

Abstract 2:

Synergistic effects of mangrove leaf litter and supplemental feed on water quality, growth and survival of shrimp (*Penaeus monodon*, Fabricius, 1798) post larvae.

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The present study identified the impact of mangrove leaf litter from four mangrove species (*Sonneratia apetala*, *S. caseolaris*, *Avicennia officinalis* and *Heritiera fomes*) on the production of juvenile shrimp (*Penaeus monodon*) with and without supplemental feed. Both mangrove species and feed application affected shrimp performance and water quality ($P < 0.05$). The only water quality parameters not affected were dissolved oxygen (DO), chemical oxygen demand (COD) and zooplankton concentration ($P > 0.05$). Phytoplankton concentration affected PL biomass gain ($P < 0.001$, $r = 0.681^{**}$). The average survival rate was 86-94% in the treatments with both leaf litter and feed, 75-82% in the treatments with only leaf litter and 88% in the treatment with only feed. The mean individual weight gain was 0.25-0.37g in the treatments with both leaf litter and feed, 0.03-0.10g in the treatments with only leaf litter and 0.17g in the treatment with only feed. The average specific growth rate (SGR) was 14-15% BWd⁻¹ in the treatments with both leaf litter and feed, 6-11% BWd⁻¹ in the treatments with only leaf litter and 13% BWd⁻¹ in the treatment with only feed. The treatments with addition of leaf litter had comparatively lower FCR (0.18-0.27) than the treatment with only feed (0.41). Finally, the synergistic effect of leaf litter and supplemental feed on shrimp performances and water quality was observed for all four species tested and the highest effect was recorded for *S. apetala* leaf litter followed by *A. officinalis*, *S. caseolaris* and *H. fomes*, in that order ($P < 0.05$).