

**The Effect of Temperature on Heavy-metal Toxicity to  
Two Midge Species  
(*Chironomus riparius*, *Chironomus yoshimatsui*)**

**Hyoung-ho Mo, Jhi Hong Kim<sup>1</sup>, Yeon Jae Bae<sup>2</sup> and Kijong Cho<sup>1</sup>**

Department of agricultural biology, Korea University

<sup>1</sup>Division of Environmental Science and Ecological Engineering, Korea University

<sup>2</sup>Department of Biology, Seoul Women's University

*Chironomus riparius* is the international standardized species but does not inhabit in Korea and *Chironomus yoshimatsui* dominates in urban streams in Korea. Both of two species have short life cycle (27 days) and they are resistant to pollutants, easy to mass breed in the laboratory, and have been used for ecological, toxicological, and molecular genetical experiments. This study was conducted to examine how temperature effects on heavy-metal acute toxicity to two midge species. Both species were reared at 23±1°C and other conditions followed the OECD guideline 219. The same aged larvae (9 days after hatching) were acclimated to 20°C and 27°C for 24 hours before the exposure to minimize the heat shock. Ten chironomidae were exposed to each test vessel with heavy metal (lead, cadmium, and mercury) for 48 and 96 hours. During the exposure, the test was conducted under the static condition without food supplying and water exchanging. This study showed the effect of temperature on heavy metals acute toxicity using mortality response of two kinds of Chironomidae.

**Key words:** *Chironomus riparius*, *Chironomus yoshimatsui*, aquatic ecotoxicology, temperature, heavy metals