

Effect of garlic supplemented diet on growth performances, survival and disease resistance against *Aeromonas hydrophila* in guppy (*Poecilia reticulata*)

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This study investigates the effects of garlic incorporated commercial feed on the growth, survival and disease resistance of *Poecilia reticulata*. Three hundred (300) Guppy fingerlings with an average initial weight of 0.073 ± 0.022 g was introduced randomly into 12 fiber glass tanks (61x46x46 cm) in 4 groups, with 25 fish in each group. Garlic incorporated experimental diet was prepared incorporating 5% (Treatment 1), 10% (Treatment 2), 15% (Treatment 3) and 0% (control) of garlic powder to a commercially available fish feed. Fish were fed with each experimental diet at 5% body weight up to eight weeks and feeding levels were adjusted fortnightly, according to their mean body weight. At the end of the experiment, growth performances and survival rates were evaluated. Fish were challenged with *Aeromonas hydrophila* bacteria after eight weeks post feeding and percentage mortalities were recorded up to 10 days after post challenge and the histopathological observations were made. During the experimental period Dissolved Oxygen, Temperature and pH were monitored weekly and Ammonia, Nitrite and Nitrate were measured fortnightly. The significant highest mean Weight Gain (WG), (0.448 ± 0.042 g) was recorded in T3 whereas lowest (0.349 ± 0.029 g) in T0. The Feed Conversion Ratio (FCR) and Specific Growth Rates (SGR) were not significantly different within the treatments. Mortalities were not observed during the feeding trial, in all groups. Throughout the study, water quality parameters were within the acceptable levels for the fish growth. In the challenge study, lowest mortality rate was recorded in T3, (20%) and severe disease conditions were not observed in gut histological analysis conducted for all treatments. The best growth performance and survival rate were obtained in fish fed with 15% garlic powder incorporated diet.

Keywords: *Allium sativum*, growth performances, *Poecilia reticulata*

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