

**Mahatama Gandhi Vidyamandir's**  
**Smt. Pushpatai Hiray Arts, Science & Commerce Mahila Mahavidyalaya,**  
**Malegaon Camp**  
**Best Practice No.2**

**Title of practice: Vermicomposting for organic waste management**

**Objectives of the practice:**

The main aim of the project is to develop organic manure in the form of compost prepared from Vermicomposting process.

The Objectives are:

- 1) To collect garbage from the college and nirmalaya collected at Girna river, Malegaon during Ganapati celebration by National Service Scheme (NSS) volunteers and science students.
- 2) To prepare compost on large scale to supply to the farmers and students/ staff etc.
- 3) To encourage students to adopt vermiculture for improving fertility of soil
- 4) To reduce the use of chemical fertilizers
- 5) To develop the environmental protection awareness through utilization of garbage as a source of utility.

**The Context:**

The cleaning and dumping of solid waste has become a challenge for the college management. To get rid of the bio-waste the department of Zoology has come up with an innovative idea of dispensing with the solid waste and at the same time making good use of it.

Nirmalaya collected at the Girna river during Ganpati festival is also brought at college Vermicompost Centre. Vermicompost contains water soluble nutrients and it is an excellent nutrient with rich organic fertilizer and soil conditioner. It is used in farming. Hence ,the innovative idea to develop it in the campus.

**The Practice:**

At the first stage nirmalaya and college organic waste is collected and then segregated into bio and non- bio degradable waste. This work is done by NSS volunteers and students of Department of Zoology. After segregation the bio degradable waste is dumped in to the vermicompost bed. To prepare compost, plastic vermicomposting bed is used. The biomass is collected and placed under the sun for about 10-12 days for decomposition. After decomposition of organic waste preparation of vermicompost bed starts. Bed preparation is done in the following manner.

- First layer at base – 6 inch decomposed organic waste.
- Second layer – 6 inch cow dung.
- Third layer – 6 inch decomposed organic waste.
- Fourth Layer (Topmost layer) – 6 inch cow dung.

After Bed preparation, first day 100 to 150 Liter of water is sprinkled on the bed. On the second day earthworms are introduced and 30 Liters of water is sprinkled. From third day up to vermicompost preparation 70 to 80 Liters of water is sprinkled once after every fourth day. Vermicompost gets ready in almost two months. After vermicompost is prepared, no water should be sprinkled for five days. The compost is first sieved and then it is ready for use. The bio fertilizer so obtained is used for the plants grown in the campus and is also distributed to the people as per their need.

This is a low cost practice. The practice is repetitive. It only requires garbage and cow dung. The earthworms lay eggs and the eggs turn into new earthworms. This is a continuous process.

### **Evidence of success:**

The practice is given more publicity so that the program becomes a model and can be practiced by the local people and students. The vermicompost was used by our students in their garden. The experts/users reviewed it as a best vermicompost. This practice has helped the institute to train students to recycle organic waste in a productive way. The investment required is very less and the students can perform vermicomposting on their agricultural lands as well. This practice has solved the problem of disposal of organic waste and the institute is getting good quality compost for its own garden. The vermicompost enriches soil and suppresses plant diseases present in the campus and converts it into green campus.

### **Problems encountered and resources required:**

1. The girl students found the removal of weeds and collection of garbage quite challenging. It was done successfully with collective efforts.
2. It is a time consuming process and takes 2-3 months to convert the organic matter into usable form.
3. It nurtures the growth of pests and pathogens such as fruit flies, centipedes and flies.
4. Vermicomposting is a high maintenance activity. Vermicomposting bed needs to be looked after carefully as it should not be too dry or too wet.

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**Year 2022-23**

Vermicompost is known to be the world's best fertilizer. Vermicomposting is a method of preparing enriched compost with the use of earthworms. It is one of the easiest methods to recycle agricultural wastes and to produce quality compost. Earthworms consume biomass and excrete it in digested form called worm casts. Worm casts are popularly called as Black gold. The casts are rich in nutrients, growth promoting substances, beneficial soil micro flora and having properties of inhibiting pathogenic microbes. Vermicompost is stable, fine granular organic manure, which enriches soil quality by improving its physicochemical and biological properties. It is highly useful in raising seedlings and for crop production. Vermicompost is becoming popular as a major component of organic farming system. Using Vermicompost can fulfill the requirements for organically grown products.

