Evaluation of quantitative and qualitative characteristics of five greenhouse tomato cultivars in response to fertilizers containing seaweed extract and amino acids

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Abstract

Extensive use of chemicals in crop production has attracted global public concerns in terms of their effects on human health. The issue has led to movement toward reducing chemicals and replacing with environmentally-friendly compounds during production processes of agricultural crops. An experiment was carried out to evaluate the effects of fertilizers with biologic origin, including seaweed extract and amino acids and their combination, on five cultivars of greenhouse tomatoes (Sweet million, Golden cherry, M09, EDU and Guiza) in soil culture system under greenhouse conditions. The results showed that the use of fertilizers containing amino acid has generally more positive effects than seaweed extract on tomato plant yield. The impact of tomato cultivar on response to fertilizers showed that fruit length, diameter and weight of cherry tomatoes (Sweet million, Golden cherry, M09) were not affected as much as large tomatoes (EDU and Guiza) by fertilizers containing amino acids or seaweed extract. In most cases, fruit quality characteristics including percentage of titratable acidity, soluble solids content and vitamin C were greater when fertilizers containing amino acids were used.

Keywords: Biological fertilizers, Cherry tomatoes, Yield components, Sustainable agriculture.

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