



1.1.2 STC

Rayat Shikshan Sanstha's,
S.S.G.M. College, Kopargaon
Department of Zoology
Short Term Course : 2017-18

A CERTIFICATE COURSE IN VERMICULTURE

Department of Zoology have decided to start short term course "A CERTIFICATE COURSE IN VERMICULTURE" for framing the syllabus of said course, committee was constituted as follow :

- 1) I/c Prin. Dr. D. P. Gade (Chairman)
- 2) Mr. R. S. Naik (Head and member)
- 3) Dr. R. G. Pawar (Member)
- 4) Dr. D. R. Wakchaure (Member, Ashwamedh Agrotech.[Director])
- 5) Dr. R. R. Gawali (Alumni)

Aims and Objectives of the syllabus :

- 1) Students are expected to understand the principle of Vermicomposting.
- 2) They are expected to understand morphology, physiology and composting mechanism of the animal.
- 3) The practicals are implemented to understand the concepts and it would help in the development of practical skills of the students.
- 4) It is expected to inspire and boost the interest of students towards the subject, which will be helpful to avoid the use of chemical fertilizers and more and more application of organic fertilizers.
- 5) It will enable to develop interdisciplinary approach of the subject.



Rayat Shikshan Sanstha's
**Shri Sadguru Gangageer Maharaj Science, Gautam Arts and
Sanjivani Commerce College, Kopargaon, Dist. Ahmednagar
423601 (Maharashtra)**
CERTIFICATE COURSE IN VERMICULTURE

Academic Year 2017-18

Certificate course in Vermiculture

30 Hours

Syllabus

Section: I Theory

10 Hours

- 1) Introduction
- 2) Vermicompost
- 3) Earthworm:
 - a) Habit and habitat
 - b) Different species of Earthworm, Indigenous and Exotic species
 - c) Life cycle of Earthworm
 - d) Digestive system
 - e) Reproductive system
- 4) Role of Earthworm in Vermicomposting
- 5) Uses of Earthworm
- 6) Methods of Vermicomposting
 - a) Surface Bed method (farm)
 - b) Vermicomposting at home
 - c) Vermicomposting in plastic tub or wooden box

- 7) Methods for Preparation of Vermiwash
 - a) Cot method
 - b) Barrel Method
- 8) Enemies of Earthworm
- 9) Importance & Composition of Vermicompost

Section : II Practicals

15 Hours

- 1) Preparation of bed- selection of site, collection of cow dung, soil, garbage and making water available. Mixing all the above material and making into hump.
- 2) Release of Earthworm into the bed
- 3) Regular watering of bed so as to keep proper humidity
- 4) Regular addition of garbage and dry leaves into the bed.

Section : III Field work

05 Hours

- 1) Harvesting of cocoon and Earthworms
- 2) Separation of Vermicompost from the bed

References

- 1) Gupta, R., Mutiyar, P.K, Rawat, N.K., Saini, M.S., and Garg, V.K. 2007. **Development of a water hyacinth based vermireactor using an epigeic earthworm *Eisenia foetida***. *Bioresource Technology* **98(13):2605-10**.
- 2) Parthasarathi, K., Ranganathan, L.S., Anandi, V., and Zeyer, J. 2007. **Diversity of microflora in the gut and casts of tropical composting earthworms reared on different substrates**. *Journal of Environmental Biology* **28(1):87-97**.
- 3) Pramanik, P., Ghosh, G.K., Ghosal, P.K., and Banik, P. 2007. **Changes in organic – C, N, P and K and enzyme activities in vermicompost of biodegradable organic wastes under liming and microbial inoculants**. *Bioresource technology* **98(13):2485-94**.
- 4) Roberts, P., Edwards-Jones, G., and Jones, D.L. 2007. **Yield responses of wheat (*Triticum aestivum*) to vermicompost applications**. *Compost Science & Utilization* **15(1):6-15**.



Rayat Shikshan Santha's
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Kopargaon – 423601,
Dist.- Ahmednagar, M. S. – India

**Internal Quality Assurance Cell
(IQAC)**

Syllabus Approval Letter

The IQAC committee has approved the submitted syllabus of short term/Certificate course planned to be conducted by the Department of Zoology.

Sr.No.	Name of Course	Type of Course
01	Vermiculture	Short term course/Certificate course

HOD of Zoology Department may proceed accordingly.