**Vermicomposting materials:**

Decomposable organic wastes such as Nirmalya collected during Ganpati Festival and college campus organic waste are commonly used as composting materials. Red earthworm (*Eisenia foetida*) is preferred species of earthworms because of its high multiplication rate and thereby converts the organic matter into vermicompost within 45-50 days. Since it is a surface feeder it converts organic materials into vermicompost from top.

F.Y.B.Sc and S.Y.B.Sc. Student from Department of Zoology, M.P.H. Arts, Science And Commerce Mahila Mahavidyalaya, work on this Vermicompost Project in academic year.2022-23.

At 15 April 2023 we had started the project under the Guidance of Principal Dr. U.S.Deore and Smt.N.S.Desale, Head of the Department Zoology and faculty of the department Dr.T.A.Sontakke, Prof. Smt.S.J.Salunke, and Miss . Sara Hamdani.

After two months good quality vermicompost is ready for use. The bio fertilizer so obtained is used for the plants grown in the campus and is also distributed to the people as per their need.

# Photographs of Vermicompost Project



**Collection of Nirmalya from the Ganpati Visarjan site- Girna river during Ganpati Festival by NSS Volunteers**



**Extracted Material from Collected Nirmalya**



**Collection of Organic waste from College Campus By Students, Department of Zoology.M.P.h.Mahila Mahavidyalaya, Malegaon**



**Collection of Organic waste from College Campus By Students,  
Department of Zoology**



**Collection of Organic waste from College Campus By Students, Department of Zoology, M.P.H Mahila Mahavidyalaya, Malegaon**



**Preparation of Vermicompost Bed By S.Y.B.sc and T.Y.B.Sc. Zoology**

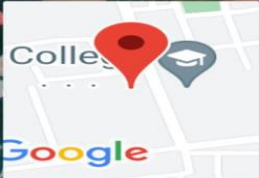




ivo Y21 · Lalita Musale  
Apr 21, 2023, 09:18



GPS Map Camera



**Malegaon, Maharashtra, India**  
Loknete Vyankatrao Hiray Marg, HG67+CQC, Agriculture Collage  
Farm Area, Malegaon, Maharashtra 423105, India  
Lat 20.5611°  
Long 74.514408°  
21/04/23 09:19 AM GMT +05:30



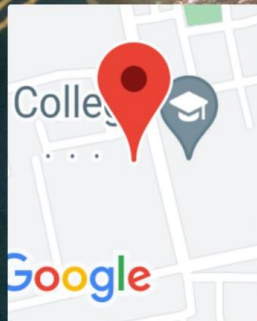
**Sprinkling of water to Vermicompost Bed by Students**



Shot on OnePlus  
By DrTeju



GPS Map Camera



**Malegaon, Maharashtra, India**

Loknete Vyankatrao Hiray Marg, HG67+CQC, Agriculture Collage

Farm Area, Malegaon, Maharashtra 423105, India

Lat 20.5611°

Long 74.514408°

21/04/23 09:21 AM GMT +05:30

**Addition of cow dung in Vermicompost Bed by Students**



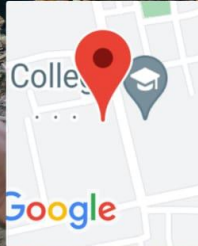
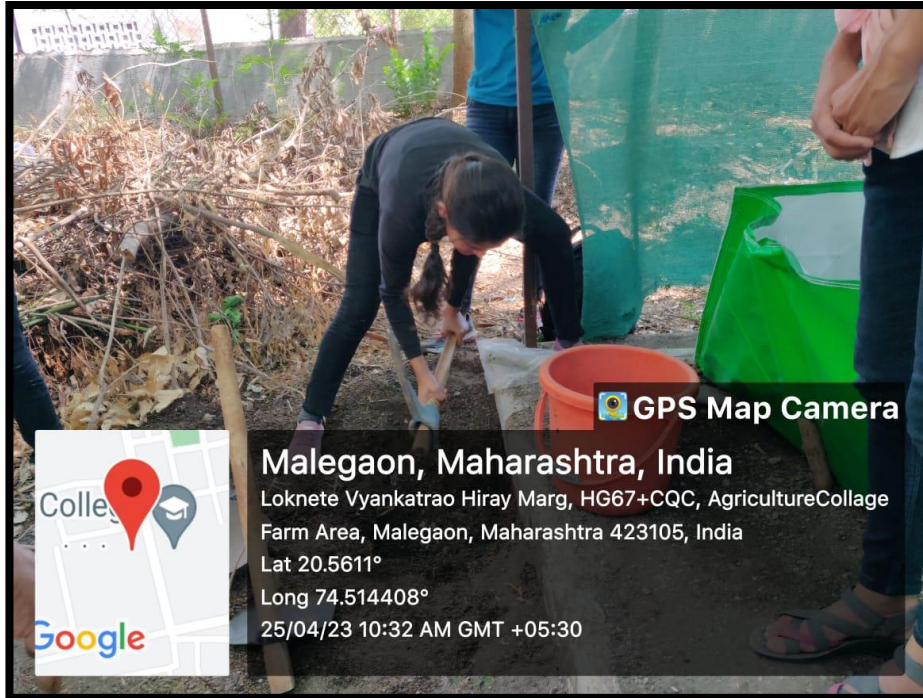
**Vermiculture**



