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Effect of photoperiod on growth performance of Guppy fish (*Poecilia reticulata*)

N. S. Ramanayake, M. A. A. P. Kumari* and W. A. D. Nayananjalie

Department of Animal and Food Sciences, Faculty of Agriculture,
Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka
*a.pubudu@yahoo.com

Light is an essential environmental factor that affects all life stages of fish. In the present study effect of different photoperiod on the growth performance of guppy juveniles (initial mean weight: 2.28 ± 0.10 g) was investigated for 10 weeks. Five treatments (A: 12 h lightness and 12 h darkness, B: 24 h lightness, C: 24 h darkness, D: 8 h lightness and 16 h darkness, E: 16 h lightness and 8 h darkness) with three replicates were set up by using 40 L tanks with 20 fish per tank while treatment A was considered as the control. At the end of the experiment growth performance indicators including specific growth rate (SGR), weight gain (WG), length gain (LG) and condition factor (K) were calculated and one way ANOVA was used to compare the treatment effects. The final average body weight and total length of guppy were significantly higher in treatments E (0.5 g) and A (0.51 g) than in other treatments. Similarly, treatments E, A and C had a higher ($p<0.05$) calculated SGR (2.43, 2.4 and 2.16 % day^{-1}), WG (363.8, 355.5 and 316.9 %), LG (89.5, 86.5 and 71.9%) and lower ($p<0.05$) K (1.08 and 1.11), respectively. The results suggest that juvenile guppies are influenced by photoperiod for their growth performance. However, treatment E and C had similar higher effect on their growth performance as the control (A). Hence, it is not necessary to manipulate the photoperiod level to enhance the growth performances of guppy fish in local condition.

Keywords: Growth performance, Photoperiod, *Poecilia reticulata*