STUDYING THE INFLUENCE OF SALINITY AND PHOTOPERIOD ON THE GROWTH OF MICROALGA *Thalassiosira pseudonana*

Dinh Thi Hanh, Tran The Muu, Dinh Van Khuong

Summary

The biomass culture of the silica algae, including *Thalassiosira pseudonana* is affected by several major factors: salinity, photoperiod and biotic environment. This study aims to assess the effects of salinity and photoperiod on the growth of *Thalassiosira pseudonana*. Experiments were conducted in plastic bottles with the volume of 10L. Each treatment had three replicates. In salinity experiment, *T. pseudonana* was cultured at salinities of 15, 20, 25 and 30‰ with start density 100×10^4 cells/ml, temperature was kept at 28°C, aeration and photoperiod 24 h. Results showed that at 25‰ the culture reached the highest density ($1252 \pm 15.59 \times 10^4$ cells/ml) with the shortest culture duration (6 days). In the photoperiod experiment, *T. pseudonana* was cultured at one of three photoperiod 24 h light: 0 h dark, 16 h light: 8 h dark and 12 light: 12 h dark, with start density 100×10^4 cells/ml, temperature and salinity were kept at 28°C and 28‰ respectively and aeration 24 h. The results showed that algae reached the highest density of $1390 \pm 33 \times 10^4$ cells/ml at 16 h light: 8 h dark while the shortest time to reach the highest algal density occurred in the day 7th in 24 h light: 0 h dark. Therefore, the salinity of 25‰ and the photoperiods of 16-24 h light: 8-0 h dark are recommended for biomass culture of *T. pseudonana* in North of Vietnam.

Keywords: *Thalassiosira pseudonana, salinity*, *photoperiod*.