

Effect of Three Types of Liquid Compost Combined with *Avicennia marina* Leaves on Growth and Survival of Tiger Prawns (*Penaeus monodon*)

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Abstract

The sustainability of prawn farming in brackish water ponds is controversial because of low yields and a history of mangrove clearing. Low yields are due largely to insufficient preparation of pond bottoms. Mangrove trees are often planted on pond bunds as window dressing. This study examines the effect of three types of liquid compost from vegetable, fruit, and both vegetable and fruit in tanks to which whole or chopped *Avicennia marina* leaves have been added to mimic local pond conditions. In a split-plot design, 28 square tanks were each stocked with one hundred 15-day-old post-larvae tiger prawns (*Penaeus monodon*). Four tanks were used as controls and 24 were assigned to the treatments, 12 with whole (B1) and 12 with chopped leaves (B2). Of the treatment tanks, 4 received liquid compost from vegetable (B1), 4 received fruit (B2), and 4 received mixed vegetable and fruit (B3). Shrimp were weighed at the start, halfway point, and the end of the 50-day trial, and fed at 5% of the estimated total weight; survival was counted at the end. The survival rates of treatments and controls (65%–76%) were not significantly different. Shrimp in water with vegetable compost grew significantly faster (2.7% day⁻¹) than in both treatments with fruit (2.5% day⁻¹), while all treatments were associated with significantly faster growth than were the controls (2.0% day⁻¹). The lower growth rate of shrimp fed fruit compost may have been due to dinoflagellates, which are known to negatively affect shrimp. Shrimp in tanks with chopped mangrove leaves grew slightly better than shrimp in tanks with whole mangrove leaves.

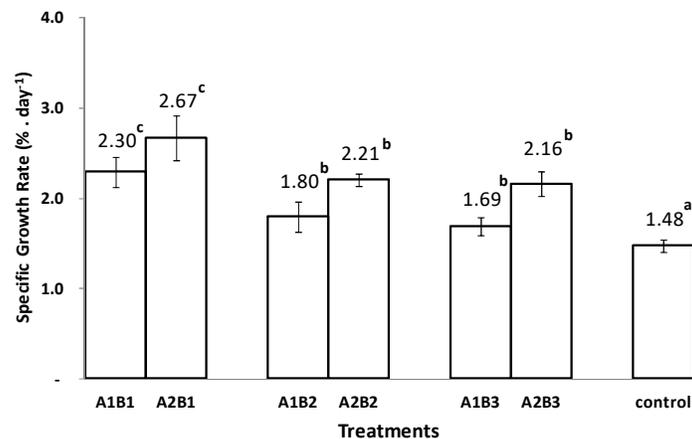


Figure 1. Histogram of the mean specific growth rate of *P. monodon*, with standard deviations, for each treatment.

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