

Evaluation of Feed Management Strategies in Shrimp Culture Ponds in Sri Lanka

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Shrimp exports have become one of Sri Lanka's major foreign exchange earners and accounts for nearly 90% of total aquaculture exports. The average feed costs for the Sri Lankan shrimp culture industry is estimated to be around 54% of the total recurrent costs. This study evaluated different feed management strategies in commercial shrimp farms with a view to bringing about improvements. Five shrimp farms with different management practices in the north western province, Sri Lanka were selected for the study. Feed selection, storage methods, feed types, feeding frequency, ration size, feeding tray monitoring, adjustments to feeding rates, and feed conversion ratios (FCR), specific growth rate (SGR) of shrimp were recorded weekly.

Blind feeding was employed in all the farms from date of stocking to 30 – 45 days. It varied from 131.5 – 219.8 kg/ 100,000 post larvae and did not increase simultaneously with stocking density. No correlation was found between the amount of feed given with SGR during the blind feeding period ($p > 0.05$). These results suggest the probability of over feeding during the initial stage of the culture cycle. Adjustments to feeding rates were done according to feed tray (6 – 8 trays / ha) observations, feeding guide supplied by feed manufactures and theoretical survival calculations. Feed tray observation time varied from 1 h to 2.30 h. Feeding frequency was 2 – 6 times a day. Higher variation of these parameters emphasizes the need to standardize them for optimum feed usage.

Four feed management information transfer channels were identified in shrimp farms. These were (i) owner - feed marketing officer (ii) labourer – manager - consultant (iii) supervisor - manager (iv) manager only. FCR values in the farms were 2.0, 1.5, 1.4, 1.4 – 1.3 with SGR of 2.5, 2.9, 3.3, 2.6 day⁻¹, respectively. Information channels (i) and (ii) resulted in higher FCR values. It is suggested to pay more attention on information transfer channels in order to avoid over- feeding. Blind feeding, feeding frequencies and information transfer channels were identified as crucial areas that could be improved for the sustainable shrimp culture industry in Sri Lanka. With these improvements, the cost of feeding could also be minimized.

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