

**TITLE:** SYMBIOTIC MICROENCAPSULADO of SODIUM ALGINATE MATRIX WITH CASSAVA FLOUR AND *Lactobacillus* spp. IN NILE TILAPIA FISH DIET CHALLENGED WITH *Aeromonas* spp.

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## **SUMMARY**

Brazil has been standing out as a promising country for aquaculture. However, production in intensive systems predisposes fish to disease. In this context, the use of antibiotics is adopted. The consumption of probiotics, prebiotic and symbiotic has its increasing demand due to the benefits conferred to health. Therefore, the use of products derived from cassava, as a functional food, together with *Lactobacillus* spp. forming a symbiotic emerges as a potential strategy. Increasing Doses of the prebiotic source (2%, 4%, 6% and 8%) were tested to evaluate the effect on the growth of *Lactobacillus* spp. in the in vivo test, after feeding for 30 days, 2 of the 7 fishes of each treatment were euthanized, and weighed for the determination of the zootechnical parameters, the hematological and biochemical variables, as well as the lysozyme for immune response. The remaining fishes were inoculated with *Aeromonas* spp. to check the survival rate. A completely randomized design (DIC) was performed with 07 treatments, T1 (pure Ration), T2 (ration with 8% flour, *Lactobacillus* spp. and alginate), T3 (ration with alginate), T4 (ration with alginate and *Lactobacillus* spp.), T5 (ration with *Lactobacillus* spp.), T6 (flour and alginate feed) and T7 (ration with flour). Each treatment had 4 replications, totaling 196 animals. In the average daily gain of the alevines used in the experiment, statistical difference was observed in the treatments that used the ration with the symbiotic and with the *Lactobacillus* spp., when compared with the ration with the cassava flour that obtained the lowest gain, the fish mortality was initially observed on the second day and became more evident on the third day after injection, especially in treatments that did not have the presence of symbiotic and probiotic, even though there was no difference between treatments. It was observed that for the parameters Hb, HTC, PT, albumin, lysozyme, HCM and CHCM, there was no significant difference, and erythrocytes, glucose and VCM had significant difference between treatments with the use of the ration with alginate and flour when compared to the use of pure feed. The present study is the first report that the supplementation of *Lactobacillus* spp. with cassava flour, the Nile Tilapia diet improved the GMD, final biomass, feed conversion and survival of fish, influencing some hematological parameters and as quantity of erythrocytes, mean corpuscular volume and glucose.

**KEYWORDS:** Aquaculture; Prebiotic; Probiotic; Symbiotic.

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