

Rayat Shikshan Sanstha's

**D. P. Bhosale College, Koregaon**

**Department of Zoology**

**INDEX**

**Short Term Course on Vermicomposting  
Year 2019-20**

<b>Sr. No.</b>	<b>Content</b>
1.	Notice
2.	Objectives and learning outcomes
3.	Syllabus
4.	Workload distribution
5.	Time - Table
6.	List of Participants
7.	Attendance
8.	Report
9.	Certificate

Rayat Shikshan Sanstha's

**D. P. Bhosale College, Koregaon**

**Department of Zoology**

**Short Term Course on Vermicomposting**

**NOTICE**

**Year 2019-20**

All the students of Zoology Department are hereby informed that, the short term course on Vermicomposting will be conducted from **1<sup>st</sup> December 2019 to 29<sup>th</sup> February 2020**. All the students should remain present for the lectures in time.



**Head**  
Department of Zoology  
D. P. Bhosale College Koregaon

Rayat Shikshan Sanstha's

## **D.P. Bhosale College, Koregaon.**

**Department of Zoology**

**2019-2020**

**Autonomous (Self Financed) Short term certificate course.**

### **Vermicomposting – (Vermiculture ) (Vermitechnology)**

#### **Objectives of the course –**

1. To aware student about importance of Vermiculture and Vermicomposting.
2. To make student self entrepreneurs / employed by imparting them skill to set up and run vermicomposting unit at commercial level.
3. To generate employment for rural illiterate men and women.

#### **Outcome of the course-**

1. Student will get in depth knowledge about Vermitechnology.
2. Student can get self employment.
3. Student generates rural employment for rural men and women.

#### **Reference Books:-**

1. Text book of invertebrate Zoology – Kotpal.
2. Text book of practical invertebrate Zoology. - Kotpal.
3. Economic Zoology- C.B. Pandey.
4. Text book of Vermitechnology- S.S. Patil.
5. Earthworm- type study- Agarwal.

#### **Board of studies-**

1. Jawale C. B. ( Co-ordinator)
2. Ms. Shaikh N. A.
3. Ms. Pawar S.S.
4. Ms. Kadam T.N.
5. Ms. Kokil S.D.
6. Dr. Patil S.S. ( K.M. Rethare, Karad)
7. Dr. Gadale M.M. ( K.M. Rethare, Karad)

#### **Experts Name-**

1. Dr. Patil S.S. ( K.M. Rethare, Karad)
2. Dr. Gadale M.M. ( K.M. Rethare, Karad)
3. Mr. Bhosale M. B. ( Farmer expert- at Eksal)



Rayat Shikshan Sanstha's  
**D.P. Bhosale College, Koregaon.**  
**Department of Zoology**

2019-2020

**Short Term course- Vermicomposting – (Vermiculture ) (Vermitechnology)**

**Syllabus: - Theory.**

- A) Introduction to Vermitechnology. .... (1. Lecture)
  - a. Vermiculture.
  - b. Vermicomposting.
- B) Study of Earthworm. .... (12. Lectures)
  - a. Taxonomy & Morphology of Earthworm.
  - b. Useful species of Earthworm.
  - c. Anatomy of Digestive system of Earthworm.
  - d. Anatomy of Excretory organs of earthworms.
  - e. Anatomy of Reproductive system of Earthworm.
  - f. Study of Life cycle of Earthworm.
- C) Vermiculture. .... (5. Lectures)
  - a. Factors influencing the culture of earthworm.  
(Food, Moisture, Temperature, Light, PH, Predators)
  - b. Setting up of vermiculture unit in Farms.  
Place of Construction, size of Unit.  
Material used for setting of vermiculture unit.  
Preparation of vermi-bed or culture bed.
- D) Vermicomposting. .... (6. Lectures)
  - a. Setting up of Vermicomposting Unit.  
(Material, Size, place, Layering, and maintenance)
  - b. Steps in vermicomposting treatment of organic wastes.  
(Removal of non-organic matter)  
(Size reduction of organic matter)  
(Microbial pre-treatment of organic matter)  
(Vermicomposting of pre-treated organic waste.)
  - c. Importance of Vermicomposting.
  - d. Vermiwash.

