Title Effects of the Addition of Mineral Controlled Deep Sea Water to a Nutrient Solution on Growth, Fruit Yield and Quality of Hydroponically Cultivated Eggplants

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Abstract

The effects of mineral controlled deep sea water added to a nutrient solution for improving the growth of plant and fruit yield and quality of eggplant var. "Ryoma" grown hydroponically were assessed. In this experiment a new industrial solution called, mineral controlled deep sea water prepared from deep sea water, was used instead of raw deep sea water. Mineral controlled deep sea water was added to the nutrient solution at concentrations of 2% and 0% (control). With the addition of mineral controlled deep sea water at 2%, eggplant had larger vegetative growth rate than with the control. The total fruit yield and marketable fruit yield with 2% mineral controlled deep sea water addition was 14% and 23% higher than the control. As compared to the control, the fruits of treated plants showed a higher dry matter content and higher percentage of soluble solid which is desirable for fruit processing. Also, the fruits picked from plants treated with mineral controlled deep sea water produced eggplants characterized by a higher amount of Mg^{2+} ion. The results indicated that the eggplant fruit quality might be improved with the addition of mineral controlled deep sea water to a nutrient solution.