ABSTRACT

POTENTIAL IMPACTS OF SELENIUM ON CALIFORNIA RED-LEGGED FROG (*RANA DRAYTONII*)

Amphibian stress response to selenium through the hypothalamus-pituitary-interrenal axis, reflected in corticosterone levels, and its effects on development and growth, is unknown. In our current study, *Rana pipiens* embryos were exposed to selenium treatments (0 µg/L, 1 µg/L, 5 µg/L, and 13 µg/L) and reared in a laboratory until metamorphosis completed at Gosner stage 46. We also examined *Lithobates catesbeiana* from a selenium-contaminated pond and a reference site. We then analyzed the selenium accumulation, corticosterone levels, development, and growth in both amphibian species. *Lithobates catesbeiana* from the contaminated site accumulated higher levels of selenium but had lower corticosterone levels compared to *L. catesbeiana* from the reference site, which had a significantly higher corticosterone response. Selenium accumulation in *R. pipiens* tadpoles was 1,000 times the selenium exposure, corticosterone response was at control levels, and there was no affect on both development and growth. Our study demonstrates that selenium exposure does not elicit a stress response.

Foung Vang
May 2008