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Sustainable Urban Gardening Practice in the Marshall Islands Using Seaweeds Compost for Growing Water Spinach (*Ipomea reptans*)

The Republic of the Marshall Islands (RMI) has been trying for many years to reduce the risk of non-communicable diseases (NCDs), especially type II diabetes. With the increase of migration in the main islands of Majuro and Ebeye, dependence on imported foods that are mostly highly refined and high in sugar content becomes prevalent. Sustainable production of green vegetables is one of the problems to be addressed. Water spinach (*Ipomea reptans*) also known as Kangkong is one of the vegetable that has been promoted in the island due to its high nutritive value and fiber content. Macro algae (seaweeds) are mostly available in the RMI's shoreline and is sometimes becoming a pollutant, attracting flies and giving off a foul smell. In this research, we hypothesized that seaweed will be as effective as imported commercial fertilizer and other garden products.

This experiment assessed three growth parameters: plant height, leaf width, and marketability. The mean values were compared ($p < 0.05$) among 5 treatments: top soil (T_1 control), seaweeds (T_2), chicken manure (T_3), Miracle grow potting mix (T_4), and NPK fertilizer (16-16-16).

The overall pattern showed that the control group was significantly different from all of the other four treatments of seaweed compost, chicken manure, Miracle Grow, and NPK fertilizer (16-16-16). Seaweed compost was found to have no significant difference with reference to T_3 , T_4 , and T_5 . This pattern suggests that seaweed compost could be used effectively as compost fertilizer and would be able to diminish dependence on imported commercial garden products and promote sustainability.

Keywords: Kangkong, seaweeds, sustainable production, growth parameters