

Effect of Dietary Conjugated Linoleic Acid on Growth Performance and Backfat Thickness of Pigs during Late-finishing Period

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Abstract

Two trials were conducted to determine whether supplementing conjugated linoleic acid (CLA) in diet in a short time could reduce backfat thickness, and improve growth performance of pigs during late-finishing period. In trial 1 and 2, 18 and 48 late-finishing pigs (about 90 and 100 kg), were divided into three treatments and fed diets supplemented 0, 0.3, or 0.9% CLA, and 0 or 0.9% two sources of CLA for 28 days, respectively. Weight gain, feed intake, feed:gain, and backfat thickness between 4, 5th rib, last rib and last lumbar were measured ultrasoundly. Blood samples were obtained at the end of each trial. Serum glucose, urea nitrogen, and non-esterified fatty acid (NEFA) were analyzed. Dietary CLA decreased 4,5th rib ($P < 0.01$) and average ($P < 0.05$) changes of backfat thickness in trial 2. Dietary CLA decreased ($P < 0.01$) serum NEFA concentrations of pigs in trial 1 and 2, and the effect of 0.9% CLA was greater ($P < 0.01$) than that of 0.3% CLA in trial 1. There was no effect of dietary CLA on the growth performance and other measurements of pigs in all the trials. The results suggest that supplementing 0.9% CLA in diet for 28 days may not affect the growth performance but decrease backfat thickness of pigs, especially in barrows, during late-finishing period.

Key words: Conjugated linoleic acid, Growth performance, Backfat thickness, Pigs

飼糧中共軛亞麻油酸對肥育後期豬隻生長性能及背脂厚度之影響

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摘 要

本研究分兩個試驗探討短時間內於飼糧中添加共軛亞麻油酸 (Conjugated Linoleic acids; CLA)，是否可降低肥育後期肉豬背脂厚度及促進生長性能。試驗一及二各將 18 及 48 頭體重約 90 及 100 公斤之肥育豬逢機分配至 3 處理組，分別飼予添加 0 (對照組)、0.3 或 0.9% CLA，及 0 或 0.9% 兩種不同廠牌 CLA 之試驗飼糧，為期四週。試驗期間記錄豬隻體重及飼料採食量，計算飼料利用效率，並測定第四、五肋骨間、最後肋骨及最後腰椎之背脂厚度；並於試驗結束時採集豬隻空腹時血液，測定血清中葡萄糖、尿素氮及非酯化脂肪酸濃度。結果顯示，飼糧中添加 CLA 降低($P < 0.01$)豬隻血清中非酯化脂肪酸濃度(試驗一及二)，而在 0.9% 組之效果又大於($P < 0.05$) 0.3% 組者(試驗一)。飼糧中添加 CLA 亦降低($P < 0.01$)豬隻第四、五肋骨間之背脂厚度(試驗二)，但對豬隻之生長性能及其他測定項目則無顯著影響。綜合以上，飼糧中添加 0.9% CLA 經四週，可能會降低肥育後期豬隻(尤其是閹公豬)之背脂厚度，但對生長性能並無影響。

關鍵詞：共軛亞麻油酸、生長性能、背脂厚度、豬