



**BHARATIYA JAIN SANGHATANA'S  
ARTS, SCIENCE AND COMMERCE  
COLLEGE, WAGHOLI, PUNE.**

**GREEN AUDIT REPORT 2019**





# **BHARATIYA JAIN SANGHATANA'S ARTS, SCIENCE AND COMMERCE COLLEGE, WAGHOLI, PUNE.**

BHARTIYA JAIN SANGHATANA'S "WAGHOLI  
EDUCATIONAL REHABILITATION CENTER"  
(WERC)

## **GREEN AUDIT REPORT 2014 - 2019**



## **Preface....**

The concept of 'GREEN AUDIT-2019' was put forth by Hon. ShriShantilaljiGulabchandjiMuttha, Founder President - Bharatiya Jain Sanghatana, Pune during dialog about the tree plantation, environmentally sustainable development of the campus and at that very moment we decided to take this opportunity.

Concept of green audit is not limited to the decorating the college campus but also corporate responsibility, with quality education keep college environment eco-friendly with its facilities.

Attempt has been made on that direction by landscaping and plantation, solid waste management, recycling of waste water, conservation of energy, water conservation, rainwater harvesting and minimum of usage of paper.

With keeping this view our campus is clean and fresh, we tries to inculcate value of surrounding environment amongs the students through Environmental awareness activities like 'nature club', 'NSS', 'Cycle rally 'No vehicle dayceleberation, Quiz competition on environment, 'Salad Decoration Competition ', Flower Arrangement,Gardening development and nursery management course, Mushroom cultivation course, Production of vermicompost from solid waste and activity like Competition on Preparation of 'Best from Waste', preparation of trenches and plantation of tree sapling on ' Greensunrise hill', greenery of the campus is maintain by the student of 'KarmaveerBhaurao Earn and Learn Scheme' and Botany departments.

Because of the greenery and eco-friendly sustainable environment, college campus becomes more charming, refreshing and healthier. This increases efficiency of every element of the college.

**“GROW GREEN LIVE GREEN”**

**Editors**

**(Prof. ArtiSarode)**

Asst. Professor

**( Dr. Devidas N. Patil)**

HEAD, Department of Botany

## **Acknowledgement....**

**We take this opportunity to express our gratitude towards the president of the Institute, Hon. Founder President, ShriShantilalji Murtha and President, ShriPrafulajiParakhBhatiya Jain Sanghatana, Pune and Chairman of Local Management Committee, Hon. AbhayajiMunot and all Hon. Members of the local management committee of the college for their valuable guidance, continuous encouragement, generous gift of time with constructive criticism& suggestion during the composition of work of entire ‘Green Audit Report-2019’.**

**We also express our deep sense of gratitude to our Hon. Principal Major, Dr.Ashok V. Giri, Vice-Principal Dr. DesardaKishor who inspired and encouraged us throughout the work. We great fully acknowledge the help provided by him on several occasions.**

**It is right time to express our deep sense of gratitude to our college Prof. Dr. S. D. Gaikwad, Dr. J.C. More, Dr. Madhuri V Deshmukh, Prof.Sonawne S. M.for their continuous help, inspiring resoluteness and sensible suggestion without any reservation whenever we approached throughout investigation.We are thankful to Mr. Jadhav Sir for his valuable guidance.**

**We are equally thankful to our colleagues teaches and students of F.Y.B.Sc - Anshika, Chaitrali, Kunal, Sanket, Pavan, Madhav which helps during data collection and identification of plants.**

**Dr. D.N. Patil**

**Coordinator , Green Audit Report**

## **Principal Message....**

I express my hearty wishes for success of this publication of 'Green Audit 2014-2019'.

WERC is one of the unique spiritual educational campus with quality education we are aware about the environment with cultural development, as fundamental feature of Indian ancient philosophy is a good environmental sense..

Efforts made by our institution and senior college for the protection of environment and biodiversity conservation is really unique, which may become pilot project gives message about to avoid the for coming natural disaster like global warming, land sliding etc.

We try to maintain environment eco-friendly through activities like landscaping and plantation, rain water harvesting, solid waste Management, sewage treatment plant, energy conservation, e-waste management, and paperless technology to minimize the use of paper basically prepare from the plants

The ultimate aim of our institution to develop youth as fertile probe who understand for their social responsibilities.

I express my hearty wishes for success of this movement of Green Audit Report for the new beginning of the conservation from the doorstep of the people.

Our green audit reflects assessment and achievement of vision and mission of the college.



**PRINCIPAL**  
Bharathi Jain Sanghatana's  
Art, Science & Commerce College  
Wagholi, Pune - 412207

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**Bhartiya Jain Sanghatana's Arts, Science, and  
Commerce College, Wagholi, Pune- 412207.**

**GREEN AUDIT REPORT COMMITTEE**

**(2014- 2019)**

<b>Sr. No</b>	<b>Name</b>	<b>Designation</b>	<b>Committee Role</b>
1	Dr.Patil Devidas Narhar	Head, Department of Botany	Coordinator
2	Mr. Patil H.B.	Asian Certification ( Auditor)	External Auditor
3	Dr. Gaikwad Sanjay	IQAC, Coordinator	Internal Auditor
4	Dr. More J.C.	Head, Dept. of Geography, Chairman, BOS, Geography, (SPPU)	Internal Auditor
5	Dr. Deshmukh M.V.	Head, Department of Zoology	Internal Auditor
6	Prof. Arti Sarode	Assit. Prof. Dept. Of Botany	Member



**Principal**

**Major Dr. Ashok Giri**

**PRINCIPAL**

**Bhartiya Jain Sanghatana's  
Art, Science & Commerce College  
Wagholi, Pune - 412207**

# Green Audit Certificate

This is to certify that **Bharatiya Jain Sanghatana's Arts, Science and Commerce College, Wagholi, Pune** has conducted "Green Audit" in April 2019 to assess the green initiative planning, efforts, activities implemented in the college campus like Plantation, Waste Management, Rain water harvesting, Conservation of Energy, Paperless technology and various Environment Awareness activities. This green audit is also aimed to assess impact of green initiatives for maintenance of the campus eco-friendly.

