

A
Green Audit Report
of



**Vidya Vikas Mandal's S. G. Patil Arts, Science
and Commerce College, Sakri, Dist. Dhule**

For the year

2020-21

Submitted by

**School of Environmental and Earth Sciences
KBC North Maharashtra University, Jalgaon**



Vidya Vikas Mandal's S. G. Patil Arts, Science and Commerce College, Sakri, Dist. Dhule

About the Trust

The trust **Vidya Vikas Mandal** was established in the year 1970 by **Hon'ble Loknete Dadasaheb Ramrao Patil, Sakri District Dhule**. The Arts and Commerce College was established in June 1971 in Sakri by this trust with an aim to eradicate illiteracy, to impart qualitative higher education to the tribal students coming from hill-area & remote area of Sakri tehsil. The other objective of establishment of the trust is to bring the women in the men stream of the higher education in the rural and tribal area. In the decade of seventies there was not a single college in this area except Dhule i.e., district place. Dhule was considered as the tribal district of Maharashtra and Sakri tehsil was the most undeveloped tribal part in this district. Establishment of this college has opened a gate-way to higher education to the tribal area of Sakri Tehsil. Vidya Vikas Mandal is known as premier educational sanstha in Dhule district. This sanstha is playing a vital role in developing proficiency, competency, and cultural, national, social values through curricular, co-curricular and extra-curricular activities since its establishment through various educational units.

Vidya Vikas Mandal is bloomed with various educational institutions covering primary to research education. The Trust runs 1 primary school, 2 Ashram Shala, 7 High schools, 5 Junior Colleges and 2-degree colleges.

About the college

The Arts and Commerce College was established in June 1971, in the inception of trust Vidya Vikas Mandal, Talika: Sakri, Dist.: Dhule. The aim of the college was to spread higher education and upliftment of the society in this region. In the decade of seventies there was no facilities for higher education in the area except Dhule. Dhule district and specially Sakri Tehsil was dominated by Tribal and Rural population. Establishment of this college has opened the gate of higher education to the Tribal and Rural population in this area.

This college has played a vital role in developing proficiency, competency, cultural, national, and social values through curricular, co-curricular and extracurricular activities since its establishment. This college was affiliated to university of Pune after its establishment and then to north Maharashtra University, Jalgaon since 1990. The college was renamed as Sitaram Govind Patil Arts, Commerce and Science College, Sakri in 1982. Late Shri S. G. Patil was the veteran truth seeker of Mahatma Phule, Chatrapati Shahu, and Dr. Ambedkar thoughts.

The college has started science faculty in addition to the formerly Arts and Commerce faculties from the academic year 1981-82. The College has emerged as an esteemed and renowned educational institution in the jurisdiction of North Maharashtra University. The college adopted green protocol under green campus initiatives which gives importance to the conservation of environment. Sustainable utilization of natural resources and the conservation of the water and energy sources is practiced by the institution. Well managed waste management system, recycling, and reuse of waste materials etc. are the major concern of the campaign and thus to make campus environment friendly one. The green campus program also emphasizes the activities to avoid plastic and planting of trees and development of gardens in the campus.

Green Audit

A management tool comprising a systematic, documented, periodic and objective evaluation of how well the environment organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations.

Objectives

1. To implement the green protocol for awareness of students and faculty for environmental conservation.
2. Implementation of Environment friendly and safe methods for to minimize the effects of hazardous waste materials generated in the campus.
3. To understand the energy consumption and potential of alternate energy sources for utilization on the campus.
4. To promote health and welfare practices for staff and students at the college.
5. To examine current practices adopted by the institution for protection of environment and resources.
6. To develop and effective implementation of the green and eco-friendly practices for sustainable Campus development.

Methodology

The green audit included the methodology like questionnaire, inspection of campus, Analysis of ecofriendly activities conducted in the campus.

