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

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## 1. INTRODUCTION

The benefits of the use of protected butyrate on animal health and performance has been widely described in the literature. Mallo et al. (2011) also showed a significant digestibility improvement of energy (5.8%) and protein (4.7%) in broilers adding sodium butyrate at 1 kg/t of feed. It could be explained by the better development of the intestinal epithelium showing an increased intestinal surface

**OBJECTIVE:** To evaluate the effect of **GUSTOR N'RGY** (sodium butyrate protected with sodium salts of palm fatty acids distillates) and three different nutrient concentration diets on protein and energy utilization in broilers

## 2. MATERIAL AND METHODS

**Animals:**

162 male Cobb broiler chickens (14 days old) distributed in digestibility cages (3 chicks/cage) and 6 experimental groups (n=9)

**Treatments:**

A 3 x 2 factorial design was used with a basal diet based on wheat, barley and soybean meal

- Three different nutrient concentrations
- With or without additive (**GUSTOR N'RGY** at 1 kg/t)

| Nutrients concetration | No additive | Additive |
|---|---|---|
| **Standard:** 3,000 kcal AMEn/kg; 11.6 g/kg dig Lys | CON | N'RGY |
| **Reduction 1:** - 60 kcal AMEn/kg; -2.3% of AA | CON -1 | N'RGY -1 |
| **Reduction 2:** -120 kcal AMEn/kg; - 4.6% of AA | CON -2 | N'RGY -2 |

**Experimental procedure:**

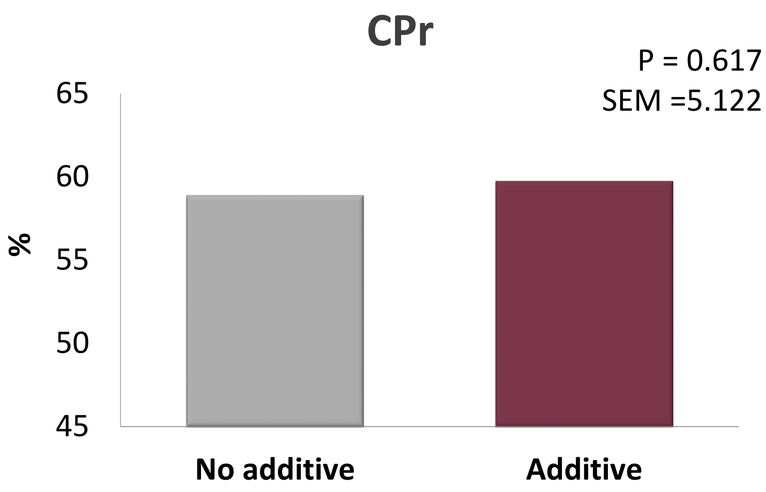
Digestibility balance lasted 7 days, from 14 to 21 days of age

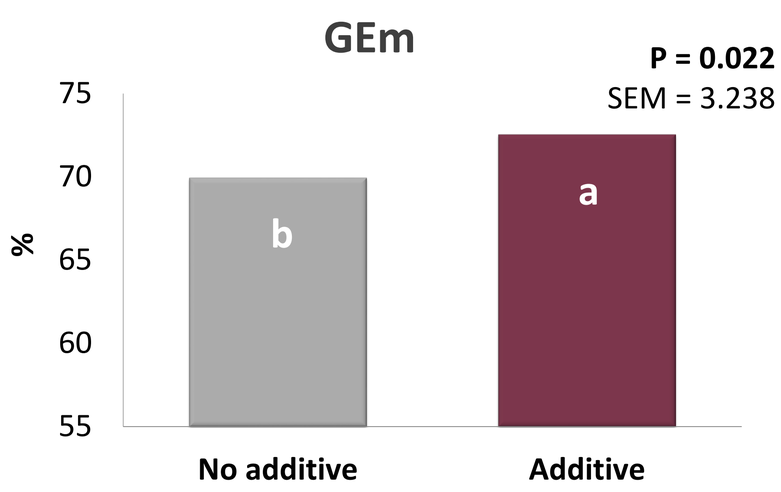
Total excreta was daily collected and weighed per cage on days 19, 20 and 21