(Total 24 Lectures)



Rayat Shikshan Sanstha's

**D.P. Bhosale College, Koregaon.**

**Department of Zoology & Microbiology**

2019-2020

**Short Term course- Vermicomposting – (Vermiculture ) (Vermitechnology)**

**Syllabus: - Practicals.**

**List of Experiments-**

1. Taxonomy and Morphology of Earthworm.
2. Study of Useful species of Earthworm.  
(*Eudrilus eugeniae*, *Eisenia foetida*, *Megascolex species*, *Eisenia Andrei* etc)
3. Dissection of Digestive system of Earthworm.
4. Dissection of Reproductive system of Earthworm.
5. Mounting of excretory organs "Septal Nephridium" of Earthworm.
6. Study of Life cycle of Earthworm.
7. Rearing of Earthworms.
8. Survey for site selection of vermiculture and vermicomposting Unit.
9. Size and material used for vermiculture unit.
10. Material and methods for preparation of beds / layers in vermiculture unit.
11. Steps in vermicomposting treatment of organic wastes.  
(Removal of non-organic matter)  
(Size reduction of organic matter)  
(Microbial pre-treatment of organic matter)  
(Vermicomposting of pre-treated organic waste.)
12. Setting up of vermicomposting Unit (maintenance of physico-chemical factors, harvesting of vermicompost and vermivash)



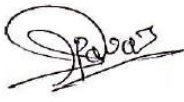


Rayat Shikshan Sanstha's,


**D.P. Bhosale College, Koregaon**

**Department of Zoology & Microbiology**

**Vermicomposting – (Vermiculture ) (Vermitechnology  
Syllabus Workload distribution**

**2019-2020**

Class	Unit	Teacher Name	Signature
<b>Syllabus: - Theory</b>			
<b>B.Sc. -II</b>	<b>A ) Introduction to Vermitechnology</b>  a. Vermiculture. b. Vermicomposting	Ms. Pawar S.S.	
	<b>B) Study of Earthworm.</b>  a. Taxonomy & Morphology of Earthworm. b. Useful species of Earthworm. c. Anatomy of Digestive system of Earthworm. d. Anatomy of Excretory organs of earthworms. e. Anatomy of Reproductive system of Earthworm. f. Study of Life cycle of Earthworm.	Mr. Jawale C.B.	
	<b>C) Vermiculture</b>  a. Factors influencing the culture of earthworm. (Food, Moisture, Temperature, Light, PH, Predators) b. Setting up of vermiculture unit in Farms. Place of Construction, size of Unit. Material used for setting of vermiculture unit. Preparation of vermi-bed or culture bed.	Ms. Shaikh N.A.	

Class	Unit	Teacher Name	Signature
B.Sc. -II	<p><b>D ) Vermicoposting.</b></p> <p>a. Setting up of Vermicomposting Unit. (Material, Size, place, Layering, and maintenance)</p> <p>b. Steps in vermicomposting treatment of organic wastes. (Removal of non-organic matter) (Size reduction of organic matter) (Microbial pre-treatment of organic matter) (Vermicomposting of pre-treated organic waste.)</p> <p>c. Importance of Vermicomposting.</p> <p>d. Vermiwash.</p>	Ms. Pawar S.S.	



Coordinator



Head  
Department of Zoology



Rayat Shikshan Sanstha's,

**D.P. Bhosale College, Koregaon**

**Department of Zoology & Microbiology**

**Vermicomposting – (Vermiculture ) (Vermitechnology**

**Syllabus Workload distribution**

**2019-2020**

Class	Unit	Teacher Name	Signature
<b>Syllabus: - Practical</b>			
	<ol style="list-style-type: none"><li>1. Taxonomy and Morphology of Earthworm.</li><li>2. Study of Useful species of Earthworm.</li><li>3. Study of Life cycle of Earthworm.</li></ol>	Ms. Pawar S.S.	
	<ol style="list-style-type: none"><li>1. Dissection of Digestive system of Earthworm.</li><li>2. Dissection of Reproductive system of Earthworm.</li><li>3. Mounting of excretory organs "Septal Nephridium' of Earthworm.</li></ol>	Ms. Kokil S.D.	
	<ol style="list-style-type: none"><li>1. Size and material used for vermiculture unit.</li><li>2. Material and methods for preparation of beds / layers in vermiculture unit.</li><li>3. Steps in vermicomposting treatment of organic wastes.</li></ol>	Mr. Jawale C.B	
	<ol style="list-style-type: none"><li>1. Survey for site selection of vermiculture and vermicoposting Unit.\</li><li>2. Rearing of Earthworms.</li><li>3. Setting up of vermicoposting Unit (maintenance of physico-chemical factors, harvesting of vermicompost and vermiwash)</li></ol>	Ms. Shaikh N.A.	

