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饲料缬氨酸与赖氨酸比对初产母猪繁殖性能及血清生化指标的影响

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Effects of Dietary Valine/Lysine on Reproductive Performance and Serum Biochemical Indices of Gilts

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摘要 本试验旨在研究饲料缬氨酸与赖氨酸比(Val/Lys)对初产母猪繁殖性能、血清生化指标和乳成分的影响。选取80头体况相近的初产母猪,采用单因子试验设计,根据Val/Lys随机分为4组:75%组(75/100)、90%组(90/100)、105%组(105/100)、120%组(120/100),每组20个重复,每个重复1头母猪。母猪妊娠第90天进入正式试验,到再次发情结束。结果表明:母猪泌乳期120%组全期平均日采食量显著高于75%组($P<0.01$),显著高于90%组($P<0.05$);饲料Val/Lys对窝产活仔数、窝产健仔数、初生窝重、初生个体重均无显著影响($P>0.05$);仔猪21日龄断奶时,随母猪饲料Val/Lys的升高,仔猪断奶重逐渐增加,120%组显著高于75%组($P<0.05$);母猪分娩后第21天,120%组背膘厚极显著低于75%组($P<0.01$),背膘损失极显著高于75%组($P<0.01$);母猪分娩后第14天,120%组血清总蛋白含量显著高于75%和90%组($P<0.05$),120%和105%组血清尿素氮含量显著低于75%和90%组($P<0.05$),75%组血清葡萄糖含量显著高于其余各组($P<0.05$),且随着饲料Val/Lys的增加,葡萄糖含量呈降低的趋势;120%组初乳和第14天常乳中乳脂、非脂固形物、乳蛋白含量显著高于75%和90%组($P<0.05$)。饲料中添加缬氨酸可提高初产母猪平均日采食量,以Val/Lys为120%时最高,断奶仔猪生长性能最佳,但对初产母猪断奶-发情间隔没有显著影响。

关键词: 缬氨酸与赖氨酸比 初产母猪 繁殖性能

Abstract: Eighty crossbred gilts were used to investigate the effects of different valine/lysine (Val/Lys) on the gilts' reproductive performance and serum biochemical indices. According to Val/Lys, the gilts were randomly allocated to 4 groups [75% group (75/100), 90% group (90/100), 105% group (105/100) and 120% group (120/100)] with 20 replicates in each group and 1 pig per replicate. The experiment period was from the day 90 of pregnancy to estrus again. The results showed as follows: the average daily feed intake of gilts during whole lactation period in 120% group was significantly higher than that in 75% group ($P<0.01$) and 90% group ($P<0.05$). There were no significant differences in the number of piglets born alive per litter, the number of healthy piglets per litter, birth weight of piglets per litter and birth weight of piglet ($P>0.05$). The body weight of piglets weaned at 21 days of age was gradually increased with elevating Val/Lys, and 120% group was significantly higher than 75% group ($P<0.05$). On day 21 after parturition, back fat thickness in 120% group was significantly lower than that in 75% group ($P<0.01$), and back fat loss was significantly higher than that in 75% group ($P<0.01$). On day 14 after parturition, serum total protein content of gilts in 120% group was significantly higher than that in 75% and 90% groups ($P<0.05$). Serum urea nitrogen content of gilts in 120% and 105% groups was significantly lower than that in 75% and 90% groups ($P<0.05$). Serum glucose content of gilts in 75% group was significantly higher than that in the other groups ($P<0.05$), and with increasing levels of Val/Lys, a decreasing trend was observed. The contents of milk fat, solid(s)-non-fat and milk protein content in colostrums and milk on day 14 in 120% group were significantly higher than those in 75% and 90% groups ($P<0.05$). It is concluded that dietary Val significantly improves average daily feed intake of gilts, and Val/Lys of 120% is the best for average daily feed intake of gilts and performance of piglets in this study, but Val has no effect on interval days from weaning to estrus.

Keywords: Val/Lys, gilts, reproductive performance

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