

NOTICE OF PUBLICATION

AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM



RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Fish Yield with Nitrogen Supplemented Organic Fertilizers

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Date: 21 February 2006 Publication Number: CRSP Research Report 03-A5

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Abstract: Organic fertilizers are phosphorus rich and nitrogen poor relative to the 1:7 ratio of P:N required by pond algae for growth. During experiments in Thailand, nitrogen deficiency occurred in Nile tilapia ponds where chicken manure was used at a rate of 500 kg/ha/wk. Ponds in this treatment has the same microflora / fauna production and fish yields as ponds treated at 1 / 10 the rate of chicken plus a urea supplement that provided a 1:7 ratio of P:N in the fertilizers. Rates of net primary productivity were 2.23 and 2.24 g C / m² / day in these treatments respectively. Fish yields obtained from 25 g fingerlings at two fish / m² with a four month growout were close to 4,000 kg / ha / yr in both treatments. Fertilizer cost per kg of fish yield was \$US 0.05 in both treatments. Data from our work suggest that Nile tilapia yields close to those obtained with feeds will result from increasing chicken manure to a range of 50 to 200 kg / ha / wk and adding urea to make the fertilizer P:N ratio 1:5. We are testing this approach with consideration of economics.

This abstract is excerpted from the original paper, which was in *Journal of the World Aquaculture Society*, 20:56A.

CRSP RESEARCH REPORTS are published as occasional papers by the Program Management Office, Aquaculture Collaborative Research Support Program, Oregon State University, 418 Snell Hall, Corvallis, Oregon 97331-1643 USA. The Aquaculture CRSP is supported by the US Agency for International Development under CRSP Grant No.: LAG-G-00-96-90015-00. See the website at <pdacrsp.orest.edu>.