REMOVAL OF NITROGEN AND PHOSPHORUS COMPOUNDS IN EFFLUENT FROM THE GIANT TIGER SHRIMP CULTURE USING USING SAI (Najas indica (Willd) Chane)

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ABSTRACT

Removal of nitrogen and phosphorus compounds in effluent from the intensive giant tiger shrimp culture using sai (Najas indica (Willd) Chane) was carried out in 24 cm X 50 cm X 30 cm - glass aquaria with a static water system (no water exchange and no aeration throughout the experiment). There were 5 treatments 0, 1.5, 2.8, 5.4 and 10.6 gm sai/1 l, with 3 replicates. Water quality was monitored for nitrite, nitrate, total ammonia, dissolved inorganic nitrogen, dissolved organic nitrogen, particulate nitrogen, total nitrogen, phosphate dissolved organic phosphorus, particulate phosphorus and total phosphorus before adding the sai and at 1, 3, 5, 7, 9 and 11 days afterward. It was found that 10.6 gm of sai at 5 days was the most efficient treatment based on the percentage decrease of nitrite, nitrate, total ammonia, dissolved inorganic nitrogen, total nitrogen, phosphate and total phosphorus (92, 57, 98, 91, 77, 92 and 67%, respectively). This indicated that sai can remove nitrogen and phosphorus compounds efficiency especially dissolved inorganic substances. It is recommended that sai can be used for nitrogen and phosphorus removal in effluent from the intensive giant tiger shrimp culture.

Key words: Sai (Najas indica (Willd) Chane), Nitrogen and Phosphorus Compounds, Shrimp farms effluent

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