Effect of dietary lipid on growth, expression of canthaxanthin-based coloration, digestive enzymes activities and immunity in blood parrot cichlid Amphilopus 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, 168.1 g/kg diet) on growth, digestive enzymes activities, immunity and expression of carotenoid-based coloration in parrot cichlid (Amphilopus citrinellus x Paraneetroplus synspilus). Each diet contained canthaxanthin 0.05% 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% of their total body weight. Growth, digestive enzymes activities, immunity and body color 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 color parameters and dietary lipid levels indicated the critical threshold lipid inclusions in diet: 113.7 g/kg for the best expression of lightness, 112.1 g/kg for redness, 127.5 g/kg for yellowness and 125.3 g/kg for chroma of fish's skin. Considering redness, lightness and specific growth rate are most important variables, a diet containing lipid 115.0 g/kg can be recommended for blood parrot cichlid.

Keywords
Author Keywords: enzymatic activity; growth; immunity; lipid; redness; yellowness
Key Words Plus: CARP CYPRINUS-CARPIO; CAROTENOID-BASED COLORATION; PORGY MAGRUS-PAGRUS; ROHU LABEO-ROHITA; COMMON CARP; BODY-COMPOSITION; PONDS; FINGERLINGS; SUPPLEMENTATION; DIGESTIBILITY

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