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SMALL-SCALE FISH FARMING IN SEASONAL PONDS IN BRAZIL

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The inclusion of aquaculture in household agriculture is an opportunity of product and income diversification as well as to increase food security for farmers. Small-scale fish production has increased in Brazil, even in regions with a pronounced dry season. However, there is no information about the characteristics, and technical and economic viability of aquaculture under these conditions. This study was carried out with the objective to characterize the production of tambatinga (\square *Colossoma macropomum* \times \square *Piaractus brachypomus*) in water deficit conditions in Tocantins state, Brazil. Seven small-scale fish farms were monitored, comprising nine seasonal ponds. The study revealed that it is technically possible and economically feasible to produce tambatinga in seasonal ponds (Table 1). Worth noting was the adaptability of the hybrids which showed suitable growth and tolerance to the poor water quality conditions. However, in order to achieve production success and financial returns, the adoption of the following procedures are suggested: (a) fish stocking as soon as the rainy period starts; (b) use of larger juveniles to achieve a higher final weight; (c) adoption of pond liming and fertilizing practices previous to stocking (d) water quality monitoring; (e) evaluate fish growing performance; (f) partial harvesting during the production cycle; and (g) total harvesting at the end of the rainy season.

Table 1. Productive performance and financial returns of tambatinga reared in seasonal ponds.

Farmer	Initial weight (g)	Final weight (g)	Production cycle (days)	Maximum weight - MW (g)	Production cycle in MW ¹ (days)	Daily weight gain (g day ⁻¹) ²	Profit in MW ¹ (R\$)
A	1.5	549	271	760	208	3.65	420.60
	1.5	328	271	519	208	2.50	178.61
B	1.5	214	174	214	174	1.23	-445.74
	1.5	135	174	152	153	0.99	-753.94
C	1.5	170	174	261	153	1.70	151.08
D	1.5	465	173	465	173	2.69	278.45
E	1.5	449	244	463	208	2.23	-419.97
F	1.5	401	173	401	173	2.32	2,220.71
G	1.5	172	90	172	90	1.91	-234.17

¹Period that comprised from the beginning of the production to heaviest weight.

²Calculated at the time fish reached the heaviest weight.