Effects of Cumin-Supplemented Diets on Growth and Disease (Streptococcus iniae) Resistance of Tilapia (Oreochromis mossambicus)

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Abstract

The effects of dietary cumin (Cuminum cyminum) as a feed additive on growth performance and disease resistance of tilapia (Oreochromis mossambicus) were studied. Five isonitrogenous (37% crude protein) and isocaloric (18.6 kJ/g) diets were formulated to contain 0% (control), 0.5%, 1.0%, 1.5%, or 2.0% cumin. Fifteen aquaria (80 l) were stocked with 15 fish (0.56±0.02 g), each, and fish were fed one of the five diets for 75 days. The cumin supplementation did not affect the feed conversion rate (FCR) or specific growth rate (SGR). Cumulative mortality was 60% in fish fed the 0% control diet and challenged with Streptococcus iniae. However, in fish fed the 1.0%, 1.5%, or 2.0% supplemented diets, mortality was only 10.42%, 31.25%, and 37.50%, respectively. In conclusion, a dietary cumin level of 1% provides the best survival rate for tilapia, O. mossambicus, without adversely affecting growth performance or feed utilization.

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