Green Audit Team

No.	Name	Designation
External Auditor		
1.	Prof. S. T. Ingle	External Member
2.	Prof. S. N. Patil	External Member
3.	Prof. S. B. Attarde	External Member
Internal Auditor		
4.	Dr. R. R. Ahire	Principal and Convener
5.	Dr. D. S. Chavhan	Internal Member
6.	Dr. D. V. Nagarale	Internal Member
7.	Dr. P. P. Rathod	Internal Member
8.	Mr. D. N. Waghmare	Internal Member
9.	Mr. K. M. More	Internal Member

Action Plan

The Green Audit by VVM's S. G. Patil College, Sakri based on four aspects.

1. Environmental Audit
2. Water Audit
3. Energy Audit
4. Waste Audit

1. Environment Audit

Environmental audit mainly focused on the factors related to the conservation of Biodiversity.

- a) Does the campus having gardens especially herbal garden to preserve biodiversity?
- b) Does the infrastructure facilities such as parking facility affect the water drainage and so the biodiversity?
- c) Does a forestation program to conserve the local and other fruit trees.
- d) Does the flora of the campus identified and properly maintained?

2. Water Audit

Water audit analyses the conditions of water sources and their storage capacity. Identify the water storage system like rain water harvesting and to understand the water management practices in the campus and thus to reduce the wastage of water.

3. Energy Audit

Energy audit will monitor the usage of electricity and analyse the methods and ways by which the energy gets utilized in the campus and calculate how much energy wastage and what are the methods adopted to reduce the wastage of energy.

4. Waste Audit

Waste audit mainly aims to know different types of waste generated in the campus. Disposal, storage, recycling and reuse of solid waste including degradable organic wastes and non degradable plastic wastes, liquid waste from laboratories and E waste etc. under consideration of waste audit.

Operational Procedure

- i. Green Audit Team is the authority of monitoring green initiatives
- ii. First meeting will be held at the beginning of an academic year.
- iii. Convener shall plan the Audits and assign the Audit Teams during the first meeting.
- iv. Questionnaires will be distributed among the staff and students after the notification.
- v. Audit result will be shared to the students and staff after discussing it in the first committee meeting after the audit.
- vi. Actions will be planned after the analysis of the audit.
- vii. Plans on execution of the actions will be discussed with the principal authority of the College.

Department of Chemistry

Title of the Practice:

Disposal of dead chemicals and laboratory waste water.

Objectives of the Practice:

- The prime objective of the practice is to control water quality deterioration being created due to experiments performed in institutional laboratories
- To train students for water analysis and create environmental concern among them.
- To design experiments from waste water and performing the task of recovery of heavy metals
- To check the effect of laboratory waste water on different plants, particularly desert plants
- To develop solar distillation plant for the preparation of distilled water from laboratory waste water.

The Context:

It is a well known fact that laboratory waste particularly of Chemistry lab waste involves several toxic and hazardous chemicals including mineral acids like hydrochloric, sulfuric and nitric acid. These acids, alkalis and other chemicals come out with waste water and if disposed directly to environment without neutralization, these not only degrade the underground water quality but also deteriorate the soil quality drastically when exposed for a prolonged period of time. When we are talking about waste water management, the disposing / recycling, pollution control and

Green campus etc. are also included. It is important to make sense of waste water treatment and recycling in colleges and / institution laboratories.

The Practice:

It is being taught regularly and periodically that acidic, alkaline waste and other wastes disposals coming out from laboratories are toxic, hazardous and dangerous. Further pH calculations and determination of in the labs.

Fig. 1 : Disposal of dead chemicals and laboratory waste water



Fig. 2 : Plantation in various Departmental Areas



Department of Zoology

Vermi-composting

Vermicomposting is a method of using worms to transform organic waste into a nutrient-rich fertilizer. The main objective of Vermicomposting is to produce organic manure of exceptional quality for the organically starved soil by using agricultural wastes garden wastes and animal farms waste are usually dumped into at places resulting in a foul mess. It is a healthy and clean way to eliminate wastes going into our landfills, which improves the environment. Vermicomposting attracted lot of interest in recent years due to increasing environmental concerns and use of sustainable fertilizers. The Vermicomposting is becoming very popular due to a way to treat organic wastes more quickly. It is the Eco-friendly method of converting organic waste into nutrient rich fertilizer.



