

عنوان مقاله:

The integrated use of excreta-based vermicompost and inorganic NP fertilizer on tomato (*Solanum lycopersicum* L.) fruit yield, quality and soil fertility

محل انتشار:

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خلاصه مقاله:

Purpose A field study was conducted at Dire Dawa, Eastern Ethiopia, with an objective to find out an optimum combination of inorganic (NP) fertilizer and excreta-based vermicompost for best economic yield and quality of tomato and to assess their effect on selected physicochemical properties of amended soil after crop harvest. **Methods** The experiment consisted of eight treatments where the mineral (NP) fertilizer and the excreta-based vermicompost were combined in different proportions being arranged in a completely randomized block design replicated three times. **Results** Growth, yield and quality attributes of tomato as well as the post-harvest soil nutrient status were markedly influenced by the nutrient treatments. The highest values for the various growth, yield and quality attributing parameters were recorded for the treatment combination consisting 75% of the recommended rate of NP fertilizer 11.25 ton ha⁻¹ vermicompost (T6), this treatment was also observed to have the highest net benefit with acceptable economic return as well as a fairly high residual soil nutrient status. Following this treatment, is the integration of 50% of recommended rate of NP fertilizer 7.5 ton ha⁻¹ vermicompost (T3) which surpassed the sole mineral fertilizer and vermicompost in terms of the crop's yield and its economic return. **Conclusion** 25–50% of the recommended rate of chemical fertilizer can be supplemented through vermicompost. However, in order to generate more reliable information, there is a need to conduct more such studies using more integration ratios of these nutrient sources (NP fertilizer and vermicompost) at various soil and agro-climatic conditions.

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