冬季の播磨灘における *Eucampia zodiacus* の分布特性と環境条件

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Abstract

The diatom *Eucampia zodiacus* is one of the harmful species which cause, through nutrient depletion, the discoloration of cultivated "Nori" (*Porphyra* thalli). In order to predict the short-term changes of nutrients in Nori-culture ground, the relationships between the distributions of *E. zodiacus* and environmental factors were investigated in Harima-Nada from January to April in 2004. The results showed that *E. zodiacus* increased near the bottom layer of shallow water in the north-west region of Harima-Nada at the beginning stage of appearance, and extended to the surface layer and other regions broadly when the west or north wind blew continuously. At the end stage of the appearance, *E. zodiacus* decreased to non-detection level after consuming near the bottom layer of the same region of the beginning stage again. Since some close relations were observed between the rise and fall of the number of *E. zodiacus* cells and changes in a physical condition of the field according to the wind and the precipitation, it became clear that a forecasting model that uses flow model is effective for short-term forecasting of the number of *E. zodiacus* cells. We confirmed that large numbers of *E. zodiacus* cells are maintained in spite of very low concentrations of dissolved inorganic nitrogen (DIN) and dissolved inorganic phosphate (DIP). Moreover, it was shown that DIN concentrations decreased as the standing crop of *E. zodiacus* cells increased. This correlation was thought to be able to use for simple revision of the forecast of DIN concentrations when the species appeared dominant.