EFFECT OF DIFFERENT BIO-AUGMENTATION AGENTS ON THE BIOCHEMICAL COMPOSITION OF BACTERIAL FLOC AND GROWTH OF JUVENILE *Penaeus monodon* CULTURED IN CONCRETE TANKS

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ABSTRACT

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The effect of bio-augmentation agents on the biochemical composition of biofloc, growth of juvenile *Penaeus monodon*, and antimicrobial activity of BFT water against *Vibrio harveyi* was investigated. *P. monodon* juveniles were cultured in pond soil-lined concrete tanks for 150 d using biofloc technology with bio-augmentation. Three commercial bio-augmentation agents (Pond Protect™, Pond Dtox™, BZT Waste Digester™) were tested against a control with no bio-augmentation agent application. At the end of the culture period, floc and shrimp collected for proximate analysis, and biofloc water tested for activity against *V. harveyi*. Average body weight (ABW), food conversion ratio (FCR), and specific growth rate (SGR) of the shrimp were computed. Bio augmentation with Pond Protect™ resulted in significantly higher ($p < 0.05$) crude protein content of the biofloc although this did not translate to higher shrimp yield nor growth performance. BZT Waste Digester™ as bio-augmentation agent significantly increased ($p < 0.05$) shrimp ABW. No apparent relationship between floc composition and shrimp carcass composition was observed. BFT water, with and without bio-augmentation agents, completely inhibited *V. harveyi* within 24 h. This study demonstrates that bio-augmentation agents could enhance the biochemical composition of floc and affect shrimp growth. BFT water was also shown to have potent antimicrobial properties against *V. harveyi*.