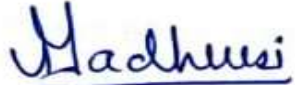
**Place:** Wagholi

**Date:** 10.04.2019

  
**Mr. Patil H. D.**  
External Auditor



  
**Dr. Devidas N. Patil.**  
Coordinator

  
**Dr. Deshmukh Madhuri**  
Internal Auditor

  
**Dr. More J. C.**  
Internal Auditor

  
**Dr. Sanjay Gaikwad**  
IQAC Coordinator

  
**Principal**

**IQAC Coordinator**  
Bharatiya Jain Sanghatana's  
Arts Science and Commerce College Wagholi

**Major Dr. Ashok Giri**  
**PRINCIPAL**  
Bharatiya Jain Sanghatana's  
Art, Science & Commerce College  
Wagholi, Pune-412207



continues to offer shelter to orphans even today. Hon'ble President Dr. A. P. J. Abdul Kalam visited WERC, Pune and gave donation from his personal account.

The tremendous success of BJS-EDUQIP prompted Education Department of Goa Government to execute the same programme in about 1,700 state-run schools in Goa State. The same programme is being implemented in all the 550 Navodaya Vidyalayas all over India.

### **Location (WERC)**

WERC is located on **Pune-Ahamadnagar National Highway** (Maharashtra), East of the Pune City at Wagholi as sub urban area of Pune City spreaded over 10 acre.

Country	India
State	Maharashtra
District	Pune
Taluka	Haveli
Village	Wagholi
<b>Government Type</b>	<b>Grampanchayat</b>
Sarpanch	Vasundharatai Shivdas Ubale
Area <sup>2</sup>	
Metropolis	10 acers
Population	<b>7,169</b>
Demonym	BJS
Area Code (s)	+91-20
Official language	Marathi

## Satellite Image of BJS Campus



### A) Geography :

Pune is located 560 m (1,840 ft) above sea level on the western margin of the Deccan plateau. It is situated on the leeward side of the Sahyadri mountain range, which forms a barrier from the Arabian sea. It is a hilly city, with its tallest hill, Vetal Hill, rising to 800 m (2,600 ft) above sea level. Just outside the city, the Sinhagad fort is located at an altitude of 1300 m. It lies between 18° 32"North latitude and 73° 51"East longitude.

Central Pune is located at the confluence of the Mula and Mutha rivers. The Pavana and Indrayani rivers, tributaries of the Bhima river, traverse the northwestern outskirts of metropolitan Pune.

**B) LATITUDE AND LONGITUDE**

(WGS84): 18° 34' North , 73° 58' East

**C) SOIL TYPE:**Lateritic, hard rock.

**D) CLIMATE:**Pune has a hot semi-arid climate (BSh) bordering with tropical wet and dry (Aw) with average temperatures ranging between 20 to 28 °C (68 to 82 °F).

Pune experiences three seasons: summer, monsoon and a winter

Typical summer months are from March to May, with maximum temperatures ranging from 30 to 38 °C (86 to 100 °F). The warmest month in Pune is April; although summer doesn't end until May, the city often receives heavy thundershowers in May (and humidity remains high). Even during the hottest months, the nights are usually cool due to Pune's high altitude. The highest temperature ever recorded was 42.3 °C (108.1 °F) on 30 April 1897.<sup>[34]</sup>

The monsoon lasts from June to October, with moderate rainfall and temperatures ranging from 22 to 28 °C (72 to 82 °F). Most of the 722 mm (28.43 in) of annual rainfall in the city fall between June and September, and July is the wettest month of the year. Hailstorms are also common in this region.

Winter begins in November; November in particular is referred to as the Rosy Cold (literal translation) (Marathi: गुलाबीथंडी). The daytime temperature hovers around 28 °C (82 °F) while night temperature is below 10 °C (50 °F) for most of December and January, often dropping to 5 to 6 °C (41 to 43 °F). The lowest temperature ever recorded was 1.7 °C (35 °F) on 17 January 1935.<sup>[35]</sup>

## Climate data for Pune

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
<b>Record high °C (°F)</b>	35.3 (95.5)	38.9 (102)	42.8 (109)	43.3 (109.9)	43.3 (109.9)	41.7 (107.1)	36.0 (96.8)	35.0 (95)	36.1 (97)	37.8 (100)	36.1 (97)	35.0 (95)	43.3 (109.9)
<b>Average high °C (°F)</b>	30.3 (86.5)	32.8 (91)	36.0 (96.8)	38.1 (100.6)	37.2 (99)	32.1 (89.8)	28.3 (82.9)	27.5 (81.5)	29.3 (84.7)	31.8 (89.2)	30.5 (86.9)	29.6 (85.3)	32.0 (89.6)
<b>Daily mean °C (°F)</b>	20.5 (68.9)	22.0 (71.6)	25.6 (78.1)	28.8 (83.8)	29.7 (85.5)	27.4 (81.3)	25.3 (77.5)	24.5 (76.1)	25.1 (77.2)	25.0 (77)	22.3 (72.1)	20.2 (68.4)	24.7 (76.46)
<b>Average low °C (°F)</b>	11.4 (52.5)	12.7 (54.9)	16.5 (61.7)	20.7 (69.3)	22.5 (72.5)	22.9 (73.2)	22.0 (71.6)	21.4 (70.5)	20.7 (69.3)	18.8 (65.8)	14.7 (58.5)	12.0 (53.6)	18.0 (64.4)
<b>Record low °C (°F)</b>	1.7 (35.1)	3.9 (39)	7.2 (45)	10.6 (51.1)	13.8 (56.8)	17.0 (62.6)	18.9 (66)	17.2 (63)	13.2 (55.8)	9.4 (48.9)	4.6 (40.3)	3.3 (37.9)	1.7 (35.1)
<b>Precipitation mm (inches)</b>	0 (0)	0.5 (0.02)	5.3 (0.209)	16.6 (0.654)	40.6 (1.598)	116.1 (4.571)	187. 2 (7.37)	122.3 (4.815)	120.1 (4.728)	77.9 (3.067)	30.2 (1.189)	4.8 (0.189)	721.7 (28.413)
<b>Avg. precipitation on days</b>	0.0	0.1	0.6	1.1	2.8	7.5	12.8	10.6	7.4	4.6	2.0	0.4	49.9
<b>% humidity</b>	56	46	36	36	48	70	79	82	78	64	58	58	59.3
<b>Mean monthly sunshine hours</b>	291.4	282.8	300.7	303.0	316.2	186.0	120.9	111.6	177.0	248.0	270.0	288.3	2,895.9

Source #1: Temperature and Precipitation: IMD (1951-1980)<sup>[36][37]</sup>

Source #2: Sun hours and Humidity: NOAA (1971-1990)<sup>[38]</sup>

## ❖ Executive Summary

Bharatiya Jain Sanghatana's Wagholi Educational and Rehabilitation Center (WERC), Pune, established in 1997 leads 10 acres of campus, where with senior college there is administrative building, hostel, canteen, Secondary and higher secondary school, staff quarters, Ladies hostel. About 3000 population provided with facility of water, canteen, toilet, electricity.