Date: 08/08/2017

Place: Kopargaon

Halpur
IQAC Coordinator
S.S.G.M. College, Kopargaon

Principal





Rayat Shikshan Sanstha's,
S.S.G.M. College, Kopargaon
Department of Zoology
Short Term Course: 2017-18

A CERTIFICATE COURSE IN VERMICULTURE

List of Candidates (Class T.Y.B.Sc.)

Sr. No.	Roll No.	Name
1	7219	Abhale Rushikesh Kisan
2	7224	Bagate Pooja Appasaheb
3	7225	Gaikwad Vishnu Gangadhar
4	7226	Girme Swapnil Balasaheb
5	7228	Khond Dipak Sopan
6	7231	Niphade Saurabh Ramesh
7	7238	Prasad Ankita Brajbhushan
8	7240	Shelar Anand Prakash
9	7244	Tarte Dhananjay Anil
10	7246	Tiwari Anjali Trijog

Course Coordinator



Head

Department of Zoology,
S.S.G.M. College, Kopargaon.
S.S.G.M. College, Kopargaon



Rayat Shikshan Sanstha's,
S.S.G.M. College, Kopargaon
Department of Zoology

Date : 8/8/2017

Notice

All students of Science faculty are hereby informed that Department of Zoology is going to commence the short term course on **Vermiculture** in academic year 2017-18. Those who are interested can register their names in the Department of Zoology for same course.

Information regarding course :

Name: Vermiculture assistant.

Qualification: XIIth Science pass.

Duration: 3 months.

Job profile: The trained person will be able to work in Vermiculture farm independently.



Head

Department of Zoology,
S.S.G.M. College, Kopargaon
S.S.G.M. College, Kopargaon



Rayat Shikshan Sanstha's,
S.S.G.M. College, Kopargaon

Department of Zoology
Short Term Course : 2017-18

A CERTIFICATE COURSE IN VERMICULTURE

TIME TABLE

Sr. No.	Date	Lecture	Time
1.	With effect from 16/08/2017	1	8:00 a.m. – 9:00 a.m.
		2	9:00 a.m. – 10.00 a.m.
		3	11:00 a.m. – 12:00 p.m.
		4	12.00 p.m. – 1.00 p.m.

Head

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Department of Zoology
S.S.G.M. College, Kopargaon



Principal

S.S.G.M. College, Kopargaon

Rayat Shikshan Sanstha's
S.S.G.M. College, Kopargaon
Department of Zoology 2017-18

Name :

Roll No. :

Total Marks ~~40~~ 50

Date : 18/02/2018

Time : 2 hrs.

Paper: A certificate course in Vermiculture

Q. 1) Define the followings:

20 M

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)
- 10)

Q. 2) Write short notes on (Any 2)

10 M

- 1)
- 2)
- 3)

Q.3) Attempt the following (Any2)

10 M

- 1)
- 2)
- 3)

Q. 4)

10 M

Rayat Shikshan Sanstha's
S.S.G.M. College, Kopargaon
Department of Zoology

Roll No. :

Name :

Total Marks: 40

Date :
Time : 2 hrs.

Paper : A certificate course in Vermiculture

Q. 1) Define the followings :

10 M

- 1) Vermicompost.
- 2) Two species name of earthworm
- 3) Habit & Habitat of earthworm.
- 4) Phylum of earthworm
- 5) Organic farming
- 6) use of earthworm.
- 7) Composition of Vermicompost.
- 8) Vermiwash.
- 9) Vermiculture.
- 10) Cocoon.

Q. 2) Write short notes on (Any 2)

10 M

- 1) Surface bed method of Vermicomposting.
- 2) Cot method of Vermiwash.
- 3) Importance of Vermicompost.

Q.3) Attempt the following (Any 2)

10 M

- 1) Draw the well labelled diagram of Digestive system of earthworm.
- 2) Enemies of earthworm.
- 3) Why earthworm called friend of farmer.

Q. 4) Describe the Reproductive system of earthworm.

10 M

OR

Vermicomposting is a organic farming method.



Rayat Shikshan Sanstha's

**Shri Sadguru Gangageer Maharaj
Science, Gautam Arts & Sanjiwani
Commerce College, Kopergaon**

Jr. Supervisor's Signature

Examination 200 - 200

Class - _____ Sub. _____

Roll No. _____ Paper No. _____

Date _____ Marks Obtained _____

Answer Book	Suppliments	Total

29
40

Please Write from here. Write on both Sides.

Q 1 Define following.

① ~~vermicapost~~ vermicompost

→ vermicompost is the product of the decomposition process using various species of worms. e.g. white worms.

