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Sustainable Aquaculture for a Secure Future

Title: Effects of replacing fish meal with soya protein concentrate on growth, feed efficiency and digestibility in diets for snakehead, *Channa striata*

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Abstract: Soya bean meal-based formulated feeds have recently become available for snakehead culture in Vietnam. This study was conducted to determine the appropriate replacement of fish meal (FM) protein by another soya product, soya protein concentrate (SPC), in snakehead (*Channa striata*) diets. Five iso-nitrogenous (45% crude protein) and isocaloric (19 KJ g⁻¹) practical diets were formulated to replace 0% (control), 40%, 60%, 80% and 100% of protein FM by protein SPC (100% FM, 40% SPC, 60% SPC, 80% SPC and 100% SPC respectively). A digestibility experiment was also conducted with the same formulated diets with addition of 1% chromic oxide. Fish fed 100% FM and 40% SPC diets had significantly better growth and survival compared with other treatments. Feed intake, feed conversion ratio, protein efficiency ratio and net protein utilization, trypsin and chymotrypsin activities of experimental fish fed 100% FM and 40% SPC diets were significantly higher than those fed other diets. The apparent digestibility coefficient (ADC) of the diet and diet components, ADC_{diet} , $ADC_{protein}$ and ADC_{lipid} of fish fed diet 40% SPC and 100% FM treatment were significantly higher than those of other treatments. The cost/kg fish produced in diets 100% FM and 40% SPC was much lower compared with other treatments. Dietary inclusion levels of SPC in diet above 40% significantly affected fish survival, growth, digestibility and trypsin and chymotrypsin activities, although fish chemical composition was not greatly affected.

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