

# NOTICE OF PUBLICATION

---



AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM

## RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

---

**Title:** Fertilization Regimes

**Author(s):** C. Kwei Lin<sup>1</sup>, D.R. Teichert-Coddington<sup>2</sup>, B.W. Green<sup>2</sup>, and K.L. Veverica<sup>2</sup>

1. Agricultural and Aquatic Systems Program, Asian Institute of Technology, Bangkok, Thailand

2. International Center for Aquaculture and Aquatic Environment, Dept. of Fisheries and Allied Aquacultures, Auburn University, Alabama

**Date:** 20 November 2017 Publication Number: CRSP Research Report 97-A11

The CRSP authors will not be distributing this publication. Copies may be obtained by writing to the authors.

**Abstract:** Pond Fertilization to increase fish yields has long been practiced throughout the world. It is a well-known tradition in China to utilize animal manures and human excreta as major sources of pond-inputs for polyculture of the major Chinese carps (Ling, 1967; Wohlfarth and Schroeder, 1979). The uses of inorganic fertilizer were introduced more recently in temperate regions (Mortimer, 1954; Gooch, 1967). There is voluminous literature on pond fertilization, documenting many conflicting and inconsistent results based on various types of fertilizer, rates of input, and methods and frequency of application (Coleman and Edwards, 1987). Those controversial viewpoints may actually reflect the differences in the physical and chemical environments of experimental ponds as well as variations in cultured fish species and stocking densities. Some of the problems have also stemmed from the lack of proper statistical designs with sufficient replication and common protocols for pond fertilization experiments.

A major thrust of the PD/A CRSP during the past 14 years has been to develop a data base for pond dynamics and fertilization management strategies for pond culture. The common global experiments were conducted primarily on pond fertilization and its impact on water quality and fish yield. The practical goal was to provide fish growers with sound strategies and guidelines for pond fertilization. Standardized fertilizer experiments were carried out during 2 to 3 years at sites in Honduras, Indonesia, Rwanda, Panama, Philippines, and Thailand. Work plans for global experiments consisted of simple inputs of phosphorus to calibrate sites, comparison of inorganic and organic fertilizers, and comparison of various

---

**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 <  
<http://pdacrsp.oregonstate.edu/> >.

Continued...

---

loading rates of organic fertilizers. Some site-specific experiments were also conducted, depending on the needs of the individual site and the perspective of the researchers. Standardized experimental design and work plan protocols were followed at all sites (Egna et al., 1987). Results from the various sites are comparable because Nile tilapia (*Oreochromis niloticus*) was used as the cultured species with specified 5-month grow-out cycles, during which measurements of water quality, fish sampling, and methods of fertilizer application were standardized.

This abstract is excerpted from the book chapter, which was published in H.S. Egna and C.E. Boyd (Editors), Dynamics of Pond Aquaculture. CRC Press, Boca Raton, FL, pp. 73-107