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Title: Production of *Oreochromis niloticus* (L.) and ecosystem dynamics in manured ponds of three depths

Author(s): J.P. Szyper, Hawaii Institute of Marine Biology, University of Hawaii at Manoa, Kaneohe, Hawaii, USA

K.D. Hopkins, College of Agriculture, University of Hawaii at Hilo, Hawaii, USA

C. Kwei Lin, Asian Institute of Technology, Bangkok, Thailand and University of Michigan, Michigan, USA

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Abstract: During three 5-month experiments in Thailand, earthen ponds of approximately 370 m^2 surface area were stocked with male Nile tilapia, *Oreochromis niloticus* (L.), fingerlings of 4 to 12 g weight at densities of 0.5 to 1.6 fish/m^2. Stocking and fertilization (with chicken manure, urea, and TSP) in triplicate depth treatments of 0.6, 1.0, and 1.5 m were proportional to pond volume in two experiments (wet and dry seasons) and to pond area in the other (dry seasons).

Depth showed no direct effect on fish yields of 0.9 to 6.3 t/ha/year, on survival rates of 66 to 98%, or on final individual weights of 96 to 313 g/fish. Greater yields were obtained from deeper ponds when they received proportionally greater stocking and fertilizer inputs. Inputs per unit area were the most important factor accounting for yield variation.

Temperature, dissoved N and P, and suspended solids showed little or no relation to depth treatments. Time-averaged chlorophyll concentrations and photosynthetic production of dissolved oxygen were greater in treatments receiving greater inputs of nitrogen per unit pond volume.

Deeper ponds produced the greatest areal yields of fish, when fertilized in proportion to their volumes. Shallow ponds produced fish and dissolved oxygen at least as efficiently per unit input as did deep ponds, which is consistent with models of photosynthesis-depth relations.

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