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Effect of protected sodium butyrate and nutrient concentration on protein and energy utilization in broilers

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The study was conducted to evaluate the effect of sodium butyrate protected with PFAD sodium salt (GUSTOR N'RGY) and three different nutrient concentration diets on protein and energy utilization in broilers. A 2 x 3 factorial design was used with a basal diet based on wheat, barley and soybean meal with three different nutrient concentrations and with or without additive. There were 6 treatments: CON (3,000 kcal AMEn/kg, 22.02% CP and 11.6 g/kg dig Lys) and CON-1 (CON with a first reduction of 60 kcal AMEn/kg and 2.3% of amino acids, AA), CON-2 (CON with a second reduction of 120 kcal AMEn/kg and 4.6% of AA), N'RGY (CON diet with GUSTOR N'RGY at 1kg/t), N'RGY-1 (CON-1 diet with 1 kg of N'RGY/t) and N'RGY-2 (CON-2 diet with 1 kg of N'RGY/t).
A total of 162 male Cobb broiler chickens, 14 days old, were used in the digestibility study. Birds were placed in digestibility cages with 3 chickens per cage; there were 9 replicates/treatment. Digestibility balance lasted seven days, from 14 to 21 days of age. Total excreta was daily collected and weighed per cage on days 19, 20 and 21, frozen and oven dried. Crude protein retention and gross energy metabolizability (CPr and GEm) were calculated. Data were analyzed by two-way ANOVA using the GLM procedure of SAS.
The inclusion of Gustor N'RGY did not affect CPr (58.87% vs 59.74%, P = 0.617) but improved GEm (69.94% vs 72.55%, P = 0.022). The reduction in nutrients concentration did not produce statistical differences in CPr (P = 0.164) nor in GEm. There were no significant interaction between nutrient concentration and feed additive inclusion.
It can be concluded that the use of GUSTOR N'RGY is able to improve energy utilization in chickens in diets with different nutrient concentration.