EFFECT OF PHOTO PERIOD ON GROWTH PERFORMANCES OF GUPPY FISH

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Photoperiod has a positive effect on the growth performances of fish by inducing feed consumption, growth of muscles due to the high locomotor activity and efficient usage of nutrients. This experiment focused on determining the effect of photoperiod on the growth performances and survival of guppy (*Poecilia reticulata*) juveniles. There were five treatments with three replicates; A-12 h (hour) lightness and 12 h darkness as the control, B-24 h lightness; C-24 h darkness, D-8 h lightness and 16 h darkness, E-16 h lightness and 8 h darkness. Fish with an average initial weight (2.28 ± 0.10 g) and an average length (1.92 ± 0.24 cm) were randomly distributed at a stocking rate of 20 fish per tank. Total culture period was 10 weeks. Fishes were fed twice a day with a commercial feed (protein 48%). Temperature (28 - 30°C), dissolved Oxygen (7 - 8 mgL^{-1}), pH (6.5 - 8) and volume of water (48 liters) were maintained at constant levels throughout the experiment. The average body weight of the fish was measured at 7 days intervals and the standard body length was measured at the beginning and the end of the experiment. Specific growth rate (SGR), weight gain (WG), daily growth rates (DGR), length gain (LG) and condition factor (K) were calculated using the collected data. Significantly higher ($p<0.05$) average body weight and average body length of guppy were exhibited in treatment E and A. Further, treatment E had a higher ($p<0.05$) calculated SGR (2.43% d^{-1}), WG (363.39%), LG (89.55%), DGR (2.57) and the lowest ($p<0.05$) K (1.08) among the treatments. There was no mortality reported during the total culture period among the treatments. In conclusion, exposure to 12 and 16 h of lightness enhances the growth performances of guppy juveniles under controlled conditions and photoperiod had not affected on the survival of guppy fish.

Keywords: Growth performances, Guppy, Photoperiod