

Effects of vermicomposts produced from food waste on the growth and yields of greenhouse peppers

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Vermicomposts, produced commercially from *food wastes*, were substituted at a range of different concentrations into a soil-less commercial bedding plant container medium, Metro-Mix 360 (MM360), to evaluate their *effects* on the growth and yields of peppers in the greenhouse. Six-week-old peppers (*Capsicum annum* L. var. California) were transplanted into 100%, 80%, 60%, 40%, 20% or 10% MM360 substituted with 0%, 10%, 20%, 40%, 60%, 80% and 100% vermicompost. All plants were watered three times weekly with 200 ppm Peter's Nutrient Solution from the time of transplanting up to 107 days. Peppers grown in potting mixtures containing 40% *food waste vermicomposts* and 60% MM360 yielded 45% more fruit weights and had 17% greater mean number of fruits than those grown in MM360 only. The mean heights, numbers of buds and numbers of flowers of peppers grown in potting mixtures containing 10–80% vermicompost although greater did not differ significantly from those of peppers grown in MM360. There were no positive correlations between the increases in pepper yields, and the amounts of mineral-N and microbial biomass-N in the potting mixtures, or the concentrations of nitrogen in the shoot tissues of peppers. Factors such as: an improvement of the physical structure of the potting medium, increases in populations of beneficial microorganisms and the potential availability of plant growth-influencing-substances *produced* by microorganisms in *vermicomposts*, could have contributed to the increased pepper yields obtained.

Keywords: *Food waste; Vermicomposts; Pepper; Plant growth; Yield*