

Chapter - 12

A Comparative Analysis of the Australian Earthworm *Eisenia Fetida* and the Indian Variety *Jai Gopal* (*Perionyx Ceylanensis*) for Enhancing Vermicompost Quality

*Birendra Kumar Savita*¹, Kiran Gupta¹, Sukrat Sinha²*

¹Department of Zoology, Nehru Gram Bharati (Deemed to be)
University, Kotwa -Dubwal, Prayagraj- 221505

²Department of Zoology, Sri Venkateswara College, Benito Juarez Marg,
University of Delhi-110021

Corresponding Author Email id: bksavita260@gmail.com

Abstract

Vermicomposting is an environmentally beneficial method that uses earthworms to turn organic waste into useful compost. The purpose of this study is to examine how well the Indian species *Perionyx ceylanesis* (*Jai Gopal*) and the Australian earthworm *Eisenia fetida* improve the nutritional profile of vermicompost. The breakdown rate, nutritional content, and microbial activity of the vermicompost generated by each species were examined through experimentation. The findings demonstrate notable variations in the amounts of nutrients, with *Perionyx ceylanesis* displaying better microbial activity and *Eisenia fetida* displaying a larger nitrogen concentration. According to the results, each species has special advantages that may be used to maximize the vermicomposting processes for increased plant growth and soil fertility.

Keywords: Vermicompost, Eisenia fetida, Perionyx ceylanesis, nutrient profile, microbial activity

Introduction

In general, earthworms have a strong resistance to the majority of pesticides, and it has been found that their tissues concentrate both the pesticides and the heavy metals that they are exposed to. In addition to this, they act as a detoxifying agent for contaminated soil and block the pathogens that are carried by the soil (Davis, 1971; Ireland, 1983). These characteristics of