Before establishment of this campus it was bare land, after construction of various building we develop greenery in surrounding area of the building, with keeping view to create eco-friendly environment in this campus we are aware about green audit of this campus, We undertake activities like landscaping and plantation, processing and reuse of Solid Waste of the plant debris and canteen, Recycling of the waste water, Rainwater harvesting, Energy conservation, e-waste management to keep the environment of the campus clean and fresh enhance educational environment.

Green audit is defined as it is ultimately about corporate responsibility. It is the process of assessing the environment impact of an organization, process, project, product etc. An examination of what a company is doing to prevent its business activities from harming the environment ( Macmillan ).

We are making green audit of campus and facilities to keep environment of college campus eco-friendly, we conduct following activities

## ❖ Objectives of the Green Audit

The main objective of the green audit is to promote the Environment Management and Conservation in the College Campus. The purpose of the audit

is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards.

The main objectives of carrying out Green Audit are:

- To introduce and aware students to real concerns of environment and its sustainability
- To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use on the campus.
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requires high cost.
- To bring out a status report on environmental compliance

## Methodology :

Green audit of the campus is prepared by various methods including different tools such as questionnaire, physical inspection of the campus, observation and review of the documents, interviewing key persons and data analysis, Observation and recommendations. The study covered the following areas to summaries the present status of environmentally sustainable management on the campus.

- Landscape and plantation
- Solid Waste management
- Sewage Waste management
- E-waste management
- Energy Conservation
  
- Rain water harvesting
  
- Environmental activities

## ❖ LANDSCAPING AND PLANTATION

**Landscaping:** Landscape is an art to develop specific piece of land into green with aesthetic view commonly called as 'beautification'.

**ACTIVITY :-**Earlier our college campus land was a bare land. After establishment of the wagholi education rehabilitation center established in 1997, landscaping is done, 10 acres of land has various buildings such as Hostel, Canteen, School, Senior college, Toilet building, Staff quarters ( A,B,C Type) and Ladies hostel surrounding area of the building were bare land of rocks because of water scarcity it was very difficult to made campus green, it was disaster for us because without plants how this campus can breath after 18 years of efforts now our project developed as one of the Eco-friendly campus whole campus is divided for specific type of plantation now in our campus green by planting 849 number of 90 species of plants. Students of Earn & Learn, N.S.S., Nature Club, Department of Botany and non-teaching staff take care of the campus and keep the campus green and clean.

Aim and objective of landscape are as below

- **Aim :** 1)To develop campus eco-friendlly
- 2)To creates healthy environment for learnig
- 3) Beautification of Land

### **Objectives:**

- 1) Plants provides natural oxygen
- 2) Plants keeps surrounding environment clean and cool
- 3) Plants protect from dust which are collected on foliage
- 4) Trapping of dust on leaves creates dust free environment in building.
- 5) Increase aesthetic view of the campus
- 6) Plant are important it creates natural habitat for birds and animal.

## **Plantation :**

Aim :1) To create healthy environment.

2) To develop the natural habitat in the campus.

## **Objectives:**

- 1) Increase O<sub>2</sub> level of the campus.
- 2) Keep surrounding environment cool.
- 3) Plants give shade.
- 4) Plant gives natural habitat for birds and animals including Microorganism.

**Activity/ Observation :** Plantation of plant sapling had been Planted as per location, different variety of plans are planted in various places with keeping aesthetic view with respect to type of soil texture.

The College has 94 species of plants that are labeled and their growth is monitored. The entire campus has been developed into beautiful garden patches with variety of herbs 36, shrubs 23, trees 26, climbers 9. Efforts are made to increase the number of plants that can survive under adverse condition of soil and scarcity of water.

## **Recomndations:-**

Establish a College Environmental Committee that will hold responsibility for the enactment, enforcement and review of the Environmental Policy. The Environmental Committee shall be the source of advice and guidance to staff and students on how to implement this Policy.

Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings.

Increase use drip irrigation system for the proper watering to the plants.

