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Review

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**Bioremediation and Detoxification of Industrial Wastes by Earthworms: Vermicompost  
as Powerful Crop Nutrient in Sustainable Agriculture**

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**ABSTRACT**

Vermicompost is the final product of the vermicomposting process involving the collective action of earthworms and microbes. During this process, the waste is converted into useful manure by reducing the harmful effects of waste. Toxicity of industrial wastes is evaluated by plant bioassays viz. *Allium cepa* and *Vicia faba* test. These bioassays are sensitive and cost-effective for the monitoring of environmental contamination. The valorization potential of earthworms and their ability to detoxify heavy metals in industrial wastes is because of their strong metabolic system and involvement of earthworm gut microbes and chloragocyte cells. Most of the studies reported that the vermicompost produced from organic wastes contains higher amounts of humic substances, which plays a major role in growth of plants. The present article discusses the detoxification of industrial wastes by earthworms and the role of final vermicompost in plant growth and development.

**Keywords:** Earthworms; industrial waste; detoxification; vermicompost; plant growth.

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