

GUSTOR N'RGY®

Gustor N'RGY, sodium butyrate protected with sodium salts of palm fatty acids

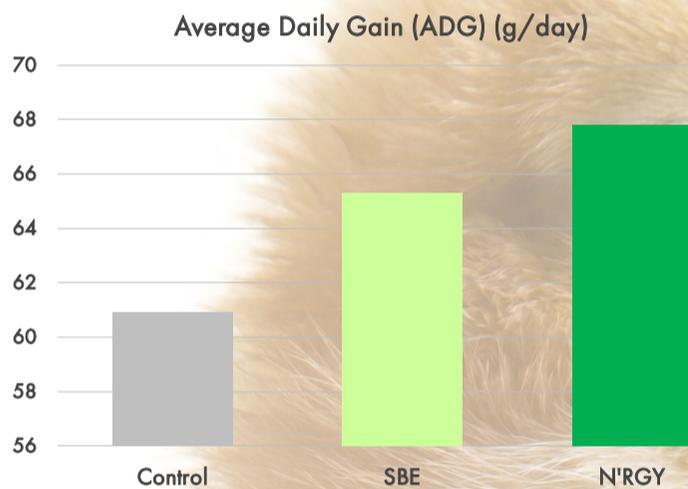
Developed for a healthy and efficient animal production and effective along all the gastrointestinal tract



Protection for optimum efficiency

EFFECT ON PERFORMANCE

Improves Average Daily Gain and gets a better performance



Complete info:

SODIUM BUTYRATE - a new step in a proper protection

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INTRODUCTION

The butyric acid market has evolved in the last years, as there is a wider knowledge about its benefits of use in different species, because of the constant research and the production of the different presentations of the active principle improved, regarding efficiency in the animals and handling. The first generation of acid source sodium and calcium salts has the main advantage of containing a high level of butyric acid, but their main drawback is a strong and persistent smell. These products can also have caking problems in presence of moisture, and, more importantly, once ingested, the butyrate salt is quickly absorbed by the enterocytes, so the activity is limited to the upper part of the digestive tract.

In the second generation of butyrates, the so-called coated butyrates, palm stearin is used to trap the active ingredient. Even if the issues of smell and caking are solved, using the coating technology has a low percentage of sodium butyrate and requires a higher dosage in feed to reach a sufficient level of active ingredient in the animal.

The third generation of butyrates uses a specific fat coating process to protect a higher level of active ingredient, avoiding the smell problems and allowing an effect along the gastrointestinal tract (upper and distal sections) acting as a natural growth promoter and reducing the levels of pathogenic bacteria, especially *Salmonella* (Fernandez-Rubio et al, 2009).

But production with vegetable fat requires an effective lipase activity to release the sodium butyrate. This is especially an issue in young birds, when the fat layers are not easily degraded, being sometimes possible to find the microgranules quite intact in the faeces. The efficacy of such products, mainly second generation, can be therefore questioned. Our R&D department has continued its investigations with the aim of developing a new production to be more efficient source of butyric acid without handling problems. Sodium butyrate protected with sodium salts of palm fatty acid distillates **GUSTOR N'RGY** is the latest addition to the health and performance booster portfolio.

TRIALS

In a trial presented in the European Symposium on Poultry Nutrition 2013, sodium butyrate protected with sodium salt of palm fatty acids **GUSTOR N'RGY** at 3 kg/t and sodium butyrate encapsulated (SBE) with hydrogenated palm stearin at 7 kg/t were compared with a control group (without any additions) on the production of healthy broiler chickens. The broiler receiving **N'RGY** in their feed, had a higher final body weight (345 g, p<0.05) than SBE and control (320 g and 310 g) and better ADG (0.017, 0.018, 0.016, p<0.05) (Figure 1).

Figure 1. Effect of the type of protection (SBE-sodium butyrate encapsulated with hydrogenated palm stearin and N'RGY-sodium butyrate protected with sodium salt of palm fatty acid) on average daily gain (g/day) in broilers

