

## Phytogenic feed additive as alternative to zinc oxide in post-weaning piglets

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### Background and objectives

During the early post-weaning period, dietary and physiological changes cause high susceptibility of piglets to a loss in growth performance. Especially enterotoxigenic *Escherichia coli* are a common cause for post weaning diarrhea (Dubreuil et al., 2016). Feed supplementation with pharmacological levels of zinc oxide (ZnO) is a widely used method for prevention of porcine colibacillosis (Hill et al., 2001). As the EU Commission decided in 2017 to phase out pharmacological ZnO until 2022 (Commission Implementing Decision of 26.6.2017, C(2017) 4,529 Final), there is demand for alternatives to support piglets' health and growth performance during the critical post weaning period. Phytogenic feed additives (PFA) are in discussion as possible substitute. Therefore, in the present study the effect of a PFA on growth performance on post-weaning piglets is compared to ZnO supplementation.

### Material and methods

682 healthy weaned piglets [(Large White x Landrace) x Pietrain] of both sexes at ~26 days of age were allocated to 62 pens (11 piglets each, 31 pens per treatment) based on body weight, litter and gender. Two feeding phases were used with basal diets based on barley, wheat, corn and soybean meal. In phase 1 (day 0-14), piglets in T1 received a basal diet supplemented with 3000 ppm ZnO and in phase 2 (Day 15-42) an unsupplemented basal diet. Animals in T2 received a basal diet supplemented with 1000 ppm PFA (Fresta® Protect, Delacon Biotechnik GmbH) during both phases.

### Results

During phase 1, no differences in BW, average daily gain (ADG) or feed conversion ratio (FCR) were observed ( $P>0.1$ ). A tendency for higher average daily feed intake (ADFI) was observed with T2 compared to T1 ( $P=0.076$ ). Furthermore, no differences ( $P>0.1$ ) could be observed for all growth performance parameters, mortality, culled animals and animals receiving medication during the whole trial period of 42 days.

### Conclusion and discussion

Overall, the lack of differences on all recorded parameters indicates a similar effect on growth performance of piglets after supplementation of feed with 3000 ppm ZnO during the first two weeks post weaning or the tested PFA. Therefore, it can be concluded that this type of PFA might offer a valuable alternative to ZnO in supporting piglets during the critical time post-weaning.

### References

- Dubreuil, J., Isaacson, R. & Schifferli, D. 2016. Animal Enterotoxigenic *Escherichia coli*. EcoSal Plus 7(1). Doi:10.1128/ecosalplus.ESP-0006-2016.
- Hill, G.C., Mahan, D.C., Carter, S.D., Cromwell, G.L., Ewan, R.C., Harrold, R.L., et al. 2001. Effect of pharmacological concentrations of zinc oxide with or without the inclusion of an antibacterial agent on nursery pig performance. Journal of Animal Science 79, 934–941.