

# Magnesium fumarate combined with hops can reduce cannibalism in weaner pigs



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## Introduction

Stress-reducing feed ingredients are meant to be an additional approach to mitigate cannibalism in pig production, besides more fundamental changes in housing system and stocking density. Goal of the study was to evaluate the effectiveness of a feed additive (Anta®Phyt-Mg from Dr. Eckel Animal Nutrition, Niederzissen, Germany) made of highly bioavailable Magnesium sources and a special sources of hops on the incidence and severity of cannibalism in weaner pigs.

## Material & Methoden

In a 2x2 factorial design 80 weaned pigs of a Pi × (DL × DE) breed (28 days old, 8.5 kg average body weight, mixed sex) were grouped along the two factors tail length (long-tail vs. short-tail) and feed additive (without vs. with). Each treatment group of 20 animals was kept in 2 pens of 10 animals each. Pigs were evenly distributed to the four experimental groups and stayed in the trial for 6 weeks (target weight 28 kg). The feed additive was included at a dosage of 4 kg/t. Magnesium content of the final feed was 2.2 g/kg in the standard diet and 2.8 g/kg in the experimental diet. In order to measure cannibalism (caudophagy), a scoring system was used based on 4 criteria (lesions, bleedings, swelling, tail loss). All scoring was done by the same person. To assess the stress level of the animals, cortisol content of saliva of two pigs per pen was measured at 3 sampling time-points. In order to account for natural inter-individual differences between initial cortisol, the relative increase between the first and the last measurement was used as variable of interest.

## Results

Signs of cannibalism occurred in both dietary groups, but to a lesser extent in the treatment group. During the first 2 weeks hardly any signs of cannibalism were detectable. Swellings and bleedings start to increase markedly from week 3 onwards. Partial to complete losses of the tail started to occur from the 4th week onwards. After 6 weeks most pigs showed swellings in the tail region independent of the treatment (control 95%, treatment 93%). Bleedings were present in animals without feed additive twice as often compared to animals of the treatment group (53% vs. 23%). Severe to complete tail losses were slightly reduced in the treatment group (30% vs. 25%). Lesions of grade 2 or 3 were present in 23% of the pigs in the control group but only in 8% of the pigs in the treatment group.

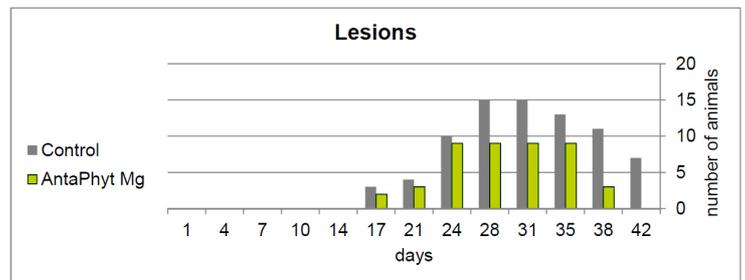


Figure 1. Occurrence of lesions (grade 2 or 3 of 3) in long-tail pigs in the course of the feeding trial separated by treatments.

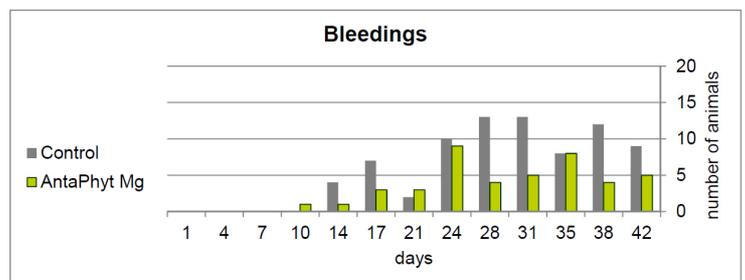


Figure 2. Occurrence of bleedings in long-tail pigs in the course of the trial separated by treatments.

## Conclusions

In conclusion, the study results support our hypotheses that the feed additive (Anta®Phyt-Mg) composed of hops substances and highly bioavailable magnesium is able to reduce signs of cannibalism in young pigs. To our knowledge is the first time a feed additive for pigs showed direct effect on behavioral aspects of animal welfare. Such a feed additive could be part a pig farms larger strategy to implement more animal welfare. Further research is needed to clarify if the calming effect can be achieved in other animal categories (fattening stage, boars, sows) as well.