

# Antagonistic Effect of Various Dietary Levels of Aflatoxin B1 and Zearalenone on Digestive Enzymes Activity of Fingerling Rainbow Trout (*Oncorhynchus mykiss*)

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Received Date: August 18, 2018

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Accepted Date: December 16, 2018

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## Abstract

The formation of mycotoxins in feedstuffs is a worldwide issue affecting digestive physiology of aquatic animals and resulting in lower animal performance. In the study, 540 rainbow trout (*Oncorhynchus mykiss*) with an average body weight of  $3\pm 0.2$  g were treated in 9 distinct groups with various dietary levels of aflatoxin B1 (0, 25 and 50 ppb) and zearalenone (0, 200 and 400 ppb) for 4 weeks. At the end of the experiment, pyloric caeca samples were taken for determining alkaline protease, lipase and amylase activity. Results revealed that feeding on diets contaminated with aflatoxin B1 and zearalenone for 4 weeks did not significantly affect alkaline protease activity ( $P<0.05$ ), however, significantly affected lipase and amylase activity ( $P<0.05$ ). The highest lipase activity was recorded in control group (feeding on diet devoid of any mycotoxins) and in treatment group that was co-contaminated with containing 25 ppb aflatoxin B1 or 200 ppb zearalenone. However, the lowest lipase activity belonged to treatments contaminated with only 400 ppb zearalenone or 25 ppb aflatoxin B1. The highest amylase activity was assayed in group fed on diet without any mycotoxin contamination in comparison with those fed diet contaminated with any levels (25 or 50 ppb) of aflatoxin B1 ( $P<0.05$ ). It can be concluded that co-contamination with both aflatoxin B1 and zearalenone can reduce their negative effects on lipase activity of fish.

Keywords: Pyloric caeca, Mycotoxins, Digestive enzymes, Diet, Rainbow trout.

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