

STOCKING DENSITY DURING THE INITIAL GROW-OUT PHASE OF TAMBATINGA ♀ *Colossoma macropomum* x ♂ *Piaractus brachypomus* IN NET CAGES

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Small-scale fish farming has increased in the state of Tocantins (Brazil) in the last years as an alternative source of animal protein and income. However, fish production is conducted at unplanned constructed ponds, with no water inlet and outlet mechanism, unabling complete pond emptying and drying to eliminate potential predators. In order to minimize losses due to fish predation, many farmers perform the initial grow-out phase in small net cages. The aim of this work was to determine the most adequate stocking density for tambatinga during the initial grow-out phase in net cages, considering growth, health and economic analysis. Three stocking densities were evaluated during 60 days in a completely randomized design: 400, 500, and 600 fish m⁻³. Table 1 summarizes the main variables of this work. There were no significant differences among the stocking densities for growth parameters, with the exception of yield, which was higher in the density of 600 fish m⁻³ compared to 400 fish m⁻³. Glucose, hematocrit, and total plasma proteins levels did not differ among treatments. The production was economically feasible for the three stocking densities. However, the density of 600 fish m⁻³ showed the highest profit in comparison to the others. Considering yield and the economic revenues, 600 fish m⁻³ was the most adequate density for the initial grow-out phase of tambatinga in net cages.

Table 1. Growth, blood and economic variables of tambatinga juveniles reared at different stocking densities in net cages.

	Stocking density (fish m ⁻³)		
	400	500	600
Initial weight (g)		0.34±0.11	
Final weight (g)	8.27±1.18	7.73±0.22	7.55±0.70
Feed conversion	0.92±0.15	0.78±0.10	0.73±0.08
Yield (kg m⁻³)	2,656.43±665.45 ^b	3,270.48±99.31 ^{ab}	3,909.43±397.79 ^a
Plasma glucose (g dL⁻¹)	70.80±3.70	68.85±11.33	78.85±15.14
Hematocrit (%)	25.64±7.81	26.42±3.44	29.14±3.21
Total plasma protein (g dL⁻¹)	6.87±0.31	6.65±0.21	6.45±0.30
Total harvest (fish)	319	425	518
Total cost (R\$)	581.95	660.61	736.29
Gross revenue (R\$)	638.00	850.00	1,036.00
Profit (R\$)	56.05	189.39	299.71

^{a,b} Different letters in the same row indicate significant differences by Tukey test ($P < 0.05$). Statistical analysis was only performed for growth and blood variables.