

# Effects of HiZox® on gut integrity of weaned piglets

## Place

Ghent University (Belgium)

## Objective

To evaluate the effect of zinc oxide source and dosage on weaned piglets.

## Material and method

**Animals:** 32 piglets weaned at 21 days, 2 piglets/pen, 4 pens/treatment

**Diet composition:** Wheat, barley, corn SBM; CP 18 %

**Experimental diets:** Standard ZnO – 110 ppm of Zn (NC)  
 Standard ZnO – 2400 ppm of Zn (PC)  
 HiZox® – 110 ppm of Zn (HiZox 110)  
 HiZox® – 220 ppm of Zn (HiZox 220)

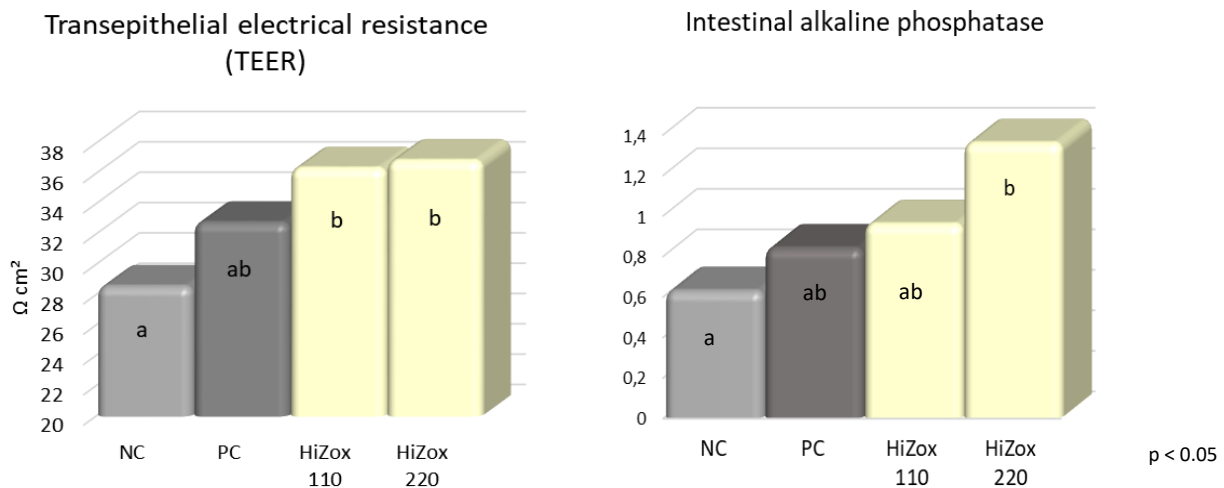
**Measurements:** At 14 days, intestinal mucosa (distal jejunum) was removed.

Transepithelial electrical resistance (TEER) was measured in Ussing chambers and mRNA expression of some genes (including intestinal alkaline phosphatase) were quantified by qPCR.

## Results

TEER was higher in groups fed HiZox® or the standard ZnO at pharmacological dosage, showing a better integrity of the tissue. Differences were significant with HiZox® at low level (110 or 200 ppm of Zn) and numerical with PC.

Additional measurements showed that HiZox® at highest level significantly increased mRNA expression for intestinal alkaline phosphatase ( $p < 0.05$ ).



## Conclusion

HiZox® fed piglets had improved intestinal barrier function at 110 ppm supplemented (legal dosage in the European Union) or at higher dosage.