

The effectiveness of a commercial microbial product in poorly prepared tiger shrimp, *Penaeus monodon* (Fabricius), ponds

ABSTRACT

The efficacy of a commercial microbial product was tested in commercial tiger shrimp, *Penaeus monodon* (Fabricius), ponds for one culture period in Kuala Selangor, Malaysia. Four ponds with replicates for treatment and control were used. The pond bottom was dried but the organic sludge was not removed as normally practised in pond preparation. The ponds were stocked with 15 post-larvae at the rate of 31 m⁻². Physical, chemical and biological parameters of the pond were analysed every 2 weeks during the culture period. Water quality parameters remained within the optimum range for shrimp culture except for ammonia-nitrogen being significantly higher in control ponds and silica in treated ponds. Benthic organisms were not found in any of the ponds. The average counts of different bacteria were not significantly higher in treated ponds than control. Because of poor health, the shrimp were harvested earlier (72 days) than the usual 120 days. An average of 875.60 ± 67.00 kg shrimp ha⁻¹ was obtained in treated ponds with a feed conversion ratio (FCR) of 1.57 ± 0.10 and survival rate of 42.35 ± 5.37% compared with 719.50 ± 130.94 kg shrimp ha⁻¹, 2.99 ± 0.70 and 21.25 ± 3.26%, respectively, in control ponds. Neither the microbial product nor the frequent water exchange was effective in overcoming the problems caused by the poor pond bottom.

Keyword: Bioremediation; *Penaeus monodon*; Shrimp ponds; Water quality