

Salmonellosis in dairy cattle: endemic, yet dynamic

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Introduction

Salmonellosis is considered endemic in dairy herds world-wide. Yet, the likelihood of persistence of a salmonella infection in a herd and the efficacy of control measures depend on the serotype. Therefore, the aim of this study was to describe trends in serogroups isolated from Dutch dairy herds from 2001 to 2015.

Materials and methods

Records of all 4,453 *Salmonella* isolates cultured from samples submitted from dairy herds in 2001-2015 were retrieved from the laboratory database of GD Animal Health. Of 3,553 isolates, the serogroup was determined.

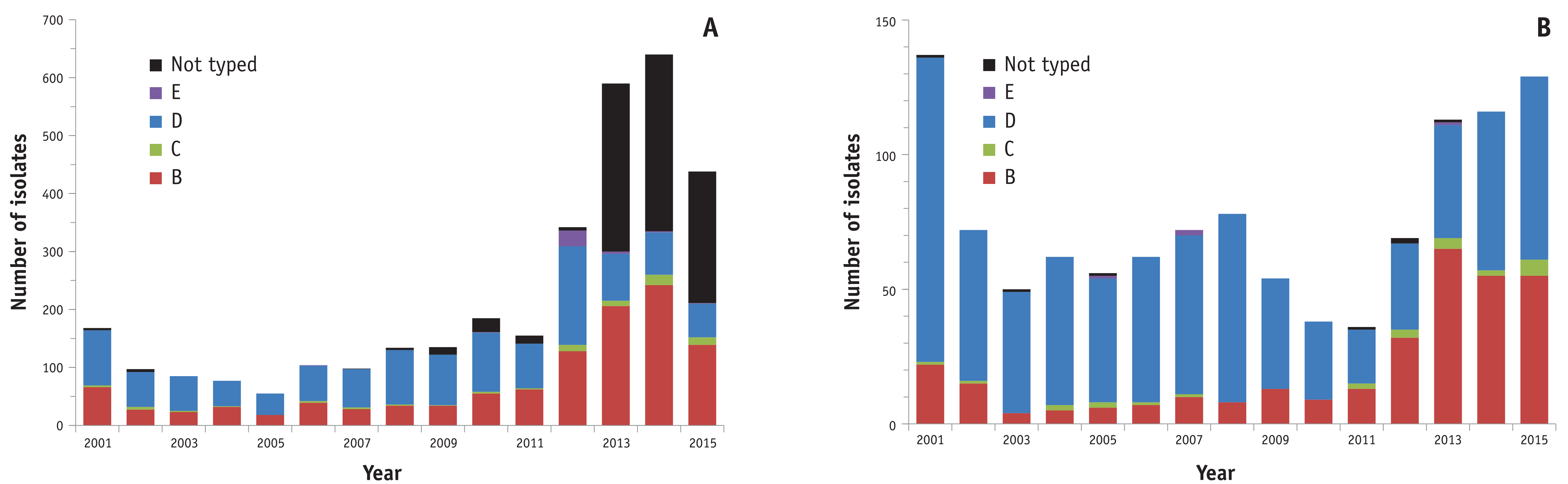


Fig 1. Serogroup of isolates from faecal samples (A; n = 3,303) and post mortem samples (B; n = 1,150)

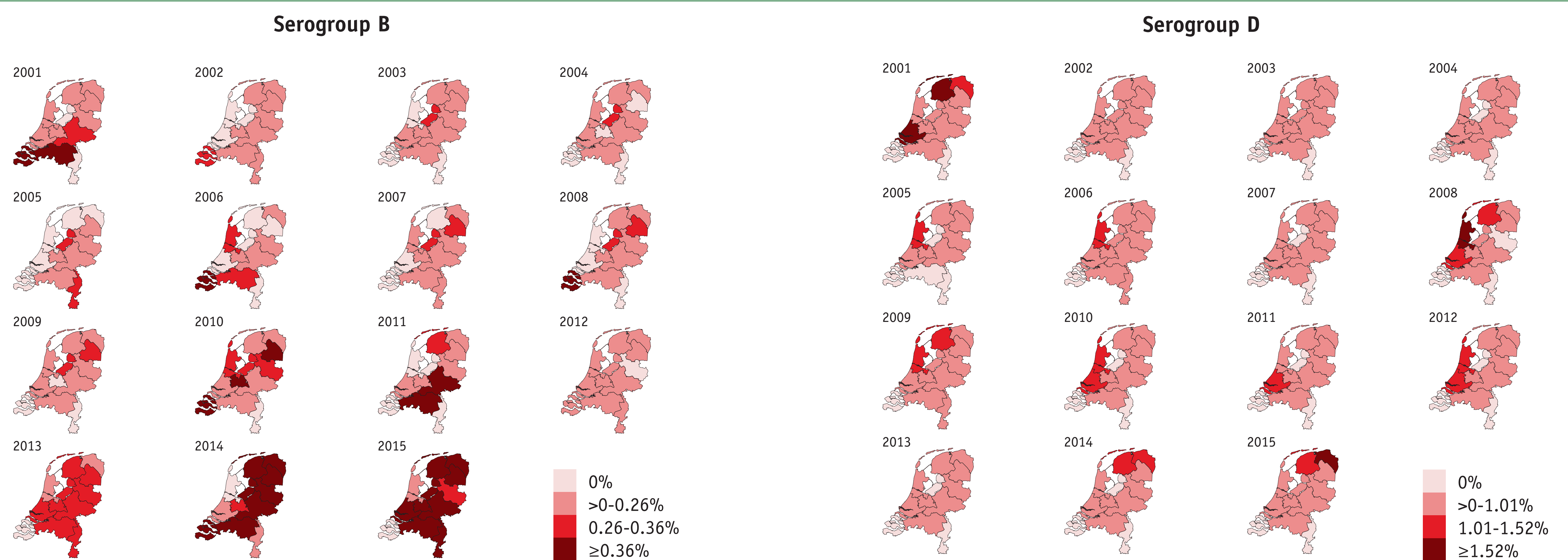


Fig 2. Proportion of dairy herds from which *Salmonella* serogroup B (left pane) or D (right pane) was isolated

Discussion

During the study period, the relative proportion of serogroup B isolates and the geographical distribution of serogroup B isolates increased markedly. It is hypothesised that potential causes of this increase include:

- Increased trade of cattle between herds, in the run up to the abolishment of milk quota in 2015;
- Increased herd sizes;
- Fertilisation of soil in area's with dairy herds with pig slurry;
- Control measures, primarily directed at serovar Dublin (serogroup D), creating an ecological niche for other serotypes.

Potential effects of the observed shift towards serogroup B may be:

- A lower proportion of cattle remaining salmonella carrier post infection, given that carriers are more often observed following serovar Dublin (serogroup D) infections compared to other serotypes. This may result in a lower rate of herds remaining persistently infected.
- Changes in the clinical presentation, due to differences between the invasiveness and pathogenicity of various serotypes. In this study, serogroup D was more frequently isolated from post mortem samples than faecal samples.

Conclusion

It is concluded that, rather than considering salmonellosis as a single entity, a focus on the dynamics of the various serotypes and serogroups is important to effectively control the infection.

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