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Culturing *Caulerpa* sp. with Varying Levels of Dissolved Oxygen

ABSTRACT

Caulerpa is a tropical alga that is Earth's largest single-celled organism. It is part of the *Caulerpaceae* family, which is a family of green algae. *Caulerpa* thrive in warm, shallow seas around the world. In an experiment done by Serapion, et al., it was shown that *Caulerpa* had the highest growth rate in the middle layer of water, around 3.75 meters below the surface. There are different species of *Caulerpa*; this research focuses on *Caulerpa* sp found in the near shore waters of Saipan, the capital of the Commonwealth of the Northern Mariana Islands.

This study involved observing the difference in the growth rate of the *Caulerpa* sp when they are given different levels of dissolved oxygen. The *Caulerpa* sp was cultured using a recirculating method, where water was circulated from a fish tank into different buckets. The buckets contained the same amount of *Caulerpa* sp at the beginning of the experiment. Each bucket has an aeration pump that was set to pump in different levels of dissolved oxygen for each bucket. We hypothesize that dissolved oxygen levels in water will affect the growth of the *Caulerpa*.

This project contributes information about culturing *Caulerpa* sp native to Saipan. With this knowledge, local farmers will be able to cultivate and sell *Caulerpa* sp. *Caulerpa* sea grapes have many benefits including antioxidants, diarrhea medicines, coughs, lowering blood pressure, and are believed to be "beauty foods" so they can be classified as economically valuable foodstuffs.

Key words: *Caulerpa* sp, dissolved oxygen, aeration pump

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