



05th January 2024 @ Uva Wellassa University, Badulla, Sri Lanka.

Paper ID: NSALS24-017

Impact of Different Ratios of Fish Tonic and Albert's Solution on Growth and Yield Performance of Lettuce (*Lactuca sativa* L.)

G. Elankeeran, L. Pradheeban, K. Thanusan✉

*Department of Agronomy, Faculty of Agriculture, University of Jaffna, Ariviyal Nagar,
Kilinochchi 40000, Sri Lanka*

✉ kthanusan28@gmail.com, +94779235605

Lettuce (*Lactuca sativa* L.) belongs to the family Asteraceae which is one of the most important leafy vegetable crops in the world. Production of quality lettuce is a major concern nowadays because it is consumed as raw fresh vegetables. There is a need to introduce an organic solution to substitute Albert's solution for production of quality lettuce in cost-effective way because production of fish tonic is a very cheaper method, and it is enriched with several nutrients. This study was conducted with the main objective to evaluate the suitability of different ratios of fish tonic and Albert's solution on growth, yield, and quality performance of lettuce. The experiment was conducted in Completely Randomized Design (CRD) with three replicates. Five different nutrient solutions; 100% Albert's solution (Control; 2 g/L of water) (T₁), 75% Albert's solution+25% fish tonic (T₂), 50% Albert's solution+50% fish tonic (T₃), 25% Albert's solution+75% fish tonic (T₄), and 100% fish tonic (T₅) (100 mL/16 L of water) were used in a non-circulating hydroponic system. Plant growth parameters (plant height, number of leaves, and plant canopy diameter), quality parameters (chlorophyll content), and yield parameters (fresh weight of shoot) were recorded. The data was subjected to ANOVA using SAS statistical software. DMRT was performed to find the best treatment. The highest plant height and number of leaves were observed in 75% Albert's solution+25% fish tonic (T₂), and the highest plant canopy and chlorophyll content were observed in 50% albert+50% fish tonic (T₃) and lowest was observed in 100% fish tonic (T₅). Among yield parameters, the highest shoot weight (42.13 g) was observed at 50% Albert's solution+50% fish tonic (T₃) and the lowest shoot weight (6.79 g) was observed at 100% fish tonic (T₅). It can be concluded that 50% Albert's solution+50% fish tonic (T₃) is an ideal nutrient solution combination for quality lettuce production in terms of yield and quality parameters under a non-circulating hydroponic system.

Keywords: Albert solution; fish tonic; hydroponics; parameters; soilless cultivation