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RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Replacement of freshwater small-size fish by formulated feed in snakehead (*Channa striata*) aquaculture: Experimental and commercial-scale pond trials, with economic analysis

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Abstract: AquaFish will not be distributing this publication. Copies may be obtained by writing to the authors.

Traditional snakehead culture in Southeast Asia relies on use of small-size (trash) fish as food, an unsustainable practice. Following development of weaning methods and testing of formulated feed (FF) in laboratory experiments, we conducted feeding trials of FF vs. trash fish (TF) in experimental ponds at Can Tho University (CTU), followed by similar trials on commercial farms in two provinces in Vietnam. CTU pond trials consisted of five treatments (in triplicate), in which TF was replaced by FF in increasing percentages: 0 (control), 25, 50, 75, and 100% replacement of TF by FF (i.e., three treatments had mixed TF/FF diets). Although survival was significantly reduced in the 100% replacement treatment, and growth was significantly reduced in the 75% and 100% replacement treatments, the cost per kg of fish produced was 28–35% less in those high-replacement treatments compared to the 0% replacement treatment. On-farm trials were then conducted at two farms in An Giang and Dong Thap provinces for 6 months with snakehead fed TF only or FF only. At both farms, survival (73–80%) was not significantly different, but growth was significantly better on FF diet at both; however, FF-fed fish at the An Giang farm showed significantly higher levels of abnormal development. Overall production was about twice as high at the An Giang farm as at Dong Thap, but significantly greater production by FF-fed fish vs. TF-fed fish was only seen at Dong Thap. Sensory evaluation by a tasting panel found no difference in product quality between FF-fed fish, TF-fed fish, and a commercial sample bought in the market. Economic analysis indicated that profits were higher for FF-fed fish from both farms, although production costs and sales varied greatly, reflecting market differences in the two provinces.

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