Nutritional effects of oyster mushroom (*Pleurotus ostreaus*) on blood serum biochemical indices of tilapia (*Oreochromis niloticus*) in exposure to Chlorpyrifos toxin

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Abstract

The use of pesticides in aquatic bodies causes stress responses in aquatic animals, especially fish, which ultimately affects the physiological condition of fish and reduces their immune function, so the use of immune stimulants such as prebiotics is essential. The aim of this study was to evaluate the effect of different prebiotic levels of oyster mushroom (*Pleurotus ostreatus*) on the safety parameters of tilapia (*Oreochromis niloticus*) serum exposed to chlorpyrifos toxin. This research was conducted in the fall of 1397 in the aquaculture hall of Shahid Nasser Fazli Barabadi, Faculty of Fisheries, Gorgan University of Agriculture and Natural Resources, for this purpose, 120 tilapia fry in 4 treatments: treatment (1) control, no prebiotic oyster mushroom, treatment (2) food containing 0.05% treatment (3) food containing 0.1% and treatment (4) food containing 0.2% of oyster mushroom prebiotics were divided and fed with food containing prebiotics twice for 42 days (morning and evening). Then, 0.5 ppm concentration of chlorpyrifos toxin was added to each group for 16 days and the biochemical indices of fish were evaluated at different levels. Serum safety indices were significantly different from the control group ($P < 0.05$). Alkaline phosphatase (ALP) and aspartate aminotransferase (AST) levels in chlorpyrifos exposure treatments were significantly increased compared to the control group and alanine aminotransferase (ALT), albumin, immunoglobulin and total protein levels were significantly different. The control group also had a significant decrease in glucose index in treatments exposed to the above toxin. The overall result of the present study showed that treatment fed with 0.05% oyster mushroom prebiotics in the diet can have the best protective effect on index changes. Biochemical properties of tilapia exposed to chlorpyrifos toxin with a concentration of 0.5 ppm.

Keywords: Prebiotic, Chlorpyrifos toxin, Tilapia, *Pleurotus ostreatas* mushroom

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