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IMPROVES INTESTINAL HEALTH

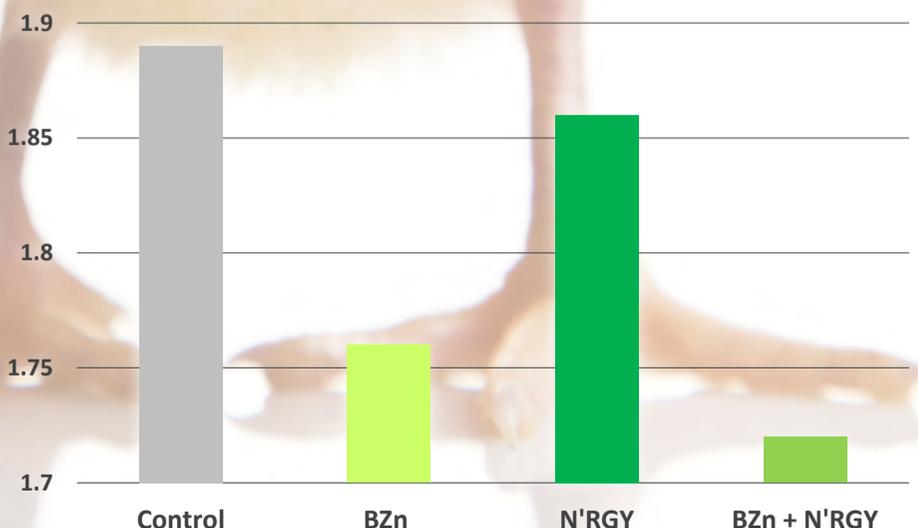
Increases ileum villi length and mucosa thickness

	Villus height (µm)	Crypt depth (µm)	Mucosa thickness (µm)
Control	487 ^b	183	670 ^b
Zn Bacitracin	464 ^b	164	627 ^b
Gustor N'RGY	720 ^a	202	922 ^a
BZN + Gustor N'RGY	589 ^{ab}	219	809 ^{ab}
SEM	57.1	18.9	60.4
P	0.0306	0.2360	0.0182

SYNERGISTIC EFFECT WITH AGP'S

GUSTOR N'RGY®, with or without medication, improves Feed Conversion Ratio (FCR), showing a synergistic effect with Zinc Bacitracin

Feed Conversion Ratio (FCR) (g/g)



Complete info:

Improved broiler performance with a combination of protected sodium butyrate and zinc bacitracin

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INTRODUCTION

Since the early 1950's antibiotics have been widely used in poultry feeds, first primarily to control disease and more recently to promote growth and improve feed conversion. Legislative developments in the European Union and USA, recommendations by the World Health Organization, initiatives taken by the food chain, and consumer concerns, all point to a widespread removal of antibiotic feed additives for animal growth promotion.

Essentially, the main way in which we can reduce our dependence on antibiotic use in animals is the development of alternatives to antibiotics that work via similar mechanisms, promoting growth whilst enhancing the efficiency of food conversion. However, the mode of action of AGPs is not yet fully understood. Different potential mechanisms have been proposed to explain AGP-mediated growth enhancement (Gustors et al., 2002; Doherty and Richards, 2005; Page, 2006). The most accepted mechanism would be through modulation of the gut microbiota, which plays a critical role in maintaining the host health (Frydahl, 2002). Microbiota composition influences the intestinal environment and the development and response of the host immune system against pathogenic and non-pathogenic organisms (Gibson, 1999; Kelly and Collins, 2009).

In evaluating the possible alternatives to subtherapeutic use of antibiotics, it must be considered not only their relative short- and long-term costs but also their ability to produce the same positive effects as the antibiotics. The focus of alternative strategies has been to prevent proliferation of pathogenic bacteria and modulation of indigenous bacteria so that the health, immune status and performance are improved (Ravindran, 2008). It may well be necessary to adopt changes in the management of broilers and also introduce different feed components in order to compensate for the antibiotics effects and maximize production. Genetic improvements in animals and vaccines may also be useful. Therefore, some of the alternatives described below may be part of the solution even though they do not reproduce all the beneficial effects of antibiotics.

ORGANIC ACIDS

Organic acids are not antibiotics but, if used correctly along with nutritional, management and biosecurity measures, they can be a powerful tool in maintaining the health of the GI tract of poultry, thus improving their zootechnical performance. Abdel-Fattah et al. (2001). Organic acids in poultry might be a meaningful tool of controlling enteric bacteria, both pathogenic and non-pathogenic (Harris, 2000; Wolfenden et al., 2003). Due to their antimicrobial effect, organic acids result in inhibition of intestinal bacteria leading to the reduced bacterial competition with the host for available nutrients and diminution in the level of toxic bacterial metabolites. As a result of the decreased bacterial fermentation, protein and energy availability might be improved and thereby ameliorate the performance of broilers. Acids also decrease the pH values in different segments of gastro-intestinal tract which is conducive for the growth of favourable bacteria, hampering the growth of pathogenic bacteria which grow at relatively higher pH.

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