

Department of Zoology

**Dr.BRR Government College
Jadcherla**

Student Study Project

On

**A study on the “Impact of use of Vermicompost on selected
Rose plants in Telangana Botanical Garden at Dr.BRR
Government Degree college Jadcherla, Telangana State”**

Academic Year 2021-22

**Dr. BRR GOVERNMENT DEGREE COLLEGE
JADCHERLA – 509 301**

(Accredited with B⁺ by NAAC)



Dr. CH.AppiyaChinnamma, M.Sc., Ph.D.
Principal

The department of Zoology has conducted student study projects during the academic year
2021-22

Title: A study on the “Impact of use of Vermicompost on selected Rose plants in Telangana Botanical Garden at Dr.BRR Government Degree college Jadcherla, Telangana State”

**Place of Work: Dr.BRRGovernment Degree College
Jadcherla T.S**

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By

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DEPT. OF ZOOLOGY
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Dr. CH.AppiyaChinnamma, M.Sc., Ph.D.
Principal

Student Study Project Certificate

CERTIFICATE

This to certify that, the project work entitled “Impact of use of Vermicompost on selected Rose plants in Telangana Botanical Garden at Dr.BRR Government Degree college Jadcherla, Telangana State” is a bonafide work done by .P.Maheshwari, P.Govardhanamma, G.Swathi, L.Shashikala, Nagamani and M.Deepika the students of B.Sc (BZC) IV semester under my supervision in Zoology at the Department of Zoology Dr.BRR Government Degree College Jadcherla during the academic year 2021-22 and the work has not been submitted to any other college or university either part or full for the award of any degree.

Place: *Jadcherla*

Date: *31/1/22*

A handwritten signature in green ink, appearing to read 'B. Ravinder Rao'.

B.Ravinder Rao

Asst, Prof, of Zoology

Department of Zoology
Dr.BRR Government Degree College Jadcherla

A Student Group Project

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By

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Acknowledgements:

The members of this project extend thanks Dr.CH.AppiyaChinnamma, Principal for permitting to conduct this project. The guidance provided by Sri B,Ravinder Rao, HOD is deeply indebted.Special thanks are due to Dr.B.Sadasivaiah, Asst.Professor and Coordinator of Telangana Botanical Garden, K.Neeraja and Smt.K.subhashini Asst.professors of zoology department for their help and advice to complete this project.

Objectives:

To Promote interest in research aptitude among students

To promote the use of organic fertilizers

To preserve the natural composition of Soil

To make use of organic disposal as manure

ABSTRACT:

Earthworm product, the vermicompost is the best alternate fertilizer to the chemical ones. Vermicomposting is a process of getting enriched biofertilizer with the use of earthworms. It is one of the easy ways of recycling agricultural wastes and to produce quality fertilizer. Earthworms consume biological waste and egest it in digested form called worm castings. Worm casts are popularly called 'Black gold'. It is rich in nutrients, growth promoters, and beneficial soil microflora which can inhibit several pathogenic agents. Vermicompost is stable, fine granular organic manure, its physicochemical and biological properties enrich soil quality. It is suitable in raising seedlings, saplings, gardens and for crop production. For a sustainable environment vermicompost is playing as a major component of the organic farming system. With the use of Vermicomposting a phase shift in organic farming can be expected. The present study was conducted for six months from July 2021 to January 2022 on the Telangana Botanical Garden of Dr. BRR Govt. Degree College Jadcherla and found that the plants provided with vermicompost grew healthy with more productivity.

Key words: Vermicompost, Telangana Botanical Garden, Dr. BRR Govt. College Jadcherla

Introduction:

Use of Chemical fertilizers not only disturb the natural composition of the soil but also affect the health of plants. Consuming the products of crops grown by using chemicals affecting the health of Humans. Infertility and soil composition are the main problems in front of Indian farmers, the use of vermi compost improves soil structure, texture, aeration, water holding capacity and prevents soil erosion. It is an easily adoptable low cost technology. Cheap price as compared to chemical fertilizers. Crops harvested by using this manure have high demand in the international market. This crop fetches a premium selling price. Media is creating awareness on the importance of vermicompost at national and international level. People are more concerned about their health and prefer to consume organic food.

Hundreds of tonnes of biodegradable organic waste is being thrown in cities creating disposal problems in the country. This waste can be converted into valuable compost by utilizing it as raw material. Decomposable organic wastes such as animal excreta, kitchen waste, farm residues and forest litter are commonly used as composting materials. In general, animal dung mostly cow dung and dried chopped crop residues are the key raw materials. Mixture of leguminous and non-leguminous crop residues enriches the quality of vermicompost. Red earthworm (*Eisenia foetida*) is preferred species of earthworm 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.. Legitimate support by the government to the farmers to start this unit.

Absence of competitors in the market can be a big opportunity for producers. Wide scope at national and international level.

Study Area:

JadcherlaTown is located 80KMs away from Hyderabad, the capital city of Telangana State. It is located on National Highway 44 south to Hyderabad. The topographical details are Longitude: 78.1442814, Latitude: 16.7629646, Elevation: 548m / 1798feet and Barometric Pressure: 95KPa. Population of Jadcherla in 2021 is 127,430. Dr.BRR Government Degree college is located at Signalgadda landmark with an area of around 15Acres of land. this college has good greenery with gardens covering 7 Acres of land.



Fig.1: Map of Study area - Jadcherla

Material and Methods:

Dr.BRRGovt.Degree College Jadcherla has a Vermicomposting Unit maintained by the Department of Zoology. This college is also developing a Garden named as Telangana Botanical Garden in its college area. The members of this project selected 25 Rose plants (Rosa indica) with identification numbers P1 to P25, from different parts of the garden, the status of these plants was recorded before they can be provided with vermicompost. 100grams of

Vermicompost is given to the selected plants fortnightly. Watering is done on every alternate day through Drip system. Growth, Health and Flowering details are recorded regularly.



Team members collecting vermicompost.















Fig.1: Team members in the Telangana Botanical Garden at Dr.BRR GDC Jadcherla

Results:

After carefully recording the data related to the parameters such as Height of the plants, Number of flowers produced and the size of the flowers from the selected rose plants in the Telangana Botanical Garden of Dr.BRR Government Degree college Jadcherla, it is observed that a significant improvement in the all the parameters of the study such as Growth of the plants, Yield of Flowers and Size of flowers is found. Based on these observations it can be noted that there is a notable impact of the use of biofertilizeri.eVermicompost on the growth and yield of the plants.

Conclusion:

The literatures cited verify that Vermicompost can be used as an organic fertilizer alternative to inorganics as it improves soil quality as well as plant growth and production. It can also be used for bioremediation of contaminated soil. It is thus found to improve soil physio-chemical and biological properties. However its efficacy on soil quality greatly depends on raw materials used for its production. It is found that increasing soil quality due to vermicompost application is reflected in plant growth and production. The review also suggests that vermicompost should be used at appropriate rate depending on type of crops grown and its nutrient requirement for cost effectiveness. Overall, VC is boon to organic farming.

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