A Comparative Study of Feed Conversion Ratio (FCR) of Optimum Saline Tilapia *(Oreochromis spp)* Cage Culture in Batticaloa Lagoon, Sri Lanka

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Abstract

Aquaculture is essential for seafood demand, with tilapia facing challenges in high-saline environments. Saline tilapia thrives in these conditions, enabling cage culture in Batticaloa Lagoon. The research aims to identify the best feed for this practice, addressing a gap in guidance. The goal is to determine the optimal feed based on the Feed Conversion Ratio (FCR), addressing a critical gap in aquaculture practice in the region. Field surveys collected data on feed, culture practices, water quality, and growth parameters of tilapia. Statistical analyses were performed using SPSS v27. Farmers in Batticaloa Lagoon utilized both fry and fingerling varieties, stocking at rates of 4 or 5 fish/m³. Multi-response patterns were observed in stocking strategies, with preferences for all-male or mixed varieties. Feed preferences varied; some prepared their own feed, while others used commercial options. Feeding frequency averaged three times daily, and both floating and stationary cage types were utilized. Weight gain correlated with feed intake, but only one farm achieved the optimal FCR. Mesh types and sizes were consistent across all farms. Farm locations served multiple purposes, with water parameters generally suitable for saline tilapia. Profitability analysis highlighted challenges, especially for farmers with less than 5 years of experience in tilapia cage culture. Regression analysis showed that multiple factors did not significantly influence FCR ($p < 0.05$). Despite this, the comparative study on FCR in saline tilapia cage cultures in Batticaloa Lagoon offers insights for stocking, feeding, cage construction, and water condition optimization.

Keywords: Cage culture, FCR, Feed types, Saline, Tilapia

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