Composition of vermicompost

Nitrogen	1.5 to 3%
Phosphorous	1.05 to 2.20%
Potash	1.10 to 1.75%
Calcium	0.9-1 to 10%
Magnesium	0.4 to 0.5%
Sulphur	0.15 to 2.9%
Copper	2.2%
Iron	135 ppm
Manganese	90 to 118 ppm
Zinc	40 to 77 ppm
Molybdenum	0.2 ppm

Vermicompost is the product of the composting process by various species of Earthworms. Beside above composition, Vermicompost also contain biologically active substances such as plant growth regulators and microbes. Vermicomposting can be done in large scale at farm and small scales at house. The

beneficiaries can understand the recycling process. The exotic earthworm species used are *Eisenia foetida* (Red Worms) and *Eudrilus eugeniae* (Night crawler).

Objectives and Goals:

- To Maintain Vermicomposting Unit in college in order to maintain eco-friendly college campus.
- To utilize waste of campus plants and garden by using earthworms and get vermicompost as a Black Gold!
- To aware the students and society to use chemical free Vermicompost as an organic fertilizer for agriculture.
- To provide own Vermicompost to college horticulture and gardens in free of cost.
- To develop 'Vermicomposting Consultancy Unit' and organize organic farming workshops for farmers.

Practice and Infrastructure:

College has established vermicomposting unit in college campus (Total area = 750Sq.Ft.) with seven vermicompost beds having size 10'X3'X2' purchased from Madhur Agro Services, Kolhapur. We have introduced the species of earthworm- *Esinia foetida*. The vermicompost beds were maintained properly by watering and other management.

Energy Conservation

The energy conservation is practiced by the reduced use of electricity. This is done by the use of energy saving electrical equipment. Extensive usage of LED bulbs. Use of solar energy as an alternative energy source, for this installed solar panels in the campus.



Water Management

The effective water management and water conservations methods are adopted in the campus. Rainwater harvest system and rain digs are there to collect the maximum amount of rain water. Water purifiers are used in all the departments. Sprinklers and drip irrigation are used in the gardens to reduce the wastage of water.



Environment Protection

In connection with World environment day every year planting tree saplings in different localities of the campus for the conservation of biodiversity. Maintaining herbal garden and organic vegetable garden to make campus eco-friendly. Reduced use of plastic materials and proper disposal of waste materials are practiced.

Tree Plantation



Our campus is covered with Neem tree (*Azadirachta indica*), Campa and various flowering plants.

Botanical Garden: Our Botany Department is maintaining medicinal plants garden



Oxygen zone for students



Medicinal Plant Garden:





Transport



कोरिसला ७ अणि इतर नमुन एका श्वा बाहेरचे स्वरुपाने त्या गी त्या साने निरु मांग सुकर होणार आहे.

द.लक्ष महाराष्ट्र

यवतमाळच्या तरुणीच पर्यावरण रक्षणासाठी महाराष्ट्र भ्रमण साक्री । प्रतिनिधी

अलीकडे विविध प्रकारच्या प्रदूषणामुळे पर्यावरणाचा न्हास होतो आहे. अशा परिस्थितीत खात्रीचा वाटा एवढे का होईना आपण पर्यावरण जगूनीचे काम केले पाहिजे हा हेतू डॉ.ब्यासमोर ठेवून यवतमाळची २१ वर्षीय प्रणाली विठ्ठल चिक्टे ही सायकल यात्रे राज्यभ्रमण करत आहे. यासोबत महिला सशक्तिकरण जनजागृती, स्थानिक संस्कृतीचा अभ्यासही ती करते आहे. स्वइच्छा, स्वनिर्वाह आणि पालकांच्या परवानगीने ही युवती कोणत्याही संस्थांशिवाय गावोगावी पर्यावरण संवर्धनाचा संदेश देत आहे.



पर्यावरण संवर्धनाचे काम करू

कोणत्याही प्रकारचे कुठेही प्रदूषण असेल ते निर्मुलनासाठी आपला सक्रीय सहभाग नोंदवावा. अशा सामाजिक कार्यात मनगणमन सहभागी व्हावे. शासनाच्या कोणत्याही यंत्रणेची वाट न पाहता आपण कार्य करू शकतो, कोणत्याही न सांगता जेवढे पर्यावरण संवर्धनाचे काम आपण करूया, असे सांगितले.

