 | Tree | 20 Mtr. | 2.5 Mtr. | Flowering |
| 2 | Aegle Marmelos (Indian Bael) | 5 | Tree | 8 Mtr. | 5 CM | Flowering |
| 3 | Mangifera Indica (Mango) | 30 | Tree | 20 Mtr. | 5.3 CM | Flowering |
| 4 | Artocarpus Heterophyicus (Jack Fruit) | 6 | Tree | 21 Mtr. | 7 CM | Flowering |
| 5 | Tamaridus Indica (Tamarind) | 4 | Tree | 25 Mtr. | 8 CM | Flowering |
| 6 | Sharea Rabasta (Sal) | 15 | Tree | 50 Mtr. | 2 CM | Flowering |
| 7 | Tectona Grandis (Teak / Shagwn) | 20 | Tree | 40 Mtr. | 12.5 MM | Flowering |
| 8 | Cccimum Basilicum | 10 | Herb | 24 Inch | | Flowering |
| 9 | Carica Papaya | 6 | Tree | 10 Mtr. | | Flowering |
| 10 | Tagetes (Marigold) | 30 | Herb | 6-24 Inch | | Flowering |
| 11 | Mimosa Pudica | 25 | Creeper | 3 Ft. | | Flowering |
| 12 | Ocimum Sanctum | 20 | Shrub | 4 Ft. | | Flowering |
| 13 | Ficus Benghalensis | 2 | Tree | 90 Ft. | 2 Ft. | Flowering |
| 14 | Ficus Religiosa | 3 | Tree | 100 Ft. | 20 Ft. | Flowering |
| 15 | Anacardium Occidentale (cashew) | 10 | Tree | 12 Mtr. | | Flowering |
| 16 | Eucalyptus Globulus | 20 | Tree | 150 Ft. | 5 Ft. | Non-Flowering |
| 17 | Bougainvillea Glabra | 10 | Shrub | 30 Ft. | | Flowering |
| 18 | Psidium Guajava | 5 | Tree | 10 Mtr. | 20 CM | Flowering |
| 19 | Coces Nucifera (Coconut) | 15 | Tree | 80 Ft. | | Flowering |
| 20 | Phoenix Dactylifera (Date palm tree) | 10 | Tree | 60 Ft. | | Flowering |
| 21 | Aloe Barbadensis (Aloevera) | 10 | Soccutent | 2 Ft. | 2 Ft. | Non-Flowering |
| 22 | Murraya Koenigii (Curry Leaves) | 3 | Tree | 15 Ft. | | Flowering |
| 23 | Saraca Asoca | 6 | Tree | 15 Mtr. | | Flowering |

| | | | | | | |
|---|---|---|---|---|---|---|
| 24 | Citrus Limon | 2 | Tree | 10 Ft. | | Flowering |
| 25 | Thuja Occidentatis | 6 | Tree | 5 Ft. | | Non-Flowering |
| 26 | Cardacum Variegatum (Croton) | 20 | Shrub | 8 Ft. | | Non-Flowering |
| 27 | Madagascar Periwinkle | 30 | Herb | 30 Inch | | Flowering |
| 28 | Maringa Oleifera | 6 | Tree | 12 Mtr. | 45 CM | Flowering |
| 29 | Capsicum Annum (Chilly) | 6 | Shrub | 4 Ft. | 5 CM | Flowering |
| 30 | Sida Cardifolia (Bajramuli) | 5 | Shrub | 70 Inch | | Flowering |
| 31 | Achyrantias Aspera (Afamaranga) | 30 | Herb | 90 CM | | Non-Flowering |
| 32 | Elacocartus Ganitrus | 1 | Tree | 31 mtr. | | Flowering |
| 33 | Saccharum Spontaneum (Kasatandi) | 50 | Grass | 5 Mtr | | Flowering |
| 34 | Coriandrum Sativur (Corrinder) | 30 | Herb | 50 CM | | Flowering |
| 35 | Senna Tora | 40 | Herb | 90 CM | | Flowering |
| 36 | Coccinia Grandis | 15 | Cvire | 3 Mtr. | | Flowering |
| 37 | Cyperus Rotundus (Grass) | 50 | Grass | 140 CM | | Non-Flowering |
| 38 | Chrysanthemum Indicum (Sebati pink) | 20 | Herb | 24 Inch | | Flowering |
| 39 | Chrysanthemum Muttiform (sebati yellow) | 20 | Herb | 24 Inch | | Flowering |
| 40 | Collocasia Esculenta | 30 | Herb | 6 Inch | | Non-Flowering |
| 41 | Thevetia Peruviara | 6 | Tree | 12 Mtr. | | Non-Flowering |
| 42 | Tabernaemon Divaricata | 10 | Herb | 2 Mtr. | | Flowering |
| 43 | Hibiscus Rosasinensis (Mandara) | 4 | Shrub | 10 Ft. | 3 Ft. | Flowering |
| 44 | Ixora Chinersis (rangani) | 10 | Shrub | 15 Ft. | 3 Ft. | Flowering |
| 45 | Anthocephalus Cadamba (Kadamba) | 2 | Tree | 45 Mtr. | 100 CM | Flowering |
| 46 | Calotrofis Gigantea (Arakha) | 20 | Shrub | 4 Mtr. | | Flowering |

| | | | | | | |
|---|---|---|---|---|---|---|
| 47 | Tridax Procumbers | 30 | Herb | 50 CM | | Flowering |
| 48 | Araucaria Columnaris | 6 | Tree | 60 Mtr | | Non-Flowering |
| 49 | Araucaria Nemorosa | 4 | Tree | 70 Mtr. | | Non-Flowering |
| 50 | Ligustrum Ovalifolium | 4 | Shrub | 15 Ft. | | Flowering |
| 51 | Brunfelsia Uniflora | 5 | Shrub | 3Mtr. | | Flowering |
| 52 | Cyanthillium Cinereum | 20 | Herb | 120 CM | | Flowering |
| 53 | Mikaria Scanders | 30 | Herb | 10 Ft. | | Flowering |
| 54 | Mazus Pumilug | 30 | Creeper | 30 CM | | Flowering |
| 55 | Rhoeo Disolor | 20 | Shrub | 50 CM | | Non-Flowering |
| 56 | Butea Monosperma | 6 | Tree | 15 Mtr. | | Non-Flowering |
| **Total No. of Plants** | | **853** | | | | |

