

Spray-dried Porcine Plasma is a consistent alternative to Zinc Oxide in weaned pig diets - A review

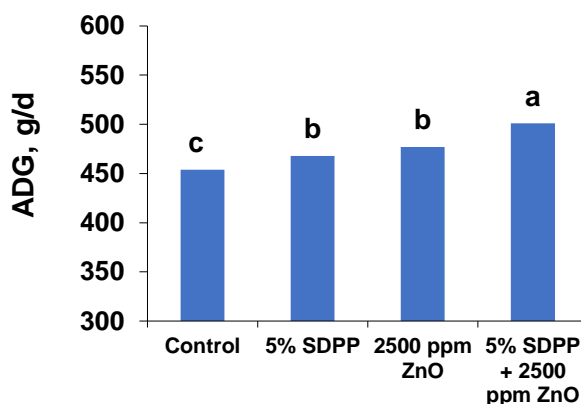
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Introduction

High levels of zinc oxide (ZnO) are commonly used in nursery pig diets to manage the effects of pathogenic *E. coli* on pig growth and health. The EU recently established regulations to restrict use of ZnO at high levels in pig feed within 3 years due to concerns on environmental pollution and the prevalence of antibiotic-resistant pathogens. Supplementing nursery pig feed with spray-dried plasma (SDP) is a viable option for replacing use of ZnO in feed to manage pathogenic *E. coli*.

SDP can substitute ZnO in weaned pigs

(Danish Pig Production, 2009). Weaned pigs (7.1 kg BW) were fed with either 0, 5% SDPP or 2500 ppm ZnO or a combination of 5% SDPP and ZnO for 14 days and control diet until they averaged 30.5 kg. There were 42 replicate pens per trt (364 pigs/group). Both SDPP and ZnO improved growth compared with control treatment and there was an additive effect when both products were used together.



SDP supports growth of weaned pigs infected with *E. Coli* as effective as ZnO (Owusu-Asiedu et al., 2003). Ten d old weaned pigs were fed experimental diets for 14 d. At d 7 pigs were infected with *E. coli* K88. Pigs fed diets with SDP compared to diets with 2,880 mg/kg ZnO during the initial two weeks post-weaning had similar average daily gain (ADG) and performance. In addition, diarrhea scores 24 hours after *E. coli* infection were less severe for pigs fed diets with SDP or ZnO compared to the control diet. Pig mortality was significantly lower for pigs fed diets with SDP or ZnO compared to the control diet.

Parameters	Control	SDP	ZnO
Scours scores ¹ at 24h after <i>E. coli</i> K88 challenge	2.7 ^a	2.0 ^b	1.9 ^b
Mortality, %	40.0 ^a	6.6 ^b	13.3 ^b

¹Scours scores: 0, normal; 1, soft feces; 2, mild diarrhea; 3, severe diarrhea

^{a,b} Means in a row that do not have a common superscript differ ($p < 0.05$).

Conclusions

SDP is a viable option for replacing use of pharmaceutical levels of ZnO in nursery pigs, even under enteric challenging conditions.

SDP is an environmentally friendly, natural feed ingredient that does not promote development of antibiotic resistant pathogen.

References: Danish Pig Production, 2009. Report 846; Owusu-Asiedu et al., 2003. *J. Anim. Sci.* 81:1790-1798.