ABSTRACT

Increasing cost and limited supply of fishmeal make fish feed more expensive. This has lead to the search for alternative protein sources for fish feed. Pupa of the silkworm (*Bombyx mori* L.), a byproduct of sericulture industry is a cheap and sustainable alternative to fish meal. Current study was aimed to examine the impact of replacing fish meal with silkworm pupae meal on the growth performance and health profile of Gift Tilapia fingerlings (*Oreochromis niloticus*). Gift Tilapia fingerlings (3.38±0.23g) were divided into four group (n=60 in each group). These fish were reared for 10 weeks and fed at the rate of 4% body weight daily at 10am and 3pm. The basal standard diet was given to the control. Other three experimental diets were prepared by 10% (SWP10), 20% (SWP20) and 40% (SWP40) replacement of fish meal with silkworm pupae meal. The results showed that the values of weight gain, feed efficiency ratio and organosomatic indices were significantly higher ($p<0.05$) in SWP40 group as compared to all other groups. The values of red blood cells, white blood cells, hematocrit, mean corpuscular volume and hemoglobin concentration were also significantly improved in SWP40 group. The whole body crude protein differed non-significantly ($p>0.05$) in all of the study groups. The fat content was significantly higher in SWP20 group. In can be concluded that, silkworm pupae are the suitable source of protein to be substituted in the feeds of Gift Tilapia replacing 10 to 40% of fish meal for enhanced health profile and promising growth.

Keywords: Silkworm pupae, Gift Tilapia fingerlings, Fish meal replacement, Fish feed, Growth performance, Proximate analysis and Hematology