

SUMMARY

Gracilaria gigas is one of the red seaweed-producing agar, and is one of the largest in Indonesia. Its ability to grow over a wide range of salinity makes it widely cultivated in pond areas, one of them in the Randusanga area of Brebes Regency, Central Java where seaweed for this research is taken. As an autotrophic organism, the fulfillment of light is needed for the process of photosynthesis, this is related to the depth and chlorophyll content from this seaweed. In addition, salinity is also be the factor that determines the success of photosynthesis process, where this process produces some food reserves and one of them in the form of agar. Temperature and evaporation are closely related to salinity, higher temperature and evaporation will affect in higher salinity. The method had been used is a survey method with Completely Randomized Design (CRD) with Factorial pattern. The observed variables include independent variables: different depth and salinity levels, and dependent variables: chlorophyll content and agar yield. The results obtained were then analyzed using Analysis of Variance (Anova) (F-test) with 5% and 1% level. This research shows that independently, salinity does not affect the agar yield, but affects the chlorophyll content where the salinity <25 ppt is the most influential. Neither depth nor interaction between depth and salinity affect the chlorophyll content and yield of *Gracilaria gigas* seaweed.

Key word: *Gracilaria gigas*, chlorophyll, agar, depth, salinity

