

Effects of varying dietary carbohydrate levels on growth performance, body composition and liver histology of Malaysian mahseer fingerlings (*Tor tambroides*)

ABSTRACT

We investigated the effects of four iso-nitrogenous (40% crude protein) and iso-caloric (17.6 kJ g⁻¹) diets with different dietary carbohydrate levels (15%, 20%, 25% and 30%) on the growth performance, feed utilization efficiency, body composition and liver histology of Malaysian mahseer (*Tor tambroides*) fingerlings in a 10-week feeding trial. Fish (initial weight of 0.8±0.1 g; initial total length 4.2±0.1 cm) were fed twice daily at 4% body mass. Dietary carbohydrate level had significant effects ($P<0.05$) on weight gain, SGR (specific growth rate), FCR (feed conversion rate), PER (protein efficiency rate), survival percentage and all nutrient retention values (PRV, LRV, CRV, ERV). Protein, carbohydrate and gross energy composition of the fish body were also significantly differed ($P<0.05$) among treatments. Liver histology showed mild hepatic steatosis and hypertrophy for fishes receiving a higher dietary carbohydrate inclusion. In general, treatments with 20% and 25% dietary carbohydrate levels produced better growth results compared to the rest of the treatments. Using a second-order polynomial regression analysis model, the optimal dietary carbohydrate level of 23.4% was estimated for mahseer fingerlings.

Keyword: Aquafeed; Carbohydrate level; Growth performance; Liver histology; *Tor tambroides*