

Effects of salinity on the growth and proximate composition of selected tropical marine periphytic diatoms and cyanobacteria.

ABSTRACT

Marine periphytic cyanobacteria and diatoms have been examined as a potential source of feed supplement for rearing aquatic larvae in the aquaculture industry. Culture of the periphytic diatom *Amphora* sp., *Navicula* sp., *Cymbella* sp. and the cyanobacteria *Oscillatoria* sp. at different salinities showed significant changes in biomass and specific growth rates. Diatoms growth was significantly higher at 35 g L⁻¹, while for cyanobacteria growth was better at 25 g L⁻¹. Significantly higher levels of protein and lipid were found in diatoms at low salinities (15–25 g L⁻¹) and an increase in carbohydrate at high salinities (30–35 g L⁻¹). Conversely, cyanobacteria showed a significantly higher lipid content at 30–35 g L⁻¹ compared with other salinity levels but no significant changes were observed in the protein and carbohydrate contents at different salinity levels. The present findings can be taken into consideration when culturing marine periphytic *Amphora* sp., *Navicula* sp., *Cymbella* sp. and *Oscillatoria* sp. to provide appropriate levels of protein, lipid and carbohydrate as feed supplement as well as for bioremediation in aquaculture.

Keyword: Salinity; Growth; Proximate composition; Diatoms; Cyanobacteria.