

Diatom 11: 9-15 (英文)

吉澤一家・中村文雄 : *Synedra acus* Kützing の増殖と細胞外有機物

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Abstract

The growth characteristics and extracellular organic matter of *Synedra acus* Kützing, which often causes problems to the public water supply, were investigated by using an artificial culture medium. *Synedra acus* was removed from the water of a reservoir ; the cultivations were carried out between 10~25°C with continuous light illumination, under cool-white fluorescent lamps at 4,500lx and 2,000lx.

Under these conditions, the higher the temperature and the brighter the light became, the more rapidly the diatoms grew. With the growth of the diatoms, extracellular organic matter, which included saccharides, increased at a 40% ratio. Following the logarithmic phase, extracellular saccharides were yielded at a ratio of 11~12% to the dry algae.

The composition of these saccharides was recorded as follows : Rib+Ara : Fuc : Xyl : Man : Gal : Glu=4.3 : 1.8 : 7.1 : 8.6 : 9.4 : 68. As a result, saccharides produced by *Synedra acus* were characterized by a high concentration of Glu and the absence of Rha.

Key words

cultivation, extracellular products, growth characteristics, saccharides, *Synedra acus*