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EFFICACY OF ANTIBIOTICS AND HERBAL MEDICINE MIX FOR THE TREATMENT OF MOTILE AEROMONAS SEPTICEMIA IN FARMED FISH COLOSSOMA MACROPOMUM

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RESUMO

In Brazil, the availability of antimicrobial drugs for the treatment of fish diseases is limited, and still absent for *Colossoma macropomum*. *Aeromonas* spp. is a major pathogen for many farmed fish species and the misuse of drugs for treatment of this bacteria reflects negative effects on the fish, environment, and consumers. Therefore the objective of the study was to evaluate the effectiveness of drugs with potential for treating *C. macropomum* against *Aeromonas jandaei*. The relative percentage of survival (RPS) of 90 infected-fish (10g) was determined after treatment following protocols practiced by fish farmers. For infection, fish were divided into 9 aquariums (3L, 10 fish/experimental unit), totaling 3 experimental groups (triplicate): G_1 (thyme and oregano essential oil mix), G_2 (terramycin-TM700®), and G_3 (control-untreated). The *Aeromonas jandaei* strain (AM-70, 2.91 x 10^8 CFU/mL) was reativated (TSB, 28°C/48h) and used to trigger the infection. All experimental groups were injected intraperitoneally with 0.1mL of inoculum/10g of live weight. The G_1-treatment (essential oil mix) was prepared using 75mL of each essential oil. The mix was solubilized in DMSO (1:1,v/v), and then, dissolved in 1 mL of distilled water. The resulting solution was used for short treatment via bath (1 hour of fish exposure), using 100µl of this mix in 3L of water, daily applied in hospital aquariums (identical to experimental units). The G_2-treatment (terramycin-TM700®) was administered in the feed, according to the manufacturer's recommendations, at 11.85g of TM-700®/kg of body weight/day. The drug was based on a daily intake of 2% of live weight. The groups were treated for 10 days after *Aeromonas*-infection. The treatments with RPS≥80% were considered effective. The group treated with TM-700® had the lowest cumulative mortality rate (10%) and RPS=87.5%, resulting in the only effective treatment. The treatment with essential oil mix was not effective (RPS=16,63%) against *Aeromonas* and the group presented the highest mortality rate (93%), even higher than control (infected, without treatment) (80%). This result strengthens the possibility of a negative interaction between the compounds (synergy), or even a negative interaction of the drugs with fish (intoxication). The development of resilient aquaculture requires the ascertainment of effective treatments for fish diseases and this study highlights the effectiveness of TM-700® in treating Motile *Aeromonas* Septicemia in an important farmed fish. This is a fundamental step to develop biosecure strategies using antibiotic protocols. Fonte de financiamento: Biodiversa (FAPEAM, 01.02.016301.03247/2021-54), Conselho Nacional de Desenvolvimento C ientífico e Tecnológico – Universal (CNPq,

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PALAVRAS-CHAVE: Aeromonas jandei, Origanum vulgare, Tambaqui, Thymus vulgaris

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