EFFECTS OF STOCKING DENSITY ON THE GROWTH OF TAMBAQUI *Colossoma macropomum* IN NURSERY CAGES IN NORTHEAST OF BRAZIL

C. A. SILVA*

Embrapa Coastal Tablelands. Av. Beira Mar, 3.250, CEP: 49.025-040 – Aracaju/SE - Brazil
*Email: carlos-alberto.silva@embrapa.br

The aim of this study was to evaluate the growth of tambaqui in cages at different stocking densities in a lake supplied by with rainwater. The experiment was conducted at Embrapa Coastal Tablelands, Aracaju, Sergipe State, NE, Brazil in a nursery at densities of 50, 100, 200 and 300 fingerlings.m^{-3} for 98 days (mean weight of 0.35 ± 0.02g), using twelve 1m^3 cages with a 20 mm metallic mesh placed in a lake 0.5 ha with water depth ranged from 1.4 to 2.5m according to season. During nursery phase, a nylon 4 mm mesh was placed into cage to prevent escape of fingerlings. Commercial extruded feed was offered four times a day and contained 40% and 36% of crude protein. Sampling was done every 30 days to evaluate growth in weight and adjust the feeding rate. The water temperature was 29.1 ± 1.4°C, dissolved oxygen 8.3 ± 0.8mg.L^{-1}, pH 6.5 ± 1.1 and conductivity 606.2 ± 69.9μS.cm^{-1}. Environmental parameters of the water fluctuated within the recommended range for the rearing of tambaqui. The highest final weight was obtained at 50 fingerlings.m^{-3}, (table I). Survival over 97% was observed in the nursery. The stocking density had a significant effect on production, with the highest final biomass (14.0 kg.m^{-3}) in cages stocked at the highest density. The recommended density in nurseries for producing juveniles tambaquis reared in small cages is 300 fingerlings.m^{-1}. The results show that the tambaqui cage culture is viable in lakes supplied by rainwater and can be integrated with multiple-use water services. Further research is needed to improve growth to market-size and decrease feed conversion rate lowering production costs.

Table I: Final weight, feed conversion rate (FCR), survival rate and final biomass of tambaqui in the nursery

Parameter	Fingerling.m^{-3}			
	50	100	200	300
Final weight (g)	[1]83.5 ± 18.0[a]	70.8 ± 19.1[a]	44.0 ± 4.7[b]	46.8 ± 9.2[b]
FCR[2]	1.1 ± 0.1[b]	0.9 ± 0.1[a]	1.0 ± 0.1[b]	0.8 ± 0.1[a]
Survival rate (%)	88.2 ± 13.5[b]	97.4 ± 2.2[a]	99.5 ± 0.6[a]	99.7 ± 0.4[a]
Final biomass (kg.m^{-3})	3.6 ± 1.9[c]	6.9 ± 1.6[b]	8.8 ± 0.9[b]	14.0 ± 2.7[a]

[1]Means (± SD). Means followed by different letters are significantly different at P<0.05 by Tukey's test.
[2]FCR = Feed conversion rate