NOTICE OF PUBLICATION

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RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Evaluation of blended virgin coconut oil and fish oil on growth performance and resistance to *Streptococcus iniae* challenge of Nile tilapia (*Oreochromis niloticus*)

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Date: **30 October 2017** Publication Number: AquaFish Research Report **17-380**

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Abstract: Five isolipidic experimental diets (32% crude protein) were formulated to contain 3% fish oil (FO) and virgin coconut oil (3VCO) as sole lipids or blends of FO + VCO in ratios of 75:25% (0.75VCO), 50:50% (1.5VCO) and 25:75% (2.25VCO). Triplicate groups of O. niloticus were fed one of five diets to apparent satiation, twice daily for 8 weeks. It was observed that fish fed diet 3VCO exhibited the best performance with respect to feed intake (492.1 g), final weight (214.60 g) and weight gain (154.90 g). Significant effects of dietary fatty acid profile were reflected in fish fed the diets in whole body, muscle and liver C12:0 and C14:0. However, eicosapentaenoic (EPA, 20:5n-3) and docosahexaenoic (DHA, 22:6n-3) were significantly different (P 0.05) compared to their respective diets while liver n-3: n-6 ratio significantly increased and recorded low levels in whole body and muscle. Statistically, least values of mortality were recorded as VCO levels were elevated when fish were subjected to *Streptococcus iniae* infection while plasma metabolite indicators among treatments were not altered. The inclusion of VCO at 3% in the diet gave excellent performance, indicating that it could wholly replace FO and as such represents a better alternative lipid source for feeding *O. niloticus*.

This abstract was excerpted from the original paper, which was in the *Egyptian Journal of Basic and Applied Sciences* (2017), 4(3): 175-184.

AQUAFISH RESEARCH REPORTS are published as occasional papers by the Management Entity, AquaFish Innovation Lab, Oregon State University, Corvallis, Oregon 97331-1643 USA. The AquaFish Innovation Lab is supported by the US Agency for International Development under Grant No. EPP-A-00-06-00012-00. See the website at <aqua shcrsp.oregonstate.edu>.