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Effect of dietary sodium diformate in broilers on the productivity index against a positive control

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Introduction: Gastrointestinal diseases pose a serious threat to commercial poultry production. In the past this hazard was controlled by the prophylactic use of antibiotics. Since the EU ban on antibiotic growth promoters (AGP) in 2006, which led other markets to consider similar steps, new strategies against gastrointestinal diseases in livestock have been developed. Organic acids and their salts are commonly used to suppress gastrointestinal disorders. Potassium diformate for instance, is the first substance with EU-approval as a non-antibiotic growth promoter for pigs. In a new commercial study, sodium diformate (NDF) was tested against a positive control (AGP) in order to demonstrate similar effects in poultry.

Material and methods: The trial was conducted under large scale conditions in Ceará, Brazil in 2013 and aimed to test NDF against a commercial broiler diet containing an antibiotic growth promoter (Colistin). Feed and water were available *ad libitum*. Around 500,000 one day old birds from 33 different houses were included in the study and were compared to the same number of birds (from the same houses) and their subsequent performance from the previous year. Performance data were measured at the end of the trial and the European Broiler Index (EBI) calculated as:

EBI = ADG [g] × Survival [%] / (10 × FCR)

The average growth period was 45 days. The positive control group used 60 g Colistin per t of feed for the first 21 days, while the treatment group added 0.1% NDF during the same time period. EBI data were analysed using the t-test. The results are given as mean ± SD with a confidence level of 95%.

Table 1: Productivity index of broilers fed with or without sodium diformate (NDF)

	Positive control	0.1% NDF	P-level
EBI*	266±15	279±27	0.006
max. EBI	297	331	n.d.**
min. EBI	232	237	n.d.
EBI >300 [n]	0	10	n.d.

*EBI: European Broiler Index
**n.d.: not determined

Results and conclusions: EBI in the houses with 0.1% NDF was increased by 5.1% (P=0.006) – Table 1. Due to the inclusion of sodium diformate, EBI in 10 out of 33 houses reached a value above 300 (max. 331), whereas the Colistin-treated houses attained only a maximum EBI of 297 – Figure 1.

These findings lead to the conclusion that the addition of 0.1% sodium diformate considerably improves overall broiler performance, combining effects on daily gain, survival and feed efficiency, even when compared to the use of an AGP.

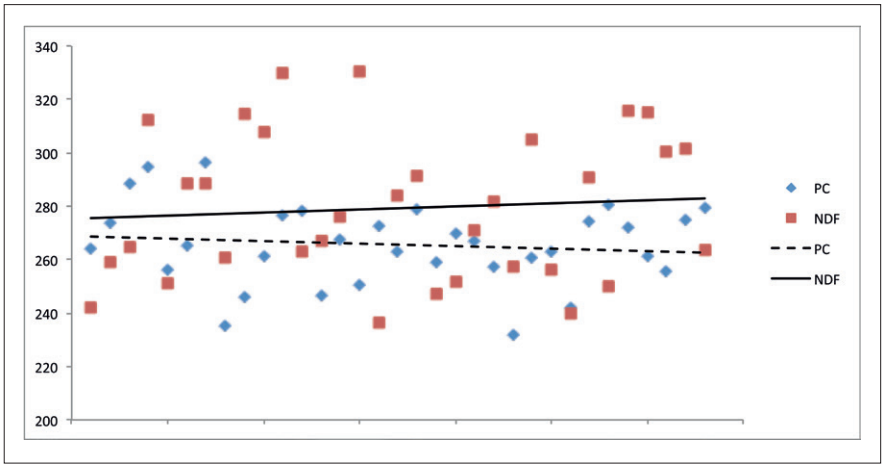

Figure 1:
EBI of broiler fed with or without NDF