Effect of Four Formulated Diets on Colour Enhancement of Platy Fish, *(Xiphophorus maculates)*

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Skin colouration is one of the most important factors which determines the commercial value of ornamental fish. Pigmentation in the skin is responsible for different colouration of fish. Pigment enriched feed is a reliable method, because hazardous effect of fish is considerably reduced. Objective of this study was to determine the colour development of platy fish subjected to four different diets. Four formulated diets were prepared using autolyzed ground shrimp head, autolyzed ground crab shell, dried & ground carrot as supplements and control diet without supplement. Twenty-five percent (25%) supplement was used for each diet preparation and other ingredients were common to all formulated diets consisted of the rest of 75% in the diet. Additional 25% of fish meal was used instead of supplement in the control diet. Experiment was conducted using five-day old platy as 30 individuals /tank and each treatment was triplicated. Laboratory conditions were maintained at 26±1 ˚C of temperature under natural photo periods for 75 days. Fish were fed two times per day until satiation. Photographs were captured in every 2 week interval by a same person with the same camera (Canon EOS 1300D) at a distance of 5.5 cm and 90˚ of angle at same condition for colour comparison. Pigmentations in the platy fish of each treatment were compared using a Mathematical language function which is called image analysis. Collected data were statistically analyzed using one-way ANOVA at $p<0.05$ of significant level by SPSS 24 software. According to the results, colour intensity of the platy fish fed with the feed containing autolyzed ground shrimp shell were significantly different (0.192±0.005) from the other three diets. All three experimental diets with carotenoid pigments at different levels had enhanced the colour of the fish. Present study reveals that the autolyzed shrimp head supplement is a good candidate in improving the colour of the platy fish.

Keywords: Shrimp waste, Platy fish, Autolysis, Carotenoid, Colour enli an cement