

SOIL INFLUENCE ON THE COMBINATORY EFFECT OF MIXTURES OF DIFLUBENZURON AND P-CHLOROANILINE IN TILAPIA AND ANALYSIS OF BIOINDICATORS

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The use of agricultural products has been the main way to combat parasites in aquaculture, and diflubenzuron is the most used compound. This can be toxic to non-target species and, when degraded, generates p-chloroaniline, a potentially carcinogenic and mutagenic metabolite to humans. The objective of this study was to evaluate the enzymes catalase and the Alanine aminotransferase and aspartate amino transferase as water toxicity bioindicators using as experimental model the tilapia fish, exposed for 96 hours to different combinatory concentrations of Diflubenzuron and p-chloroaniline mixtures, in presence and absence of soil. Samples of tilapia liver were homogenized and the supernatant was used for the biochemical analyses of enzyme activities. Our results showed for catalase, in the presence of soil, 80% decrease was observed for the mixture of 25% Diflubenzuron (75% p-chloroaniline) and no significant effects were observed for the mixtures of 50 and 75% Diflubenzuron, in relation to the control. The alanine aminotransferase activities increased 350%, 80% and 60% for the mixtures of 25, 50 and 75% Diflubenzuron, respectively; no significant effects were observed on the transaminase aspartate amino transferase activities. Our results suggest that catalase and the transaminases can be used as water toxicity bioindicators for the combinatory mixtures of Diflubenzuron and p-chloroaniline.

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