

# WEANED PIGLET MORTALITY AND ANTIBIOTIC TREATMENT REDUCTION IN A BELGIAN PIG FARM BY VACCINATION WITH VEPURED®

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## BACKGROUND & OBJECTIVES

Oedema Disease (OD) is an enterotoxaemia caused by certain *Escherichia coli*'s (*E. coli*) colonizing the small intestine and producing verotoxin 2e (Vt2e)<sup>1</sup>. This enterotoxaemia might result in acute mortality, nervous symptoms, respiratory distress and growth retardation. Also, the disease is one of the reasons for prophylactic antibiotics treatments or the use of zinc oxide at weaning. In this study, the effect of piglet vaccination on mortality and antibiotic treatment was monitored in a Belgian multi-site farrow to finishing farm.

## MATERIAL & METHODS

The study was performed in a 5-week batch system farm with 300 sows. Historically mortality in this farm was high (5% or more), especially the first week after weaning at 21 days of age. In May and June 2018 several bacterial cultures were performed on swabs of the small intestines collected during necropsy. In addition, several oral fluids from 6 different pens were collected from piglets 2 weeks post-weaning<sup>2</sup>. As the presence of Vt2e carrying *E. coli*'s was confirmed, it was decided to start VEPURED<sup>®3,4</sup> vaccination (1ml IM) of piglets between 3-5 days of age in July 2018. The mortality and antibiotic treatment was compared for 3 non-vaccinated groups with 3 vaccinated groups. Statistical analyze was performed on the control and vaccinated group weaned in July by a proportion test with the software R, version 3.5.1.

## RESULTS

The bacterial cultures revealed the presence of high numbers of *E. coli*'s and hemolytic *E. coli*'s as well as *Streptococcus suis* and *Clostridium spp* to a lower degree. Samples were negative for *Salmonella*. The qPCR targeting the Vt2e gene in the oral fluids confirmed the presence of the OD causing agent in all 6 oral fluids. The 3 groups of in total 2,254 non-vaccinated piglets had an average mortality of 8.76%. In the 3 groups of in total 2,120 VEPURED<sup>®</sup> vaccinated piglets, the average mortality dropped to 0.66% in the nursery period. This difference in mortality was shown to be statistically different for the 2 groups in July ( $p=3.926 \cdot 10^{-6}$ ).

All groups received tylosine at 15 mg/kg during 14 days after weaning. The non-vaccinated piglets however also were treated with amoxicilline 20mg/kg for 14 days, paromomycin sulfate 25 mg/kg for 8 days and zinc oxide.

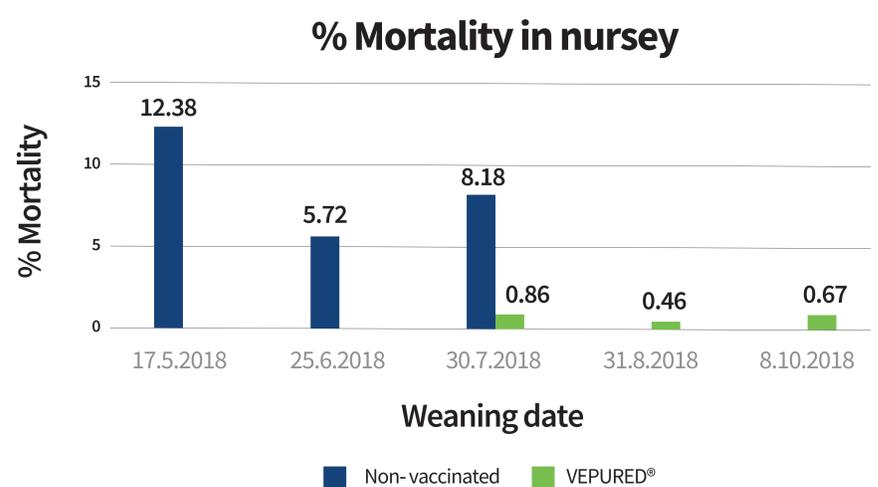


Figure 1. Mortality in the nursery period for non-vaccinated versus vaccinated piglets.

## DISCUSSION AND CONCLUSION

The mortality on this farm was statistically significant reduced by vaccination of the piglets with VEPURED<sup>®</sup>. Apart from reducing mortality, the vaccination could also be a useful tool to reduce high antibiotic consumption in farms with clinical oedema disease outbreaks and help to overcome the ban on the use of zinc oxide in Belgium in December 2020.

## REFERENCES

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