② Two species of earthworm.

→ two species of earthworm

① epigenic worms

② endogenic worms.

③ ~~phylum~~ of earthworm

→ phylum : Annelida.

④ ~~organic~~ farming

→ organic farming is an agricultural system that uses fertilizers of organic origin such as compost manure, green manure & bone meal & places emphasis

⑤ habit & habitat of earthworm.
→ habit : moist soil
habitat : The nutrition come from things is soil, such a decaying roots & leaves.

⑥ use of earthworm :
~~The uses of earthworm~~
① increased nutrient availability
② better drainage.

⑦ composition of vermicompost.
~~Vermicomposting~~ is the process of turning organic debris into worm castings. The worm casting are very important to the fertility of soil.

⑧ vermiwash :
~~vermiwash~~ is a liquid extract produced from vermicompost in a medium where earthworms are richly populated.

⑨ verniculture :
⑧ ~~The~~ cultivation of earthworms, especially in order to use to convert organic waste into fertilizer.

⑩ cocoon.
~~cocoon~~, a case produced in the larval stage of certain animals (butterfly, moths) for the resting pupal stage in the life cycle.

Q 2

① surface bed method of vermicomposting
→ composting is done on the ^{ing}
pucca / Kachcha floor by making
bed of organic mixture. This
method is easy to maintain
& to practice.

3 It is the one of the easiest
method to recycle agricultural
waste & to produce quality
compost.

② Importance of vermicompost.

→ ① vermicompost helps improve
soil structure, texture, porosity
water holding capacity, drainage
& aeration & reduce erosion.

② It improves plant growth
by enabling the growth of
new shoots & leaves.

③ thereby increasing productivity
of farm.

④ It helps to neutralize the
pH of the soil

⑤ It reduce the volume of
organic compost

⑥ stabilize organic matter.

Q3

① enemy of earthworm

→ enemy of earthworm,

- ① Ants ② birds ③ snakes
④ centipedes ⑤ beetles ⑥ toads
⑦ carabid ⑧ nematodes

② why earthworm called friend of farmer?

→ ① Earthworm make burrows in the soil

② Earthworm make soil porous & which help the in respiration & penetration of the developing plant roots & they are called farmer friend.

③ The earthworm improves the quality of the soil like water holding capacity.

Q4

① reproductive system of earthworm.

→ ① The male & female sex organ can produce. Sperm & egg in earthworm

② Although earthworms are hermaphrodites, most need a mate to reproduce.

③ During mating, two worms lines up inverted from each other so sperm can be exchange.

④ The fertilized egg will develop & become young worms.

⑤ The male reproduction organ consists of testis sac, testes, seminal vesicles



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Result

Sr. No.	Roll No.	Name	Marks (Out of 40)
1	7219	Abhale Rushikesh Kisan	29
2	7224	Bagate Pooja Appasaheb	21
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5	7228	Khond Dipak Sopan	27
6	7231	Niphade Saurabh Ramesh	22
7	7238	Prasad Ankita Brajbhushan	28
8	7240	Shelar Anand Prakash	16
9	7244	Tarte Dhananjay Anil	26
10	7246	Tiwari Anjali Trijog	28


Course Coordinator




Head

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Dist – Ahmednagar

Department of Zoology
Certificate course in Vermiculture
Feedback form (2017-2018)

How you like this activity?
(Please tick (✓) on the appropriate option)

Criteria's	Excellent	Very good	Good	Average	Poor
Content of the curriculum	✓				
Quality of Lectures		✓			
Quality of practical's			✓		
Arrangement of tour and hands on training	✓				
Is the course is applicable for entrepreneurship development in your future life		✓			
Overall evaluation of the course			✓		
Is the course is beneficial for students and parents as far as environment and crop production is concerned	✓				
Any suggestions :					

Name of Student: Tiwari Anjali Trijog.

Class: TY Bsc.



"Education Through Self - Help is our Motto" - Karmaveer

Rayat Shikshan Sanstha's

Shri Sadguru Gangageer Maharaj Science, Gautam Arts & Sanjivani Commerce College



Kopargaon, Dist. Ahmednagar (M.S.)

Short Term Course

CERTIFICATE OF COMPLETION

This is to Certify that Shri/Kym. Leena Swapnil Balasahab

of Class T.Y.B.Sc. has Completed Short Term Course in Vermiculture

conducted by the department of Zoology

during the academic year 2017 /2018


Course Co-ordinator


Co-ordinator


Principal


Principal
Gautam College
Kopargaon