

## **The influence of light intensity and photoperiod on the growth and lipid content of microalgae *Nannochloropsis* sp.**

### **Abstract**

Illumination factors such as length of photoperiod and intensity can affect growth of microalgae and lipid content. In order to optimize microalgal growth in mass culture system and lipid content, the effects of light intensity and photoperiod cycle on the growth of the marine microalgae, *Nannochloropsis* sp. were studied in batch culture. *Nannochloropsis* sp. was grown aseptically for 9 days at three different light intensities (50, 100 and 200  $\text{l mol m}^{-2} \text{s}^{-1}$ ) and three different photoperiod cycles (24:0, 18:06 and 12:12 h light:dark) at 23 C cultivation temperature. Under the light intensity of 100  $\text{l mol m}^{-2} \text{s}^{-1}$  and photoperiod of 18 h light: 6 h dark cycle, *Nannochloropsis* sp. was found to grow favorably with a maximum cell concentration of  $6.5 \times 10^7$  cells  $\text{mL}^{-1}$ , which corresponds to the growth rate of 0.339  $\text{d}^{-1}$  after 8 day cultivation and the lipid content was found to be 31.3%.