NOTICE OF PUBLICATION

AQUACULTURE & FISHERIES INNOVATION LAB

RESEARCH REPORTS

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Title: **Effects of Reduced Soybean-Meal Diets Containing *Moringa oleifera* or *Leucaena leucocephala* Leaf Meals on Growth Performance, Plasma Lysozyme, and Total Intestinal Proteolytic Enzyme Activity of Juvenile Nile tilapia, *Oreochromis niloticus*, in Outdoor Tanks**

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

Leaf meals are potential alternatives to soybean meal (SBM) in fish diets in developing countries because they are cheaper. *Moringa oleifera* (MOR) and *Leucaena leucocephala* (LEU) reduced nutrient digestibility of diets compared with SBM in an earlier study. However, fish raised outdoors consume natural foods, which might offset the negative effects of leaf-meal diets. We conducted a feeding trial using mixed-sex Nile tilapia (5.2 g) to assess performance of fish fed 36% protein diets with different concentrations of MOR and LEU leaf meals in place of SBM. Fish in static pools were fed daily to apparent satiation for 59 d. Individual weight gain (30.4–34.7 g), survival (91.8–97.3%), feed conversion ratio (FCR, 1.6–1.9), proximate composition, plasma lysozyme activity, and intestinal proteolytic enzyme activity were similar among diets. However, fish fed diets containing leaf meals had higher concentrations of n-3 fatty acids than those fed the SBM control. Despite lower nutrient availability of the leaf-meal diets compared with the soy diet, MOR or LEU could replace up to 30% of the SBM protein without reducing fish performance. Inclusion of poultry meal in the diets and probable nutrient supplementation from natural foods appeared to compensate for the lower nutritional value of the leaf meals compared with SBM.

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