

Feeding trial

Weaning without ZnO: HP 300 can replace SDPP in nursery diets



Summary

The ban on the use of pharmacological levels of zinc oxide (ZnO) in nursery diets calls for alternative nutritional strategies when pigs are weaned. In practice, this is often addressed by including 3-5% spray-dried porcine plasma (SDPP) in the diets. SDPP contains immunoglobulins, is highly palatable and may help piglets respond better to pathogenic challenges after weaning, making it a valuable protein source. However, SDPP is a costly ingredient and not readily available everywhere. Furthermore, the use of SDPP may pose a risk for biosecurity as the introduction of SDPP has coincided with entry of porcine epidemic diarrhea virus (PEDv) in some farms. Even though, science

is not convinced whether this was related to SDPP, reasonable doubt exists, and producers prefer to be safe. HP 300 can be used as an alternative high-quality protein source for nursery piglets which is readily available, does not pose a threat for biosecurity and is cheaper than SDPP. In the present trial, replacing SDPP by HP 300 in the creep feed and the pre-starter feed resulted in similar performance of pigs while reducing the feed cost. Thus, HP 300 represents a viable tool to feed nursery pigs diets without pharmacological levels of ZnO.

Objective(s)

To evaluate performance of piglets when SDPP was replaced by HP 300 in the creep feed and the first nursery diet (D7-21), both free of zinc supplementation.

Results

- Replacing SDPP with HP 300 in nursery diets resulted in similar BW after the creep feed (D7) and the pre-starter feed (D21) periods (figure 1). This also showed as similar growth of both groups in both periods (table 1).
- HP 300 in creep feed and pre-starter feed resulted in similar feed intake as SDPP suggesting that HP 300 is a highly palatable protein source (table 1). Likewise, HP 300 resulted in similar FCR as SDPP.
- Mortality was low in both the HP 300 and the SDPP supplemented groups and no differences between groups were observed.
- The high performance of the HP 300 group is most likely due to the low content of soy anti-nutritional factors and the readily available protein.



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HP 300 results in similar BW as SDPP in diets without ZnO

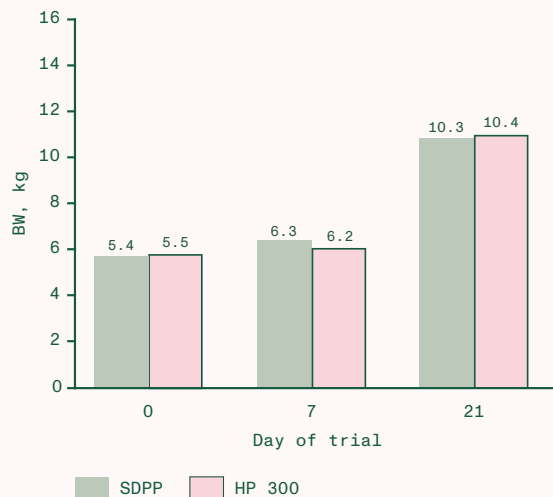


Figure 1 Body weight (BW, kg) of pigs fed standard nursery diets without ZnO but with SDPP or HP 300 in the creep feed (D0-7) and the pre-starter feed (D7-21).

HP 300 in nursery diets without ZnO results in similar performance as SDPP

Table 1 Productive performance of pigs fed standard nursery diets without ZnO but with SDPP or HP 300 in the creep feed (D0-7) and the pre-starter feed (D7-21).

	SDPP	HP 300
D0-7		
ADG, g/pig/day	124	114
ADFI, g/pig/day	179	164
FCR	1.55	1.47
Mortality, %	0.49	0.49
D7-21		
ADG, g/pig/day	288	296
ADFI, g/pig/day	370	370
FCR	1.32	1.28
Mortality, %	0.49	0.98

ADG: average daily gain; ADFI: average daily feed intake; FCR: feed conversion ratio.

Materials and methods

612 nursery pigs (DANBRED x PIETRAIN; mixed sex; 5.48 ± 0.43 kg) were used. Dietary treatments:

- Standard commercial nursery diet (no zinc oxide (ZnO) supplementation) containing 6% spray-dried porcine plasma (SDPP) (D0-7) and 1% SDPP (D7-21)
- Standard commercial nursery diet (no ZnO supplementation) containing 6.9% HP 300 (D0-7) and 1% HP 300 (D7-21).

The creep feed (D0-7) and pre-starter feed (D7-21) were formulated to be iso-energetic at 2500 kcal and 2490 kcal NE_{swine}/kg, respectively and to contain 1.30% and 1.27% digestible lysine, respectively.

There were 12 replicates per treatment.

Location: Commercial research facility, Spain, 2021.

The results of this study are presented at the Zero Zinc Summit in Copenhagen, Denmark, 2022.

