

植物プランクトン色素組成から推定した 西部太平洋表層の種組成変動

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Abstract

The latitudinal variation of phytoplankton community structures was estimated from phytoplankton pigment analysis in western Pacific Ocean (140°E–175°E, 30°N–25°S). Surface water was collected during the overseas educational cruise of Tokai University from February 15 to March 31, 2002. 8 pigments including chlorophyll a (Chla) were identified and quantified by reversed-phase HPLC. Chla concentration and the pigments composition changed distinctly across 25°N to 30°N where temperature fronts were found. On the north side of the front, Chla concentration was more than 0.2μg/L. The maximum value was 0.58μg/L in the late March, which was explained as a spring bloom. The fucoxanthin and 19'-hexanoyloxyfucoxanthin, which stand for diatoms and prymnesiophyte, respectively, varied proportional to Chla concentration. On the other hand, zeaxanthin contained in cyanobacteria and prochlorophyte dominated in the southern part of the front where Chla concentration was low (<0.1μg/L). Zea : Chla ratio showed the highest value, 0.237 ± 0.139 , in this area. Summarizing these results, we show that diatoms and prymnesiophyte increase inshore, whereas picophytoplankton including cyanobacteria and prochlorophyte dominates more than 80% in oligotrophic waters of offshore.