

Effect of addition of a yeast derivative on piglets' performance during post-weaning period

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Background and objectives

With the restrictions of use of antimicrobial growth promoters (AGP) and zinc oxide (ZnO) in animal feed, it becomes necessary to look for alternative products to control the growth of pathogenic bacteria, keeping animal health and growth performance. Among others we find the yeast based products, whose cell wall components with β -D-glucans, α -D-mannans and nucleotides are considered the agents for their positive effects (Kogan and Kocher 2007; Shen et al 2009; Sauer et al. 2011). A combo of inactivated yeast fractions (Yang[®], Lallemand Animal Nutrition) from 2 complementary species of *Saccharomyces cerevisiae* and 1 strain of *Cyberlindnera jadinii* has shown positive antibacterial effects in vitro (Duniere et al. 2016). The objective of the current trial was to test the effect of the supplementation of Yang to weaning piglets on growth performance especially when they start eating feed without ZnO.

Material and methods

In total, 480 weanling piglets (LW x LD; Duroc) from 4 subsequent batches were distributed in 8 nursery rooms of 4 pens each, in groups of 20 piglets/pen. Piglets were fed a 2-phase feeding program (prestarter from weaning until 21 days post-weaning; starter between days 22 and 55) and had free access to feed and water. Pens were randomly allocated to 2 treatments: Control (CON; standard post-weaning diets), and Yeast (Y; CON + 800 g/ton and 400 g/ton of test product in prestarter and starter, respectively). Prestarter feeds were medicated with 2400 ppm ZnO. The following measurements were recorded: individual body weight, feed intake per pen, mortality, and daily diarrhoea score per pen. Data were submitted to ANOVA in SPSS Statistics 22.0 (IBM), with batch, treatment and their interaction as main effects. The experimental unit was the pen.

Results

There were significant differences in final body weight (FBW; $P < 0.01$), average daily gain (ADG) during starter and overall ($P < 0.05$), and feed conversion ratio (FCR) during starter, with Y-piglets showing higher BW (30.4 vs 31.6 kg), faster growth (449 vs 470 g/d overall), and lower FCR (1.66 vs 1.58). Furthermore, the piglets in Y tended to grow faster (240 vs 255 g/d) and eat more (350 vs 382 g/d) in prestarter ($P < 0.1$). During the trial, diarrhoea occurred in all the batches and pens around 4-5 days after the switch to the starter diet.

Conclusion and discussion

The multi yeast strains product better supported piglet's growth in the Starter compared to Prestarter. ZnO removal during starter may explain the greater challenge of piglets since prestarter ZnO use may have caused gut dysbiosis (Broom et al. 2006; Starke et al. 2014), that was no longer controlled in ZnO free diet. However, Y-piglets better cope with the absence of ZnO. It is concluded that the addition of the yeast derivative in the post-weaning diets improves piglet performance, and it is an interesting tool alongside with other strategies to replace the pharmacological doses of ZnO in the feed.

References

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