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Determination the Effects of Different Concentrations of Waterborne Sodium on Ions Content of Rainbow Trout (*Oncorhynchus mykiss*) Egg

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Abstract

A completely randomized design was conducted to determine the effect of four concentrations of waterborne sodium (2, 14, 50, 100 mg L^{-1}) on sodium, calcium, magnesium, copper, zinc and iron uptake and accumulation in rainbow trout eggs. Water recirculating incubators as experimental units were used and 22.5g the newly fertilized rainbow trout eggs were introduced in each one. The incubation media (treatments) were prepared by adding analytical salt into the double-de-ionized distilled water. The water temperature was between 7.5-10.0 ºC during the incubation period. The concentrations of Na, Ca, Mg, Cu, Zn and Fe of egg and water were measured in the beginning of experiment and hatching stage. Based on the results, Sodium and magnesium uptake by eggs from waterborne occurred in all treatments except in $[Na^+]$ 2 mg L^{-1}. Calcium and Iron were not absorbed by eggs from the waterborne. Cu uptake by eggs from waterborne were recorded in $[Na^+]$ 2 and 14 mg L^{-1} and prevention of Cu uptake occurred in $[Na^+]$ 50 and 100 mg L^{-1}. Zn uptakes by eggs were not different significantly ($P>0.05$) among treatments. The results of this study indicated that sodium, copper and magnesium uptake and accumulation in rainbow trout eggs depend on waterborne and whole egg sodium concentrations.

Keywords: *Egg, Rainbow trout, Sodium, Ion content.*