Ain Shams University
Faculty of Science
Zoology Department

ACIDIFIED SUBSTANCES AS GROWTH PROMOTERS FOR THE FRESHWATER PRAWN, *MACROBRACHIUM ROSENBERGII* AND THE NILE TILAPIA, *OREOCHROMIS NILOTICUS*

A Thesis submitted for the award of the Degree of Doctor of Philosophy in Science (Ph.D) in Zoology (Aquatic Biology)

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Abstract

In present study three experiments were carried out to investigate the effect of dietary sodium lactate, calcium lactate and calcium propionate levels as organic acids salts on growth, nutrient digestibility, proximate body composition, feed utilization and histological induces of the Nile tilapia, *Oreochromis niloticus* and the freshwater prawn, *Macrobrachium rosenbergii*.

The results demonstrated that calcium propionate at a levels of 2% for Nile tilapia (experiment I) and either 2% and 3% for freshwater prawn (experiment II) recorded the highest significant growth performance, survival rate, feed utilization, body composition and digestibility were obtained, also, less histological alternations of liver, pancreas and hepatopancreas were observed. Improving growth performance, survival and feed utilization was recorded also with the dietary sodium lactate at a level of 1% for freshwater prawn (experiment III) with mild impact histological effects of hepatopancreas. No gonads intact were observed in all experiments treatments of Nile tilapia and freshwater prawn, except slight histological alteration of testis's Nile tilapia.

Key Words: *Oreochromis niloticus*, *Macrobrachium rosenbergii*, organic acids salts, acidifiers, sodium lactate, calcium lactate, calcium propionate, nutrition of Nile tilapia, nutrition of freshwater prawn, liver, pancreas, gonad, hepatopancreas.

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