Coordinator

Head

Department of Zoology



Rayat Shikshan Sanstha's  
**D. P. Bhosale College, Koregaon**

**Department of Zoology**

**Short Term Course on Vermicomposting**

**2019-20**

**Time Table**

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>Theory</b> 10.15 to 11.15	CBJ	NAS	SSP	CBJ	NAS	SSP
<b>Practical</b> 8.30 to 10.30	SSP	CBJ	NAS	SSP	CBJ	NAS

CBJ: Mr. C. B. Jawale

NAS: Mrs. N.A. Shaikh

SSP: Ms. S. S. Pawar

  
**Head**  
Department of Zoology  
D. P. Bhosale College Koregaon

Rayat Shikshan Sanstha's

D.P. Bhosale College, Koregaon.

**Department of Zoology & Microbiology**

Autonomous (Self Financed) Short term certificate course.

Vermitechnology – (Vermiculture and Vermicomposting)

**Duration: - 1 December 2019 to 29 February 2020**

**LIST OF STUDENT**

<b>Roll. No.</b>	<b>Name of the Students</b>
3371	Bandgar Tejas Vilas
3372	Bhoite Kunal Vitthal
3373	Bhosale Mahesh Ankush
3374	Bhosale Pooja Dattatray
3375	Bhosale Priya Dattatray
3376	Chavan Samadhan Shrikamt
3377	Disale Rohan Ramesh
3378	Ghorpade Rushikesh Shrimant
3379	Jadhav Ankita Bapuu.
3380	Jadhav Harshda Sanjay
3381	Jagdale Mahesh Sopan
3382	Kadam Manasi Sanjay
3383	Matkar Ashutosh Pandurang
3384	Matkar Dinesh Ashok
3385	More Dhanshri Vinod
3386	More Shivam Tanaji
3387	More Sneha Pramod



Coordinator.



Principal

D.P. Bhosale College Koregaon.

