

Pellet Feed Improvements through Vitamin C Supplementation for Snakehead (*Channa striata*) Culture in Vietnam

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Abstract : Laboratory feeding trial: the study was conducted to find out the optimal dietary vitamin C, or ascorbic acid (AA) levels in terms of the growth performance of snakehead. The growth trial included six treatments with five replications. Each treatment contained 0, 125, 250, 500, 1000 and 2000 mg AA equivalent kg^{-1} diet which included six iso-nitrogenous (45% protein), iso-lipid (9% lipid) and isocaloric (4.2 Kcal.g⁻¹). Eighty snakehead fingerlings ($6.24 \pm 0.17 \text{ g.fish}^{-1}$) were assigned randomly in 0.5 m³ composite tanks. Fish were fed twice daily on demand for 8 weeks. The result showed that growth rates increased, protein efficiency ratio increased and the feed conversion ratio decreased in treatments with AA supplementation compared with control treatment. The survival rate of fish tends to increase with increase AA level. The number of RBCs, lysozyme in treatments with AA supplementation tended to rise significantly proportional to the concentration of AA. The number of WBCs of snakehead in treatments with AA supplementation was higher 2.1-3.6 times. In general, supplementation of AA in the diets for snakehead improved growth rate, feed efficiency and immune response. Hapa on-farm trial: based on the results of the laboratory feeding trial, the effects of AA on snakehead in hapas to simulate farm conditions, was tested using the following treatments: commercial feed; commercial feed plus hand mixed AA at 500; 750 and 1000 mg AA.kg⁻¹; SBM diet without AA; SBM diet plus 500; 750 and 1000 mg AA.kg⁻¹. The experiment was conducted in two experimental ponds (only SBM diet without AA placed in one pond and the rest in the other pond) with four replicate hapa each. Stocking density was 150 fish.m² and culture period was 5 months until market size was attained. The growth performance of snakehead and economic aspects were examined in this research.

Keywords : fish health, growth rate, snakehead, Vitamin C

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