मंगळवार सायकल डे म्हणून पाळणार

दर मंगळवारी आमच्या महाविद्यालयात येताना कोणत्याही प्राध्यापक, शिक्षक कर्मचारी आणि स्थानिक विद्यार्थ्यांनीही सायकलने महाविद्यालयात यायचे नमूद केले. हा दिवस आजपासून सायकल डे म्हणून पाळणार असल्याचे सांगितले. सर्वांनी रोज एक तास सायकल चालवा आणि आपले आरोग्य जपा असा मंत्र जाग्यात करण्याचे सर्वानुमते ठरले.

आज ९ मार्च रोजी प्रणाली चिक्टे हिने सकाळी सात वाजता बापगोपाड येथून आपला सायकल प्रवास सुरू केला. आणि अवघ्या तीन तासात ४४ किलोमीटर अंतर कापत साक्री येथील सि.गो पाटील महाविद्यालयात पोहोचली. प्राचार्य डॉ.आर.आर.अहिरे,

उपप्राचार्य डॉ.अनंत पाटील, विद्यार्थी विकास अधिकारी डॉ. लहू पवार, युवती सभा प्रमुख डॉ.ज्योती बाकोडे, एनएसएस चे प्रा. विश्वास धामरे, प्रा. उषा शेंतार, प्रा. भारती खेंतार, सर्व प्राध्यापक, शिक्षक कर्मचारी, विद्यार्थी विद्यार्थिनींनी प्रणालीचे स्वागत केले.

स्वजबाबदारीने दि. २०ऑक्टो २० पासून प्रणालीने आपला सायकल प्रवास सुरू केला आहे. आजपर्यंत ५७०० किलोमीटर प्रवास करून ती साक्री जिल्हा घुळे येथे पोहोचली. या दरम्यान तिने यवतमाळ, चंद्रपूर, वर्धा, नागपूर, भंडारा, गोंदिया, अमरावती,अकोला, चांलिम, बुलढाणा, जळगाव, नंदुरबार,आणि विशेष म्हणजे जागतिक महिला दिनी प्रणाली साक्री तालुक्यात पोहोचली. प्रास्ताविक, आभार विद्यार्थी विकास अधिकारी डॉ.लहू पवार यांनी केले.

गाणी, इत्यादी. अहिरेगीतेत लिखित

Every Tuesday is No Vehicle day most of the staff residing near the campus. Students and the staff using public transport system and transport by using only cycle. Bicycles purchased in the campus are used by the students for college transport.

सकाळ

महिला सशक्तीकरणासाठी यवतमाळच्या तरुणीची सायकलवारी

साक्री येथे प्रणाली चिकटे हिचे जल्लोषात स्वागत

सकाळ वृत्तसेवा

साक्री, ता. १४ : पर्यावरणजागृतीचे काम केले पाहिजे हा हेतू डोळ्यांसमोर ठेवून यवतमाळची २१ वर्षीय प्रणाली विठ्ठल चिकटे ही सायकल यात्री राज्यभर प्रमंतीबरोबर महिला सशक्तीकरण जनजागृती, स्थानिक संस्कृतीचा अभ्यास करत आहे. स्वेच्छा, स्वनिर्वाह आणि पालकांच्या परवानगीने ही तरुणी कोणत्याही संरक्षणशिवाय गावोगावी पर्यावरणसंवर्धनाचा संदेश देत आहे.

प्रणालीने ९ मार्चला सकाळी

मंगळवार ठरला 'सायकल डे'

साक्री महाविद्यालयाचे प्राचार्य डॉ. राजेंद्र अहिरे यांनी प्रणालीची प्रेरणा घेऊन दर मंगळवारी महाविद्यालयात येताना कोणत्याही प्राध्यापकाने किंवा शिक्षक कर्मचारी आणि स्थानिक विद्यार्थ्यांनीसुद्धा सायकलने महाविद्यालयात यायचे असल्याचे नमूद केले. दर मंगळवार 'सायकल डे' म्हणून पाठ्यगार असल्याचे सांगितले.

