عنوان مقاله:

Utilization of Lagerstroemia speciosa dry leaf litter combined with cat-tle dung for the production of enriched vermicompost – A possibility of valorization

محل انتشار:

مجله بین المللی بازیافت مواد آلی در کشاورزی, دوره 12, شماره 4 (سال: 1402)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

Purpose: Waste and waste disposal is a universal problem and attention is required in all ways. The plant generated waste (leaf litter) is also a type of organic waste that creates multiple issues in urban areas.Method: Vermicomposting is a suitable alternative safe, hygienic, and cost-effective disposal of organic solid waste with the help of earthworms. The present study focussed on the conversion of leaf litter of Lagerstroemia speciosa trees from the local places to beneficial vermicompost. Vermicompost was prepared using leaf litter (LL) supplemented with cattle dung (CD), food waste, and earthworms. The study also explored the physical factors like temperature, pH, moisture, and biomass reduction of the vermicompost (۱۰۰% & ۵۰% LL) and CD.Results: An alkaline pH (۸.۹۷±۰.۰۴), nominal temperature (۲۲.۶۳±۰.۲۶°C) and high moisture content (۷۲±۲.۷۵%), as well as increased biomass reduction (۷.۴۵±۰.۶۹ cm) was observed at the end of the vermicompost process. The study also performed plant growth analysis using vermicompost as manure. Increased growth, germination, and pest resistance were observed in the plants in which compost was utilized.Conclusion: The current study paves the way to create a green environment by reducing and converting leaf litter into vermicompost which will act as a circular economy.

کلمات کلیدی:
waste Management, Earthworms, manure, Recycle, Plant growth, Circular economy