

EFFECT OF SEAWEED EXTRACT AS ORGANIC FERTILIZER  
AND ITS ELEMENT COMPOSITION ON GROWTH OF  
*Abelmoschus esculentus* (L.) Moench

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JUNE 2014

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## ABSTRACT

### **THE EFFECT OF SEAWEED EXTRACT AS ORGANIC FERTILIZER AND ELEMENT COMPOSITION ON THE GROWTH OF *Abelmoschus esculentus* (L.) moench**

This study conducted to determine a way to replace the uses of chemical fertilizer to enhance the growth of the plant which can effects plant and human indirectly. The uses of seaweed as organic fertilizer to enhance the growth of the plant were being considered as we used two types of seaweeds, *Kappaphycus alvarezii* (Doty) and *Euchema denticulatum* (N.L.Burman) as an extract. Those two seaweed were been extracted at different concentration and added into the soil before planted the seed of *Abelmoschus esculentus* (L.) moench .The element compositions that present in the seaweeds were analyzed by using Atomic Absorbance Spectrophotometry (AAS). The data shows that less concentrated seaweed extract of 0.01 g/ml contain higher concentration of elemental composition compare to the more concentrated extract which is 0.02 g/ml. The comparison between both seaweeds samples by observing the growth rate shows that *Euchema denticualtum* (N.L.Burman) of 0.01 g/ml was more effective to enhance the growth of the plant compare to the more concentrated extract which is 0.02 g/ml.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of Study

Nowadays, the use of natural seaweed products as a substitute to inorganic fertilizer has gained important (Ramya *et al.*, 2011). Seaweed contains all the trace element and plant growth hormone needed by plants. In India, there is large quantities of macroscopic marine algae that been utilized as manure. Liquid extract from the seaweed that commonly called SLF (Seaweed liquid fertilizer) has been widely used as foliar spray to induce growth and increase yield in plant (Thirumaran *et al.*, 2009).

The most abundance production of seaweed comes from Semporna, Sabah which is located on the east coast of Sabah (Fisal *et al.*, 2012). Other than that, seaweed also known as a source growth regulators, organic osmolites, amino acids, mineral nutrient and vitamin precursors (Spinelli *et al.*, 2009).