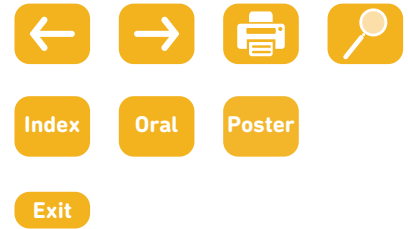




# FIRST CONFERENCE ON ANIMAL BIOSECURITY

June 5<sup>th</sup> & 6<sup>th</sup> 2025



## POSTER COMMUNICATIONS

**ID 28**

### **BIOSECURITY AGAINST SALMONELLA DUBLIN INTRODUCTION AND ESTABLISHMENT IN DAIRY CATTLE FARMS**

Lars Pedersen<sup>1</sup>; Hans Houe<sup>2</sup>; Erik Rattenborg<sup>3</sup>; Liza Rosenbaum Nielsen<sup>2</sup>

1. SEGES Innovation P/S, Animal Health and Welfare, Cattle Livestock, 8200 Aarhus; Denmark and Department of Veterinary and Animal Sciences, Section for Animal Health and Welfare, University of Copenhagen, 1870 Frederiksberg, Denmark; 2. Department of Veterinary and Animal Sciences, Section for Animal Health and Welfare, University of Copenhagen, 1870 Frederiksberg, Denmark; 3. SEGES Innovation P/S, Animal Health and Welfare, Cattle Livestock, 8200 Aarhus, Denmark

#### **Introduction**

Salmonella enterica subspecies enterica serotype Dublin (S. Dublin) is host-adapted to cattle. The infection has both enteropathogenic and systemic effects and is a serious zoonotic hazard. S. Dublin is excreted in faeces in varying quantities and survives in the environment. This enables between-farm transmission by fomites leading to many introduction pathways, with variabilities in day-to-day transmission probabilities. This makes it difficult to point out single environmental risk factors for S. Dublin. Furthermore, combinations of implemented on-farm control measures vary a lot, making it difficult to identify single biosecurity control measure effects.

#### **Objectives**

The study objective was to gain new knowledge about the association between the probability of S. Dublin-introduction and -establishment in dairy cattle farms in S. Dublin-endemic areas of Denmark and the level of on-farm biosecurity assessed semi-quantitatively compiling several risk factors into an overall biosecurity score.

#### **Material and Methods**

Dairy farms with no history of test-positive results for at least 2 years in the Danish S. Dublin surveillance programme were followed over a one-year period. Of 45 new test-positive case farms selected at the time of becoming test-positive, 37 were included in the study. Each case was matched by herd size with two test-negative farms from the target population, resulting in 74 control farms. A Biosecurity Assessment Framework with 12 expert-weighted farm sections was used to assess the overall biosecurity level for each farm, with biosecurity scores ranging from 0 (total lack of biosecurity measures) to 100 (excellent biosecurity), supported by on-farm observations and interviews.

#### **Results**

Increased biosecurity level was associated with reduced odds of becoming a case (odds ratio=0.64 per 10-unit increment in biosecurity score) after adjusting for local infection pressure. None of the included farms scored high.

#### **Conclusions**

In conclusion, preventing spread of S. Dublin requires initiatives to reduce local S. Dublin infection pressure and to improve the farm biosecurity levels.

#### **Keywords**

biosecurity • salmonella • cattle • prevention • control