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Sustainable Aquaculture for a Secure Future

Title: **Effects of clam size on heavy metal accumulation in whole soft tissues of *Galatea paradoxa* (born, 1778) from the Volta estuary, Ghana**

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Date: **September 14, 2010** Publication Number: CRSP Research Report **09-A04**

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Abstract: The Volta basin clam, *Galatea paradoxa*, is collected for food and remains an important affordable protein source for the riparian communities in the catchment. Clams accumulate metals in their soft tissues, which can be toxic to humans when consumed. A study was, therefore, carried out to examine the concentrations of Mn, Zn, Fe and Hg in *G. paradoxa*, at 3 different size classes: small (20 - 40 mm), medium (41 – 60 mm) and large (>60 mm) at Ada and Aveglo in the Volta estuary area in Ghana. The concentrations of heavy metals in the clams varied considerably between the two locations. There were, however, no significant differences ($p > 0.05$) in Mn, Fe and Zn concentrations among the different size classes, indicating a similar bioavailability of the metals at both locations and, possibly, an efficient metabolism to keep the concentrations of Mn, Fe and Zn relatively similar. Mercury concentrations in the Ada clams varied significantly ($p < 0.05$) among the different size classes. A Risk Analysis indicated that the concentrations of heavy metals in the clams were within acceptable limits and safe for human consumption.

This abstract was excerpted from the original paper, which was published in International Journal of Fisheries and Aquaculture, 1(2) 2009: 014-021.

CRSP RESEARCH REPORTS are published as occasional papers by the Management Entity, AquaFish Collaborative Research Support Program, Oregon State University, 418 Snell Hall, Corvallis, Oregon 97331-1643 USA. The AquaFish CRSP is supported by the US Agency for International Development under CRSP Grant No. EPP-A-00-06-00012-00. See the website at <aquafishcrsp.oregonstate.edu>.