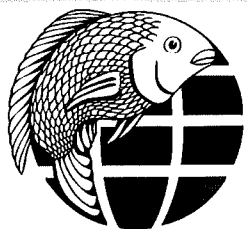


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AQUACULTURE & FISHERIES INNOVATION LAB

## RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

**Title:** Study on nitrogen and phosphorus budgets and production performance in higher-place pond of *Litopenaeus vannamei*.

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**Abstract:** AquaFish will not be distributing this publication. Copies may be obtained by writing to the authors.

Nitrogen and phosphorus budgets in the higher-place ponds of *Litopenaeus vannamei* were studied systematically to investigate the effects of stocking seasons, shrimp larvae strains and grading culture on shrimp production. Results indicate that feed is the main source of nitrogen and phosphorus inputs, accounting for 91.76%~93.68% and 94.55%~96.97% of total inputs, respectively, while 29.46%~40.46% of total nitrogen and 12.64%~17.41% of total phosphorus were deposited into harvested shrimp; 24.63%~54.52% of total nitrogen and 23.03%~59.02% of total phosphorus were discharged into effluent; 14.10%~44.59% of total nitrogen and 27.59%~62.25% of total phosphorus were accumulated in pond sediment. Shrimp production is significantly affected by different stocking seasons and shrimp larvae strains. The average growth rate of trial ZS in summer reaches 0.175 g·d<sup>-1</sup>, which is 73.0% and 139.3% higher than that of trial ZF in fall and trial ZW in winter, respectively. The survival of ZW is 77.70%~87.75%, which is significantly higher than that of ZS and ZF. Compared with ZW stocked at the same season, the survival of trial BW is 62.10%~72.30% with yield per unit area of 8 821~9 878 kg·hm<sup>-2</sup>, which are both significantly low. Trial ZWb of grading cultured shortens the culture cycle by 56.13%.

This abstract was excerpted from the original paper, which was published in South China Fisheries Science (2010). 5: 13-20.

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