

## عنوان مقاله:

Microbiological integration for qualitative improvement of vermicompost

## محل انتشار:

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## خلاصه مقاله:

**Purpose** This study was carried out to assess the effect of integrating microbiological fortification with vermicomposting process on biofertilizing quality of vermicompost as well as improvement of the availability of nitrogen and phosphorus in the product. **Method** A mixture of cow dung and vegetable market waste (1:1) was used for vermicomposting with *Eisenia foetida* as the decomposer earthworm @ ۱۰ no.of worm kg<sup>-1</sup> substrate. Nitrogen fixing and phosphate solubilizing bacteria (NFB and PSB) *Azotobacter chroococcum* and *Pseudomonas fluorescens* were integrated with this composting process at varying doses viz. ۰, ۵ and ۱۰ g kg<sup>-1</sup> substrate under different combinations. Changes in the population of these two bio-fertilizing microorganisms and the availability of relevant nutrients in the substrates were monitored periodically to assess the behaviors of these microorganisms and their effects on the produced vermicompost. **Results** All the inoculations resulted in substantial increments in population of both NFB and PSB over the control. However, the increments were more prominent for NFB than the PSB. Significant increments in the amount of mineralized nitrogen and solubilized phosphate over the control were observed in almost all the treatment combinations. **Conclusion** Integration of nitrogen fixing and phosphate solubilizing bacteria with vermicomposting process resulted in substantial enrichment of the product. This benefit was observed not only in terms of increased availability of the two major plant nutrients of concern viz. N and P, but also in significant improvement in the population of the inoculated microorganisms turning the product into a potential source of bio-fertilizers.

## کلمات کلیدی:

Vermicomposting, Microbial fortification, Compost quality, Nutrient availability, Bio-fertilizer population

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