**Vermiculture Species – *Eisenia foetida***



**Addition of Vermiculture into Vermicompost Bed by Student**



GPS Map Camera

**Malegaon, Maharashtra, India**

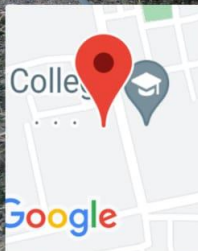
Loknete Vyankatrao Hiray Marg, HG67+CQC, AgricultureCollage

Farm Area, Malegaon, Maharashtra 423105, India

Lat 20.5611°

Long 74.514408°

25/04/23 10:32 AM GMT +05:30



GPS Map Camera

**Malegaon, Maharashtra, India**

Loknete Vyankatrao Hiray Marg, HG67+CQC, AgricultureCollage

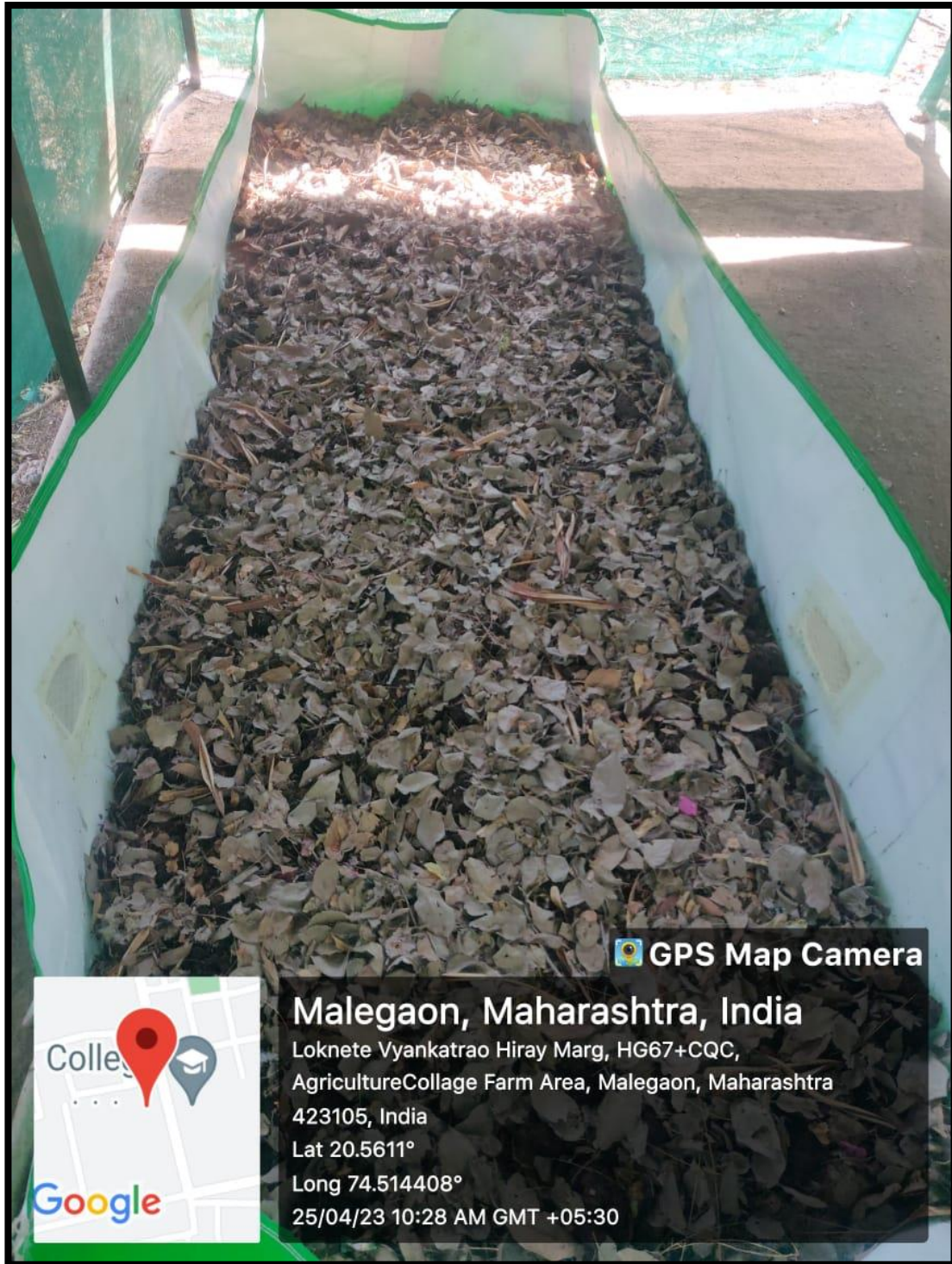
Farm Area, Malegaon, Maharashtra 423105, India

