

Influence of light on biomass and lipid production in microalgae cultivation

ABSTRACT

Microalgae have a diverse application in food, pharmaceutical, beauty, animal feed and bioenergy industry. The demand for high-quality pure microalgae biomass has steered the large-scale production of microalgae in the photobioreactor. The usage of light-emitting diodes (LEDs) as a light source is gaining attention as to conventional fluorescent lamps due to the higher energy conversion ratio, lower heat dissipation and its flexible application in photobioreactors. Besides, the narrow spectrum of LEDs could efficiently promote specific compounds in microalgae. This article reviews the influence of using various LED spectra on the biomass and lipid composition of microalgae. In addition, suggestions on the use of different LEDs cultivating common microalgae species in aquaculture are provided.