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Dietary lipid and carbohydrate interactions: implications on growth performance, feed utilization and non-specific immunity in hybrid grouper (*Epinephelus fuscoguttatus* ♀ × *E. lanceolatus* ♂)

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## Abstract

The present study was conducted to explore the effects of dietary lipid, carbohydrate and their interactions on growth performance, feed utilization, body composition and non-specific immunity of hybrid grouper (*Epinephelus fuscoguttatus* ♀ × *E. lanceolatus* ♂). Nine isoproteic diets were formulated with three levels of dietary lipid (7, 10 and 13%) and carbohydrate (8, 12 and 16%) in a 3 × 3 factorial design. Triplicate groups of 30 juvenile fish (initial weight, 21.48 ± 0.24 g) were fed each of the diets twice daily to apparent satiation for 8 weeks. Results showed that a

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