東海學報56 卷2016：1-12

中華民國一〇五年六月出版

飼糧中添加乳化劑對肉雞生長性能、屠體性狀及營養分消化率之影響

張勝博姜樹興*

東海大學畜產與生物科技學系

（收件日期：104 年12 月11 日；接收日期：105 年4 月06 日）

摘 要

本研究以兩個試驗分別探討，不同來源乳化劑之乳化安定性及臨界微膠粒濃度；不同來源乳化劑(陰離子型或非離子型)，對肉雞生長性能、屠體性狀及營養分消化率之影響。試驗一，選取五種不同乳化劑， 包括 (1) 十二烷基硫酸鈉(sodium lauryl sulfate; SLS; 陰離子型) ； (2) 聚氧乙烯油酸酯(polyoxyethylene oleate; PEO; 非離子型) ； (3) 聚氧乙烯雙油酸酯(polyoxyethylene dioleate; PEDO; 非離子型) ； (4) 親油性聚氧乙烯烷基醚(polyoxyethylene alkyl ether/lipophilic; PAEL; 非離子型) 或(5) 親水性聚氧乙烯烷基醚(polyoxyethylene alkyl ether/hydrophilic; PAEH; 非離子型)，測定其乳化安定性及臨界微膠粒濃度。試驗二，選擇非離子型中有較高乳化安定性及較低臨界微膠粒濃度之PEO 及PAEH 及陰離子型SLS，進行肉雞生長及代謝試驗。500 羽1 日齡愛拔益加肉雞，逢機分配至5 處理組，每處理4 重複，每重複25 羽，分別飼予(1) 不添加或添加100 ppm (2) SLS; (3) PEO; (4) PAEH 及(5) 複方乳化劑(1/3 SLS+1/3 PEO+1/3 PAEH) 之試驗飼糧，為期36 天。結果顯示，飼糧中添加不同乳化劑，對肉雞生長性能及屠體性狀無影響。飼糧中添加不同乳化劑，對總脂肪酸全腸道及迴腸消化率皆無影響；但是添加SLS，提高蛋白質迴腸消化率($P < 0.05$)。綜合以上，飼糧中添加乳化劑對肉雞生長性能及脂肪酸消化率並無影響，但其中SLS 可提高肉雞蛋白質迴腸消化率。

關鍵詞：生長性能、消化率、乳化劑、肉雞

*通訊作者：shchiang@thu.edu.tw

Effect of Dietary Supplementation of Emulsifier on Growth Performance, Carcass Characteristics and Nutrient Digestibility of Broilers

Sheng-Po Chang and Shu-Hsing Chiang*
Department of Animal Science and Biotechnology, Tunghai University
(Date received: December 11, 2015; Date accepted: April 6, 2016)

Abstract

Two trials were conducted to investigate the emulsion stability (ES) and critical micelle concentration (CMC) of different emulsifiers, the effect of dietary supplementation of different emulsifiers on growth performance, carcass characteristics and nutrient digestibility of broilers. In trial 1, five emulsifiers [(1) sodium lauryl sulfate (SLS; anionic emulsifier), (2) polyoxyethylene oleate (PEO; nonionic emulsifier), (3) polyoxyethylene dioleate (PEDO; nonionic emulsifier), (4) polyoxyethylene alkyl ether/lipophilic (PAEL; nonionic emulsifier), and (5) polyoxyethylene alkyl ether/hydrophilic (PAEH; nonionic emulsifier)] were selected to determine the ES and CMC of them. PEO and PAEH were selected (higher ES and lower CMC) plus SLS for conducting growth and metabolism trial in broilers. In trial 2, five hundred newly hatched Arbor Acres chicks were allotted to 5 treatments, 4 replicates per treatment, 25 chicks per replicate. Chick were fed diets without (1) or with supplementing 100 ppm of (2) SLS, (3) PEO, (4) PAEH and (5) blended emulsifier (1/3 SLS+1/3 PEO+1/3 PAEH) for 36 days. Results showed that supplementing different emulsifiers did not affect growth performance, carcass characteristics, and fecal and ileal digestibility of total fatty acids. Supplementing SLS significantly increased protein ileal digestibility ($P < 0.05$). In conclusion, dietary supplementation of emulsifiers did not affect the growth performance and fat digestibility, while SLS increased protein ileal digestibility of broilers.

Key word: Growth performance, Digestibility, Emulsifier, Broilers

*Corresponding author: shchiang@thu.edu.tw