

苜蓿草粉对禾花鲤蛋白酶和淀粉酶活性影响的研究

张春梅, 施传信, 王成章, 何云, 刘圉炜

摘要:

选取来源一致、规格整齐的2龄禾花鲤1 200尾, 采用单因子完全随机设计, 分为5个处理, 每处理3个重复, 每重复80尾鱼, 分置于15个试验池中。各处理苜蓿Medicago sativa草粉的添加量分别为0(对照组)、40(试验I组)、80(试验II组)、120(试验III组)和160 g/kg(试验IV组), 正试期50 d, 观测苜蓿草粉对禾花鲤前、中、后肠及肝胰脏蛋白酶和淀粉酶活性的影响。结果表明: 1) 添加苜蓿草粉对前肠蛋白酶活性有显著影响 ($P<0.05$), 其中试验II组显著高于对照组和试验IV组, 但和试验I、III组差异不显著 ($P>0.05$)。添加苜蓿草粉对中、后肠及肝胰脏蛋白酶活性均无显著影响 ($P>0.05$), 但它们有相同的变化趋势, 即试验I、II、III组鱼的蛋白酶活性均高于对照组。2) 鲤鱼的前肠、中肠、后肠蛋白酶活性依次减弱, 而肝胰脏的蛋白酶活性远低于肠道。3) 添加苜蓿草粉后前肠及中肠淀粉酶活性比较, 试验II组显著高于对照组 ($P<0.05$), 其余各组与对照组差异不显著 ($P>0.05$), 后肠淀粉酶活性与对照组无显著差异 ($P>0.05$)。添加苜蓿草粉能提高鲤鱼肝胰脏淀粉酶活性, 其中试验II组显著高于对照组 ($P<0.05$), 其余试验组与对照组无显著差异 ($P>0.05$)。4) 禾花鲤前、中、后肠及肝胰脏4部分淀粉酶的活性有较大的不同, 肝胰脏>后肠>中肠>前肠。

关键词: 苜蓿草粉; 禾花鲤; 蛋白酶; 淀粉酶

Effects of alfalfa meal on protease and amylase activities of common carps

ZHANG Chun-Mei, SHI Chuan-Xin, WANG Cheng-Zhang, HE Yun, LIU Juan-Wei

Abstract:

An experiment was conducted using 1 200 carps to study the effects of alfalfa meal on the activity of digestive enzymes. Carps were randomly divided into five treatments according to a random factorial arrangement, each treatment represented by three replicates of 80 carps each. Carps were fed with diet containing 0(control), 40, 80, 120 and 160 g/kg (group 1,2,3,4, respectively) alfalfa meal during the period of 50 days, and activity of protease and amylase in carp's foregut, midgut, hindgut and hepatopancreas were investigated. The results showed that: 1) Protease activity in foregut of carps fed with 80 g/kg alfalfa meal was significantly enhanced compared to the control and group 4 ($P<0.05$), but there was no significant difference between group 1 and group 3 ($P>0.05$). Protease activity in midgut, hindgut and hepatopancreas of carps had no significant difference compared to the control ($P>0.05$), but they had the same trend: the activity of protease of group 1, 2 and 3 were higher than the control group. 2) Activity of protease in carp's foregut, midgut and hindgut were gradually lowered, And activity of protease in hepatopancreas were far lower than that in guts. 3) Activity of amylase in foregut and midgut of carps fed with 80 g/kg alfalfa meal were significantly enhanced ($P<0.05$). There were no significant difference between the other groups and the control ($P>0.05$). Amylase activity in hindgut had no significant difference compared to the control ($P>0.05$). But alfalfa meal enhanced the activity of amylase in hepatopancreas, group 2 was significantly higher than control ($P<0.05$). The other groups had no significant difference compared to the control ($P>0.05$). 4) There was great difference between activity of amylase in foregut, midgut, hindgut and hepatopancreas. Among the four parts, the activity of amylase ranged from high to low: hepatopancreas> hindgut> midgut> foregut. In summary,

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(729KB)
- ▶ [HTML全文]
- ▶ 参考文献PDF
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

- ▶ 苜蓿草粉; 禾花鲤; 蛋白酶; 淀粉酶

本文作者相关文章

- ▶ 张春梅
- ▶ 施传信
- ▶ 王成章
- ▶ ??云
- ▶ 刘圉炜

PubMed

- ▶ Article by Zhang, C. M.
- ▶ Article by Shi, C. S.
- ▶ Article by Wang, C. Z.
- ▶ Article by He, Y.
- ▶ Article by Liu, J. W.

appropriate alfalfa meal significantly improved the activities of protease and amylase of common carps, and the activities of protease and amylase were different in different parts of carps.

Keywords: alfalfa common carp protease amylase

收稿日期 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者:

作者简介:

作者Email:

参考文献:

本刊中的类似文章

Copyright by 草业科学