Abstract for SETAC North America 35th annual meeting, Vancouver, BC, Canada November 9-13, 2014

Presentation Type: Platform

Track: Aquatic Toxicology and Ecology

Session: Refining Methods for Conducting Laboratory Whole-Sediment Toxicity Tests

Abstract Title:

Inter-LabTesting of *Hyalella azteca* Water and Sediment Methods: 1 Background and Overview of the 42-d Survival, Growth and Reproduction Test

Authors:

Norberg-King, TJ, Hockett, JR, Mount, DR (USEPA, Duluth MN); Soucek, DJ (Illinois Natural History Survey, Champaign, IL); Ingersoll, CG, Ivey, CD, Brumbaugh, WG (USGS, Columbia, MO); Taylor LN (Environ Canada, Ottawa, ONT).

Abstract:

Over the past four years, USEPA-Duluth, USGS-Columbia, the Illinois Natural History Survey, and Environment Canada have been conducting studies to refine the USEPA and ASTM International methods for conducting 10- to 42-d water or sediment toxicity exposures with the amphipod *Hyalella azteca*. However, in advance of revising the methods for conducting water or sediment tests with *H. azteca*, we wanted to determine if additional laboratories following these revised methods could also demonstrate improved performance of *H. azteca*. Twenty-five laboratories volunteered to participate in an inter-laboratory study to evaluate *H. azteca* 10- to 42-d sediment or water exposures. Goals of the inter-laboratory study were to: 1) Determine whether the proposed new diets and water requirements will result in strong growth/reproduction of *H. azteca* in exposures across a range of laboratories, 2) Determine whether use of the new diets/water will support increases in minimum control performance of *H. azteca* in water or sediment exposures (e.g., weight, reproduction), 3) Determine if there are other diets or waters that are better than those being proposed. All labs were asked to prioritize two treatments for the water-only tests: 1) A diet of diatoms (*Thalassiosira weissflogii*) and flaked fish food (Tetramin®) with both rations increased weekly and 2) A diet of the same rations of Tetramin® combined with a fixed ration of yeast-cereal leaves-trout chow (YCT). Both diets were tested over a sand substrate using a water containing ≥15 mg Cl/L and ≥0.02 mg Br/L, but labs chose whether to renew the overlying water daily or use a 3X week water replacement. Beyond these two basic treatments, participating labs were also encouraged to test alternate substrates, control sediments, diets, or waters of interest to them. This presentation will cover the background studies on the waters and foods, the test procedures for the sediment and water-only test method, the various matrices evaluated by labs in the study, and describe the study design for the interlaboratory study. *This abstract does not necessarily reflect US EPA policy.*