

Comparative Toxicity of diflubenzuron and p-chloroaniline in Phosphatases and Antioxidant Enzymes of Non-Target Organisms

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Aquaculture is one of the fastest growing business activities in Brazil, depending not only on the high potential in terms of species diversity, as well as infrastructure and variety of aquatic ecosystems available for exploration and growth. One of the downsides of this increase is the arising of parasites and predators that attack the fish causing high mortality rates. The use of agricultural chemical products has been the main way to combat these parasites in aquaculture, and the Diflubenzuron (DFB) is the most used. This compound inhibits the synthesis of chitin, a component of the exoskeleton of the parasites, and has low toxicity to fish. In the aquatic environment, the DFB can be toxic to non-target species and produce p-chloroaniline (PCA) when degraded, with a metabolite potentially carcinogenic and mutagenic to humans. The purpose of this study was to examine and compare the acute toxic effects and biochemical analysis of DFB and its metabolite PCA on *Pseudokirchneriella subcapitata*, *Daphnia similis* and *Oreochromis niloticus*, representative organisms of aquatic food chain. For this, the organisms were exposed to different doses of DFB and PCA to calculate the concentration that inhibits 50% of these (EC50). Preliminary results indicate which *D. similis* presented more sensible for diflubenzuron than *P. subcapitata*, evidenced by reduced EC50 (0,001mg/L) when compared with obtained for alga (50mg/L). These results suggest which diflubenzuron was more toxic for microcrustacean than for alga.

Keywords: Diflubenzuron, p-chloroaniline, Phosphatases, Antioxidant Enzymes

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