POSTER COMMUNICATIONS

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BIOSECURITY AGAINST SALMONELLA DUBLIN INTRODUCTION AND ESTABLISHMENT IN DAIRY CATTLE FARMS

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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