浙江农业学报 *Acta Agriculturae Zhejiangensis*，2014，26(3)：570-575 http：//www.zjnyxb.cn
贾凤，刘燕，韦强，等. 包膜丁酸钠对肉鸭肠道黏膜形态和消化酶活性的影响[J]. 浙江农业学报，2014，26(3)：570-575.

DOI：10.3969/j.issn.1004-1524.2014.03.06

包膜丁酸钠对肉鸭肠道黏膜形态和消化酶活性的影响

贾　凤[1,2]，刘　燕[2]，韦　强[2]，肖琛闻[2]，季权安[2]，李　科[1,2]，鲍国连[2,*]
([1] 浙江师范大学，浙江 金华 321004；[2] 浙江省农业科学院 畜牧兽医研究所，浙江 杭州 310021)

摘　要： 以北京鸭为对象，研究了包膜丁酸钠对肠道黏膜形态和消化酶活性的影响。选用1日龄北京鸭240只，分别饲喂：基础日粮；基础日粮+500 g·t^{-1}包膜丁酸钠；基础日粮+1 000 g·t^{-1}包膜丁酸钠；基础日粮+40 g·t^{-1}杆菌肽锌。分别在鸭21日龄和42日龄，每个重复分别取2只鸭的十二指肠、空肠和回肠制作石蜡切片，测量绒毛长度和隐窝深度，计算绒隐比(V/C)，并对各组肉鸭十二指肠内容物中的消化酶活性进行测定。结果表明：与对照组和抗生素组相比，添加包膜丁酸钠对肉鸭十二指肠绒毛长度和隐窝深度改善效果明显，1 000 g·t^{-1}包膜丁酸钠添加组显著增加了空肠的绒毛长度、降低了隐窝深度($P<0.05$)，1 000 g·t^{-1}包膜丁酸钠添加组对肠道黏膜形态的改善作用优于500 g·t^{-1}添加组。同时包膜丁酸钠显著提高了十二指肠中脂肪酶的活性($P<0.05$)。日粮中添加包膜丁酸钠能有效改善肉鸭肠道黏膜的形态，提高脂肪酶活性，促进肉鸭肠道健康。

关键词： 包膜丁酸钠；肉鸭；肠道黏膜形态；消化酶活性
中图分类号： S 816.79，S 834　　**文献标志码：** A　　**文章编号：** 1004-1524(2014)03-0570-06

Effect of coated sodium butyrate on intestinal mucosa morphology and digestive enzyme activities in meat duck

JIA Feng[1,2]，LIU Yan[2]，WEI Qiang[2]，XIAO Chen-wen[2]，JI Quan-an[2]，LI Ke[1,2]，BAO Guo-lian[2,*]
([1] *Zhejiang Normal University*，*Jinhua 321004*，*China*；[2] *Institute of Animal Husbandry and Veterinarian Sciences*，*Zhejiang Academy of Agricultural Sciences*，*Hangzhou 310021*，*China*)

Abstract: The effect of coated sodium butyrate (CSB) on intestinal mucosa morphology and digestive enzyme activities in Beijing duck were evaluated in this study. Two hundred and forty one-day-old Beijing ducks were randomly divided into four groups with four replicates. The dietary treatments were as follows: basal diet, basal + 500 g·t^{-1} CSB, basal + 1 000 g·t^{-1} CSB and basal + 40 g·t^{-1} zinc bacitracin. On the day 21 and day 42, two ducks of each replicate were selected and villous lengths and crypt depths of duodenum, jejunum and ileum were measured, based on which V/C ratio were calculated. Meanwhile, digestive enzyme activities in the duodenum contents were measured. It showed that addition of CSB could obviously improve the villous length and crypt depth of duodenal compared with control and antibiotic group; addition of 1 000 g·t^{-1} CSB could increase the height of jejunal villous and decrease the depth of crypt significantly ($P<0.05$), the intestinal mucosa morphology of 1 000 g·t^{-1} group was better than that of 500 g·t^{-1} group. At the same time, CSB could improve activity of lipase in the duodenum ($P<0.05$). In conclusion, CSB in dietary could effectively improve the intestinal mucosa morphology, increase lipase activity and enhance intestinal health in Beijing duck.

收稿日期： 2013-09-19
基金项目： 杭州市重大科技创新专项(20112312A52)
作者简介： 贾凤(1989—)，女，河北石家庄人，硕士研究生，主要从事动物免疫方面的研究。E-mail：jiafeng1989@126.com
* 通讯作者，鲍国连，E-mail：baoguolian@163.com