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Effects of water temperature on survival, growth, digestive enzyme activities, and body composition of the leopard coral grouper Plectropomus leopardus (Article)

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Abstract

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The effects of water temperature (15, 20, 25, 30, and 35 °C) on survival, growth performance, digestive enzyme activities, and body composition of Plectropomus leopardus were studied for a period of 6 weeks. One hundred eighty fish with initial body weights of 26.5 ± 1.5 g were randomly arranged into 15 glass aquaria in equal numbers in five recirculating systems to form five groups in triplicate. The results showed that survival of P. leopardus at 35 °C was significantly greater ($P < 0.05$) than survival at 15 °C. No death was recorded at 20, 25, and 30 °C. Among all treatment groups, the significantly highest average individual harvesting weight, weight gain, feed ingestion rate and protease enzyme activity of P. leopardus were observed in 30 °C group. Similar results were also observed in protein and fat content in this species. Based on the present findings, a culture temperature of 30 °C can be considered to be the optimum temperature for the aquaculture of juvenile P. leopardus. However, more research is still needed to optimize the nutrition and photoperiod of P. leopardus culture. © 2014, Japanese Society of Fisheries Science.

Author keywords

Body composition | Digestive enzyme | Plectropomus leopardus | Temperature | Weight gain

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