

Effect of dietary probiotic supplementation (*Enterococcus faecium* DSM 7134) on the performance of sows

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INTRODUCTION

High performances of the sows increasingly change their intestinal flora. Probiotic bacterial cultures have a regulatory and stabilising function in pig intestines.

The objective of the study was to identify the effects of a continuous probiotic supplementation of sow feeds on the reproductive performance of sows as well as rearing performance of suckling piglets (Fig. 1). *Enterococcus faecium* is licensed throughout the EU for the application in sow feed of all reproductive stages.

MATERIAL AND METHODS

Three long-term trials encompassing two complete reproductive cycles were conducted. Primiparous and multiparous sows of modern crossbreds represented the animal basis. The number of sows varied within each trial (20 to 300). The mean litter size of each experimental group was similar within the respective trial. Gestation and lactating feed was given to the sows, which only differed in the supplementation of the probiotic additive *Enterococcus faecium* DSM 7134 (Lactosan GmbH & Co. KG, Austria) in the experimental group with an inclusion rate of 0.5×10^9 CFU per kg of feed. Creep feeds did not contain any probiotics. Piglets were weaned at 21 or 28 days of age.

RESULTS

Adding *E. faecium* to the diet was proven to have a positive effect on sows' **milk composition**. Milk fat content rose significantly by up to 0.7 MJ ME per kg of milk. This was also beneficial to the performance of suckling piglets. **Live weight gains** among piglets from birth to weaning in two lactations were found to be significantly better in all trials with probiotic treatment than in control animals (+ 6 %). Results show an improvement of the **sows' condition**. Body weight losses of lactating sows were significantly reduced by the supplementation of *E. faecium*. They dropped by 5 kg to 6 kg due to mobilisation of body mass during lactation. Experiments with the **faecal microflora** of the sows illustrated that the intestinal flora also improved. Levels of clostridia in the faecal microflora of sows were reduced more than tenfold by the addition of probiotica. Beneficial lactobacilli stabilising the intestinal flora were stimulated (Fig. 2).

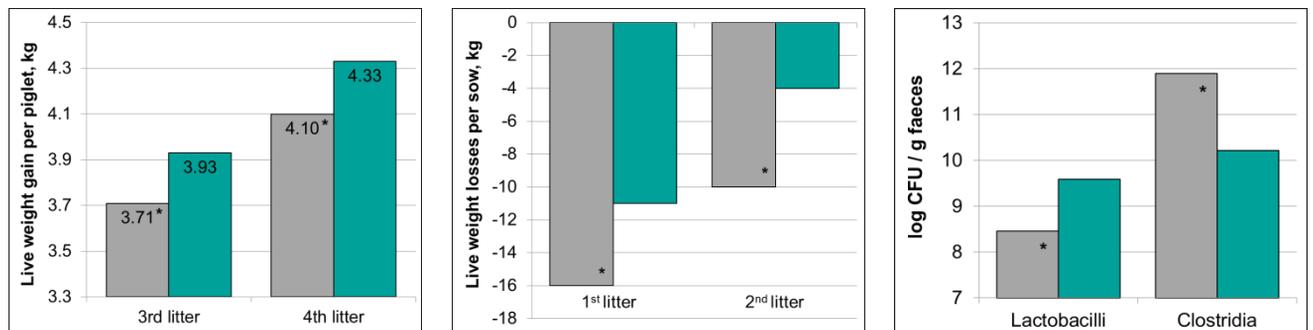


Figure 2: Results of supplementation with *Enterococcus faecium* in sow feeding on the performance of sows and piglets

■ Control ■ E. faecium

CONCLUSION

Rising litter sizes in modern swine production increasingly challenge the sows' health, especially the intestinal health.

Recent trials illustrate multiple positive effects due to the application of *Enterococcus faecium* DSM 7134 in sow feeding. They show that the intestinal health of sows was improved and ensure an outstanding performance throughout the reproductive cycle. The supplementation of probiotica stimulates and stabilises the gastrointestinal microflora.

A better digestion, more effective feed conversion and a higher feed intake are the consequence. Moreover, the very good condition, increased vigour and improved milk composition offer an ideal base for lasting positive effects on sows and subsequent piglets.

Which effects does *E. faecium* have in sow feeding?

Larger litters

- 6 % increase in live weight gains of suckling piglets

Milk composition

- Significant increase in milk fat content
- 0.7 MJ ME more energy per kg of milk
- Higher milk protein content

Sows in better condition

- Live weight loss during lactation up to 6 kg lower

Positive intestinal flora

- Reduces levels of harmful clostridia tenfold
- Stimulates beneficial lactobacilli

Figure 1: Effects of supplementation with *Enterococcus faecium* in sow feeding