

Study on the Enhancement of Soil Fertility and Tomato Quality by Applying Concentrated Biogas Slurry

Authors : Fang Bo Yu, Li Bo Guan

Abstract : Biogas slurry is a low-cost source of crop nutrients and can offer extra benefits to soil fertility and fruit quality. However, its current utilization mode and low content of active ingredients limit its application scale. In this report, one growing season field research was conducted to assess the effects of concentrated biogas slurry on soil property, tomato fruit quality, and composition of the microflora in both non-rhizosphere and rhizosphere soils. The results showed that application of concentrated slurry could cause significant changes to tomato cultivation, including increases in organic matter, available N, P, and K, total N, and P, electrical conductivity, and fruit contents of amino acids, protein, soluble sugar, β -carotene, tannins, and vitamin C, together with the R/S ratios and the culturable counts of bacteria, actinomycetes, and fungi in soils. It could be concluded as the application is a practicable means in tomato production and might better service the sustainable agriculture in the near future.

Keywords : concentrated slurry, fruit quality, soil fertility, sustainable agriculture

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