NOTICE OF PUBLICATION

POND DYNAMICS / AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM

RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Comparative production of *Colossoma macropomum* and *Tilapia nilotica* in Panama

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Date: 31 January 1990 Publication Number: AquaFish Research Report **90-25**

Abstract: The production of *Colossoma macropomum* (tambaqui), a relatively little studied fish from the Amazon and Orinoco basins, was compared with that of tilapia nilotica, a fish well known for its good production characteristics. The experimental design was randomized and arranged in 2 x 2 factorial with each species being tested at 2,500 and 10,000 fish/ha. Treatments were replicated three times. Fingerlings (22-31 g) were stocked into 870 m^2 earthen ponds, fed a commercial diet (25% protein), and harvested after 129 days. Mean yield (kg/ha) for tilapia at high and low density was 3,361 and 917, respectively, and for Colossoma was 3,682 and 977, respectively. The yield difference between species was not significant ($P < 0.01$). Although yield was not different for the species, tambaqui weight gain was significantly greater than that of adult tilapia because of reproduction in the tilapia ponds. Mean tilapia and tambaqui weight gains (g) for low density were 379 and 471, respectivley, and 321 and 395, respectively, for high density. Increasing the stocking density fourfold resulted in an almost fourfold increase in net yield for both species, although individual weight gains were not significantly affected. There was no interaction between species and density for the production characteristics studied.

This study concluded that under culture conditions that included a short growth period, high quality rations, and stocking rates up to 10,000/ha, production of tambaqui was equal to, or

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better than that of tilapia. Also, stocking rates lower than 10,000/ha would result in lower yields of both species while not producing a significantly larger fish.

This abstract is excerpted from the original paper, which was in *Journal of the World Aquaculture Society* (1989), 20: 236-239.

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