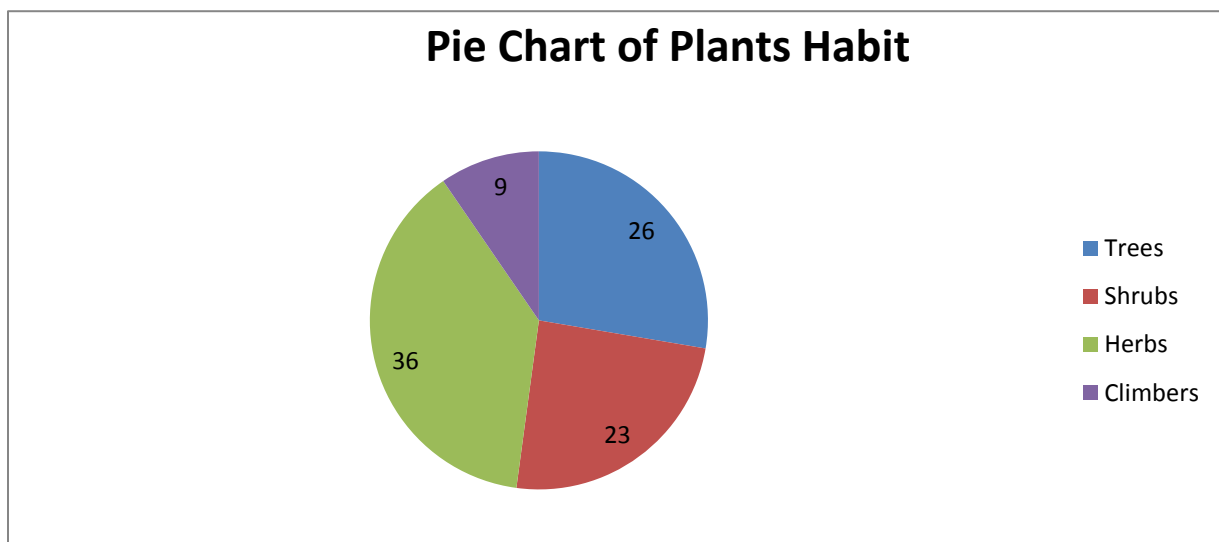


**Table -I :Locational Survey of WERC Campus plants**

<b>Sr. no</b>	<b>Location</b>	<b>No of Plants</b>
<b>1</b>	<b>College Porch-1</b>	<b>68</b>
<b>2</b>	<b>College Porch-2</b>	<b>68</b>
<b>3</b>	<b>College front side</b>	<b>280</b>
<b>4</b>	<b>College building -Left</b>	<b>42</b>
<b>5</b>	<b>College building -Right</b>	<b>50</b>
<b>6</b>	<b>Botanical Garden(Back side)</b>	<b>250</b>
<b>7</b>	<b>Staff Quarter</b>	<b>110</b>
<b>8</b>	<b>School Porch</b>	<b>93</b>
<b>9</b>	<b>School Front</b>	<b>120</b>
<b>10</b>	<b>Ganesh temple- front</b>	<b>25</b>
<b>11</b>	<b>Hostel campus</b>	<b>320</b>
<b>12</b>	<b>WERC gate I- Entry Road</b>	<b>50</b>
<b>13</b>	<b>Mess= Front Entry</b>	<b>05</b>
<b>14</b>	<b>Play ground-Front</b>	<b>50</b>
<b>15</b>	<b>Indoor Hall Front Ground</b>	<b>50</b>
<b>16</b>	<b>Road avenue</b>	<b>50</b>
<b>17</b>	<b>Waste water treatment plant</b>	<b>34</b>
<b>18</b>	<b>Administration Building</b>	<b>50</b>
	<b>Total no. of plants</b>	<b>1,615</b>

**Table –II :Habit Survey Of WERC Campus Plants**

Sr.no	Habit	Number
1	Trees	26
2	Shrubs	23
3	Herbs	36
4	Climbers	9



**Table –III :NUMBER OF PLANTS PRESENT IN CAMPUS**

SR NO.	BOTANICAL NAME	COMMON NAME	FAMILY	NO. OF PLANTS IN CAMPUS
	Adenium obesum (Forssk.)Roem.&Schult.	Adenium	Apocynaceae	6
	Albizia lebbeck	Rain Tree	Miomsaceae	1
	Allamanda cathartica L	Golden Trumpet	Apocynaceae	10
	Allium cepa L	Onion	Liliaceae	10
	Allium sativus L.	Garlic	Liliaceae	10
	Aloe vera L.	Korphad	Liliaceae	5
	Alstonia scholaris (L.) R. Br.	Satptparni	Apocynaceae	2
	Annona reticulate L.	Raamphal	Annonaceae	5
	Annona squamosa L.	Shitaphal	Annonaceae	10
	Araucaria columnaris G.Forst.) Hook.	X- Mass Tree	Araucariaceae	1
	<a href="#">Aristolochia ringensvahl.</a>	BadakVel	Aristolochiaceae	10
	Asparagus racemosus L.	Shatavari	Liliaceae	50
	Asplenium nidus L.	Bird Nest Fern	Aspleniaceae	2

	Azadirachata indica L	Kaduneem	Meliaceae	15
	Bambusa dendrocalamus	Bamboo	Poaceae	50
	Bauhonia .purpuria	Bauhonia Apta	Fabaaceae	2
	Bougainvillea spectabilis Willd.	KagdiPhul	Nyctaginaceae	5
	Canna indica L	Kardal	Cannaceae	5
	Capsicum annum L.	Chili	Solanaceae	5
	Carica papaya L.	Papaya	Caricaceae	1
	Caryota urens L.	Fish Tail Palm	Aracaceae	10
	Cassia Fistula Linn	Golden Shower	Fabeaceae	2
	Casurina equisetiflia L.	Suru	Casurinaceae	2
	Cesalpinia pulcherrima	Shankasur	Leguminaceae	5
	Cestrum nocturnum L	Raatrani	Solanaceae	1
	Colocasia esculenta(L.) Schott	Colocasia	Arecaceae	17
	Combretum indicum (L.)	Madhumalti	<a href="#">Combretaceae</a>	11
	Curcuma longa	Turmeric	Zingiberaceae	5
	Cycas revolute Thunb.	Cycas	Cycadaceae	5
	Cynodon dactylon (L.)	Durva	Poaceae	437

	Cyperus Sp.	Cyperus	Cyperraceae	25
	Delonix regia Rafin	Gulmohor	Caesalpiniaceae	21
	Dieffenbachia amoenaBull	Dumb Cane	Araceae	40
	Dracaena brauniiEngl.	Lucky Bamboo	Asparagaceae	2
	Dracaena marginataLam.	Dracaena	Asparagaceae	50
	Dypsis lutescens (H.Wendl.) Beentje&J.Dransf	Butterfly Palm	Arecaceae	95
	Epipremnum aureum(Linden & André) G.S.Bunting	Money Plant	Araceae	20
	Eucalyptus globulusLabill.	Neelgiri	Myrtaceae	15
	Ficus bengalensis L.	Banyan Tree	Moraceae	1
	Ficus elastic Roxb.exHornem.	Rubber Tree	Moraceae	5
	Ficus racemosa Roxb.	Umber/Audum ber	Moraceae	5
	Gaillardia pulchella Foug.	Galanda	Asteraceae	30
	Hamelia patens Jacq.	Hamelia/ Firebrush	Rubiaceae	5
	Hibiscus rosa-sinensus L.	Jaswand	Malvaceae	5
	Ipomoea purpurea(L.) Roth	Morning glory	<a href="#">Convolvulaceae</a>	5
	Ixora coccania	Lokhandi	Rubiaceae	10
	Jacaranda mimosaeifolia D. Don	Neelgulmohar	Bignonaceae	2

	Jasminum sambac(L.) Aiton	Mogra	Oleaceae	20
	Jatropha curcus L	Moglierand	Euphorbiaceae	5
	Justicia adhatoda L.	Adusa	Acanthaceae	1
	Kalanchoe pinnata(Lam.) Pers	Panphuti	Crassulaceae	1
	Lantana camara L.	Tantani/ HaladiKunku	Verbenaceae	5
	Livistona rotundifloia	Table-Palm	Aracaceae	2
	Mallingtonia hortensis	Akashneel	Bignoniaceae	9
	Michelia champaca	Chafa	Magnoliaceae	5
	Mimosa pudica L.	Touch Me Not/Lajalu	Mimosaceae	10
	Moringa oleifera Lam	Shevga	Fabaceae	3
	Morus albaL.	Tuti	Moraceae	1
	Murraya koenigii(L.) Spreng	Curry Leaf	Rutaceae	3
	Nephrolepis exaltata(L.) Schott	Fern/ Neche	Nephrolepaeae	2
	Nerium indicumMILL.	Kanher	Apocynaceae	30
	Nyctanthes arbor-tristis L.	Parijatak	Oleaceae	3
	Ocimum tenuiflorum L	Ram Tulsi	Lamiaceae	5

