

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

## WATER QUALITY OF TAMBAQUI PRODUCTION SUBMITTED TO TWO DENSITIES OF STORAGE IN WATER RECIRCULATION SYSTEM

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The increasing the stocking density of fish to obtain higher biomass can compromise water quality, a necessary factor for animal health and performance. In this context, the objective was to evaluate the water quality parameters of tambaqui (*Colossoma macropomum*) production, submitted to two storage densities in water recirculation system. The study was conducted from January to March 2016, in a completely randomized design with two treatments, that correspond to two stocking densities, with six replicates. Juveniles of the species with an average weight of 25.39 g were distributed at a stocking rate of 15 and 30 fish in nurseries of one m<sup>3</sup>, maintained in water recirculation system, with use of three forages (tifton 85 - *Cynodon lenfluensis*; jiggs - *Cynodon dactylon* e floralta - *Hemárhria altissima*) cultivated in a biofilter with an area of 0.2 m<sup>2</sup>. During the experimental period the animals were kept without water renovation, only with weekly replacement of the volume of water lost by evapotranspiration. Was maintained the same rate of water recirculation, 10% of the total volume per hour, for all experimental units. The water quality parameters were recorded weekly, in the period morning and afternoon, for temperature, pH, ammonia and dissolved oxygen. Data were submitted to analysis of variance and t test (*Student*) at 5% probability. The parameters of water quality remained within the limits recommended for the production of tambaqui. There was no significant difference ( $p > 0.05$ ) for the temperature data: 28.18 - 31.88°C, pH: 6.57 - 8.33, dissolved oxygen: 5.40 - 9.45 mg L<sup>-1</sup>, averages for morning and afternoon respectively. The water of tambaqui cultivation with stocking rate of 15 fish m<sup>-3</sup> presented total ammonia contents of 0.31 - 0.33 mg L<sup>-1</sup>, for morning and afternoon, while total ammonia levels of water in nurseries with the stocking rate of 30 fish m<sup>-3</sup> were significantly higher ( $P \leq 0.01$ ), with averages of 0.38 - 0.40 mg L<sup>-1</sup> for morning and afternoon. Considering the temperature and the pH of the water, it is estimated that the total ammonia, 22,33% not ionized, toxic form for animals, being still below the value considered harmful to the health and performance of fish of 0.5 mg L<sup>-1</sup>. It was concluded that the water quality of tambaqui juvenile nurseries with stocking rate of 30 fish m<sup>-3</sup> in water recirculation system, with use of forages in the biofilter, satisfactory quality parameters, within the values recommended for the species.

**Keywords:** Ammonia not ionized, biofilter, *Colossoma macropomum*

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