

Kalayanee Thamanasakun 2011: Water Quality Management in Intensive Shrimp Pond Using Gut Weed at Phra Samut Chedi District, Samut Prakan Province. Master of Science (Sustainable Land Use and Natural Resource Management), Major Field: Sustainable Land Use and Natural Resource Management, Interdisciplinary Graduate Program. Thesis Advisor: Mr. Ratcha Chaichana, Ph.D. 115 pages.

Intensive Pacific white shrimp culture is the shrimp culture at high density levels. However, if improperly managed leftover food and organic waste may cause deterioration of water quality leading to low growth rate of shrimps. Presently, the new concept of integrating seaweed into shrimp culture is promoted because seaweed may help improve water quality and environmental conditions as well as reducing chemical substances used and reducing costs. This research was aimed to study potential of introduction of gut weed (*Ulva intestinalis*) to Pacific white shrimp ponds. Shrimps at post larval (P12) stage were cultured in 4-rai ponds. Objectives were to improve water quality and sediment during shrimp culture as well as comparing costs and production between control and experimental ponds. The results showed that concentrations of total nitrogen, phosphorus and BOD in experimental ponds with gut weed were significantly lower than control ponds at 95% confident interval ($P < 0.05$). However, sediments quality between control and experimental ponds was not statistically different at 95% confident interval ($P > 0.05$). Average yield from the control ponds was 1,136 kg./rai which was not significantly different with experimental ponds of 1,070 kg./rai ($P > 0.05$). The net profit obtained from the treatment ponds was 61,251.34 baht/rai compared with 60,234.09 baht/rai of control ponds which was not significantly different ($P > 0.05$). The result from interviewing shrimp farmers suggested that most of famers interested in intensive culture Pacific white shrimp together with gut weed.

Student's signature

Thesis Advisor's signature