

عنوان مقاله:

Dynamics of chemical changes through production of various composts/vermicompost such as farm manure and sugar industry wastes

محل انتشار:

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خلاصه مقاله:

Purpose Owing to aridity in our agro-ecosystem, mineralization of organic substrate is quite rapid and thereafter volatilized due to lower matrix affinity. In these consequences, the study has been chalked out with the hypothesis to alter the best approaches for mineralization of available organic resources as soil supplement to reduce the economic burden on the farming community. Our laboratory study showed the sequential temporal variations in physico-chemical properties of available organic substrates such as farm manure and sugar industry waste during composting/vermicomposting. Methods The organic material obtained from the farm manure of live-stock farm and another sources of industrial organic waste {sugarcane baggase (SCB), pressmud (SPM), mixture of SCB, SPM and sugarcane effluent} were used for this mineralization perspectives. However, all organic substrates properties remained static except moisture up to a period of 21 days. Thereafter, these produced and processed matrix was subsequently composted and vermicomposted during 45 days under normal shade. No earthworms were spiked in composting while *Lumbricus rubellus* collected near vicinity of research area were inoculated at the rate of 50 g/kg of waste in vermicomposting. Contrarily, their applications was mandated as and when required policy subsequently. Moisture and temperature status of substrates were monitored regularly. However, compost/vermicompost substrates were assessed @ 15 days interval to evaluate temporal changes in physico-chemical characteristics. Results Vermicomposting of farm manure and sugar industry wastes produced best quality manure with enriched nutritional status comprising more OC (4 %), N (3 %), P (2 %), K (7 %), Ca (3.5 %), Na (2.5 %), SO₄-2 (3.1 %) and B (twofold) as compared to composting. Conclusion Inoculation of local specie for vermicomposting is a viable option to be recommended to the farming community.

کلمات کلیدی:

Composting Vermicomposting Raw organic sources Local earth worms Chemical change

