Utilization Of Carbon Dioxide (CO$_2$) For The Optimization Of The Growth Of Seaweed *Kappaphycus alvarezii*

Research on seaweed needs to be developed in an effort to increase the quantity of seaweed production effectively. One that researched is the use of carbon dioxide (CO$_2$) as an indicator of an increase in the rate of growth of seaweed *Kappaphycus alvarezii* in a controlled laboratory scale.

The research was conducted at the Laboratory of Microalgae Surfactant and Bioenergy Research Center (SBRC) Bogor Agricultural Institute at Baranang Siang, Bogor. *Kappaphycus alvarezii* seaweed used in the study obtained from Pulau Panjang, Banten in August 2010.

Experimental design used was Randomized Complete Design (RCD) with treatments. P1 is the provision of CO$_2$ once / 3 days (5x100 ml / min for 25 minutes), P2 is the provision of CO$_2$ once / 2 days (5x100 ml / min for 25 minutes), P3 is the provision of CO$_2$ 1 once / day (5x100 ml / min for 25 minutes), and without the provision of carbon dioxide.

The results showed that the average wet weight - average, influenced by the daily growth rate of carbon dioxide, and alkalinity. Wet weights of the largest found in the media P3 the thirtieth day is 36.67 grams, whereas the wet weight of the smallest found in the media P1 the sixth day is 27.60 grams. The highest growth rate of all treatments is at P3 the sixth day is 1.310%, whereas the lowest growth rate of all treatments are on the media P1 the sixth day is -1.772%. Provision of carbon dioxide significantly affect the growth rate of seaweed *Kappaphycus alvarezii*, so that made up the Tukey test to determine significantly different treatment on the rate of growth of seaweed *Kappaphycus alvarezii*. Based on the results of the Tukey test resulted that further treatment was significantly different is at P3 the growth rate of seaweed *Kappaphycus alvarezii* with a value of P3 > L:0747 > 0.65, whereas the treatment in the media P1 and P2 with a value of respectively P1 <L: 0093 <0.65 and P2 <L: 0068<0.65 were not significantly different to the rate of growth of seaweed *Kappaphycus alvarezii*. Based on the measurement of alkalinity by titration method then there is the highest alkalinity values obtained at P3 media's treatment of 80 mg / liter while the lowest alkalinity values found in P1 medium is 40 mg / liter.