Effect of dietary lipid on growth, expression of canthaxanthin-based coloration, digestive enzymes activities and immunity in blood parrot cichlid Amphilophus citrinellus x Paraneetroplus synspilus

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Abstract

A 42-day experiment was carried out to evaluate the effects of four different lipid containing diets (lipid 74.0, 105.3, 135.0, 168.1g/kg diet) on growth, digestive enzymes activities, immunology and expression of canthaxanthin-based coloration in parrot cichlid(Amphilophus citrinellus x Paraneetroplus synspilus). Each diet contained canthaxanthin 0.05g/kg diet. Two hundred and eighty-eight fish were randomly stocked into 12 glass aquaria to form four triplicate groups. Fish were fed one of four diets daily at 20 g/kg of their total body weight. Growth, digestive enzymes activities, immunology and body colour parameters were measured at the end of experiment. Based on the polynomial regression of dietary lipid level and specific growth rate, the dietary lipid level inclusion was calculated as 117.2 g/kg for the highest specific growth rate of these animals. The polynomial regression of skin colour parameters and dietary lipid levels indicated the critical threshold lipid inclusions in diet: 113.7g/kg for the best expression of lightness, 112.1g/kg for redness, 127.5g/kg for yellowness and 125.3g/kg for chroma of fish's skin. Considering redness, lightness and specific growth rate are most important variables, a diet containing lipid 115.0g/kg can be recommended for blood parrot cichlid.

Keywords

Author Keywords: enzymatic activity; growth; immunity; lipid; redness; yellowness

KeyWords Plus: CARP CYPRINUS-CARPIO; CAROTENOID-BASED COLORATION; PORGY PAGRUS-PAGRUS; ROHU LABEO-ROHITA; COMMON CARP; BODY-COMPOSITION; PONDS; FINGERLINGS; SUPPLEMENTATION; DIGESTIBILITY

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