



Effects of *Moringa oleifera* Lam. dietary seed protein extracts on growth, nutrient utilization and blood parameters in common carp (*Cyprinus carpio*, L.) and Nile tilapia (*Oreochromis niloticus*, L.)

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Kongressbeitrag

The drumstick tree, *Moringa oleifera*, is a multi-purpose plant showing several beneficial effects, depending on plant part origin. The seeds for example show potential anti-biotic activity against certain pathogenic bacteria species. Furthermore they can be used for water purification since they contain specific proteins with coagulation properties. In these experiments we tested the effects of dietary *M. oleifera* seed protein extracts (MPE) on growth performance, nutrient utilization and blood parameters of the common carp, *Cyprinus carpio*, and on Nile tilapia, *Oreochromis niloticus*, two of the most important freshwater aquaculture fish species. The MPE was added in three concentrations (carp: 200, 400 and 600 ppm; tilapia: 400, 800 1200 ppm) to the diets and fed, beside a negative control for eight weeks.

During this period carp grew from initially 25.1 g to final body masses of 95.9 g (control), 97.2 g (200 ppm), 100.2 g (400 ppm) and 100.3 g (600 ppm) and tilapia from initially 5.49 g to final body masses of 46.6 g (control), 48.0 g (400 ppm), 42.4 g (800 ppm) and 49.4 g (1200 ppm). The feed conversion was best for carp fed with 400 and 600 ppm MPE (1.08 kg feed/kg body mass gain) and for tilapia fed 400 ppm MPE (0.84 kg feed/kg body mass gain). the best protein conversions in carp was achieved by the 600 ppm treatment (2.40 kg body mass gain/kg protein fed) while in tilapia the 400 ppm MPE treated group showed the highest protein conversion (3.00 kg body mass gain/kg protein fed).

Higher supplementation levels with MPE resulted in higher red blood cell counts (RBC) in both species accompanied by increased hemoglobin concentrations and hematocrit in tilapia but not carp and in higher white blood cell counts in carp but not in tilapia.

These results show that seed protein extracts from *Moringa oleifera* have potential as growth promoters in two of the world's most important freshwater aquaculture species by improving growth and nutrient utilization.