

# Effect of two sources of Zn at different doses on growth performance in nursery piglets

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## Introduction:

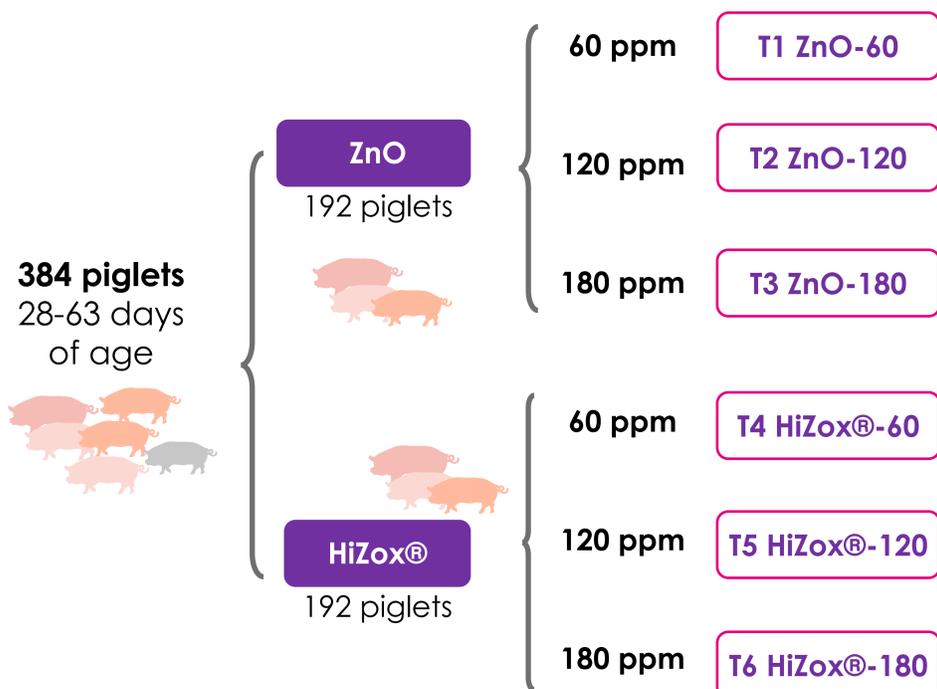
**Zinc oxide (ZnO)** supplementation in diets of weaned piglets is a current practice which **improves growth performance**. However, the possibility of reducing those levels without having negatives effects on performance and health should be studied.

Therefore, **new Zn formulations, more bioavailable** for the animals and applied at **lower dosages** are being developed to reduce the dietary zinc levels without affecting performance.

**The objective** of the study was to evaluate the efficacy of a potentiated ZnO source (HiZox®, Animine, France) compared to a conventional ZnO source in piglets' diets.

## Materials and Methods:

A 2x3 factorial block design was applied: the effect of 2 sources (ZnO vs. HiZox®) and 3 doses (60, 120 and 180 ppm) of zinc, resulting in 6 experimental treatments (28 pens/treatment; 8 pigs/pen).



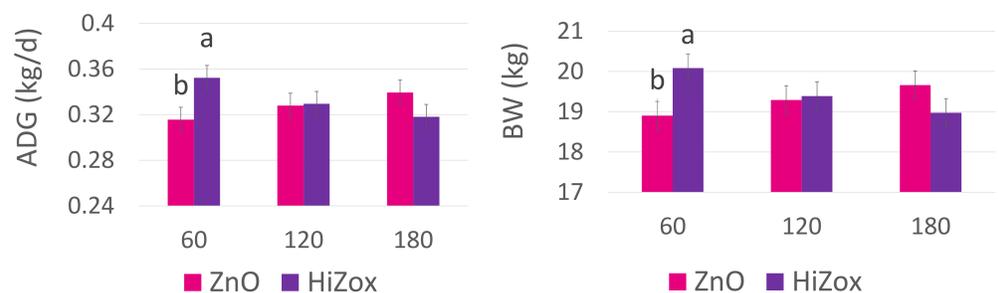
Performance and clinical signs were studied in prestarter, starter and in the whole nursery period.

Performance data were analyzed using the MIXED procedure of SAS. Mortality and presence of diarrhea were analyzed as binary variable, using the chi-square test.

## Results:

A source x dose effect ( $P < 0.05$ ) was obtained both in average daily gain (ADG) for the whole nursery period and in final body weight (BW), which at 60 ppm were higher in HiZox® than in ZnO piglets. However, these differences were not observed at higher doses.

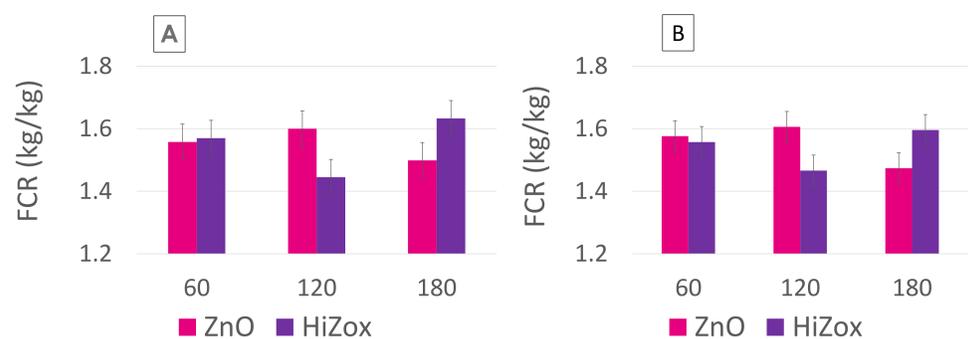
Figure 1. ADG and final BW of whole nursery phase



Average daily feed intake was not affected ( $P > 0.05$ ) by the dose nor by the source.

At 60 ppm, feed conversion ratio (FCR) did not differ in terms of sources both starter and whole phase. However, at 120 ppm HiZox® presented lower FCR than ZnO, whilst at 180 ppm ZnO presented higher FCR than HiZox® ( $P_{\text{source} \times \text{dose}} < 0.05$ ).

Figure 1. FCR during starter (A) and whole nursery phase (B)



Source did not affect presence of diarrhea; but Zn supplemented at 180 ppm decreased diarrhea scores compared with lower doses ( $P < 0.05$ ). Neither source nor doses affected mortality rate ( $P > 0.05$ ).

## Conclusions:

Under our field conditions, **more bioavailable sources of zinc** would **allow to reduce** the dietary zinc supplementation up to **60 ppm** without affecting **growth performance** of weaning piglets.



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