UNIVERSITI TEKNOLOGI MARA
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TITLE:

INVESTIGATION ON THE EFECTIVENESS OF BIOSTIMULANTS FROM RAW MICROALGAE TOWARDS THE ORGANIC PLANT GROWTH

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ABSTRACT

This project investigates the use of microalgae bio-stimulants in plants growth as a sustainable alternative to organic plant growth. This research focuses on the preparation of raw microalgae bio-stimulant. The bio-stimulant from these algae were tested on several plants like water spinach and Choy sun to determine how effective they were in encouraging plant development. The finding shows that bio-stimulants dramatically increased the plant heigh to 18 cm at the end in 36 days better than other stimulants and based on my observation, from the beginning I can see that the height is not very high since it grows a bit letter compared to commercial fertilizer and distilled water. Thus, the potential of the bio-stimulants and contribute to sustainable agriculture by offering an environmentally benign and cost-effective alternative for increasing the plant growth.

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CHAPTER 1
BACKGROUND

1.1 Introduction

Global waste water production is predicted to increase by 24% by 2030 and 51% by 2050 compared to current levels (Qadir et al., 2020). An efficient and effective wastewater technology and management will contribute significantly to sustain the development in wastewater management company (Abd-Elaty et al., 2022).

An alternative for water treatment is using microalgae as bio-stimulant as one of the treatments since it is more sustainable and cost effective. Using microalgae for waste water treatment has many advantages over traditional approaches where it can successfully reduce adverse effect on the environment while maintaining a low-cost operation that is very sustainable (Rawat et al., 2024).

1.2 Literature Review

The preparation to make this bio-stimulant needed a lot of information from the previous study as references where it will be discussed in this part.

1.2.1 Chlorophyta (Green algae)

Chlorophyta is an extensive family of green algae that can be found in the ocean, freshwater, and land. The study underlines the significant of creating a strong lineage in order to understand these algae's evolutionary background. Over the last two decades, advanced in phylogenetic research, specifically using nuclear ribosomal sequence and chloroplast genomic data have influenced our understanding of green algal evolution (Fang et al., 2017).