Effects of salinity and temperature on the growth of diatoms and green algae.

ABSTRACT

Salinity and temperature are two of the major factors controlling the growth rate of microalgae. In this study, the effect of salinity and temperature on the growth of marine microalgae; an unidentified Chlorella sp. and Chaetoceros calcitrans were investigated to optimize the microalgal biomass production. These species were cultured at different salinities (20, 25 and 30‰) and temperatures (20, 25 and 30°C). C. calcitrans and Chlorella sp. had significantly higher ($p<0.05$) growth rate when cultured at salinities of 30 and 25‰, respectively. In terms of temperature, the highest ($p<0.05$) growth rate was observed in C. calcitrans and Chlorella sp. cultivated at temperatures of 30 and 25°C, respectively. This study indicated that C. calcitrans was suitable to marine condition, whereas Chlorella sp. showed optimum growth at lower salinity and temperature.

Keyword: Chaetoceros; Chlorella; Diatoms; Green algae; Microalgae; Salinity; Temperature.