

Effects of dietary protein and lipid levels on growth and feed utilization of sub-adult flounder, *Paralichthys olivaceus*

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A 3 × 2 factorial feeding trial was conducted to determine the effects of dietary protein and lipid levels on growth and feed utilization of sub-adult flounder. Six experimental diets were formulated to contain three protein (40, 45 and 50%) and two lipid levels (7 and 14%). Triplicate groups of fish (initial mean weight 256 g) were fed to apparent satiation for 14 weeks. Water temperature ranged 14.7 from 19.0°C (16.4±1.6°C) to throughout the feeding trial. The highest weight gain, feed efficiency and protein efficiency ratio were observed in fish fed 45% protein diet with 14% lipid, were not significantly different from those of fish fed the 50% protein diet with 14% lipid. weight gain, feed efficiency and protein efficiency ratio tended to increase with dietary lipid level at the same protein level. Daily feed intake of fish fed the 45% protein diet with 14% lipid was significantly higher than that of fish fed the diets containing 7% lipid regardless of protein level, and was not different from that of fish fed the 40 and 50% protein diets with 14% lipid. The results of this study suggest that the diets containing 45% protein and 14% lipid is optimal for growth and feed utilization of sub-adult flounder.

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