YIELD COMPARISON OF LETTUCE *(Lactuca sativa L.)* GROWN IN HYDROPONICS USING FISH EFFLUENTS AND INORGANIC FERTILIZER

BY

R.M.U. RATHNAYAKA

FACULTUY OF AGRICULTURE

EASTERN UNIVERSITY

SRI LANKA

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ABSTRACT

Aquaponics, the integration of aquaculture and hydroponic crop production represents a more environmental friendly and energy efficient method of production than each method practiced in isolation. The food insecurity situation with respect to Sri Lanka is illustrated by the fact that, worst malnutrition status is observed. Aquaponics, as a closed loop system consisting of hydroponics and aquaculture elements, can contribute towards these problems. But Sri Lankan Agricultural sector has not yet initiated Aquaponics. Therefore this experiment was conducted to compare yield of lettuce grown in hydroponics using fish effluents and inorganic fertilizer. The experiment was arranged in a Complete Randomized Design (CRD) with five treatments (Water, Albert's solution, Catla waste water, Common carp waste water and Tilapia waste water) and four replications. Plant height , Canopy diameter, Number of leaves ,Root length ,Leaf fresh weight , Leaf dry weight ,Root fresh weight, Root dry weight and Total yield were measured as plant growth measurements. Initial biomass/Fish, Final biomass/Fish, Initial stocking density and Final stocking density were measured as fish growth measurements. The result demonstrated that Albert's solution treated plants showed highest yield performance compared to the other nutrient solutions treated plants followed by higher yield obtained from waste water from Tilapia tank. Fish water solution did not fulfill the nutrient requirement due to fingerling stage of fish. Therefore, it could be concluded that higher yield was obtained in Albert's solution. While, selecting suitable age stage of fish and quality of feed can be expect to get higher yield like as in Albert's solution.

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