The growth performance of grass carp (*Ctenopharyngodon idella*) in the exposure of zinc oxide nanoparticles (2015)

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Abstract

Nanoparticle uptake by aquatic organisms (such as fish) with concerns about possible side effects of nanoparticles (NPs) has been associated. The aim of this study was to assess toxicological effects of grass carp in the exposure of zinc oxide nanoparticles (ZnO-NPs) for 60 days. The research in the form of a completely randomized design with 5 treatments and 3 replications and grass carp in a continuous flow system exposed to 0 (control), 0.1, 0.3, 0.8 and 2.4 mg/liter ZnO-NPs. Juveniles with an average weight of 20 grams were divided between 15 tanks (2015). With increase of concentration nanoparticle growth performance and feeding efficiency decreased. Lower dose of zinc oxide nanoparticles can improve the length and weight growth. By increasing the amount of zinc oxide nanoparticles nutritional factors, including specific growth rate, condition factor, feed conversion ratio and protein efficiency ratio decreased. Our studies showed that the measurement of growth factors in fishes can be used as an instrument to assess the toxicity of nanoparticles ZnO.

Keywords: Nanoparticles, Zinc Oxide, Grass Carp, Growth Components.