

**TITLE:** EVALUATION OF BACTERIOCIN-LIKE INHIBITORY SUBSTANCE (BLIS) ON BIOMASS GAIN OF *Oreochromis niloticus* (NILE TILAPIA)

**AUTHORS:** PACHECO, K.D.; RIBEIRO, I.H.; RAMOS, J.L.; CESAR, D.E. ;DEL'DUCA, A.; APOLÔNIO, A.C.M.

**INSTITUTION:** UNIVERSIDADE FEDERAL DE JUIZ DE FORA, JUIZ DE FORA, MG (RUA JOSÉ LOURENÇO KELMER, S/N - MARTELOS, JUIZ DE FORA - MG, 36036-330, JUIZ DE FORA - MG, BRAZIL)

INSTITUTO FEDERAL DO SUDESTE MINEIRO – CAMPUS JUIZ DE FORA, JUIZ DE FORA, MG (RUA BERNARDO MASCARENHAS, 1283 - FÁBRICA, JUIZ DE FORA - MG, 36080-001, JUIZ DE FORA - MG, BRAZIL)

**ABSTRACT:**

Bacteriocins are promisor alternatives for sustainable aquaculture production and expansion maintenance. We tested if the addiction of Bacteriocin-like inhibitory substance (BLIS) on the feed would change larvae biomass during tilapia larviculture. Extract of two Gram-positive bacilli previously isolated from tilapia gut (Treatment 1 and 2) was added separately on feed (1:10 v/v), used in tilapia larvae diet. In the control group, the feed was sprayed with ultra-filtered water. The Treatments (triplicate) was realized in boxes with 10L of water and 80 larvae, that received feed (2% biomass/day) three times a day. Larvae samples (three) were collected and weighed (four decimal places) weekly in the first month and biweekly in the second. The weight variation at each time was statistically analyzed using analysis of variance (ANOVA). There was no difference in the average weight of the larvae between the treatments. The absence of variation in the average weight does not necessarily indicate that there was no beneficial change in larvae. Mortality rate, although not statistically significant, was higher in control groups than the treatment ones. Further, no weight loss was observed by the use of BLIS. However, *in vitro* tests previously executed showed that the BLIS are capable to inhibit *Aeromonas hydrophila* (*Ah*), *Edwardsiela tarda* (*Et*) and *Salmonella* Tiphys (*St*) growth. Even though there has been no change in biomass, it is possible that microbial composition of the water or larvae could be changed by the antagonistic activity, since the two first bacterial species (*Ah* and *Et*) previous inhibit are involved on tilapia infected diseases. It was reinforced by the microbial count variation on water were density and phenotypic changes observed (data not shown). Once this study did not aim the nutrition of the fish, the antagonistic substances dilution by the feed to the water, or not, and the time of feed intake by the larvae also should be considered. Concluding, these results are promising once BLIS did not affect negatively fish's weight gain, but it can promote health fish through the decrease of diseases caused by pathogenic bacteria.

**Keywords:** Weight gain, Tilapia larviculture, Antagonistic substance.

**Development Agency:** FAPEMIG, BIC/UFJF, EPAMIG-Leopoldina