

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

## IMPACT OF FEEDING OF OREGANO EXTRACT ON GROWTH PERFORMANCE AND ANTIOXIDANT ACTIVITY IN *BETTA SPLENDENS*

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Oregano exhibits fungicidal, bactericidal and antiparasitic action, however, research on its use in fish diets is still scarce. In this way, the objective of this study was to evaluate the use of oregano extract (OE), *Origanum vulgare*, as an additive in rations for *Betta splendens*. The experiment was conducted in the Aquaculture Laboratory (LAQUA), for 45 days. 40 male juveniles of *B. splendens* were used, from a single spawning center, with a mean initial weight of  $0.30 \pm 0.02$  g, distributed in a completely randomized design with four treatments and ten replicates, the experimental unit being composed of one fish, individually housed. The treatments consisted of a diet free of oregano extract (0% OE) and other three rations with addition of OE with levels of 0.25%; 0.50% and 0.75%. The ingredients were milled in knife type mill with 0.5 mm screen to formulate homogeneous feed, pelletized and dried in an oven with forced ventilation. The food supply was performed until apparent satiation. The partial water exchange (20%) was performed every two days. Biometrics were performed at begin and end of the experiment. The variables analyzed were: initial weight (IW), final weight (FW), mean weight gain (WG), protein efficiency rate, head length (HL), profile index (PI), head index (HI), total length (TL), standard length (SL), and height (H). As a variable for the evaluation of oxidative stress, the activity of the enzyme catalase (CAT) in muscle tissue was also verified. The data of each variable were submitted to analysis of variance, Tukey test and regression analysis at 5% probability. This research is in accordance with ethical principles in animal research and was approved by the Ethics Committee on the Use of Animals (Protocol N<sup>o</sup>. 072/16 - CEUA / UFAL). There was no effect ( $P > 0.05$ ) of the treatments on the evaluated variables: FW, HI, H, PI, HI and specific growth rate. However, there was a linear positive effect as the addition of OE in the rations was increased over the WG, SL, TL and CAT variables. Possibly, a better performance of antimicrobial agents occurs with the use of natural additives, positively influencing the health and performance of the animals, besides contributing to raise the activity of antioxidant enzymes. Therefore, it is recommended to use rations with 0.75% of oregano extract for *Betta splendens*.

**Keywords:** antioxidant, fish nutrition, *Origanum vulgare*, ornamental fish

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