	Ocimum sanctum L	Tulsi	Lamiaceae	5
	Pandanous odorifer	Kewda	Pandanaceae	10
	Passiflora indulis	Krushnkamal	Passifloraceae	20
	Phyllanthus emblica L	Avala	Euphobiaceae	1
	Pithecolobium dulce	Vilayti Chinch	Fabaceae	3
	Plectranthus scutellarioides(L.) R.Br	Coleus	Lamiaceae	2
	Polyalthia longifolia Benth.&Hk.	FasleAshoka	Annonaceae	45
	Polyanthes tuberosa L.	Nishigandh	Amaryllidaceae	5
	Pongamia pinnata(L.) Pierre	Karanj	Fabeaceae	15
	Portulaca grandiflora Hook.	Chinigulab	Amaranthaceae	20
	PortulacaoleraceaL.	Perslane	<a href="#">Portulacaceae</a>	70
	Psidium guajava Mill.	Peru	Mrytaceae	1
	Pyrostegia venusta(Ker Gawl.) Miers	SankrantVel	<a href="#">Bignoniaceae</a>	10
	Ricinus communis L.	Erand	Euphorbiaceae	3
	Rosa indica L.	Rose/ Gulab	Rosaceae	75
	Saraca ashoka L	Ashoka	Fabaceae	2
	Saussurea obvallata (DC.) Edgew	Bramhkamal	Asteraceae	5
	Solanum melongena L	Bringal	Solanaceae	10

	<i>Syngonium podophyllum</i> Schott	Arrow Head	Araceae	5
	<i>Syzygium cumini</i> (L.)	Jamun	Euphorbiaceae	5
	<i>Tabernaemontana divaricata</i> (L.) R.Br. ex Roem. &Schult.	Tagar	Apocynaceae	2
	<i>Tectona grandis</i> Linn.	Saag	Lamiaceae	6
	<i>Thevetia neriifolia</i> Juss.ex A.DC.	Bitti	Apocyanaceae	75
	<i>Thuja accidentalis</i>	Morpankhi	Cupressaceae	5
	<i>Tinospora cordifolia</i> (Thunb.) Miers	Gulvel	Menispermaceae	1
	<i>Trachyspermum ammi</i> (L.) Sprague	Ova/ Ajwain	Apiaceae	4
	<i>Tradescantiaspathacea</i> Sw.	Oyster Plant	Commenlinaceae	50
	<i>Vincaroseus</i> L.	Sadphuli	Apocynaceae	10
	<i>Vitex nigundo</i> Linnaeus ap. Bojer	Nirgudi	Lamiaceae	1
	<i>Ziziphus jujube</i> MILL.	Ber / Bor	Rhamnaceae	3
				Total ,1615



**Table- IV :List of Some Medicinal Plants in the College campus (WERC)**

Sr. No	Botanical name	Local name	Part used	Uses
1	<i>Aloe vera</i> L.	'Korpad'	leaves	Preparation of commercial cosmetics
2	<i>Azadirachata indica</i> L.	'Kadu-Neem'	Leaves ,karneles seeds	Expectorant cure digestive germs & worms
3	<i>Cassia Fistula</i> Linn.	'Bahava/Amal tash'		Fruit pulp use to cure stomach ache of the babies.
4	<i>Ocimum sanctum</i> L.	'Ram tulsi'	Leaves	Use in rheumatic joints
5	<i>Phyllanthus emblica</i> L.	'Avala'	fruit	Use in churn
6	<i>Polyalthia longifolia</i> Benth. &Hk.	'ASHOK''	Branch of plant	Use in milk secretion in mother
7	<i>Tinospora cordifolia</i> (Wild.) Miers. ex.H.&T.	'Korpad'	leaves	Use in cosmetics as antiseptic properties.
8	<i>Hibiscus rosa- sinensis</i> L.	Jaswand	Flowers	Use for making dyes
9	<i>Bombax ceiba</i>	Malyari	Flowers	Edible flowers
10	<i>Mangifera indica</i>	'Amba'	Fruits	Edible fruits
11	<i>Pongamia pinnata</i>	'Karanj'	Seeds,	Use in skin diseases
12	<i>Cassia fistula</i>	'Amaltas'	leaves	Against skin diseases
13	<i>Mimosa pudica</i>	'Lajalu'	leaves	For hydrocele
14	<i>Kalanchoe pinnata</i>	'Panphuti'	Leaves	making threads
15	<i>Asparagus recemosus</i>	shatavari	Leaves	Increase milk

				productivity
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**Table - V :THEME LOCALITIES**

Sr. No.	Theme	Location	Plants
1	Oxygen rich	Botanical garden, South side of college and School front side	Tulsi, Pimpal,Neem
2	Beauty	Front of college	Ficus, Croton, cynadon (Lawn grass), Shampion palm, Ixora.
3	Medicinal Plants	Botanical garden	Bahava, Adulsa,Tulsi,Ekhand, Ran owa,Korpad,
4	Climbers	Left side of toilet building	Quisqualis, Gulvel
5	Shade	Botanical garden, college road and college left side	Teak, Melingtonia, Neem, Thewetia, Bakul, Almond
6	Avenue	College road and way to botanical garden, Hostel	Biti, Gulmohar, Sag (Tick) Akashneem,Rain-tree
7	Palms	Botanical garden, College front	Areca palm, fish-tail palm
8	Gymnosperms	Botanical garden, College front	Cycas, Thuja, X-mas tree,
9	Pteridophytes	Botanical garden	Tree fern, Nephrolepis
10	Aquatic plants	Botanical garden	Eichornia, Salvia,Azolla
11	Bund	Left side of the college, School front side	Areca palm Tecoma
12	Rose garden	Hostel campus	Different colored roses

## SOLID WASTE MANAGEMENT

**Aim :-**

- 1) Scientific disposal of solid waste**
- 2) Protection of human health and environment**

**Objective:-**

- 1) To increase recycling level**
- 2) To reduce organic waste in landfills**
- 3) To control air, water, soil pollution**
- 4) Production of green manure and vermicopost.**

**Activity / Observation :**

Solid waste is separated as **dry** and **wet**. Dry waste includes plastic, glass, paper, metals, wood and related product. Wet waste typically refers to organic waste usually generated as canteen waste, plant debris.

