عنوان مقاله:

Effect of tertiary combinations of animal dung with agrowastes on the growth and development of earthworm Eisenia fetida during organic waste management

محل انتشار:

مجله بین المللی بازیافت مواد آلی در کشاورزی, دوره 2, شماره 1 (سال: 1392)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

Background: Abundant uses of chemical fertilizers have adversely affected the soil. The large production oflivestock dung is recorded in India annually. The presence of abundant agrowastes and animal dung causes seriousproblems to animals as well as to human beings, due to the improper management of these wastes. Due to thepresence of different physicochemical parameters, these agrowastes and animal dung as food source influence notonly the earthworm population but also affect their growth and reproduction during vermicomposting. The effectof agrowastes (wheat straw, banana pills) and bran (barley, rice, and gram bran) with cow and goat dung as tertiarycombinations (1:1:1) on the growth and reproduction of E. fetida was investigated.Results: The significant ($P < 0.05$) highest cocoon production was 5.92 ± 0.01/worm/2 weeks observed in CWRr.The reproduction rate as the number of hatchling emerged per cocoon was also significantly the highest ($P < 0.05$)in CWBr as 1.9 ± 0.03. The maximum biomass gained was up to 898.67 ± 2.04 mg/worm, and significant growthrate was 7.32 ± 0.02 mg/worm/day in CWGr combination. There was a significant decrease in pH, C/N ratio, TOC,and EC while there was a significant increase in TKN, TK, TAP, and TCa in different tertiary combinations of finalvermicompost when compared to the initial feed mixture.Conclusion: The tertiary combinations of dung and bran with agrowastes used were effective and efficient culturemedia for the large-scale production of E. fetida, which will be important for the production of vermicompost.

کلمات کلیدی:

Eisenia fetida; Growth rate; Tertiary combinations; Vermicomposting; Organic wastes