ABSTRACT

ACCUMULATION, DEPURATION AND EFFECTS ON COPPER ON THE GROWTH REPRODUCTION AND HISTOLOGY OF THE GOLDEN APPLE SNAIL *POMACEA CANALICULATA* LAMARCK

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Golden apple snail, *Pomacea canaliculata* Lamarck, an agricultural pest in Asia, was exposed to 5 nominal copper concentrations to test if it could be a metal biomonitor. To have a more comprehensive knowledge on the over-all effect of copper (Cu+2) on *P. canaliculata,* the feeding and growth rates, reproduction, accumulation and depuration patterns and histology were studied. Results showed that age and copper concentration had an effect on the feeding rate while copper concentration and days of exposure to copper had an effect on the growth of snails. Cu concentration had no effect on the snail's fecundity, number of egg mass laid, egg mass size, number of eggs in an egg mass, incubation period and hatchability. Uptake rate, bioaccumulation and biotransference factors and assimilation efficiency implicated that *P. canaliculata* was a good copper accumulator. Accumulation of copper was evident even in low concentrations but there was a behavioral regulation at lethal concentrations. Its major route of exposure for the dissolved Cu was through the gills. Accumulated copper was positively correlated to the ambient concentration. *P. canaliculata*'s accumulated copper from dissolved and sediment was significantly higher from copper ingested from food. A nominal concentration of 67.5 ug Cu l-1 caused tissue damage in all four organs: kidney, digestive gland, foot and gills. These results suggest that *P. canaliculata* could be a good biomarker as well as metal biomonitor which give a more integrative measurementof the bioavailable metal since its accumulated metal was an integration of available fraction from the different matrices/media in which they were exposed over a period of time. Its wide distribution and adaptability to different conditions could make *P. canaliculata* a cosmopolitan biomonitor.