

Coupling of the spatial dynamic of bacteria community and nanoflagellate grazing pressure in the subtropical pelagic continental shelf ecosystem

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To investigate the trophic linkages between nanoflagellates and bacteria and *Synechococcus* spp. in the southern East China Sea, size-fractionation experiments were performed in the summer periods (August 2010, June and August 2011). During the study period, as shown in the temperature-salinity (T-S) diagram, the surface water at each sampling station was covered by oligotrophic Taiwan Strait water. For Bacteria, growth rates and grazing rates ranged from 0.22 to 1.99 d⁻¹ and 0~1.77 d⁻¹, respectively (averaged of 0.93 d⁻¹ and 0.49 d⁻¹, respectively). For *Synechococcus* spp., growth rates and grazing rates ranged from 0.25 to 4.84 d⁻¹ and 0~0.79 d⁻¹, respectively (averaged of 1.33 d⁻¹ and 0.49 d⁻¹, respectively). In addition, bacterial production rate ranged from 1.13 to 58.77 µg C L⁻¹ d⁻¹ and with average of 12.96 µg C L⁻¹ d⁻¹, and consumption rates with average of 8.05 µg C L⁻¹ d⁻¹. For *Synechococcus* spp., average of production and consumption rate was about 10.65 µg C L⁻¹ d⁻¹, and 4.05 µg C L⁻¹ d⁻¹, respectively. Apart from upwelling effect in June 2011, abundance of bacteria and heterotrophic nanoflagellates varied in small range in a certain region and showed [the prey-predator eddy]. In this study, we conclude that nanoflagellates largely depended on heterotrophic bacteria as an important energy source, as 62% of bacterial production consumed 62% of bacterial production.

Keywords: bacteria; *Synechococcus* spp.; nanoflagellate; prey-predator eddy