Dry waste is separated and it is given for its reuse and recycling to the recycler agency to avoid the pollution.

Wet waste is also known as **organic** waste. It is obtain from canteen , fallen Leaves , litter, ort, trash etc. produce in this campus if it is not disposed properly it creates air pollution, to avoid this we have implemented solid organic waste management activity ,we run it at two level **one** is decomposition of solid waste through the composting in pit, vermi-compost form solid organic waste and **second** is training to the students, farmers about production of organic manure like vermicompost, production of mushroom from the solid organic agricultural waste which ultimately conversion of Best from Waste, further the best biofertilizer is used for plants of college campus which enhances greenery leads environment clean and fresh.

Canteen waste is also disposed by the Shreedlingprocessing Machine produce good organic fertilizer use for the plants in the campus garden.

## Vermicompost Units

The solid waste comes from Botanical garden and campus mess produce a wide range of organic wastes, such as straw, leaves, stalks, weeds, vegetable wastes, processed food and paper.

Zoology department has constructed two permanent chambers for vermicomposting under a shady tree in Botanical garden.

**Unit 1:** It is of 12 ft length, 4 ft width, and 2 ft deep, which is about 2 ft above ground to avoid entry of rainwater into the chambers, used for vermicomposting.

**Unit 2 :** It is of 12 ft length, 4 ft width and 1 feet deep. It is used for decomposing the organic waste. Both the units are covered.

We are using *Eisenia foetida* species of the earthworms for vermicomposting as this species has high conversion ratio.

Earthworms are used to manage all these agricultural wastes, earthworms convert this waste into humus or manure or 'Vermicompost' or worm castings, which is a nutrient-rich and biologically beneficial soil product. Vermicompost enhances plant growth, suppresses disease in plants, increases porosity and microbial activity in soil, and improves water retention and aeration. Vermicompost also benefits the environment by reducing the need for chemical fertilizers and decreasing the amount of waste going to landfills. Vermicompost contains 2 times more [magnesium](#), 15 times more [nitrogen](#), and 7 times more [potassium](#) compared with the surrounding soil.

### Recommendations :-

- Reduce the absolute amount of waste that it produces from college staff

offices.



## **VERMICOMPOST PRODUCTION UNIT –I AND II**



## **Vermicomposting Activity with Staff and Students**

### **SEWAGE WASTE MANAGEMENT**

**Aim :**

**1) Scientific disposal of Sewage.**

**2) Provide solution to maintain health and hygiene.**

**Objective:**

- 1) Minimization of air and water pollution
- 2) Reuse of drainage water
- 3) To fulfill the requirement of water for gardening
- 4) To minimize expenses on water for gardening

**Activity / Observation :-**

WERC campus includes hostel, school, senior college, staff quarter, ladies hostel, administrative building about 7,169 Population includes students, staff, and satke holders live in this campus, creates about 41,74,854 liters of waste water daily, due to lack of drainage system of the corporation disposal of water was challenge for us ,but through the establishment of the two waste water treatment plant, it became possible to reuse this water for campus green spaces, it avoid the air , water pollution.

Daily about 20,00,000lits. Of domestic waste water is collected and supplied for treatment in “**Sewage water treatment plant**”( STP), after the treatment it is circulated through pipe in garden for growing of plants in the campus which are the natural fan keeps environment clean and eco- friendly.

**Recommendations:-**

- Minimize wastage of water and use of electricity during water filtration process, if used, such as RO filtration process and ensure that the equipment’s used for such usage are regularly serviced and the wastage of water is not below the industry average for such equipment’s used in similar capacity.
- Ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment, i.e. are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous



Sewage Treatment plant- I

## E-WASTE MANAGEMENT

**E- waste/electronic waste comprises of waste generated from used electronic devices and household appliances which are not fit for their original intended use.**

### **Aim and objective:**

E-waste is the future coming environmental problem will create hazards to our environment, it is non-degradable waste can pollute water, soil and air. With keeping this view we are aware about destructive material mainly metal, insulating materials present in the e-waste like CD, scrap, mobile like devices, computer waste like wiring, metals, and unused pen drive.

### **❖ ITEMS AND THEIR TOXIC COMPONENTS :**

<b>SR. NO</b>	<b>ITEM</b>	<b>COMPONENTS</b>
1	REFRIGERATOR	CFC/HC/RUBBER
2	PC AND LAPTOPS	CRT, FLUORESCENT LAMP, COPPER
3	TELEVISION	METAL, CRT, PLASTIC, BRP
4	WASHING MACHINE	RUBBER, ELECTRIC WIRE, METAL AND MOTOR



5	COMPUTER BATTERIES	CADMIUM
6	CAPACITOR AND TRANSFORMER	PBC
7	PRINTED CIRCUIT BOARD	LEAD AND CADMIUM
8	CATHOD RAY TUBES	LEAD OXIDE AND Cd
9	CABLE INSULATION / COATING	PVC
10	SWITCHES AND FLAT SCREEN MONITOR	MERCURY

### **Activity / Observations :-**

With keeping view to minimize the pollution created through the e-waste, we have carried out the scientific disposal of e-waste by two ways

- 1) Collection of e- waste in e- waste box
- 2) Reuse of the component of unused electronic devices.

### **COLLECTION OF E- WASTE**

We have installed e- waste box at the corner of the computer laboratory, and our students, staff put unused electronic devices and component like CD, PD, memory card, simcard, etc. it also collected and few of reuse and remaining e- waste is given to e waste scrap purchaser for proper reuse and disposal of such e-waste.

This activity runs throughout the year, is collected in e- waste box, On 10 December 2018 in Campaign of e- waste collection, total 10 kg e- waste was collected and out of this some was reused to for preparation of best from waste activity. And some items was repaired.

For the scientific disposal of the e-waste , we had MOU with the “**Kuldeep E- Waste Disposals**” approved e-waste disposal agency.

