

The Effects of Heavy Metal on Earthworm and Nutrient Status of Vermicompost Through Soil Quality[†]

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Abstract: Earthworms, which play an important role in soil functioning, have enormous potential for ecosystem restoration. Burrowing and feeding improve soil aeration, nutrient cycling, and organic matter decomposition. Vermicompost, a result of the earthworm-mediated organic waste conversion, has a high concentration of humic acids, enzymes, plant growth hormones, and antibacterial components, making it an effective, environmentally friendly fertilizer. Recognizing earthworms' critical role in healthy ecosystems, scientists have conducted substantial studies on their capacity to survive and even flourish in metal-contaminated soils. Earthworms may tolerate and adapt to metal-contaminated soils by collecting metals in their tissues. Vermicompost maintains soil health and fertility through significant quantities of plant-available nutrients such as NPK and other biochemicals. Several studies have found that earthworms can withstand and live in soils with greater metal concentrations and collect metals in proportion to their substrate concentrations. This article examines the effects of metal buildup in earthworms, the effect of soil conditions on their absorption, and the morphological, behavioral, and avoidance symptoms caused by metal exposure.

Keywords: earthworm; vermicompost; heavy metals; toxicity.

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Conflicts of Interest

The authors declare no conflict of interest.