

Effect of complete replacement of fishmeal by dehulled soybean meal with crude attractants supplementation in diets for red sea bream, *Pagrus major*

Abstract

A feeding trial was carried out to develop a non fishmeal practical diet for red sea bream (*Pagrus major*) by gradually replacing fishmeal protein with dehulled soybean meal (DSM). Five isocaloric (22KJg⁻¹) diets were prepared by replacing 0 (FM100), 70 (FM30), 80 (FM20), 90 (FM10) and 100% (FM0) of the fishmeal protein with DSM. Based on our recent findings, all the replacement diets were supplemented with 10% fish soluble (FS), 5% krill meal (KM) and 5% squid meal (SM) to act as attractant and complement amino acids. Triplicate groups of fish (7.3g) were stocked in 100-l polycarbonate circular tanks at a rate of 15 fish per tank. Fish were fed the respective test diets to satiation twice a day for 56 days. At the end of the feeding trial, no differences ($P>0.05$) were found on final weight, weight gain (%) and specific growth rate (% day⁻¹) of fish fed FM100, FM10 and FM0 diets. The growth parameters were significantly ($P<0.05$) better in fish fed FM30 and FM20 diets compared to FM100 and FM0 diets. Although feed intake value in diet FM30 was significantly higher than that of FM100, these values did not differ significantly from the rest of the diets. There were no significant difference in feed efficiency ratios and protein efficiency ratios among dietary treatments. Whole body proximate compositions and somatic parameters were also not influenced ($P>0.05$) by the dietary treatments. Although wide variations in some of the blood parameters were observed, no significant alteration was identified among the treatments except for those of plasma total protein and triglyceride, which were significantly increased in fish fed FM0 diet. Dietary treatments had no significant effects on serum cortisol and oxidative stress parameters of fish compared to the control. Based on the present experimental condition, it is concluded that DSM supplemented with FS, KM and SM could completely replace fishmeal in the diets for juvenile red sea bream without any adverse effects on fish performance.