## Recommendations:-

1. Always purchase recycled resources where these are both suitable and available.
2. Reuse devices after repairing.

## E - wastecollecton, reuse and repairing 10 Dec 2018

Reuse of lighting after repair



e- Waste collection



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## **RAIN WATER HARVESTING :**

The rain water harvesting is simple collection or storing of water through scientific techniques from the areas where the rain falls. It involves utilization of rain water for the domestic or agricultural purpose. The method of rain water harvesting has been into practice since ancient times. It is for the best possible way to conserve water and harvesting has been into practice since ancient times. It is as far the best possible way to conserve water awaken the society towards the importance of water. The method is simple and cost effective too.

People usually make complaints about the lack of water during the monsoon lots of water goes waste into gutters so,

Rain ater harvesting proves that it is effective way to conserve water..we collect the rain water into tanks and prevent it from flowing into drainsandbveing wasted. Rain water harvesting comprises of storage of water water recharging through the technical process.

- **AIMS AND OBJECTIVES:**

**Aim:-**

- 1) **Conservation of fresh water**
- 2) **Increase the ground water level**

**Objectives:-**

- 1) To arrest ground water decline and augment ground water.
- 2) To conserve surface water runoff during manson.
- 3)To reduce soil erosion.

**ACTIVITY / OBSERVATIONS:**

Rain Water is primary source Of fresh water, In our WERC campus the rainwater harvesting program activity is conducted in **Two** Ways:

- 1) Rain water dischrge in trenches in garden and old dry bore.
  - 2) Rain water harvesting for laboratory As replacement of distilled water.
- 1) College campus is of 10 acres, with construction of School, college, hostel and canteen building. Maximum rain water is harvested in campus by construction of trenches in campus garden and remaining water is diverted to the dry borewell / Pits for its recharge with rain water leads to increase ground water level.

- 2) In College campus tow locations are identified and Pits are made constructed near the dry bores, In rainy season water is collected and discharged for percolation it enhances the ground water level.
- 3) Rain water is collected every year from roof of the building,after filtration it is used as distilled water for science laboratory of Chemistry, Physics, Botany, Zoology.

**Table:- Use of rain water harvested in laboratory**

YEAR	Water Collection In Liter For Laboratory
2014-15	2500
2015-16	2600
2016-17	3000
2017-18	4000
2018-19	4000

**Recommendations:-**

1. Increase the Pits for rain water harvesting.
2. Construct the underground tank for the storage of rain water harvest.

## **ENERGY CONSERVATION**

### **Aim :**

- 1) To minimise the use of natural resorses**
- 2) Conservation of energy**

### **Objective:**

- 1) To save non-conventionally produce electric energy
- 2) Use of conventional source of energy
- 3) Minimization of electric expenses

**Activity/ Observations:**

Energy conservation is the burning problem of the contry, there is pressure due to great demand for electricity and shortage of this non-conventional source of energy.

We have implemented energy conservationprogrammes with three ways

- 1) Use of LED tube in the college building
- 2) Use of solar water heater
- 3) Solar power plant for electricity production



## Survey of Use Of LED Bulb- Energy Audit Chart

<b>BJS ASC College Energy Audit of Building 2018-2019 (Ground floor)</b>									
<b>Room No.</b>	<b>Total Tube Light</b>	<b>Power Watts</b>	<b>Total Fan</b>	<b>Power in Watts</b>	<b>Total LCD /Projector/Computer</b>	<b>Power in Watts</b>	<b>Other Frige/AC/Cooler/Xerox/ Printer Electrical Instruments</b>	<b>Others</b>	<b>Total Load Power (Watts)</b>
<b>1A</b>	6 X 36	216	3 x 60	180	2Lx 300	300	1 x 1500	1500	<b>2196</b>
<b>1B</b>	3 x 36	108	2 x 60	120	1L x 300, 1C x 300	600			<b>828</b>
<b>2</b>	6 x 18	108	10 x 60	600	8C x 300	2400	2 X 300	600	<b>3708</b>
<b>3</b>	8 x 18	144	2 x 60	120	8C X 300	2400	2x X 1500	3000	<b>5664</b>
<b>4</b>	2 X 18	36	1 X60	60	1C X 300	300	1A x 1500	1500	<b>1896</b>
<b>5</b>	4 X 40	160	3 x 60	180	1C X 300	300	1P X300	300	<b>940</b>
<b>Driking Water</b>							1 Cool X 1500	1500	<b>1500</b>
<b>6</b>	5 X 40	200	3 X 60	180					<b>380</b>
<b>7</b>	13 X 18	234	10 x 60	600	1L x 300, 3C x 300	1200			<b>2034</b>
<b>8</b>									<b>0</b>
<b>9</b>	16 X 18	288	8 X60	480	1P X300, 45C X300	13800	2 P X 300	600	<b>15168</b>
<b>10</b>	31 X 18	1240	18 X 60	1080	1P X 300, 1C x300	600			<b>2920</b>

### Conclusion:

**LED tubes saves the enery 40% than normal tuibes .this ennergy is get conserved.**

### Recomondations:-

Support renewable and carbon-neutral electricity options on any energy purchasing.

## **Paperless Technology**

**Aim :** 1) Forest conservation

2) Use of e- media for the communication as green initiative practice

**Objectives:** 1) To minimise the use of papers

2) To conserve plant natural resources

**Activity / Observations** :-Paper is a cellulosic, made from plants. Due to its use there is pressure created on the forest. To avoid this pressure, paperless technology such as & mail, SMS, Whats app various educational apps, softwares and internet services are used by the institute for communication. To send of document to the stakeholder, student, teachers, parents, Principal, management, institutes and internet is used and this paperless technology ultimately reflects our green initiatives.

We use of Digital Notice board for various notices for students.

**Recomondations:-**

Minimise the use of paper.



## Green Sunrise Hill - plantation programme and school students activity



- **GREEN SUNRISE HILL WAGHOLI – PLANTATION PROGRAMME 28 JULY 2018**



- Local study tour Green sunrise hill Wagholi - watering to plants activity done by FYBSC students 15<sup>th</sup> Sept 2018



## Environment Awareness Program

- **Aim and objective:**

**To plan, organize** and implement programmes like landscape and plantation, water management & conservation, and rain water harvesting. **To provide** education that prepares students for leadership and social responsibility teaching them to think and communicate effectively and develop a global awareness .

**To introduce** environmental education programmes for strengthen the existing ecological and environment related training infrastructure.

**To provide** consultancy to other institutions and organisations in for the establishment of similar institutions with a view to bringing sustainability.

