

# NOTICE OF PUBLICATION

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## RESEARCH REPORTS

TITLE XII POND DYNAMICS/AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM

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**Title:** Co-culture of catfish (*Clarias macrocephalus* x *C. gariepinus*) and tilapia (*Oreochromis niloticus*) in ponds

**Author(s):** C. Kwei Lin  
School of Environment, Resources & Development  
Asian Institute of Technology  
PO Box 2754  
Bangkok, 10500 Thailand

James S. Diana  
School of Natural Resources & Environment  
University of Michigan  
Ann Arbor, MI 48109-1115

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**Abstract:** The experiment was conducted for 122 days in central Thailand to test rearing of hybrid catfish in cages in earthen ponds, where tilapia (*Oreochromis niloticus*) was stocked to utilize the waste products derived from intensively reared catfish. Catfish fingerlings (13-17 g size) was stocked in plastic net cages at a density of 275 fish/m<sup>3</sup>. Six earthen ponds (250 m<sup>2</sup> - 110 m<sup>3</sup> each) were used to suspend the cages in two loading densities as experimental treatments: 800 and 1760 catfish/pond. Each loading density was replicated in 3 ponds. Each pond was stocked with 440 sex-reversed male tilapia of 6-7 g size in open water, giving the catfish and tilapia stocking ratios of 2:1 and 4:1, respectively. Catfish was fed twice daily at 3-10% body weight per day with commercial floating pellets containing 25-30% crude protein. Water quality was analyzed bi-weekly for concentration of dissolved oxygen, ammonia and chlorophyll *a*.

Results showed that there was no significant difference ( $p < 0.05$ ) in catfish growth rate and survival between the two loading densities. The mean weight gain of harvested catfish was  $259.5 \pm 34.5$  g and  $255.2 \pm 8.4$  g/fish, giving the total net yield of  $218.0 \pm 26.8$  kg and  $391.5 \pm 88.0$  kg per pond in low and high loading density, respectively. Tilapia was harvested with mean weight of  $172.3 \pm 37.8$  g and  $297.5 \pm 32.0$  g/fish, and the net yield of  $68.1 \pm 13.6$  and  $86.9 \pm 27.2$  kg/pond for low and high loading catfish density treatment, respectively. Chlorophyll *a* and total ammonia concentrations differed greatly between the two treatments. Early morning dissolved oxygen (DO) declined steadily under both treatments over the culture period.

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