Concentration of Dietary Astaxanthin on Coloration of False Percula Clownfish

(*Amphiprion ocellaris* Cuvier, 1830)

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Abstract

The experiment was conducted to evaluate the effect of astaxanthin levels in diet on change of color of false percular clown fish. Experimental fish, initial average body weight was 0.15 ± 0.05 g and total length was 2.01 ± 0.25 cm, were raised in 30x60x30 cm glass aquaria for 10 weeks. The experiment had 5 treatments (diet 1- 5) with 2 replication and contained astaxanthin at concentration of 0, 50, 100, 150 and 200 mg/kg diet respectively. Color of fish was monitored directly on orange color part of fish body every 2 weeks by colorimeter (Minolta color reader, CR-10). Color reading system using in this experiment was CIE system, L*a*b (CIELAB). Qualitative and quantitative of carotenoid, using high performance liquid chromatography (HPLC), were monitored by analyzing experimental fish skin every two weeks. From CIE color monitoring system, during week 2-6, fish were fed with diet contain 200 mg astaxanthin /kg diet showed a significantly (P<0.5) increased of red color (a*value) than fish fed diet 1. The change of red color showed a positive correlation with skin free astaxanthin and zeaxanthin concentration. Fish were fed with diet contained 50 mg astaxanthin/kg diet showed a significantly (P<0.5) increased of red color (a*value) and skin zeaxanthin concentration after week 8 of experiment. From the experiment, it would indicate that false percular clownfish can change astaxantin in diet to zeaxanthin and accumulated in skin. This was supported by data which showed the decreasing of red color (a* value) and skin zeaxanthin concentration and have no skin astaxanthin concentration after feeding experimental fish with diet contained 0 mg astaxanthin for 4 weeks.

From this experiment, it can be concluded that feeding false percular clownfish with 50 mg astaxanthin/kg diet at least 8 weeks was effectively and efficiency improve fish color.

Key words: *Amphiprion ocellaris*, Astaxanthin, Coloration

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