High potential of poultry by-product meal as a main protein source in the formulated feeds for a commonly cultured grouper in Malaysia (Epinephelus fuscoguttatus)

Abstract

A trial was carried out to evaluate the possibility of replacing fish meal with poultry by-product meal (PBM) at high inclusion levels (50-100%) in the formulated feeds of tiger grouper, Epinephelus fuscoguttatus. Fish meal-based feed (PBM0) served as the control feed and three PBM-based feeds with inclusion levels of 50 (PBM50), 75 (PBM75), and 100% (PBM100) were fed to triplicate groups of fish with mean body weight of 26.2±0.2 g. All formulated feeds were isoproteic (50%) and isolipidic (13%). Weight gain of juveniles ranged from 233 to 338% at the end of feeding trial. Final weight (g), weight gain (%) and specific growth rate (% day-1) of fish fed PBM0 were lower than other fish groups. The feed conversion ratio ranged from 1.1 (PBM50) to 2.0 (PBM0) with no significant difference detected in all treatments. Apparent digestibility coefficients (ADCs) were influenced by the inclusion of PBM in the feeds, with PBM50 recording better values in all measured ADCs. Meanwhile, replacement of fish meal with PBM has little influence on the whole body proximate compositions and body indices. The present study shows that PBM is an excellent alternative protein source for farming the tiger grouper juveniles with fish meal protein replacement level of 50% resulted in the best overall performances.

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