

NOTICE OF PUBLICATION

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Title: Influence of site and season on water quality and tilapia production in Panama and Honduras.

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Abstract: Data from two years of standardized experimental protocols in Panama and Honduras were analyzed to ascertain the influence of site and season on production of *Oreochromis niloticus* in earthen ponds. In Experiment 1, ponds were fertilized every two weeks with triple superphosphate at 4 kg P₂O₅/ha, and were monitored to establish baseline of edaphic, climatic and fish production data. In Experiment 2, ponds were fertilized weekly with chicken litter at 125, 250, 500, or 1000 kg total solids/ha. Both experiments were repeated during wet and dry seasons at each site.

Honduras ponds were more alkaline and higher in phosphorus than Panama ponds that were excavated in acidic soils. However, Honduras ponds were turbid with clay. The net result of acidic, nutrient-poor soils in Panama and clay turbidity in Honduras was low biological productivity at both sites for inorganically fertilized ponds.

Primary productivity and net daily fish yield significantly increased with increasing chicken litter application ($P < 0.05$). Primary productivity, chlorophyll *a*, and net daily fish yield were similar at both sites in ponds fertilized weekly with chicken litter at 125-500 kg/ha; however, at the highest fertilization rate, primary productivity, chlorophyll *a*, and net daily fish yield were 57, 29, and 37% greater in Panama than in Honduras. Higher fish yield was significantly correlated with higher chlorophyll *a* and primary productivity. Lower primary production and net daily fish yield in Honduras were attributed to light limitation by clay turbidity.

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