

## The inclusion of Spray-dried Porcine Plasma or Zinc Oxide in pig diets at weaning on growth performance

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**Introduction:** Many studies have demonstrated an improvement in piglet performance with the use of spray-dried porcine plasma (SDPP) in feed. These studies reported that SDPP reduces the incidence of post-weaning diarrhea and greater efficacy of SDPP has been described in younger pigs which have a less mature immune system or in pigs kept under less sanitary conditions. Therefore, SDPP is considered a viable alternative to antibiotic growth promoters and to zinc oxide (ZnO) used at pharmacological levels (Pérez-Bosque et al., 2016). The objective of this study was to test the effect of feeding SDPP or ZnO or the combination of both on growth performance of weanling pigs

**Material & Methods:** The study was conducted in a French experimental pig farm normal stressing conditions. Weaned pigs (25 d old; 7.0 kg BW) were fed during first 7 d with either 0, 5% SDPP or 2500 ppm ZnO or a combination of 5% SDPP and ZnO and 0, 3% SDPP or 2500 ppm ZnO or a combination of 3% SDPP and ZnO during following 11 d. There were 8 replicate pens per trt (17 pigs/pen; 136 pigs/group). Iso-energetic and Iso-lysine diets (1.66 and 1.46% respectively for pre-starter and started diets) were used between treatments. Piglets were fed *ad libitum* during the entire study.

**Results and Discussion:** No effect on mortality and number of days with diarrhea was observed between treatments. The below table reports the performance results obtained during the 18-d study.

	Control	SDPP	ZnO	SDPP + ZnO
BW initial	6.9	7.0	7.0	7.0
BW final	13.2 <sup>b</sup>	13.6 <sup>a</sup>	12.7 <sup>c</sup>	12.7 <sup>c</sup>
ADG, g	347 <sup>ab</sup>	370 <sup>a</sup>	316 <sup>b</sup>	320 <sup>b</sup>
ADFI, g	378 <sup>ab</sup>	403 <sup>a</sup>	357 <sup>b</sup>	366 <sup>b</sup>
FCR	1.09	1.09	1.13	1.15

<sup>a,b</sup> Means in a row that do not have a common superscript differ ( $p < 0.05$ ).

Pigs fed with SDPP had improved BW compared with pigs in the other treatments and increased average daily gain (ADG) and average feed intake (ADFI) compared with treatments containing ZnO. However, the inclusion of ZnO significantly reduced the feed intake and therefore the ADG and performance of the animals. The addition of SDPP in conjunction with ZnO did not change the negative effect of ZnO in consumption. No differences in feed conversion were found between treatments.

**Conclusions:** Under normal sanitary conditions, sometimes, the addition of ZnO at high level could have negative effect on pig performance due to its reduction in feed intake, however, the use of SDPP improved growth performance during this period.

**References:** Pérez-Bosque et al., 2017. *Porc Health Manag* 2:16. DOI 10.1186/s40813-016-0034-1.