

الإحلال الجزئى والكلى لبروتين مسحوق جلوتين الذرة بروتين الطحالب فى إعداد
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**PARTIAL AND COMPLETE REPLACEMENT OF CORN GLUTEN
MEAL PROTEIN BY ALGAE PROTEIN IN DIETS FOR NILE
TILAPIA, *Oreochromis niloticus* (L.)**

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ABSTRACT: Diets incorporating different levels of corn gluten meal replacement by using biofuel algae or Spirulina protein at 0, 25, 50, 75, and 100% were evaluated for larval/juvenile stage of Nile tilapia (*Oreochromis niloticus*). Fish averaging 0.02 g were divided into 18 groups of 50 fish. There were 3 replicates per every dietary treatment that were fed one of six diets for 11 weeks. Corn gluten protein was replaced with algae on the protein basis. All diets were supplemented with 1.5% lysine and 0.5% methionine. The experimental diets were formulated to contain $34.9 \pm 0.1\%$ protein and $12.2 \pm 0.1\%$ lipid in the form of fish oil and soybean lecithin (phospholipids source). The results indicated that algae positively affected feed consumption and fish growth up to the 50% replacement and then performance was depressed. Significant differences in concentration of individual minerals (Al, Fe, Zn, and Cu) in the whole fish body were found. Mineral composition of algae might have affected growth when diets which contained more than 75% of plant protein were replaced with microalgae. These findings suggest that up to 50% of dietary corn gluten meal protein can be replaced with microalgae which significantly enhance fish growth.

Key words: Corn gluten, Biofuel algae, Spirulina, Nile tilapia, iron, aluminum