SUMMARY

Dunaliella sp. is a microalga that has the potential to be developed as a natural feed because it contains high protein. *Dunaliella* sp. is a marine microalga whose growth is influenced by salinity concentration. Besides affecting growth, salinity also affects the biochemical composition of microalgae. This study aims to determine the growth patterns and protein content of *Dunaliella* sp. cultured at various salinity concentrations so that the effective salinity can be determined that produces the high growth and protein content of *Dunaliella* sp. The output of this study is to find the salinity concentration so that *Dunaliella* sp., as a marine microalga, can grow well in freshwater media.

This research applied an experimental method with a Completely Randomized Design (CRD) consisting of six treatments and three repetitions. The treatment tested was salinity with different concentrations observed for nine days with salinity 0, 5, 10, 15, 20, and 25 ppt. The main parameters measured are the cell density, biomass, and protein content of *Dunaliella* sp. while supporting parameters are temperature, pH, and light intensity. Cell density data were analyzed using Analysis of Variance (ANOVA) with 95% and 99% confidence levels. If the results were significantly different, further tests were carried out with the LSD test. Biomass and Protein content data were presented in histograms and analyzed using descriptive analysis.

The results of the ANOVA test showed salinity has a very significant effect ($p<0.01$) on the cell density of *Dunaliella* sp. on days 3, 4, 6, 7, 8, and 9. Salinity has a significant effect on day 5 ($p<0.05$). The BNT test results showed that salinity effectively increases the cell density of *Dunaliella* sp. by 15 ppt. The highest peak cell density at 15 ppt is 32.6067×10^3 cells/ml, and the lowest cell density at 25 ppt is 23.2267×10^3 cells/ml. The effective salinity to increase biomass is 15 ppt, while protein content is 0 ppt.

Keywords: *cell density, Dunaliella sp., growth, natural feed, protein, salinity*