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Effect of Seaweed Extract (*Sargassumtenerrimum*) on Seed Germinationandgrowth of Tomato Plant (*Solanumlycopersicum*)

M.Sasikala, E.Indumathi, S.Radhika, R.Sasireka*

[1]Department of Biotechnology, Kamaraj College of Engineering and Technology, Virudhunagar, India

Abstract: Agriculture is the backbone of our country. Now-a-days synthetic fertilizers were mostly used in agriculture when compared with bio-fertilizers. Prolonged usage results in diminishing soil fertility, soil erosion, health threads to human, livestock and also microbial community present in the soil. To overcome this problem and to increase the efficiency of plant cultivation, seaweed extracts can be used as fertilizers in sustainable agriculture. Seaweed extracts act as bio stimulants mainly due to the presence of plant hormones. The phyto-hormones identified in seaweed extracts are auxins, cytokinins, gibberellins, abscisic acid and ethylene. When compared to other marine algae Phaeophyceae (brown algae) shows better results than Chlorophyceae (green) and Rhodophyceae (red). Efficiency of the Seaweed Liquid Extract was observed by performing the experiments at different concentration such as 0.2%, 0.4%, 0.6%, 0.8% and 1%. Seaweed extractwas applied to plant in three different ways such as soil treatment, foliar spray and Seed Treatment. By observing the germination percentage, number of leaves, leaf area, shoot length, root length, wet weight, and dry weight of the plants; efficiency of the Seaweeds Liquid Fertilizer can be determined. The objective of this study is to increase the soil fertility using algal extract (*Sargassumtenerrimum*) as a fertilizer and also to improve the seed germination, growth, yield as well as quality for better production and process.

Keywords: Phytohormones, Seaweed, *Sargassumtenerrimum, Solanumlycopersicum.*

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