

Salmonella spp. in faeces of resident wild geese on infected dairy farms

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Introduction

Resident wild geese frequently forage on pastures of dairy farms persistently infected with *Salmonella enterica* subsp. *enterica*. It is unknown whether wild geese play a role in the epidemiology of *Salmonella* infections in dairy herds.

Objective

- To determine the prevalence of *Salmonella* spp. in faecal droppings of resident wild geese foraging between June and October on pastures of infected dairy farms.
- To compare *Salmonella* spp. isolates from geese droppings with isolates from cattle faeces from the same farm.



Material and methods

- 25 Dairy farms with cattle at pasture, a persistent (i.e., >1 yr) *Salmonella* spp. infection in cattle and ≥100 resident wild geese foraging on the farm's pastures were recruited.
- On each farm, 100 fresh faecal droppings of geese and pooled faecal samples from up to four cattle manure storage areas were collected. Geese droppings were pooled (1:10) in a checkerboard-like cross-pooling system into 20 pooled samples per farm. Each pooled sample was cultured for *Salmonella* spp. according to ISO6579 annex D.
- Bulk milk was tested by ELISA for antibodies against *Salmonella* serogroups B and D.
- An inventory of relevant herd management factors (e.g., grazing, summer feeding, spreading of slurry) was made by questionnaire.



Results

- On all farms, cattle were exposed at pasture to geese droppings and infectious contacts between cattle and geese were possible.
- *S. Typhimurium* was isolated from one pooled sample of geese droppings from a single herd. In this herd, no *Salmonella* spp. were isolated from cattle faeces. Moreover, no antibodies against *Salmonella* spp. were detected in bulk milk at the herd visit and during a one-year period after the herd visit. Thus, it is likely that the infection in cattle was successfully controlled.

Bulk milk ELISA	Faecal culture		Number of herds
	Cattle	Geese	
Negative	Negative	Negative	7
Negative	<i>S. Dublin</i>	Negative	7
Negative	Negative	<i>S. Typhimurium</i>	1
Positive	Negative	Negative	9
Positive	<i>S. Typhimurium</i>	Negative	1

- No *Salmonella* spp. were isolated from any of the other 498 pooled samples of geese droppings.
- The prevalence of *Salmonella* spp. in individual resident geese droppings was estimated at 0.04% (95% CI: 0.001%, 0.22%).

Conclusions

- The prevalence of *Salmonella* spp. in faecal droppings of resident wild geese foraging on pastures of persistently infected dairy farms is low.
- The results of this study do not indicate that resident wild geese play a role in the epidemiology of *Salmonella* infections in persistently infected Dutch dairy herds.

