



## AUTOCHTHONOUS PROBIOTIC INCREASE THE RESISTANCE OF TAMBAQUI AGAINST FLAVOBACTERIOSIS

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### RESUMO

Aquaculture plays a crucial role in the world's food supply. In South America, the tambaqui (*Colossoma macropomum*) stands out as the native species with the highest production rate, however, the occurrence of diseases in the tambaqui farming requires the development of tools for greater biosecurity practices. The objective of the present study was to evaluate the effects of dietary supplementation with autochthonous probiotics in tambaqui. The design was completely randomized, consisting of 5 treatments with 4 replications (18 fish/tank). Diets were prepared containing a mix of three autochthonous bacteria of the genus *Bacillus* at four concentrations, besides the control group that did not receive probiotic supplementation. The treatments were: control (T1), probiotic supplementation with  $1.1 \times 10^5$  CFU/g of feed (T2),  $9.3 \times 10^6$  CFU/g (T3),  $3.7 \times 10^7$  CFU/g (T4) and  $4 \times 10^8$  CFU/g (T5). Zootechnical performance, hematological (hemoglobin, hematocrit, HCM, MCV, CHCM and RBC), immunological (oxidative burst) and biochemical parameters (ALT, AST, total proteins, albumin and globulin), and resistance against *Flavobacterium oreochromis* were evaluated. Data were collected after 30 and 60 days of experimentation and the results indicated that the highest concentration of the probiotic ( $4 \times 10^8$  CFU/g) reduced ( $p < 0.05$ ) the final weight of the fish in relation to the control ( $73.38 \pm 1.65$ g and  $82.24 \pm 3$ g, respectively). The lower concentrations of the probiotic did not negatively impact the animal's performance. Regarding hematological parameters, there was a significant increase in lymphocytes (at a concentration of  $3.7 \times 10^7$  CFU/g) and 78% in neutrophils (at a concentration of  $4 \times 10^8$  CFU/g), in relation to the control. Regarding biochemical and immunological parameters, no significant differences were observed between the experimental groups and the control. In the challenge test with *F. oreochromis*, tambaqui fed with probiotic at concentrations of  $3.7 \times 10^7$  CFU/g and  $4 \times 10^8$  CFU/g showed survival rates of 27.78% and 16.67%, while all those fed with the lowest probiotic concentrations and the control group died. The result of both groups (T3 and T4) was statistically different from all other groups tested ( $p < 0.05$ ). In conclusion, it is noted that the incorporation of probiotics can generate greater resistance of tambaqui to *F. oreochromis*, without negative effects on performance at a concentration of  $3.7 \times 10^7$  CFU/g, highlighting it as a viable alternative to prevent disease in fish farm.

**PALAVRAS-CHAVE:** Aquaculture, tambaqui, *Flavobacterium oreochromis*, probiotics, disease resistance

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