

## A STUDY ON NUTRIENT STATUS OF LEAF LITTER WASTE VERMICOMPOST

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## ABSTRACT

Urbanization contributes to large amount of municipal solid waste . The unscientific handling of the waste generated degrades the environment and causes health hazards. The present study is made to convert the leaf litter waste generated in the college campus into a nutrient rich vermicompost using earthworms and raised bed method. By utilizing the leaf litter waste one can reduce the harmful effect of burning the waste on environment and provide sustainable organic waste management as vermicomposting.

**KEYWORDS :** leaf litter waste, earthworm, vermicompost, nutrients

## INTRODUCTION

The earthworm belongs to phylum Annelida is a farmers friend helping to reduce the use of chemical fertilizers and rejuvenate the soil "Earthworms are intestines of the earth"[1]. Mathivannan et al., (2017)[2]. have reported that vermiculture and vermicomposting is a substantial way of reducing paper and organic wastes. They indicated that vermicompost process is capable of producing high quality fertilizers and also helps in maintaining the balance of the ecological environment.

Generation of the huge amount of organic waste around the world-wide is a major ecological issue. When these organic wastes are recycled as manure for crop production Shah(2017)[3]. Mushan et al(2012) [4] have studied the vermicomposting of tendu leaf litter waste generated in Solapur city. Ponmani et al(2014)[5] evaluated the efficiency of an exotic earthworm species (*Eudrilus eugeniae*) for decomposition of different types of organic substrates (mixed liquor suspended solids, cow dung and leaf litter) into valuable vermicompost.



Figure 1: Leaf Litter Vermicomposting By Raised Bed Method

Table-1 Physico-chemical Analysis Of Leaf Litter Waste Vermicompost

Physico-chemical analysis	Leaf litter vermicompost
ph	7.74±0.11
Electric conductivity	0.29
carbon	1.25%
nitrogen	871.50±kilo/hectare
phosphorus	190.51 ±0. +9kilo/hectare
potassium	1837.72± 1.2 kilo/hectare

Vermicompost treated soil showed increased plant growth, number of leaves, flowers and fruits compared to control soil and significant yield was also recorded on vermicompost soil by (Sundararasu and Neelanarayanan, 2012) [6]. Ponmani et al(2014)[5] concluded that all vermibeds expressed a

significant decrease in pH, organic carbon, C:N ratio and an increase in total nitrogen, phosphorus and potash. The vermicompost prepared from leaf litter waste using earthworm *Esenia foetida* by raised bed method has notable physico-chemical features of a good manure.

## CONCLUSIONS

Organic waste management of leaf litter waste by vermicomposting process can yield a nutrient rich manure and is an also ecofriendly approach to utilize the waste.

## Acknowledgement:

We are thankful to Dr. V. P. Ubale, Principal, D. B. F. Dayanand College of Arts and Science, Solapur for providing permission for conducting vermicomposting of leaf waste. The author also wishes to express her warm gratitude to the Department of zoology for accompanying this experiment.

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