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Presan®-FX improves zootechnical and economic performance of grower-finisher pigs at slaughter

Conclusion

Presan®-FX compared to a low dose of benzoic acid in the starter phase of grower-finisher pig diets results in:

- Numerically improved zootechnical performance
- Significantly improved body weight and loin muscle thickness at slaughter
- Increased the value per pig at slaughter by €2.16

A field study was performed to test the effects of Presan®-FX fed during the starter phase on zootechnical performance and slaughter results of grower-finisher pigs compared to a control diet containing the commonly used dose of 0.3 % benzoic acid. The approved dose of benzoic acid in the European Union is between 0.5 % and 1 %.

Does the use of Presan-FX during the starter phase improve the zootechnical performance and carcass characteristics of grower-finisher pigs better than benzoic acid?

Numerical improvements of zootechnical performance parameters were observed for Presan-FX during the starter phase. Pigs fed Presan-FX showed a numerical increase in average daily gain (ADG; +20 g; +2.4 %) and a 1.9 % decrease in feed conversion ratio (FCR; -0.04; Figure 1). Furthermore, the within-pen weight variation on day 42 was numerically reduced by 4.9 % in the Presan-FX group.

The effect of Presan-FX on slaughterhouse performance is shown in Table 1. The pigs fed Presan-FX had a significantly higher body weight (BW) on the same day compared to the benzoic acid group ($p < 0.05$), but were sent to the slaughterhouse 2 days later. Loin muscle thickness was significantly improved ($p < 0.05$) by Presan-FX by 2.3 %. Lean meat percentage and backfat thickness were not significantly different between treatments. Comparing these slaughter results with a payment model from a Dutch slaughterhouse (Compaxo), the difference in slaughter results between the Presan-FX group and the benzoic acid group increased the profit per pig by €2.16 for the Presan-FX group.

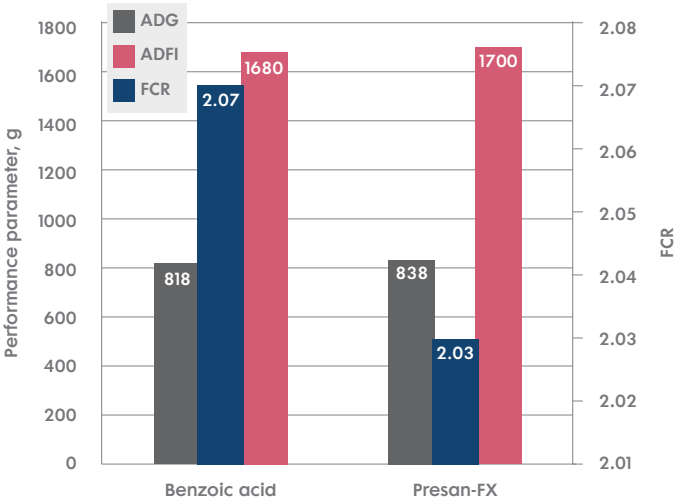

Figure 1. Zootechnical performance of the benzoic acid (0.3%) and Presan®-FX (0.2%) groups of grower-finisher pigs from 25–60 kg
ADG = Average daily gain
ADFI = Average daily feed intake
FCR = Feed conversion ratio

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Materials and methods

In this study, 998 grower-finisher pigs (Topigs 20 x Tempo) were included. Every week one room, containing 14 pens, was filled with 200 pigs. There were 14–15 pigs per pen, and gilts and boars were separated. The pigs were allocated to one of two treatments (Treatment table). According to EU legislation, benzoic acid is approved to be used at 0.5 % and 1.0 %; however, in practice it is often used at 0.3 %. At the end of the starter phase (42 days), the zootechnical performance of the pigs was measured and included ADG, FCR, average daily feed intake (ADFI) and BW. After that, the lightest animals (approximately 30 per pen) were removed from each pen, and the treatments were discontinued due to rearrangement of the animals in the room. At the end of the fattening period, the animals were weighed. Every week, all pigs in the same weight category were sent to the slaughterhouse.

Treatment table

Treatment	No. of animals in performance analysis	No. of animals in slaughter results	Starter (25–60 kg)	Grower-finisher (60 kg – slaughter)
Control	498	373*	Benzoic acid 0.3 %	Standard feed (no additives)
Presan®-FX	500	368*	Presan-FX 0.2 %	Standard feed (no additives)

*The lightest animals (approximately 30 per pen) were removed after the starter phase

Table 1. Slaughter results of grower-finisher pigs in the benzoic acid and Presan®-FX treatment groups

	0.3 % Benzoic acid	0.2 % Presan-FX
Body weight, kg	95.9^{a}	97.2^{b}
Slaughter age, days		
Lean meat percentage, %	59.07	59.00
Loin muscle thickness, mm	64.8^{b}	66.3^{a}
Backfat thickness*	13.97	14.11
Price per pig, € **	€159.19	€161.35
Additional value compared to 0.3 % benzoic acid (€/pig)	-	€2.16

Results with different superscripts (a,b) differ significantly ($p < 0.05$)
*Measured in the slaughterhouse, at 10th rib.
**Calculated with payment model from Dutch slaughterhouse (Compaxo).

Discussion

In this study, the effect of Presan®-FX on zootechnical and economic performance of grower-finisher pigs was compared to a commonly used dose of benzoic acid (0.3 %). Presan-FX showed benefits in zootechnical performance of grower-finisher pigs, which results in a higher value per pig. In addition, the improvements in carcass quality achieve a higher value per pig, calculated with a Dutch slaughterhouse model. In this study, Presan-FX and benzoic acid were only included in the starter feed of grower-finishers. Compensatory growth during the later stage may have affected the results. Besides that, the removal of the lightest animals from the groups after the starter phase may have affected the final body weights measured at slaughter. Additional studies might be needed to confirm the findings of this study. Furthermore, it is recommended to apply Presan-FX during the complete grower-finisher stage to achieve optimal results.

Trial Summary

Animal species: Swine, grower-finisher
Main subject: Zootechnical performance, carcass characteristics
Product: Presan-FX
Inclusion rate: 2 kg/t
Country & year: The Netherlands, 2015-2016
Type of trial: Field trial

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