

The Effect of Vermicompost on the Growth, Yield and Fruit Quality of Tomato (*Lycopersicum esculentum*)

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Abstract

The effects of earthworm processed sheep manure (vermicompost) on growth, yield and fruit quality of tomato (*Lycopersicon esculentum* cv. Super Beta) were investigated under field conditions. The vermicompost was incorporated into the top 15 cm of soil. The experiment was carried out by application of different levels of vermicompost (0, 5, 10, 15 t ha⁻¹), in a randomized complete-block design with four replications. During the experiment period, fruits were harvested twice in week and total yield was recorded for two months. At the end of the experiment two plants from each plot were removed for determining of leaf number, leaf area and shoot dry weight.

The addition of vermicompost increased growth and yield significantly; including increase of up to 43% in leaf area, 27% in shoot dry weight and 67% in yield. But it was not significant effect on the number of leaves. The EC-value of fruit juice and percentage of fruit dry matter increased 30% and 24% compared to control treatment, respectively. No significant differences were recorded between treatments in total soluble solids, titratable acidity and juice pH-value. Chemical analysis of tomato shoots showed that the concentration of K and P in the plant increased 55% and 62% compared to untreated plots, respectively. Increasing rate of vermicompost to soil resulted to increase the growth parameters and yield. Factors such as, leaf area, shoot dry weight and absorption nutrients like P and K could have contribution to increase tomato yields obtained.

Key words: tomato, growth, yield, fruit quality, sheep manure

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