TITLE: EFFECTS OF AFLATOXINS ON PERFORMANCE OF LAMBARI FISH (*Astyanax altiparanae*)

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ABSTRACT:

Lambari (*Astyanax altiparanae*) is a native species with potential to production, and it can be found from the south of United States of America to the north of Argentina. Lambari is important in Brazilian productive chain and the carcass yield is from 70% to 85%. In 2015, lambari had a production of 244,730 kg. The aim of this study was to verify the effects of aflatoxins on performance of lambari fish. Aflatoxins were produced in culture material from *Aspergilus parasiticus* NRRL 2999 and incorporated to extruded feed previously tested. AFB_1 levels were confirmed by high performance liquid chromatography. Treatments were: A. Control – feed without toxin; B. Feed + 10 µg AFB_1/kg; C. Feed + 20 µg AFB_1/kg e D. Feed + 50 µg AFB_1/kg. Treatments were distributed into 12 aquaria, divided into three repetitions with 50 fish per m^2. Fish were daily fed at 5% of animal biomass for 120 days. Length, weight, feed consumption and survival rate were monthly measured, evaluating 10 fish from each aquarium, adding up to 30 fish per treatment. Weight was obtained by precision scale. Length was measured with a digital pachymeter, considering the front of the head up to the end of caudal fin. Feed consumption was calculated by the amount of feed offered and the dried leftover. Survival rate was achieved by the difference between the initial and final counts in each aquarium. The effects of aflatoxins on length and weight were significant ($P<0.001$). There was also effect of time of exposure ($P<0.001$) and interaction between treatment and time ($P<0.001$). Fish from control treatment were significantly larger on day 120 (9.2 cm in control; 6.8 cm in treatment C), presenting also higher weight when compared to the other treatments (9.3 g in control; 4.5 g in treatment C). There was no difference ($P>0.05$) among treatments for feed consumption. The survival rates were 99.5% in control, 98.0% in treatment A, 97.2% in treatment B and 95.7% in treatment C. Besides the higher mortality observed, after 90 days of exposure fish from treatment C presented disorientation, rotational movements around the great corporeal axis, reduction of the work of the fins and opercula, behavior of searching atmospheric air, discreet alteration in coloration, desquamation and mucus production. It was concluded that the chronic exposure of lambari fish to aflatoxins can lead to negative effects on performance.

Keywords: AFB_1, mycotoxins, aquaculture, biometry.

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