Emulsifier improves energy utilization in broiler chickens

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The objective 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 soybean oil levels in the starter (14-21d) and finisher (35-42d) phases. Two trials were conducted using mash corn/soybean-based diets with or without inclusion (350g/ton) of emulsifier (Excential Energy Plus) and five levels of soybean oil (0; 1.5; 3.0; 4.5; 6.0%). A total of 960 male Cobb 500 in the starter and 360 male broilers in the finisher phase were allocated (metabolic cages) in a complete randomized design with 10 treatments and 6 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 3.0 and 6.0% of oil had higher values (74.96 vs 72.91; 73.99 vs 72.19). AMEn was improved ($P<0.05$) by 61, 65 and 70 kcal/kg when emulsifier was used in the treatments with 3.0, 4.5 and 6.0% of soybean oil. In the finisher phase, there was no effect ($P>0.05$) for ADCCP. However, emulsifier increased ($P<0.05$) ADCDM in the treatments with 4.5 and 6.0% of oil (76.31 vs 74.14; 74.34 vs 72.38). The AMEn was improved ($P<0.05$) by 81, 87 and 99 kcal/kg when emulsifier was used in the treatments with 3.0; 4.5 and 6.0% of soybean oil. In conclusion, Excential Energy Plus can significantly improve AMEn when higher levels of oil are used in the diets.

Keywords: Feed additive, broiler, nutrient digestibility, energy