

Bioeconomic study a marine phytoplankton *Chaetoceros calcitran* by using commercial and formulated fertilizer

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Studies were carried out on two different aspect of marine diatom, *Chaetoceros calcitran*. First is the measure of cell growth base on number of cells and dry weight in different culture media such as LCP, LCP + clewat 32, Japanese Media and Conway Media as reference. The second study is looking at the effect of growth in different tank such as glass tank, conical fiberglass tang and rectangular fiberglass tank. All the culture of *Chaetoceros calcitran*, was carried out in outdoor tank, salinity of 23.25 ‰ and ambient air temperature of 27-36 °C. Throughout the study, the weather is sunny. Results shows that *Chaetoceros calcitran* cultured in Conway media has the highest cell at 1.843×10^6 cells (maximum cell number) and 0.870 g/L (maximum dry weight). The Cultivation cost for Conway media and LCP were RM 41.227 and RM 74.833 respectively. The results from second showed growth are in the glass tank which is 1.687×10^6 cell/ml (maximum cell growth) and 0.783 g/L (maximum dry weight). Cultivation in a glass tank also showed that the lowest production cost at RM 45.191 /g dry weight compared to the fiber conical tank and rectangular fiber glass tank.

Keywords: Conway medium, *Chaetoceros calcitran*, marine phytoplankton, diatom, LCP