सतला बारीपाडा येथून सायकल प्रवास सुरू केला आणि अवघ्या तीन तागांत ४४ किलोमीटर अंतर कापत साक्री येथील सि. गो. पाटील महाविद्यालयात पोचली. प्राचार्य डॉ. आर. आर. अहिरे, उपप्राचार्य डॉ. अनंत पाटील, विद्यार्थी विकास अधिकारी डॉ. लहू

पवार, युवती सभाप्रमुख डॉ. ज्योती वाकोडे, रासेयोचे प्रा. विश्वास भामरे, प्रा. उषा शेलार, प्रा. भारती खैरनार आदींसह सर्व प्राध्यापक, शिक्षक कर्मचारी, विद्यार्थी विद्यार्थिनींनी प्रणालीचे स्वागत केले.

स्वयंबावदारीने २० ऑक्टोबर



साक्री : सी. गो. पाटील महाविद्यालयात पर्यावरणजागृतीचा संदेश देताना सायकल यात्री प्रणाली चिकटे. शेजारी महाविद्यालयाचे प्राचार्य डॉ. राजेंद्र अहिरे, उपप्राचार्य डॉ. अनंत पाटील, प्राध्यापक आदी.

२०२० पासून प्रणालीने सायकल प्रवास सुरू केला आहे. आजपर्यंत पाच हजार ७०० किलोमीटर प्रवास करून ती साक्री (जि. धुळे) येथे पोचली. "कोणत्याही प्रकारचे कुठेही

प्रदूषण असेल ते निर्मूलनासाठी सक्रिय सहभाग नोंदवावा. अशा सामाजिक कार्यात मनापासून सहभागी व्हावे. शासनाच्या कोणत्याही यंत्रणेची वाट न पाहता आपण काय करू शकतो, कोणालाही न सांगता जमेल तेवढे पर्यावरण संवर्धनाचे काम आपण करू," असे आवाहन प्रणालीने विद्यार्थिनींना केले.

Using Sifen Method for Cleaning Water Storage Tank

दिव्य मराठी

आजची निर्मितीक सुधारक

सायफन पद्धतीचा वापर करून घराच्या छतावरील पाण्याच्या टाक्यांची स्वच्छता

मंडे पॉलिटेक

रवींद्र देवरे | साक्री



घराच्या छतावर असलेली पाण्याची टाकी साफ करण्याचे काम अनेकांसाठी अपघात ठरते. या कार्यासाठी रूग्ण पद्धिकाय महाविद्यालयातील प्राचार्य प्रभाकर बच्छाव यांनी सायफन पद्धतीचा वापर करून पाण्याच्या टाकीतील गाळ काढण्याचे काम संपे केले आहे.

पाण्याची टाकी स्वच्छ करणाऱ्यासाठी प्राचार्य प्रभाकर बच्छाव यांनी सायफन पद्धतीचा वापर केला आहे. त्यासाठी त्यांनी घाट ते पाच फूट उंचीची पीव्हीसी पायप, एक रिकामी पाण्याची बाटली व घाट ते पाच फूट प्लॉस्टिक नळीचा वापर केला. पाण्याची बाटली अर्धी कापून ती पीव्हीसी पायपला जोडली जाते. तसेच पीव्हीसी पायपचे दुसरे टोक प्लॉस्टिकच्या नळीला जोडले जाते. पाच व नळीमध्ये हवा फिरवत नाही, त्यानेच नळीचे शेवटचे टोक अंतर्गत रूंद करून काळोखीय बाटलीत साधे पाणी भरून घेतले जाते. त्यामुळे नळी व पीव्हीसी पायपमध्ये पूर्ण पाणी भरले जाते. पाणी भरले नसल्यानेच रूंद टाकीतून गाळ काढण्यात आले व्हा

सी. गो. पाटील महाविद्यालयात पाण्याच्या टाकीतून गाळ काढण्याचा प्रयोग करून दाखवताना प्राचार्य प्रभाकर बच्छाव, शेजारी प्राचार्य डॉ. अर. अहिरे

महाविद्यालयात प्रयोग

शहरातील सी. गो. पाटील महाविद्यालयाच्या प्रशासकीय इमारतीवरील पाण्याच्या टाकीतील गाळ प्राचार्य बच्छाव यांनी या प्रयोगाच्या सहाय्याने काढला आहे. या वेळी उपप्राचार्य प्रा. डॉ. अनंत पाटील, प्रा. एल. जी. सोमनाथ, प्रा. विश्वास भामरे आदी उपस्थित होते.

