

Short time variation of phytoplankton species in the Yodo River

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Chlorophyll a. concentration, water temperature, photon in the water and other related parameters were observed every 10 minutes during 16 days in Yodo River estuary in Japan. Cell density of each species of phytoplankton and nutrient concentrations were also observed every two or three days. And the factors of the temporal variation of composition of phytoplankton species were analyzed. However, the ratio of diatom decreased and the ratio of dinoflagellate increased. Growth of dinoflagellate was limited by phosphorus throughout the term. The limiting nutrient of diatom growth was phosphorus at first and was changed to silicate. When phosphorus limited the growth of phytoplankton, diatom had advantage because the half saturation constant is smaller. After growth of diatom began to be limited by silicate, dinoflagellate grew more due to the decrease in phosphorus concentration. Moreover, because water temperature also increased, environment for growth of dinoflagellate became good. The factors of dinoflagellate increase are the limitation of the diatom growth by silicate and the water temperature rise.

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