Roll No.	Name of the Student	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
3371	Bandgar T. V.		<del>Band</del>	<del>Band</del>						<del>Band</del>	<del>Band</del>						A	<del>Band</del>						A	<del>Band</del>						<del>Band</del>	<del>Band</del>
3372	Bhoite K. V.		A	<del>Bhoite</del>						A	<del>Bhoite</del>						<del>Bhoite</del>	A						<del>Bhoite</del>	<del>Bhoite</del>						A	<del>Bhoite</del>
3373	Bhosale M. A.		<del>(UAP)</del>	A						<del>(UAP)</del>	<del>(UAP)</del>						<del>(UAP)</del>	<del>(UAP)</del>						<del>(UAP)</del>	<del>(UAP)</del>						<del>(UAP)</del>	<del>(UAP)</del>
3374	Bhosale P. D.		<del>Bhosale</del>	<del>Bhosale</del>						<del>Bhosale</del>	A						<del>Bhosale</del>	<del>Bhosale</del>						<del>Bhosale</del>	A						<del>Bhosale</del>	A
3375	Bhosale P. D.		<del>(Bhale)</del>	<del>(Bhale)</del>						<del>(Bhale)</del>	<del>(Bhale)</del>						A	<del>(Bhale)</del>						<del>(Bhale)</del>	<del>(Bhale)</del>						<del>(Bhale)</del>	<del>(Bhale)</del>
3376	Chavan S. S.		A	<del>Chavan</del>						<del>Chavan</del>	<del>Chavan</del>						<del>Chavan</del>	<del>Chavan</del>						<del>Chavan</del>	<del>Chavan</del>						<del>Chavan</del>	<del>Chavan</del>
3377	Disale R. R.		<del>(Disale)</del>	<del>(Disale)</del>						<del>(Disale)</del>	<del>(Disale)</del>						<del>(Disale)</del>	<del>(Disale)</del>						<del>(Disale)</del>	<del>(Disale)</del>						A	<del>(Disale)</del>
3378	Ghorpade R. S.		<del>Ghorpade</del>	<del>Ghorpade</del>						A	<del>Ghorpade</del>						<del>Ghorpade</del>	<del>Ghorpade</del>						<del>Ghorpade</del>	<del>Ghorpade</del>						<del>Ghorpade</del>	A
3379	Jadhav A. B.		<del>Jadhav</del>	A						<del>Jadhav</del>	<del>Jadhav</del>						<del>Jadhav</del>	A						A	<del>Jadhav</del>						<del>Jadhav</del>	<del>Jadhav</del>
3380	Jadhav H. S.		<del>Jadhav</del>	<del>Jadhav</del>						<del>Jadhav</del>	A						A	<del>Jadhav</del>						<del>Jadhav</del>	A						<del>Jadhav</del>	A
3381	Jagdale M. S.		<del>(Jagdale)</del>	<del>(Jagdale)</del>						<del>(Jagdale)</del>	<del>(Jagdale)</del>						<del>(Jagdale)</del>	<del>(Jagdale)</del>						<del>(Jagdale)</del>	<del>(Jagdale)</del>						<del>(Jagdale)</del>	A
3382	Kadam M. S.		A	<del>Kadam</del>						<del>Kadam</del>	<del>Kadam</del>						<del>Kadam</del>	<del>Kadam</del>						<del>Kadam</del>	<del>Kadam</del>						<del>Kadam</del>	A
3383	Matkar A. P.		<del>UP</del>	<del>UP</del>						A	<del>UP</del>						<del>UP</del>	A						<del>UP</del>	A						A	<del>UP</del>
3384	Matkar D. A.		<del>Matkar</del>	<del>Matkar</del>						<del>Matkar</del>	<del>Matkar</del>						<del>Matkar</del>	<del>Matkar</del>						<del>Matkar</del>	<del>Matkar</del>						<del>Matkar</del>	<del>Matkar</del>
3385	More D. V.		<del>More</del>	A						<del>More</del>	A						A	<del>More</del>						<del>More</del>	<del>More</del>						<del>More</del>	<del>More</del>
3386	More S. T.		<del>(More)</del>	<del>(More)</del>						<del>(More)</del>	<del>(More)</del>						<del>(More)</del>	<del>(More)</del>						A	<del>(More)</del>						<del>(More)</del>	A
3387	More S. P.		<del>SPM</del>	<del>SPM</del>						A	<del>SPM</del>						<del>SPM</del>	<del>SPM</del>						<del>SPM</del>	<del>SPM</del>						<del>SPM</del>	<del>SPM</del>

