



Amino acid retention and growth performance of juvenile sobaity sea bream (*Sparidentex hasta*) fed diet contain combination of fish meal and poultry by-product meal

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Abstract

A 60-day experiment was conducted to evaluate the effect of replacement of fish meal (FM) with poultry by-product meal (PBM) in 6 formulated diet of juvenile sobaity sea bream (*Sparidentex hasta*; 29.27±0.06g). Which PBM replaced 0, 15, 25, 35, 45 and 55% of dietary FM in the isoproteic (50%) and isocaloric (21 kJ.g⁻¹) experimental diets. The final body weight, weight gain, specific growth rate, protein efficiency ratio and nitrogen retention efficiency were higher in fish fed PBM15, 25, 35 diets than in fish fed control, PBM45 and 55 diets. Feed conversion ratio did not show significant differences in PBM0, 35, 45 and 55. Increased retention of essential amino acids (EAAs) such as arginine, lysine, methionine, histidine and taurine were observed in PBM diet. The retention efficiency (RE) of the EAAs such as arginine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine and NEAAs such as taurine, alanine, aspartate, glutamate and tyrosine showed lower values in FM-based diet. TNEAARE was not significantly different among PBM0, 45 and 55 but was significantly higher in PBM15, 25 and 35. TEAARE and TNEAARE ranged between 27.26-36.71% and 30.06-38.40%, respectively among the dietary treatments. According to quadratic regression maximum retention of TEAA, lysine and TNEAA were gained at 36.23, 35.31 and 25.73% inclusion of PBM in diets respectively. Also, the highest lysine retention was measured at 6.26 g lysine per 100g⁻¹ dietary protein which the diets PBM15 and PBM25 could supply. These dietary treatments also resulted in higher growth performance as well as feed utilization than other treatments.

Keywords: *Sparidentex hasta*, Poultry by-product meal, Growth performance, Amino acid retention, Feed utilization