Effects of different levels of dietary Zeo10 on growth and digestive enzyme activity in common carp (*Cyprinus carpio*) fingerlings

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Received date: 2021.07.20
Reception date: 2021.09.21

Abstract

This investigation aimed to study the effects of different dietary levels of Zeo10on growth and digestive enzymes of the common carp (Cyprinus carpio) fingerlings. For this purpose, 180 pieces of common carp (mean weight: 20±4 g) were randomly distributed in 12 polyethylene tanks and with four diets with different levels of Zeo10 (included the control group (without zeo10), the treatment 1(2g/kg), treatment 2(4 g/kg), treatment 3 (8 g/kg)) for eight weeks. The fish fed three times a day (at 8:00, 12:00, and 16:00) in satiety. At the end of the experimental period, growth indices, and digestive enzymes (trypsin, chymotrypsin, alkaline phosphatase, lipase, and alpha-amylase) were measured. The results showed that the mean final weight, body weight gain percentage, and specific growth rate in treatments 1 and 2 were significantly higher than the control treatment and the third treatment ($P<0.05$). The use of zeo10 also affected the activity of digestive enzymes included trypsin, chymotrypsin, and alkaline phosphatase ($P<0.05$). In this study, the lipase and alpha-amylase activity did not show a significant difference ($P>0.05$). Based on the results, Zeo10 had a positive effect on the growth of common carp by affecting the activity of protease enzymes in the digestive tract of carp juveniles. Generally, the results of this study showed that the use of Zeo10 as a supplement in the diet of common carp, by increase the activity of digestive enzymes and food digestion, leads to increased growth in this species. Based on the results, the level of 4 g/kg of Zeo10 can propose as a supplement in the commercial diet of Common carp.

Keywords: Zeo10, *Cyprinus carpio*, digestive enzymes, hydrated sodium calcium aluminosilicate