Lat 20.5611°

Long 74.514408°

25/04/23 10:40 AM GMT +05:30

**Vermi-Wash Collection site**



**Complete Set up of Vermicompost Bed at M.P.H. A.S.C Mahila Mahavidyalya by Department Of Zoology.**



**Visit to Vermicopost Unit by Dr. Mrunal Bhardhwaj , Principal, M.P.H. Mahila Mahavidyalaya , Malegaon**



**Visit to Vermicopost Unit by Teachers and Students of K.B.H. Vidyalaya, Malegaon**



**Smt. N.S Desal , Head, Department of Zoology explain the procedure of vermicomposting to students of K.B.H. Vidyalaya, Malegaon**



**Visit to Vermicompost unit By Dr .Ismail Ansari , Head, J.A.T. College, Malegaon**



**Distribution of Vermiculture to students by Dr. Mrunal Bhardhwaj,  
Principal, M.P.H Mahila Mahavidyalaya, Malegaon**



**Distribution of Vermiculture to students by N.S. Desale , Head, Department of Zoology  
M.P.H Mahila Mahavidyalaya, Malegaon**





**Distribution of Vermiculture to students by Dr. T.A. Sontakke ,Academic Supervisor,  
M.P.H Mahila Mahavidyalaya, Malegaon.**



**Distribution of Vermiculture to students by Smt. S.J. Salunke ,Faculty ,  
Department of Zoology , M.P.H Mahila Mahavidyalaya, Malegaon.**



**Distribution of Vermiculture to students by Sara Hamdani ,Faculty , Department of Zoology , M.P.H Mahila Mahavidyalaya, Malegaon**



**After Two Months, Well Developed Vermi Culture Formed**

# महिला महाविद्यालयात गांडूळखत निर्मिती प्रकल्पास सुरुवात

**मालेगाव ।**

महिलारत्न पुष्पाताई हिरे कला, विज्ञान व वाणिज्य महिला महाविद्यालयात दि.२१ एप्रिल २०२३ रोजी प्राणिशास्त्र विभागांतर्गत गांडूळखत निर्मिती प्रकल्प सुरू करण्यात आला. महाविद्यालयाच्या प्रभारी प्राचार्य डॉ. मृणाल भारद्वाज यांच्या संकल्पनेतून या प्रकल्पाची नव्याने सुरुवात करण्यात आली.

रासायनिक खतांचा वापर केल्यास शेतीचे नुकसान होते, शिवाय जमिनीचा पोतही खराब होतो. जैविक खतांचा उपयोग केल्यास उत्पादन वाढण्यास मदत होऊ शकते व जमिनीचा पोत सुधारण्यासही मदत होते. त्यामुळे, पुढीलकाळात सेंद्रियखत निर्मिती प्रकल्पांवर भर देण्याची नितांत

आवश्यकता असल्याचे डॉ. मृणाल भारद्वाज याप्रसंगी म्हणाल्या.

प्राणिशास्त्र विभागप्रमुख प्रा. एन. एस. देसले यांच्या मार्गदर्शनात, द्वितीय वर्ष विज्ञान, प्राणिशास्त्र विभागातील विद्यार्थिनींनी गांडूळखताचे बेड तयार करून प्रकल्पास सुरुवात केली. शैक्षणिक पर्यवेक्षक तसेच प्राणिशास्त्र विभागाच्या डॉ. तेजस्विनी सोनटक्के यांच्या पुढाकाराने हा प्रकल्प कार्यान्वित करण्यात आला. प्रकल्पासाठी महाविद्यालयाच्या उपप्राचार्य डॉ. दीपांजली बोरसे यांचे मार्गदर्शन लाभले. सदरसाठी प्रा. शीतल साळुंखे, सारा हमदानी व द्वितीय वर्ष प्राणिशास्त्र विभागाच्या विद्यार्थिनी तसेच कविता पाटील यांचे सहकार्य लाभले.