**To organize training programmes** for vocationalisation of environmental careers.

**To strengthen** Global Environmental Education Programmes for standardization of greening activities.

**To introduce** environmental education programmes in strengthen the existing ecological and environment related training infrastructure.

**To make special plans** for the studies vermiculture, plantation, nursery development, water & energy conservation and management, rain water harvesting and other related fields.

**To provide environmental education** that prepares students for leadership and social responsibility by teaching them to think and communicate effectively and develop global environmental awareness and sensitivity.

<b><u>DATE</u></b>	<b><u>ACTIVITY NAME</u></b>
<b><u>2014-15</u></b>	<b>1) Healthy sapling competition</b> <b>2) Slogan competition</b> <b>3) Cultivation of Mushroom</b> <b>5) Nursery management course</b>
<b>3 sept 2016</b>	<b>Study tour – BIAF and krushiVigyan Kendra- Bramati, Pune.</b>
<b>27 Aug 2016</b>	<b>One day workshop on paper bags making and handkrafts exhibition.</b>
<b>23 Sept 2017</b>	<b>Study tour Mahabaleshwar, Waai of class S.Y.B.Sc</b>
<b>16 sept 2017</b>	<b>On the occasion of “ozone day celebrated and quize competition and “No vehicle day organized on environment awareness.</b>
<b>2 SEPT 2017</b>	<b>NirmalyaNirmulan on the occasion of ganpati festival</b>
<b>27 Feb 2017</b>	<b>Study Tour Of F.Y.B.Sc “ Empress Botanical Garden “Pune</b>
<b>26 Nov 2017</b>	<b>On the occasion of NSS camp awareness and guidance on a subject- “Conservation Of Plants.”</b>
<b>29 Sept 2017</b>	<b>Common “Bird Monitoring Programe” one day workshop under COP Course.</b>

<b>6 Dec 2017</b>	<b>One day workshop and field visit to kumbhargoan ,bhigwan for bid watching.</b>
<b>16 Jan 2018</b>	<b>“ Salad Decoration Competition” On Occasion of YuvaSaptah</b>
<b>17 Jan 2018</b>	<b>Best from waste competition</b>
<b>28 July 2018</b>	<b>Plantation Program At Green Sunrise Hill Wagholi</b>
<b>17 Aug. 2018</b>	<b>“Collection Of Seeds And Exhibition”</b>
<b>27 Aug. 2018</b>	<b>Submission Of Waste Plastic Bottles With Plants And Development Of Terrace Garden</b>
<b>15 Sept 2018</b>	<b>“Nature Trail At Green Sunrise Hill Wagholi” Organized By Department Of Botany</b>
<b>21 Sept 2018</b>	<b>Organization Of “Quiz Competition on” World Ozone Day</b>
<b>6 Dec 2018</b>	<b>Cleaning Of Botanical Garden</b>
<b>16 Jan 2019</b>	<b>“ Salad Decoration Competition” On Occasion of YuvaSaptah</b>
<b>17 Jan 2019</b>	<b>Best from waste competition</b>
<b>17 Jan 2019</b>	<b>“Flower Arrangement Competition”</b>
<b>23 Jan 2019</b>	<b>Preparation Of 25 Bouquets During National Conference</b>
<b>26Jan 2019</b>	<b>Study Tour Of F.Y.B.Sc “ Empress Botanical Garden “Pune</b>

## Slogan competition 2014



- **HEALTHY SAPLING COMPETITION-2014**

**Study Tour krushiVigyanKendra(Baramati) And Ujani Dam**

**( Backwater) 29 Jan 2016**







- 
- **Farmer Training and Workshop on Nursery Management And Vermicompost Production Workshop 19 Aug 2014**





### BIAF Study Tour And Visit to Fish Farm 3 Sept 2016





- **NIRMALYA NIRMULAN ACTIVITY DURING GANESH FESTIVAL AS VOLUNTER OF NATURE CLUBE 2 SEPT 2017**





## STUDY TOUR AT MAHABALESHWAR AND SERICULTURE- SYBSC 2017



## Bird Monitoring Course visit at Bhigwan 2018



- **NATURE TRAIL GREEN SUNRISE HILL WAGHOLI- THEME- WATERING,IDENTIFICATION,CONSERVATION 2018**



**Lahu sir guided to the students**



❖ WORLD OZONE DAY – QUIZE COMPETITION 21 SEPT 2018





- **STUDY OF PLANT PROPAGATION IN BOTANICAL GARDEN CLASS FYBSC 25<sup>TH</sup> AUGUST 2018**



❖ TERRACE GARDEN DEVELOPMENT 2018-19



❖ CULTIVATION OF MUSHROOM - COP COURSE 2018-19  
(PLUEROTUS MUSHROOM)





- **COP COURSE VISIT - WEIKFIELD AGRO PVT LTD BAKORI 8<sup>TH</sup> APRIL 2019- BUTON MUSHROOM PRODUCTION**



Growing Chamber



Preperation of Compost



Harvesting of Mushroom



Buton mushroom in chamber

• **CLEANNING OF BOTANICAL GARDEN – 6<sup>TH</sup> DEC 2018**



- **VISIT TO EMPRESS BOTANICAL GARDEN, PUNE**

**Flower Exhibition and Rose Flower Competition FYBSC 26<sup>TH</sup> JAN 2019**



- **ONE DAY WORKSHOP ON FLOWER ARRANGMENT –  
PREPARATION OF BOUQUETS**

**Best From Waste Competition 17 Jan 2019**





## ❖ Flower Arrangement Competition 17 Jan 2019



**SALAD DECORATION AND BEST FROM WASTE COMPETITION JAN 2018**



**INDUSTRIAL BOTANY- JAAM AND SQUASH PREPARATION 2019**



# SALAD DECORATION COMPETITION 16 JAN 2019



## **SNAKES OF MAHARASHTRA- 15 DEC 2018**



**Dr. Rajendra Salunke felicitated by Prin. K. S. Desarda**



**Dr. Rajendra Salunke delivering lecture on 'SNAKES OF MAHARASHTRA'**

❖ **COLLEGE BEAUTY**



***BOTANICAL GARDEN***



***HYDROPHYTE TANK***



***COLLEGE FRONT BEAUTY***



**COLLEGE PREMISES**



***COLLEGE FRONT SIDE***





**IF YOU CUT A TREE, YOU KILL A LIFE.  
IF YOU SAVE A TREE, YOU SAVE A LIFE.  
IF YOU PLANT A TREE, YOU PLANT A LIFE.**

