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## 丁酸钠和甘露寡糖对断奶仔猪生长性能和免疫功能的影响

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### Effects of Sodium Butyrate and Mannan-oligosaccharides on Growth Performance and Immunity in Weaned Piglets

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摘要

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**摘要** 试验选用72头遗传背景相似、平均体重为(6.68±0.23) kg的28日龄的“长×大”断奶仔猪,以研究丁酸钠(SB)和甘露寡糖(MOS)对断奶仔猪生长性能和免疫功能的影响及其互作效应。试验仔猪按完全随机区组设计分为9个处理,每处理4个重复,每重复2头仔猪。9个处理分别饲喂含0、0.10% MOS、0.20% MOS、0.05% SB、0.05% SB+0.10% MOS、0.05% SB+0.20% MOS、0.10% SB、0.10% SB+0.10% MOS、0.10% SB+0.20% MOS的饲料。预试期为3 d,正试期28 d。结果表明:1) 28~41 d时,饲料中添加0.10% SB+0.10% MOS可显著提高仔猪的平均日增重(P<0.05)并降低料重比(P<0.05);28~55 d时,添加0.05% SB+0.20% MOS、0.10% SB+0.10% MOS和0.10% SB+0.20% MOS显著提高了仔猪的平均日增重(P<0.05),前两者还降低了仔猪料重比(P<0.05);2) 仔猪平均日采食量以0.10% SB+0.10% MOS组最高(P<0.05);3) 仔猪注射卵清蛋白(OVA)后第7天,饲料中添加0.05% SB+0.20% MOS、0.10% SB、0.10% SB+0.10% MOS及0.10% SB+0.20% MOS的仔猪血清OVA抗体水平显著升高(P<0.05);4) SB与MOS对断奶仔猪生长性能和免疫水平没有体现互作效应。由此可知,丁酸钠与甘露寡糖对断奶仔猪生长性能和免疫水平有促进作用,尤其以0.10%丁酸钠+0.10%甘露寡糖的组合效果最佳,但在本试验条件下两者未表现出互作效应。

**关键词:** 丁酸钠;甘露寡糖;生长性能;免疫;仔猪

**Abstract:** This trial was conducted to study the effects and interaction of dietary sodium butyrate (SB) and mannan-oligosaccharides (MOS) on growth performance and immunity in weaned piglets. Seventy-two 28-day-old Landrace×Yorkshire weaned piglets with average weight of (6.68±0.23) kg were divided into 9 treatments with 4 replicates of 2 piglets using a randomized complete-block design, and then were fed diets containing one of nine additives of 0, 0.10% MOS, 0.20% MOS, 0.05% SB, 0.05% SB+0.10% MOS, 0.05% SB+0.20% MOS, 0.10% SB, 0.10% SB+0.10% MOS and 0.10% SB+0.20% MOS. The experiment included adjustment period of 3 d and trial period of 28 d. The results were showed as follows: 1) During 28~41 d, average daily gain (ADG) was increased (P<0.05) and F/G was decreased significantly (P<0.05) for piglets fed with diet containing 0.10% SB+0.10% MOS. During 28~55 d, ADG was increased significantly (P<0.05) for piglets fed with diet containing 0.05% SB+0.20% MOS, 0.10% SB+0.10% MOS and 0.10% SB+0.20% MOS, in which 0.05% SB+0.20% MOS and 0.10% SB+0.10% MOS significantly decreased F/G of piglets (P<0.05). 2) Average daily feed intake of piglets fed with diet containing 0.10% SB+0.10% MOS was higher than that in other groups (P<0.05). 3) On day 7 after injection OVA for piglets, serum's anti-OVA antibody of piglets fed with diet containing 0.05% SB+0.20% MOS, 0.10% SB, 0.10% SB+0.10% MOS or 0.10% SB+0.20% MOS was increased significantly (P<0.05). 4) No interaction appeared between SB and MOS in improving growth performance and immunity when SB and MOS were combined to use in diet of piglets. In conclusion, growth performance and immunity of piglets were improved by dietary SB or MOS supplementation and 0.10% SB+0.10% MOS was an appropriate and feasible combination, but interaction between SB and MOS was not found in the present study. [Chinese Journal of Animal Nutrition, 2010, 22(2):346-351]

**Keywords:** Sodium butyrate; Mannan-oligosaccharides; Growth performance; Immunity; Piglets

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