

Vermicompost Solution As a Nutrient Source in Hydroponic Crop Production

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Abstract

Hydroponics is an agricultural method in which plants are grown in a substrate through which nutrient rich solution is pumped, bathing the roots of the plants. The purpose of this study was to compare growth and production rates of plants grown in hydroponic solutions made using leachate and worm castings from vermicomposting to Serrano pepper and garden bean plants grown using a traditional Hoagland hydroponic solution. The purpose of this study was to compare growth and production rates of serrano peppers (*Capsicum annuum*) and garden beans (*Phaseolus vulgaris*) plants grown in hydroponic solutions. The effect of the three hydroponic solutions on plant growth evaluated for this projected included a control made of a traditional hydroponic solution (Hoagland®), a leachate solution (leachate from vermicomposting diluted with water), and a humus solution prepared by submerging the red worm castings into aerated water for 2 days. The viability of vermicompost products as an ingredient for hydroponic solution was the focus of this experiment. At initial stages, the plants developed at similar rates, however, the results of the experiment are inconclusive due to environmental factors and difficulty maintaining pH levels in treatment solutions. The experiment could be improved by having stricter environmental controls and determining an effective method of pH control.