Fourth SETAC World Congress and 25th Annual Meeting in North America
14-18 November 2004, Oregon Convention Center, Portland, Oregon, USA
Abstract book, p. 207

IP058 A novel approach to identify in situ main stressors to *Pseudorasbora parva* by AFLP analysis.

Kameda, Y., Kagiya, S. and Masunaga, S.

Yokohama National University, Yokohama, Kanagawa, Japan.

Most of criteria in aquatic ecosystem are based on their acute or chronic toxicity examined during short periods. But it is necessary to evaluate the effects of long-term, low-level chronic exposure of populations by multiple stressors and to identify causative stressors for the conservation of aquatic ecosystem. Genetic variation is very useful to evaluate the persistence or vulnerability of wildlife populations but we still have many problems.This study presents a novel approach to identify multiple stressors to *Psedorasbora parva* by amplified fragment length polymorphism (AFLP) analysis.Identifying main in situ stressors is needed for effective ecological risk assessment. *Pseudorasbora parva* was captured in habitats contaminated mainly by sewage, treated sewage or agricultural effluent. We also analyzed chemical contaminations level, 14 polycyclic aromatic hydrocarbons (PAHs) and 7 heavy metals in the sampling sites. Genetic diversity in the population calculated by AFLP analysis decreased as their habitats were more contaminated by treated sewage or sewage. Genetic diversity was statistically significantly correlated with dissolved benzo[k]fluoranthene, dissolved benzo[ghi]perylene, dissolved lead, and dissolved manganese concentrations. Zinc in sediments was also significantly correlated. Some of them might be acting as strong selective agents that decreased genetic diversity in population. Using fluorescence-based AFLP data, we could classify amplified fragment length patterns into several groups and they corresponded with contamination properties of sampling sites, which showed the possibility to reveal the direction of selective forces of main stressors.