

## **Optimizing the Performance of *Hyalella azteca* in Chronic Toxicity Tests: Results of Feeding Studies with Various Foods and Feeding Regimes**

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The freshwater amphipod *Hyalella azteca* is a common organism used for sediment toxicity testing in the United States and elsewhere. Standard methods for 10-d and 42-d toxicity tests with *H. azteca* were last revised and published by USEPA/ASTM in 2000. Under the methods in the manual, a single fixed ration of the food (yeast-wheatgrass-trout chow or YCT) is recommended for the entire 10-day or 42-day test. Recently, we began a series of studies evaluating different foods, combinations of foods, and feeding rates. Clean quartz sand was used as the substrate in these studies to insure that all nutrition came from the food added rather than from sediment. For the 42-day chronic amphipod tests, we compared various foods, including diatoms, wheatgrass, TetraMin, YCT and several of these foods in combination. We monitored survival, growth, and reproduction at intervals of 7, 10, 14, 21, 28, 35, and 42 days of exposure. It was immediately clear that the standard fixed ration of 1 ml YCT/chamber-day limited amphipod growth and reproduction in the latter portions of the 42-d exposure. Higher growth and reproduction was achieved with a variety of alternate foods or feeding schedules, with 42-d weights of *Hyalella* in excess of 0.8 mg dwt/individual and reproduction over 10 young per female. Results of several experiments will be presented along with their implications for future revisions of the EPA/ASTM test method. *This poster does not necessarily reflect EPA policy.*