

Apisara Honghirun 2007: Giant Freshwater Prawn Culture System and Water Quality of Pond Effluent: A Case Study of Bang Pla Ma and Song Phi Nong District, Suphan Buri Province. Master of Science (Fishery Management), Major Field: Fishery Management, Department of Fishery Management. Thesis Advisor: Assistant Professor Methee Kaewnern, M.Sc. 132 pages.

A Case study of Giant Freshwater Prawn Culture System and Water Quality of Pond Effluent in Bang Pla Ma and Song Phi Nong District was conducted in 2005 by interview farmers and collect the water sample of pond effluent from 40 station of Bang Pla Ma and 20 station of Song Phi Nong District every month through out the crop cycle (8 month).

The result indicated that there were 2 Giant Freshwater Prawn Culture Systems in Suphan Buri province, the system that Giant Freshwater Prawn and cultured in the same pond and the system that the prawn was nursed and cultured in separated pond. The result of water quality in both systems showed mean temperature 28.6 °C. Meanwhile, DO was 4.29 mg/l, pII was 8.14 , mean  $\text{NH}_3$  was 0.2299 mg/l, mean  $\text{NO}_3^-$  was 0.0538 mg/l, mean  $\text{NO}_2^-$  was 0.0048 mg/l, mean  $\text{PO}_4^{3-}$  was 0.0067 mg/l and mean Chlorophyll-a was 66.56 mg/l . The result of the study indicated that  $\text{NH}_3$ ,  $\text{NO}_3^-$ ,  $\text{NO}_2^-$  and  $\text{PO}_4^{3-}$  in the system that Giant Freshwater Prawn was nursed and cultured in the same pond was significant different ( $P<0.05$ ) from the system that the prawn was nursed and cultured in separated pond. When classify culture period into 3 periods; 1-3 months, 4-6 months and 7-8 months, the results showed that  $\text{NH}_3$ ,  $\text{NO}_3^-$ ,  $\text{NO}_2^-$  and  $\text{PO}_4^{3-}$  of pond effluent that collected from different culture periods were significant different ( $P<0.05$ ). When considering in nutrient concentration per unit of culture area (1 rai), the result showed that  $\text{NH}_3$  concentration of both culture system was significant different ( $P<0.05$ ).

The study showed that the system that prawn was nursed and cultured in separate pond accumulated nutrients lower than another system. Farmers therefore can use this method to reduce nutrients enrichment in pond and to reduce the changes of quality water in pond.

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22 / 03 / 2007