EFFECT OF PHOTOPERIOD AND SALINITY ON THE GROWTH AND CHLOROPHYLL *a* SEAWEED *Kappaphycus alvarezii*

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ABSTRACT

K.alvarezii in the world is different in each of its water, it is strongly influenced by several factors, namely salinity and photoperiod. Salinity is closely related to the osmotic pressure that effects the body's balance of aquatic organisms. Photoperiod effects directly or indirectly, particularly on the algae, namely as a source of energy for photosynthesis. Photosynthesis process will occur not only with light, but also with the help of chlorophyll. Chlorophyll *a* serves as a primary light catcher in the process of photosynthesis. The aim of this study was to determine the effect of photoperiod and salinity on growth and chlorophyll *a K. alvarezii*. and to determine the interaction relationship between photoperiod and of salinity on growth and chlorophyll *a K. alvarezii*

The study was held on May at the Laboratory of Education Faculty of Fisheries and Marine Airlangga University. The design of the study is a Completely Randomized Design (CRD) Factorial test followed by Duncan's Multiple distance. Materials used in this study is *K. alvarezii* with 9 treatments and 3 replications. The combination treatment used is A (salinity 25ppt; photoperiod 12L: 12D), B (salinity 30ppt; photoperiod 12L: 12D), C (salinity 35ppt; photoperiod 12L: 12D), D (salinity 25ppt; photoperiod 16L: 8D), E (salinity 30ppt; photoperiod 16L: 8D), F (salinity 35ppt; photoperiod 16L: 8D), G (salinity 25ppt; photoperiod 8L: 16D), H (salinity 30ppt; photoperiod 8L: 16D), I (salinity 35ppt; photoperiod 8L: 16D).

Data results shown that the effect of salinity was not significantly different (F calculated < F table 0.05) on the growth of *K. alvarezii*. Effect of photoperiod did not significantly different on the growth of *K. alvarezii* in the first week until the third week, but it is very significantly different (F calculated> F table 0.01) in the fourth week of treatment where B is the salinity of 30 ppt with light photoperiod 12 and dark for 12 hours. On growth, there is no interaction of salinity and photoperiod. On chlorophyll *a* there is difference significant in treatment B where is the salinity of 30 ppt with light photoperiod 12 and dark for 12 hours, photoperiod had affected on chlorophyll *a K. alvarezii*., and there is no interaction of salinity and photoperiod.

KEYWORDS : Kappaphycus alvarezii, photoperiod, salinity, growth, chlorophyll