*S. Pawar*  
Head

Department of Zoology  
D. P. Bhosale College Koregaon



D.P. Bhosale College, Koregaon

Certificate Course in Vermicomposting

STUDENT ROLL CALL

Month : January 2020

Roll No.	Name of the Student	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
3371	Bandgar T. V.			A	Band		Band	A			Band	Band		Band	Band			A	Band		A	Band			A	Band		Band						
3372	Bhoite K. V.			Bhoite	Bhoite		A	Bhoite			Bhoite	Bhoite		A	Bhoite			Bhoite	Bhoite		Bhoite	Bhoite			Bhoite	Bhoite		Bhoite						
3373	Bhosale M. A.			(UAB)	(UAB)		(UAB)	(UAB)			A	(UAB)		(UAB)	(UAB)			(UAB)	(UAB)		(UAB)	(UAB)			(UAB)	A		(UAB)						
3374	Bhosale P. D.			Bhosale	A		Bhosale	Bhosale			Bhosale	Bhosale		Bhosale	Bhosale			A	Bhosale		Bhosale	A			Bhosale	Bhosale		A						
3375	Bhosale P. D.			(Bhosale)	(Bhosale)		(Bhosale)	A			(Bhosale)	(Bhosale)		(Bhosale)	A			(Bhosale)	(Bhosale)		(Bhosale)	(Bhosale)			A	(Bhosale)		(Bhosale)						
3376	Chavan S. S.			Chavan	A		Chavan	Chavan			Chavan	Chavan		Chavan	Chavan			Chavan	Chavan		Chavan	Chavan			Chavan	Chavan		Chavan						
3377	Disale R. R.			Disale	Disale		Disale	Disale			Disale	A		Disale	Disale			Disale	A		Disale	Disale			Disale	Disale		Disale						
3378	Ghorpade R. S.			Ghorpade	Ghorpade		A	Ghorpade			Ghorpade	Ghorpade		Ghorpade	Ghorpade			Ghorpade	Ghorpade		Ghorpade	Ghorpade			Ghorpade	A		Ghorpade						
3379	Jadhav A. B.			A	Jadhav		Jadhav	Jadhav			Jadhav	Jadhav		Jadhav	Jadhav			Jadhav	Jadhav		A	Jadhav			Jadhav	Jadhav		A						
3380	Jadhav H. S.			Jadhav	Jadhav		Jadhav	Jadhav			Jadhav	Jadhav		A	Jadhav			Jadhav	Jadhav		Jadhav	Jadhav			Jadhav	Jadhav		Jadhav						
3381	Jagdale M. S.			MSJagdale	A		MSJagdale	MSJagdale			MSJagdale	MSJagdale		MSJagdale	MSJagdale			MSJagdale	MSJagdale		MSJagdale	MSJagdale			MSJagdale	MSJagdale		MSJagdale						
3382	Kadam M. S.			Kadam	Kadam		A	Kadam			A	Kadam		Kadam	Kadam			Kadam	Kadam		Kadam	Kadam			A	Kadam		Kadam						
3383	Matkar A. P.			(UAB)	(UAB)		(UAB)	(UAB)			(UAB)	(UAB)		(UAB)	(UAB)			(UAB)	(UAB)		(UAB)	(UAB)			(UAB)	(UAB)		(UAB)						
3384	Matkar D. A.			Matkar	Matkar		Matkar	Matkar			Matkar	A		Matkar	Matkar			Matkar	Matkar		Matkar	Matkar			Matkar	Matkar		Matkar						
3385	More D. V.			A	More		More	More			More	More		More	A			More	More		More	More			More	A		More						
3386	More S. T.			(MS)	(MS)		A	(MS)			(MS)	(MS)		(MS)	(MS)			(MS)	(MS)		(MS)	(MS)			(MS)	(MS)		(MS)						
3387	More S. P.			SPM	SPM		SPM	SPM			SPM	SPM		SPM	SPM			SPM	A		SPM	A			SPM	SPM		A						

*Sawale*  
Head

Department of Zoology  
D. P. Bhosale College Koregaon



Rayat Shikshan Sanstha's

D.P. Bhosale College, Koregaon

Certificate Course in Vermicomposting

STUDENT ROLL CALL

Month : February 2020

Roll No.	Name of the Student	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
3371	Bandgar T. V.	Band							Band							A							A							Band
3372	Bhoite K. V.	Bhoite							A							Bhoite							Bhoite							A
3373	Bhosale M. A.	(UFA)							(UFA)							(UFA)							(UFA)							(UFA)
3374	Bhosale P. D.	A							Bhosale							A							A							A
3375	Bhosale P. D.	(Bhale)							(Bhale)							(Bhale)							(Bhale)							(Bhale)
3376	Chavan S. S.	Chavan							Chavan							Chavan							Chavan							A
3377	Disale R. R.	Disale							Disale							A							A							Disale
3378	Ghorpade R. S.	Ghorpade							A							Ghorpade							Ghorpade							Ghorpade
3379	Jadhav A. B.	Jadhav							A							Jadhav							Jadhav							A
3380	Jadhav H. S.	A							Jadhav							Jadhav							A							Jadhav
3381	Jagdale M. S.	MSJagdale							MSJagdale							A							MSJagdale							MSJagdale
3382	Kadam M. S.	Kadam							Kadam							Kadam							Kadam							Kadam
3383	Matkar A. P.	Matkar							A							Matkar							Matkar							A
3384	Matkar D. A.	Matkar							Matkar							Matkar							Matkar							Matkar
3385	More D. V.	More							More							A							More							More
3386	More S. T.	A							More							More							A							More
3387	More S. P.	SPM							SPM							SPM							A							SPM

