

Influence of Quorum Sensing Inhibition (QSI) on Neonatal Diarrhoea in Piglets – A Case Report

Reducing neonatal diarrhoea through bacterial communication disruption

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Objective

Evaluate whether QSI supplementation (Control Liquid™) reduces neonatal diarrhoea and mortality in a commercial sow herd.

Background

- ◆ The herd experienced diarrhoea in **>60%** of litters and **>20%** pre-weaning mortality.
- ◆ Neonatal diarrhoea causes major economic losses in pig production.¹
- ◆ New approaches to reduce bacterial virulence and neonatal diarrhoea with less antibiotics are needed.²

Materials & Methods

650

Danish Genetics

Week Batch System¹

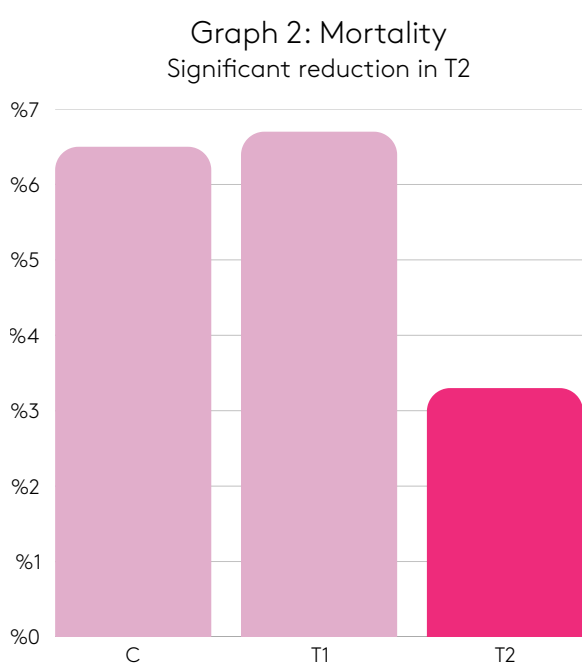
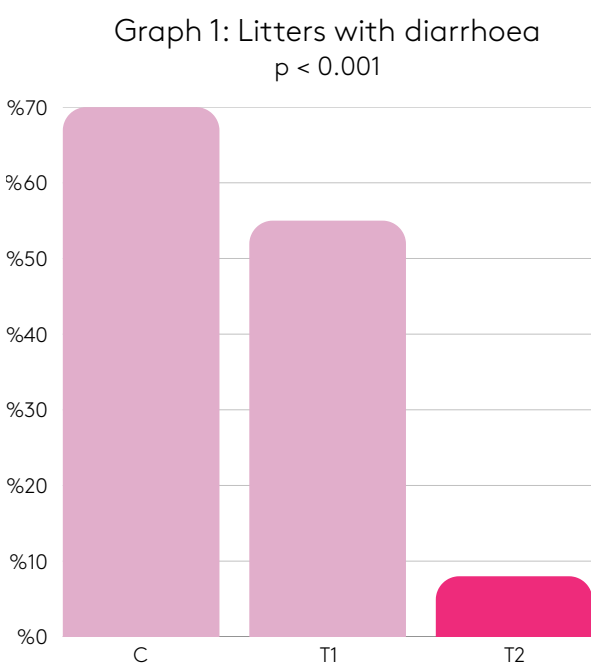
Location

Data Collection

- ◆ Diarrhoea incidence: Day 1–3
- ◆ Mortality: Day 3

Data and Results

Group	Litters	Treatment
C	23	No Treatment
T1	27	Cephalosporin day 1
T2	131	Cephalosporin + QSI (birth + day 2)

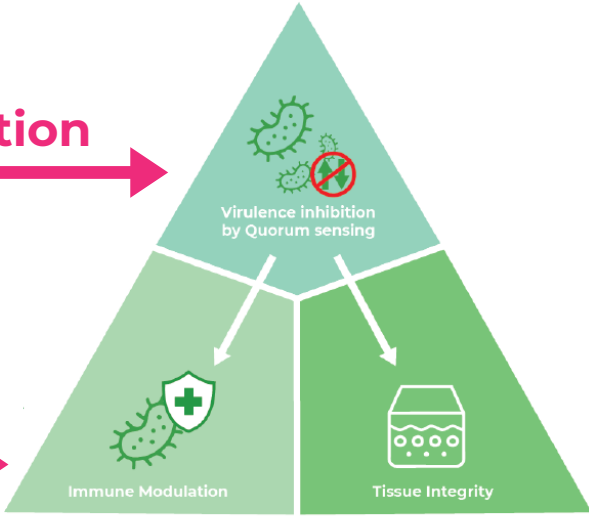


Conclusion

A holistic, interdisciplinary concept addressing management and infectious factors, supported by QSI, achieved sustainable stabilisation of litter performance. Modulating quorum-sensing systems are a key regulator of virulence, toxin production and biofilms, they offer a promising solution.³ QSI is an effective complementary tool to disrupt bacterial communications, enabling management interventions to regain control. Under the conditions of this study, supplementation with Control Liquid was associated with a reduction in diarrhoea incidence from **70% to 8%** of litters and a reduction in mortality from **6.5% to 3.3%** compared to the control group.

Bacterial Pathogen Action

Host Resilience



References

1. Jacobson M. (2022) On the Infectious Causes of Neonatal Piglet Diarrhoea-A Review. Vet Sci.,9(8):422.
2. Defoirdt et al. (2010) Quorum sensing and quorum quenching in pathogenic bacteria. Microbiology and Molecular Biology Reviews.74(3): 439–468
3. Rutherford, S. & Bassler, B. (2012): Bacterial quorum sensing: its role and potential in infectious disease control. Cell, 149, 253–266.