

Growth characteristics of *Anabaena variabilis* during the fed-batch culture

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High cell density culture of *Anabaena variabilis* was achieved by both supplying major nutrients and increasing light intensity in the previous work. Cell growth rate increased when light intensity increased from 100~110 to 1530~1700 $\mu\text{moles}/\text{sec}/\text{m}^2$. In this condition, the ratio between dry cell weight and optical density changed when the cell density became higher than 4 g dry cell/l. When filaments (above or below 4 g dry cell/l) were broken into unicells by sonication, the ratio between dry cell weight and optical density in unicells was same as that below 4 g dry cell/l in filaments. And unicell weight was same regardless of cell growth. Because both content and absorbance of pigments were negligible, they did not affect the ratio between dry cell weight and optical density. From these result, we propose that the morphological structures of filaments affected the ratio between dry cell weight and optical density.