*S. Pawale*  
Head

Department of Zoology  
D. P. Bhosale College Koregaon



Rayat Shikshan Sanstha's

**D. P. Bhosale College, Koregaon**

**Department of Zoology**

**Short Term Course on Vermicomposting**

**Year 2019-20**

**REPORT**

Department of Zoology has conducted the one month certificate course of "Vermicomposting". Now a day's chemical fertilizers and pesticides are creating many problems such as decreasing fertility of soil and ultimately affecting on soil microfauna. To overcome these problems there is great need of vermicomposting. To solve the problem of salinity and infertility of soil up to certain extent, department of zoology has started the certificate course in vermicomposting for of B.Sc. II and B. Sc. III students. Department of zoology has established vermicomposting unit in college campus. Two vermicomposting beds having size 15X4X3. We have introduced the species of earthworm *Esinia foetida*. The course includes study of earthworm species, production of vermicompost and vermiwash. The vermicompost beds were maintained properly by watering and other management. The objectives of this course are to provide the students to understand the detailed knowledge of vermicomposting, vermiwash, maintenance of beds, proper supply of organic matter etc. The vermicompost produced was used in college garden for healthy growth of plants. This course was conducted during the **1<sup>st</sup> December 2019 to 29<sup>th</sup> February 2020**. During this period the lectures and practicals of were conducted by faculties.

During this course the students get knowledge about the vermicompost. Students were sincerely attended and get hands on training of preparation of beds. In this course the every resource person inculcate the awareness about the vermicomposting, vermiwash, different species of earthworms, their role in increasing fertility of soil etc. Students getting the ideas and they will be involve in establishment of vermicompost beds in their native areas and also they aware the society for the use of vermicompost, vermiwash etc.



**Head**  
Department of Zoology  
D. P. Bhosale College Koregaon



**Vermiculture.**





## **Black-Gold: Vermicompost -**



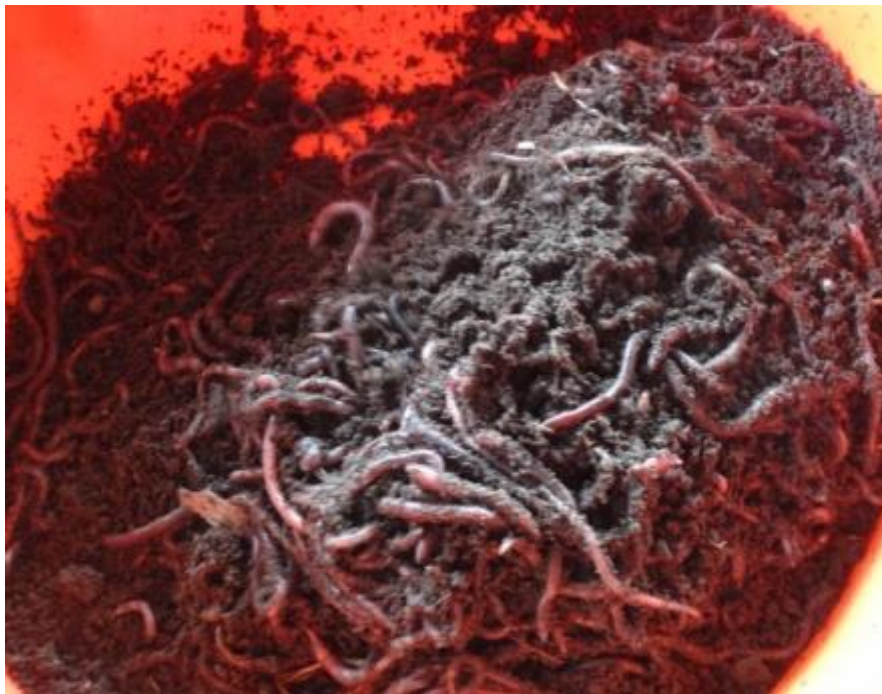
## **Vermi-Wash**







**Vermicompost Unit:**



**Earthworm culture.**



**Student observing worm eggs, worms and compost**



**Mr. Bankar V. N. demonstrating and guiding student.**

*D. P. Bhosale*  
**Head**  
Department of Zoology  
D. P. Bhosale College Koregaon



RAYAT SHIKSHAN SANSTHA'S

D. P. BHOSALE COLLEGE, KOREGAON

DIST-SATARA, MAHARASHTRA, INDIA-415501

Certificate/ Add-On/ Value added Certificate

2019-20

Certificate



This is to certify that, Mr./Ms./Miss.....  
..... participated in the Certificate/ Add-On/ Value added Certificate on  
“Vermicomposting” Organized by Department of Zoology, D. P. Bhosale College,  
Koregaon, Satara (Maharashtra).

**Coordinator**



**Principal**