Crude protein retention (CPr) and gross energy metabolizability (GEm) were calculated

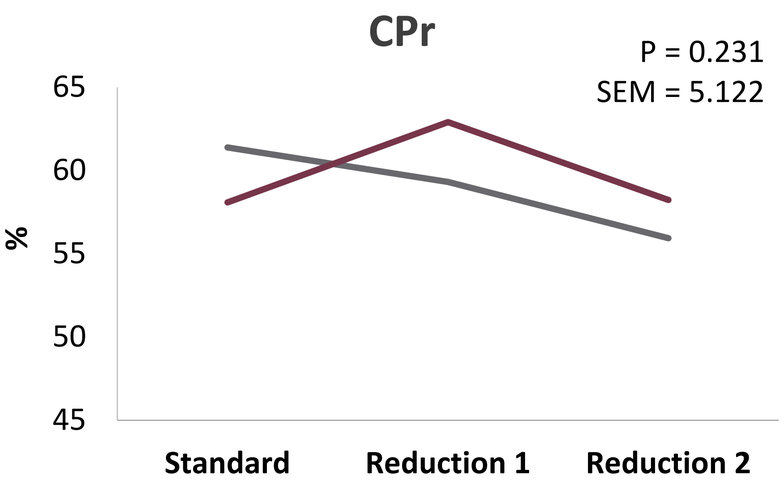
## 3. RESULTS

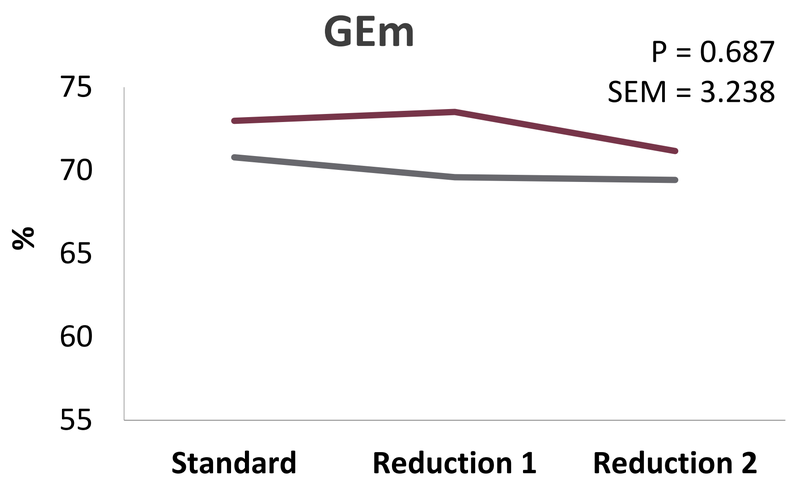
### 1) Additive effect




### 2) Interaction effect




Results were analyzed by one way ANOVA using GLM procedure of SSPS v. 19.0, with the initial BW as a covariable

[a,b] different letters means statistical differences (P<0.05); [x,y] different letters indicate tendency (0.05 < P < 0.12)

- The inclusion of **GUSTOR N'RGY** did not affect CPr (58.87% vs 59.74%, P = 0.617)
- The inclusion of **GUSTOR N'RGY** improved GEm (69.94% vs 72.55%, **P = 0.022**)
- The reduction in nutrients concentration did not produce statistical differences in CPr nor in GEm
- There were no significant interaction between nutrient concentration and feed additive inclusion

## 4. CONCLUSIONS

It can be concluded that the use of **GUSTOR N'RGY** at 1 kg/t is able to improve energy utilization in chickens in diets with reduced nutrient concentration, achieving similar results as standard diets



NOREL ANIMAL NUTRITION