

Effects of an emulsifier in diets with different sources of oil/fat for broiler chickens.

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The aim of this study was to evaluate the effects of an emulsifier-additive on nutrient digestibility and nitrogen-corrected apparent metabolizable energy (AMEn) in broilers receiving diets with different sources of oil/fat levels in the starter (14–21d) and finisher (35–42d) phases. Two trials were conducted using mash corn/soybean meal-based diets with or without inclusion (350g/ton) of emulsifier (Excential Energy Plus) in diets with 0% of source of oil, 4% soybean oil, 4% of poultry fat, and 2% of soybean oil/ 2% poultry fat. A total of 640 male Cobb 500 in the starter and 384 male broilers in the finisher phase were allocated (metabolic cages) in a complete randomized design with 8 treatments and 8 reps each. Total excreta were collected from d 19 to 21 and from d 40 to 42 to determine AMEn, apparent digestibility coefficients for dry matter (ADCDM) and crude protein (ADCCP). Data were analyzed using ANOVA (PROC GLM/SAS) and CONTRAST test among treatments. In the starter phase, there was no effect ($P > 0.05$) for ADCCP, but there were effects ($P < 0.05$) of using emulsifier on ADCDM; treatments with 4% of soybean oil and 4% of poultry fat had higher values (73.13 vs 71.21; 73.23 vs 71.62). AMEn was improved ($P < 0.05$) by 71 and 68 kcal/kg when emulsifier was used in the treatments with 4% of soybean oil and 4% of poultry fat. In the finisher phase, there was no effect ($P > 0.05$) for ADCCP. However, emulsifier increased ($P < 0.05$) ADCDM in the treatments with 4% of poultry fat and the blend of oil/fat (74.21 vs 73.11; 75.15 vs 73.37). The AMEn was improved ($P < 0.05$) by 80, 74, and 75 kcal/kg when emulsifier was used in the treatments with soybean oil, poultry fat, and soybean oil/poultry fat. In conclusion, Excential Energy Plus can significantly improve AMEn in diets with soybean oil and/or poultry fat.

Key Words: feed additive, broiler, energy, soybean oil, poultry fat