VETERINARY PUBLIC HEALTH

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EFFECT ON MEAT JUICE EVOLUTION OF SALMONELLA IN MULTISITE PRODUCTION USING *CLOSTRIDIUM BUTYRICUM* (MIYA-GOLD® S) 0-30 KG

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Introduction

Via a controlled field trial, the effect of a probiotic, *Clostridum butyricum,* on the Salmonella level (the danish classicication system) was examined.

Material and Methods

A field farm, with Salmonella level 2 (The Danish threshold for financial deduction – 2 % of carcass value) was selected. According Danish standards, sampling is done ad random at the slaughterhouse at a frequency of 60-100 pigs/year. All Salmonella meat juice samples with an percent optical density (OD%) >10 are considered positive. As a treatment with *Clostridium butyricum* (dosage 2.5 x 10^5 CFU / g feed) was added to all piglet and fattening pigs diets, starting the 1st week of January 2017. Salmonella OD% values were observed. All pigs slaughtered from 01/01/2017 till 31/05/2017 did not receive *Clostridium butyricum* (period 1 = control group). All pigs slaughtered from 31/05/2017 till 31/08/2017 received *Clostridium butyricum* in the feed from 0-30 kg (period 2 = treatment group).

Results

In the control group, 47 % of samples were positive (15 pigs sampled with 7 being positive). In the Miya Gold® group, the number of positive samples was significantly reduced to 17 % (p=0.04, Fischer´s exact test one-tailed – 29 pigs sampled only 5 positive). A relative risk (RR=2,71) of being Salmonella positive in the control period was observed. The salmonella OD titer mean was 6,7 in the Miya Gold® group vs. 15,8 in the control group (P=0,04, one-tailed t-test). The variance was 132 in the Miya-Gold group vs. 555 in the regular group (P=0,0002, one-tailed F-test).

Discussion and conclusion

Adding *Clostridium butyricum* to the piglets diet helped reducing the number of positive Salmonella samples in the slaugtherhouse. At 31/08/2017, the herd classified back to Salmonella level 1. The significant results can be explained by a combination of batch production (all-in all-out) and *Clostridium butyricum* inclusion in the piglet feed.