

Diatom 10: 13-34 (英文)

浅井一視：有機汚濁に関する付着珪藻種の 3 生態群への統計的類別（1）共存係数による方法

Kazumi Asai : Statistic classification of epilithic diatom species into three ecological groups relating to organic water pollution. (1) method with coexistence index

Abstract

Tolerance indices to organic water pollution of 709 epilithic diatom species which were obtained from 1240 attached diatom assemblages were calculated by using two typical species. *Nitzschia palea* and *Achnanthes japonica* were selected as tolerant and intolerant typical species to organic water pollution, respectively. These two species were used for setting a hypothetical axis of organic water pollution in numerical calculation of tolerance indices of each diatom species.

Coexistence indices of epilithic diatom species pair also were calculated statistically. Two distinct boundaries were successfully recognized within the order of tolerance indices by comparing and examining the coexistence indices. Therefore, epilithic diatom species were classified objectively and nationally into three ecological groups (saprophilous, indifferent and saproxenous species) by setting up two boundaries. Both saprophilous and saproxenous species were decided now and were increased in number than previous report (Watanabe *et al.* 1990).

Based on the objective and statistic classification executed in this study, DAIPo(Diatom Assemblage Index to organic water pollution), whose value was numerically estimated by using relative abundance of each ecological group, is considered to become more reliable for water quality assessment.

Key index words

coexistence index, diatom, DAIPo, saprophilous species, saproxenous species, water pollution.