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AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM



## RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

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**Title:** Characterization of Effluent From an Inland, Low-Salinity Shrimp Farm: What Contribution Could This Water Make if Used for Irrigation

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**Abstract:** Coastal aquaculture can contribute to eutrophication of receiving waters. New technologies and improved management practices allow the aquaculture industry to be more sustainable and economically viable. Current practices, however, do not provide an additional use for effluent water. Nitrogen, phosphorus and other effluent compounds could be valuable plant nutrients. Inflow and effluent water from an inland, low-salinity shrimp farm, were monitored. Bi-weekly analysis included total nitrogen, ammonia-nitrogen, nitrite-nitrogen, nitrate-nitrogen, total phosphorus, reactive phosphorus, alkalinity, chemical oxygen demand (COD), biochemical oxygen demand (BOD), total suspended solids (TSS) and volatile suspended solids (VSS), as well as temperature, salinity, dissolved oxygen and pH. Alkalinity and total nitrogen decreased during the in-pond residency. The other parameters increased while in the ponds. The potential benefit of having nutrient enriched wastewater to irrigate field crops was substantial, supplying between 20 and 31% of the necessary nitrogen fertilizer for wheat production.

This abstract is excerpted from the original paper, which was in *Aquacultural Engineering*, 27:147–156.

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