



## **EFFECTS OF THE THYMOL:CARVACROL ASSOCIATION ON HEALTH AND ZOOTECHNICAL PERFORMANCE OF TAMBAQUI**

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### **RESUMO**

Molecules such as thymol and carvacrol, obtained from plants using different extraction techniques, have medicinal properties and received prominence in aquaculture. This research addresses the use of the association of both molecules as an additive in the diet of the tambaqui *Colossoma macropomum*, aiming at improvements in the zootechnical performance of animals, benefits for the immune system and disease prevention, as observed in the researched literature with other fish. In this study, 180 tambaqui juveniles ( $32.17 \pm 5.76$  g;  $12.21 \pm 0.73$  cm) were randomly distributed in the density of 9 fish/tank, in 20 tanks with a capacity of 300 L, performing five treatments (control 0, 500, 1000, 1500 and 2000 mg/kg), with four replicates. Experimental ration was produced and offered twice a day, for a period of 60 days. In the intervals of 30 and 60 days, 2 fish/tank were sampled to evaluate hematological, biochemical and immunological parameters and after 60 days zootechnical performance, parasitic load and resistance to bacteriosis were evaluated. After 30 days, fish from the three highest concentrations showed a reduction ( $p \leq 0.05$ ) in thrombocytes compared to the control group. For the highest concentration, there was also a significant decrease ( $p \leq 0.05$ ) in the number of lymphocytes and an increase ( $p \leq 0.05$ ) in eosinophils in relation to the other groups. After 60 days, there was only an increase in the number of eosinophils ( $0.74 \pm 0.63$ ) for the concentration of 1000 mg/kg. About fish performance, the supplemented diet did not act as a growth promoter. In the parasitological evaluation, all groups tested showed a high parasitic load of Monogeneas and the diet did not decrease parasitism, even though the compounds are known in the literature with an anti-parasitic effect. The *Aeromonas jandei* infection resistance test revealed that the compounds did not prevent bacteriosis as described in the literature of recent fish studies. Finally, the main highlight of this research was the influence of thymol:carvacrol association on tambaqui hematology. The result corroborates the anti-inflammatory effect of the compounds that has been described in mammalian literature for years, while it is not compatible with the results of practical aquaculture research, where thymol and carvacrol are considered potent immunostimulants, antioxidants and growth promoter. We emphasize that both thymol and carvacrol must be investigated in depth for their anti-inflammatory effect in fish, as this may have medicinal importance.

**PALAVRAS-CHAVE:** Additives, Aquaculture, Herbal medicine, Nutrition

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