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RED SEAWEED EXTRACT AS A BIOSTIMULANT ON GROWTH AND BIOCHEMICAL PARAMETERS OF MICROALGAE *CHLORELLA VULGARIS*

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ABSTRACT:

Biostimulants and biofertilizers are considered environmentally friendly and cost-effective alternatives to synthetic products such as fertilizers, crop protection products and plant growth regulators. In the present study, the potential of seaweed liquid fertilizer (SLF) of marine red algae Gracilariacorticata and Grateloupialithophila which were collected from Kovalong coast, Tamil Nadu was evaluated for its effect on the growth, biochemical parameters and pigment content of Chlorella vulgaris.The BBM medium for Chlorella was amended with different concentrations of this SLF viz., 0.5M, 1.0M, 1.5M, 2.0M concentrations per Liter of the medium. It was estimated from our studies that the 2.0M and 1.5M concentrations of both Gracilariacorticata and Grateloupialithophila as SLF were more effective for the alga's growth and showed highest amount of pigment accumulation at these concentrations. The SLF showed increase in carotenoid content of Chlorella day by day with increase in biomass concentration. There were minimal changes in Protein accumulation thus proving that the SLF enhanced the alga's growth and the Protein content was not affected. Thus this alga can be grown efficiently with SLF in a shorter time period and supplied to the people without any side-effects. We also estimated the SLF's Auxin content in Gracilariacorticata and had highest Auxin content than Grateloupialithophila. By this we conclude that, the increase in growth of Chlorella vulgaris is influenced by presence of growth hormones in the seaweed.

KEYWORDS: *Chlorella vulgaris, BBM, Seaweed Liquid Ferilizer, Gracilariacorticata, Grateloupialithophila, Biostimulant.*