## महिला महाविद्यालयात गांडूळ बीज वाटप

**मालेगाव ।** येथील पुष्पाताई हिरे महिला महाविद्यालयात महाविद्यालयाच्या विज्ञान शाखेतील विद्यार्थिनींना महाविद्यालयाच्या प्रभारी प्राचार्य डॉ. मृणाल भारद्वाज, प्राणिशास्त्र विभागप्रमुख प्रा. एन.एस. देसले, शैक्षणिक पर्यवेक्षक व प्राणिशास्त्र विभागाच्या डॉ. तेजस्विनी सोनटके, प्रा. शीतल साळुंके, सारा हमदानी यांच्या हस्ते गांडूळ बीजाचे वाटप करण्यात आले. घरगुती कचरा, बागेतील पाला-पाचोळा हे घराच्या बाहेर कचरापेटीत फेकून देण्यापेक्षा त्यावर थोडीशी मेहनत घेऊन प्रक्रिया केली तर घरच्या घरीच उत्तमदर्जाचे गांडूळखत तयार करता येईल असा मौलिक सल्ला महाविद्यालयाच्या प्रभारी प्राचार्य डॉ. मृणाल भारद्वाज यांनी गांडूळबीज वाटपाप्रसंगी दिला. सर्व विद्यार्थिनींनी आपापल्या घरी लहान स्तरावर गांडूळप्रकल्प तयार करून गांडूळखत उत्पादनास सुरुवात करावी या उद्देशाने हा प्रकल्प राबविण्यात येत आहे. रासायनिक खतामुळे जमिनीचा जिवंतपणा नष्ट होत आहे. तो होऊ नये म्हणून प्राणिशास्त्र विभागातर्फे विद्यार्थिनींमध्ये सेंद्रिय खत निर्मितीसाठी प्रचार व प्रसार करण्याची संकल्पना सेल्फी विथ व्हर्मी कंपोस्ट या प्रकल्पाद्वारे राबविण्यात येत आहे. या उपक्रमासाठी उपप्राचार्य डॉ. दीपांजली बोरसे व प्राणिशास्त्र विभागातील विद्यार्थिनींचे सहकार्य लाभले.



**मालेगाव शहर :** पुष्पाताई हिरे महिला महाविद्यालयात गांडूळ खत प्रकल्पाची पाहणी करताना प्राचार्या डॉ. मृणाल भारद्वाज व शिक्षक.

## हिरे महिला महाविद्यालयात गांडूळखत निर्मिती प्रकल्प

मालेगाव शहर : येथील महात्मा गांधी विद्यामंदिर संचलित, महिलारत्न पुष्पाताई हिरे कला, विज्ञान व वाणिज्य महिला महाविद्यालयात प्राणिशास्त्र विभागांतर्गत गांडूळखत निर्मिती प्रकल्प सुरू करण्यात आला. प्राचार्य डॉ. मृणाल भारद्वाज यांच्या संकल्पनेतून प्रकल्पाची सुरवात करण्यात आली. रासायनिक खतांचा वापर केल्यास शेतीचे नुकसान होते, शिवाय जमिनीचा पोतही खराब होतो. जैविक खतांचा उपयोग केल्यास उत्पादन वाढण्यास मदत होऊ शकते व जमिनीचा पोत सुधारण्यासही मदत होते. त्यामुळे पुढील काळात सेंद्रियखत निर्मिती प्रकल्पांवर भर देण्याची आवश्यकता असल्याचे डॉ. मृणाल भारद्वाज यांनी सांगितले. प्राणीशास्त्र विभागप्रमुख प्रा.एन.एस.देसले यांच्या मार्गदर्शनात, द्वितीय वर्ष विज्ञान, प्राणिशास्त्र विभागातील विद्यार्थिनींनी गांडूळखताचे बेड तयार करून प्रकल्पास सुरवात केली. डॉ. तेजस्विनी सोनटक्के यांच्या पुढाकाराने हा प्रकल्प कार्यान्वित करण्यात आला. उपप्राचार्य डॉ. दीपांजली बोरसे यांचे मार्गदर्शन लाभले. प्रा. शीतल साळुंखे, सारा हमदानी व द्वितीय वर्ष प्राणिशास्त्र विभागाच्या विद्यार्थिनी व कविता पाटील यांनी पुढाकार घेतला.