

PRAZIQUANTEL IN THE CONTROL OF MONOGENETIC PARASITES OF TAMBAQUI *Colossoma macropomum*

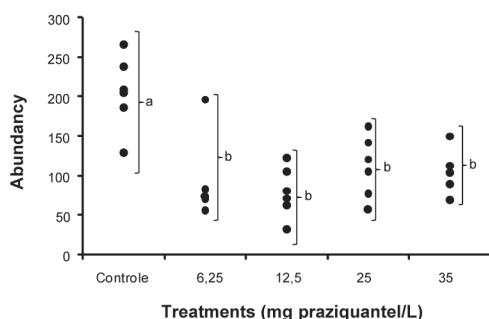
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The lack of proper management practices in pisciculture is being one of the reasons of parasites proliferation, such as those caused by monogenetic worms, which reflects in clinical signs on the hosts, to cite, anorexia, gill lamellae inflammation, asphyxia and death. It seems difficult to reach a control or prevention of these parasites, because several times, treatments cause damage to the fishes. The anthelmintic praziquantel (PZQ) was evaluated in the present study with the objective to test its efficacy in the control of monogenetic worms in *Colossoma macropomum* (tambaqui) and its effects on the host. It was used 90 fishes (32.0 ± 8.1 g and 10.1 ± 0.9 cm) naturally parasitized by monogenetic worms. The experimental design was entirely randomized, and consisted of five treatments: control= without addition of PZQ; 6.25; 12.5; 25 and 35 mg/L, with three replications each, constituting a total of 15 experimental units with 6 specimens *per* aquarium. Fishes had no food supply for 24 hours before exposition, which took place in aquariums of 60L, under static system. The PZQ was dissolved in ethanol P.A. in the proportion of 1:10,000 (w/v), given its low water solubility. A previous study demonstrated no influence of this alcohol in tambaqui's homeostasis. After 24 hours of exposition, fishes were collected from their aquariums in order to evaluate parasitic load, to calculate parasitic indices and treatment efficacy.

A significant reduction ($p < 0.05$) was observed on fish parasitic load of fishes exposed to different PZQ concentrations in relation to the control. However, there was no influence in the parasitic abundance (Figure 1). The mean values of parasitic intensity in treated fishes and the analysis of the percentage of treatment efficacy (Table 1) indicated that the tested concentrations resulted in a parasitic load reduction in all fishes analyzed. However, the efficacy was above 60% in most of the treatments, exception being 12.5 mg/L that obtained 61.8% of efficacy. The PZQ mechanism of action on a parasite results in a muscular activity intensification, followed by contractions and spastic paralysis of the parasite. This process would cause the detach of the parasite from the host. It is possible that a higher exposition period, under the same concentrations tested in the present study, would promote a more effective action of this drug. This could also explain the fact that similar concentrations (6.25 and 12.5 mg/L) showed similar efficacies.

Figure 1. Abundancy on monogenetic worms in *C. macropomum* after treatments with PZQ in 24hours baths. Different letters indicate significant different means between treatments ($p < 0.05$). N=6, except 35 mg/L (N=5).



Treatment	Efficacy (%)	Intensity
Control	-	205.33 ± 46.81
6.25 mg/L	55.5	91.33 ± 46.81
12.5 mg/L	61.8	78.33 ± 32.03
25 mg/L	46.3	110.17 ± 39.48
35 mg/L	49.1	104.60 ± 29.74

Table 1: Parasitic intensity and efficacy percentages of treatments with PZQ in baths of 24 hours in *Colossoma macropomum*.