# Table-2

| Classroom / Offices | Total Lights | LightType | Fan | AC | CCTV | BulbHolders | PC |
|---|---|---|---|---|---|---|---|
| Room-1 (History) | 6 | LED | 4 | | | | 7 (6 PC, 1 Projector) |
| Room-2 (Pol. Sc.) | 5 | LED | 4 | | | | |
| Room-3 (Edn.) | 5 | LED | 5 | | | | |
| Room-4 (Odia) | 2 | LED | 3 | | | | |
| Room-5 (Phil) | 2 | LED | 4 | | | | |
| Room-6 (Common) | 2 | LED | 3 | | | | |
| Room-7 (Botany) | 3 | LED | 3 | | | | |
| Room-8 (Zoology) | 8 | LED | 4 | 1 (Freeze) | 1 | | |
| Room-9 (Phy) | 8 | LED | | | 1 | | |
| Room-10 | 2 | LED | 6 | | 1 | | |
| Room-11 (Chem) | 7 | LED | 2 | | 1 | | |
| Room-12 | | | | | | | |
| Toilet | 6 | LED | | | | | |
| Room-13 (Math) | 4 | LED | 3 | | | | |
| Office | 4 | LED-3Nos BAR-1Nos | 3 | 1 | | | |
| Exam Sec | 2 | BAR | 1 | | | | |
| Library | 8 | LED | 7 | | 2 | | |
| Seminar Hall | 8 | LED | 8 | | 1 | | |
| Principal Office | 2 | LED | 3 | | 1 | | |
| Staff Common | 3 | BAR | 2 | | 1 | 1 TV | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Girls Common | 3 | BAR | 2 | | | | |

# CALCULATION AND CONCLUSION

## OXYGENPRODUCTION

- 1 PLANT=310 lt/day
- 1 PLANT=2170 lt/week
- 853 PLANT=1,851,010 lt/week

## OXYGENCONSUMPTION

- 1 PERSON CONSUMES OXYGEN IN ONE WEEK = 25 lt
- 692 PERSONS CONSUMED OXYGEN IN ONE WEEK=17300 lt

## CARBON DIOXIDE PRODUCTION

- 1KW produces 870gm. of $CO_2$
- So,1W produces 0.87gm. of $CO_2$

| Types of Electronic Device | Amount of Electricity produced | 1 device Producing $CO_2$ | Total No.of Devices Present | Amount of $CO_2$ produced in 1hr | Working Hour of The Electronic Device | Total Amount of $CO_2$ Produced |
|---|---|---|---|---|---|---|
| LED | 9W | 0.87×9= 7.83gm. | 81 Nos | 7.83×81= 634.23gm. | 10hrs. | 634.23×10=63 42.3gm./day |
| FAN | 320W | 0.87×320= 278.40gm. | 67 Nos | 278.40× 67= 18652.80gm. | 10hrs. | 18652.80 ×10=186529gm./day |
| AC / Freeze | 1000W | 0.87×1000= 870gm. | 2 Nos | 870×2= 1740gm. | 5hrs. | 1740 ×10=17400 gm./day |
| COMPUTER | 200W | 0.87×200= 174gm. | 8 Nos | 174×8= 1392gm. | 10hrs. | 1392 ×10=13920 gm./day |
| BARLIGHT | 40W | 0.87×40= 34.80gm. | 9 Nos | 34.80×9= 313.2gm. | 10hrs. | 313.2 ×10=3132gm./day |
| CCTV | 50W | 0.87×50= 43.50gm. | 9 Nos | 43.50×9= 391.5 gm. | 5hrs. | 391.5 ×5=1957.5gm./day |

- A human produces the same amount of $CO_2$ as it intakes $O_2$.
- So, 692 persons produces 17300 lt. of $CO_2$ in a week.
- 1 Vehicle produces 100gm. Of $CO_2$ in 1 hour. But in campus vehicle usage is of an average of 30 minutes. i.e., 1 vehicle produces 50 gm. Of $CO_2$.
- So, Average of 50 vehicles produces 2500gm. Of $CO_2$ per day.
- So weekly the Vehicles in campus produces 17,500gm. Of $CO_2$.
- Weekly the electronic devices produces 1,60,4966gm.of $CO_2$.
- So weekly from the campus we get both from vehicle and electronic gadgets are 1,622,466gm.of $CO_2$.
- Converting it into liters, we get 1622.46lt.of $CO_2$.
- As mentioned above, the humans present in the campus produce 17300lt.of $CO_2$.
- So,adding both of them we get 18,922lt.of $CO_2$,which is Approximately **19000lt.**of $CO_2$.
- Amount of Oxygen released = 1,851,010 lt.
- Amount of Carbon Dioxide released= 19000lt.
- Comparing to the amount of $O_2$ produced and amount of $CO_2$ produced we conclude that the amount of $O_2$ is very large as compared to the amount of $CO_2$ produced.
- This concludes that our Campus environment is a fully-green environment.