इमारती वीव्हीसी पायपला जोडलेली बाटली तळाशी सोडण्यात येते. त्यानेच प्लॉस्टिकच्या नळीचे तोंड उघडून पाण्यात भरलेले पाणी प्रवाही होऊ दिले. साक्री शहरातील विद्यार्थीनागर,

अनेकाना फायदा

■ घराचा अंतर्गत पाण्याचा वापर करून सायफन पद्धतीने पाण्याच्या टाकीतील गाळ काढण्यात येऊ शकते. अनेकाना सायफनची यंत्रणा जागृत घेतली. या प्रयोगाच्या अनेकाना फायदा होतो आहे. त्याचा प्रभाव अजून आहे.

प्रभाकर बच्छाव, प्राचार्य



We running various methods that makes easy and effortless cleaning method adopted by our college.

Rain Water harvesting with Well Recharge Point

We adopted Rain water recharge point by our college. To enrich ground water level in our campus.



सी.गो.पाटील महाविद्यालय मैदानावर जलपूनर्भरण प्रकल्प

कासारे, (प्रतिनिधी)- जलपातळी खाली गेली. ही त्यानुसार महाविद्यालयाचे प्राचार्य कोणत्याही गोष्टीचे मोल परिस्थिती साक्री परीसरात सर्वदूर माणसाला तेव्हाच कळते जेव्हा आहे. या समस्या दूर व्हाव्यात ती गोष्ट दुर्मिळ होत जाते. याचा यासाठी विविध संकल्पना प्रत्यक्ष आज प्रत्येकाला येत अस्तित्वात येत आहे. अशीच एक सकल्पना विद्या विकास मंडळाचे सभापती सुरेश पाटील यांनी मांडली आहे. त्यापैकीच 'पाणी' हा त्यानुसार महाविद्यालयाच्या चार एकर पयगणाच्या एका बाजूला पंधरा फुट एक महत्वाचा घटक की, सभापती सुरेश पाटील यांनी मांडली प्रकल्पातून त्यांनी इतरांनाही संदेश ज्याचे महत्त्व आज कळू लागले आहे. प्रकल्पातून त्यांनी इतरांनाही संदेश दिला की, पावसाचे पाणी वाया न जाऊ देता. त्या पाण्याला अडवा खोल व पंधरा फुट लांबी रुंदी असणारा खड्ड तयार करून त्यात व जमीनीत मुखा जेणेकरून जलपातळीत वाढ होईल. महाविद्यालयातील या प्रकल्पाचे परीसरातून कौतुक होत आहे.

Drip Irrigation

Campus is fully covered with drip point tubing to minimized and systematic distribution water among the plants.



Observations

- The college is basically catering education to rural area of North Maharashtra region.
- Most of the students are first generation learners
- The waste generated in laboratories is disposed in the ground by safe methods.
- The plantation is undertaken on various occasions to maintain the environmental balance.
- The organic waste generated is transformed into compost by vermicomposting.
- A small nursery of medicinal plants in the botanical garden is maintained by the institution.
- A scientific method is developed and practice for cleaning of overhead tank.
- Efforts are made towards roof top water harvesting by the institution.
- Rational utilization of water is practiced at the campus of the institution.

Recommendations

- The institute should develop proper mechanism for e-waste management.
- A survey should be conducted for loss of water due to leakages. It will help to adopt corrective measures for water loss.
- There is lot of scope for environmental awareness program in the area.
- This opportunity must be grab by the college.
- Attention needs to be paid towards land scaping to increase the aesthetic value of the college.
- The institute should initiate the solar power harvesting by installation of solar panels.
- Regular energy audit is recommended.

