STUDY ON EFFECTS OF STOCKING DEBSITY OF DIA FISH (*Siganus guttatus*) ON WATER QUALITY AND GROWTH PERFORMANCE IN THE WHITE SHRIMP (*Litopenaeus vannamei*) INTEGRATED SYSTEM

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Summary

This study was conducted to identify the suitable density of dia fish or rabbit fish (*Siganus guttatus*) cultured with white shrimp (*Litopenaeus vannamei)* in the integrated system in order to improve the shrimp production and reduce the pollution. An experiment was designed with 3 treatments of 3 stocking density of dia fish (body weight of 1.50 g) which were added into shrimp tanks at 10, 20, 30% of the initial shrimp biomass as integrated treatments. White shrimp (size of 0.50 g) were stocked at a density of 800 shrimp/m^3. Control treatment socked only shrimp served as monoculture treatment, Shrimp was fed four times per day with 38% protein commercial pellet with feeding rate was 5% of shrimp biomass. Water quality parameters (TSS, TAN, NO_2-N concentration) were significantly different ($p > 0.05$) between treatments. The best shrimp growth performance, total biomass, and FCR (0.14 g/day, 26,989 g/tank, 1.56 respectively) were found in the low rabbit fish density treatment (10% of the initial shrimp biomass), which were significantly better than those in control and other poly-culture treatments. Community structure in the water column of the experimental tanks, and a considerable difference in community structure between treatments, The results indicate that rabbit fish can be cultured with white shrimp at the fish stocking density of 10% shrimp biomass to improve water quality, and the overall productivity.

Keywords: *White shrimp, rabbit fish, integrated culture, Litopenaeus vannamei, Siganus guttatus.*