Effect of the Treated-sludge Technique in Implementing
Shrimp Health Management

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Abstract

The effect of the treated-sludge technique on black tiger shrimp (*Penaeus monodon* Fabricius, 1798) health, disease, and production were carried out by stocking of post larvae in six 800 square meter un-dredged earthen ponds with a stocking rate of 30,000 PL/pond. Management techniques of the bottom pond sludge can be categorized into 2 types; the daily chain-plough bottom technique throughout the culture period in 3 ponds and the control un-treated-sludge in 3 ponds. After growing period of 105 days, shrimp production from both types of the ponds was evaluated. Results showed that there was no viral disease infection in shrimps in both pond types, but *Zoothamnium* sp. was found attaching to the gills and the appendages of the shrimps in both pond types at 35 days after stocking to the end of the experiment. The percentage of the parasite found in the shrimps was relatively lower in the daily-chain-plough ponds than those in the control ponds with the total average of 20.60±11.83 and 31.31±20.31, respectively. Wounded areas due to bacterial infection at the posterior portion of the shrimp tails, antenna and appendages were found in all shrimps of the treatment ponds. The percentage of bacterial infection of the shrimps was relatively lower in the daily-chain-plough ponds than those in the control ponds with the total average of 14.95±6.67 and 32.32±14.54, respectively. In addition, the edema of shrimp tails was relatively lower in the daily-chain-plough ponds than those in the control ponds with the total average of 4.04±4.70 and 17.37±13.22 %, respectively. The average growth rate per day of a shrimp in the daily-chain-plough ponds after 105 days was 0.17 g, considerably higher than the average growth rate per day of 0.15 g for a shrimp in the control pond. There was no significant difference of the average survival rate of a shrimp in both types of the ponds at 80.63 and 84.33 %, respectively. However total average production of the shrimp in the daily-chain-plough ponds was higher than that in the control ponds at 409.47±9.27 and 383.57±13.91 kg/0.5 rai, respectively. It was also found that the percentage of a large size shrimp weight of 22.5 g was higher in the daily-chain-plough ponds than that of the control ponds. It may be concluded that using of the daily-chain-plough technique to treated-sludge at the bottom of the ponds result in much better shrimp health, render good growth rate and increase of shrimp pond production.

Key words: black tiger shrimp, treated-sludge, shrimp health

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