

Diatom 13: 247-259 (英文)

シュエイ・デアアン ライ・ペイ・チュン チェン : 中部台湾河川における付着珪藻の生態学的研究

Sheue-Duan Lai and Pei-Chung Chen : An ecological study on attached diatoms in the rivers of mid-Taiwan

Abstract

The attached diatom assemblages of mid-Taiwan rivers and their ecological environmental factors were studied during a one year period. Samples were collected each month from eleven sampling stations on six rivers in the middle Taiwan. The species composition, ecological diversity, community similarity, seasonal succession changes and the relationship between diatom communities and water quality were studied. A total of 90 diatom taxa from 19 genera were identified. Only 36 species from 16 genera achieved a relative abundance higher than 5% in the epipelagic and epilithic diatom assemblages. The data from a water quality index (WQI) and a water pollution index (WPI) showed that sampling stations ranged from slight to moderately polluted. However, chlorophyll a content of the dark brown algal community revealed a very weak correlation with the WPI and WQI. Both of the indices were easily disturbed by suspended solid. Vollenweider five-class trophic state classification by means of total phosphorus and inorganic, nitrogen, revealed that most sampling stations were polytrophic. The results emphasized that the abundance of attached diatom assemblages in the sampling rivers derived from high nutrient loading and different diatoms could be dominant during seasonal succession. Moreover, it is possible by observing some abundant, attached diatoms to detect the river pollutant loading.

Key index words

diatom, rivers, pollutant.