Fatty Acid Markers as an Indicator for Temporal Changes in Food Sources of the Bivalve *Quidnipagus Palatum*

Author(s)
Zainudin Bachoka, Tarik Mezianeb, Prosper L. Mfilingec & Makoto Tsuchiyac

Abstract
Changes in the fatty acid composition in the tissues of the bivalve *Quidnipagus palatum*from the Tomigusuku intertidal flat, Okinawa, Japan, collected in four different seasons (November 2000, the beginning of cold season; January 2001, the cold season; May 2001, the rainy season; and July 2001, the warm season) were examined and compared to the composition of surface sediments and suspended particulate materials. Assessment of fatty acid markers suggested that the food sources of *Q. palatum* differed between seasons and depended on the sources of organic material present in the sediment and water column. Vascular plants and bacteria were the main dietary components from July to November because of their abundance in the sediment. From November to January, macroalgae and phytoplankton were the major food sources of *Q. palatum*, corresponding to their predominance in sediments and algal blooms, respectively. During the May rainy season, organic matter in the sediment was dominated by diatoms, whereas the water column contained diatoms and resuspended macroalgal detritus. The transition to the warm season by July significantly increased the contribution of diatoms to the organic matter present in both the sediment and the water column. Consequently, from May to July, diatoms became the main food source for *Q. palatum*.

Keywords
Fatty acid biomarkers,
Sediment,
Intertidal flat,
Okinawa