

Vaccination against Salmonellosis in veal farms in the Netherlands is an effective prevention method to reduce the use of antimicrobials.

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INTRODUCTION

Salmonellosis has been recognized as a disease in cattle all over the world for several decades.

It has primarily been associated with *S. enterica* subsp. *enterica* ser. Dublin (*S. Dublin*) and *S. enterica* subsp. *enterica* ser. Typhimurium (*S. Typhimurium*).

In view of the economic importance to the cattle industry and the potential to infect the human population, different vaccines have been developed.

OBJECTIVE

To evaluate effect of vaccination with an inactivated Salmonellosis vaccine (Bovilis[®] Bovivac[®]S, MSD Animal Health) on mortality and reduction of antimicrobial use in veal farms in the Netherlands.

MATERIALS AND METHODS

Forty-one animal groups in 6 Dutch veal farms with a history of both *S. Dublin* and *S. Typhimurium*.

Sixteen groups were vaccinated with an inactivated Salmonellosis vaccine (Bovilis[®] Bovivac[®] S, MSD Animal Health) according to the product data sheet and the other groups remained unvaccinated against Salmonellosis.

The vaccinated groups were compared to the non-vaccinated groups over a rearing period of 25 to 26 weeks for:

- ▶ Mortality.
- ▶ Daily antibiotic dose.
- ▶ Daily antibiotic dose as defined by the SDa (Netherlands Veterinary Medicines Institute).
- ▶ Veterinary cost per calf.
- ▶ Veterinary cost per calf excluding vaccination.

Vaccination against Salmonellosis with an inactivated vaccine is beneficial in Dutch veal conditions as there is less mortality and a strong reduction in antimicrobial use.



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RESULTS

- ▶ 42620 animals included: 17839 vaccinated and 24781 unvaccinated.
- ▶ Average animal group was 1115 and 991 animals for respectively the vaccinated and non-vaccinated groups.
- ▶ The average mortality was 28% lower in the vaccinated groups (**Table 1**).
- ▶ The daily antibiotic dose was more than 25% lower in the vaccinated groups (**Table 1**).
- ▶ No 3rd choice antibiotics in vaccinated animals (**Figure 1**).
- ▶ The veterinary costs excl vaccination were lower in the vaccinated groups (**Table 1**).
- ▶ Vaccination paid itself more than back (**Table 2**).

TABLE 1. Results per evaluated parameter.

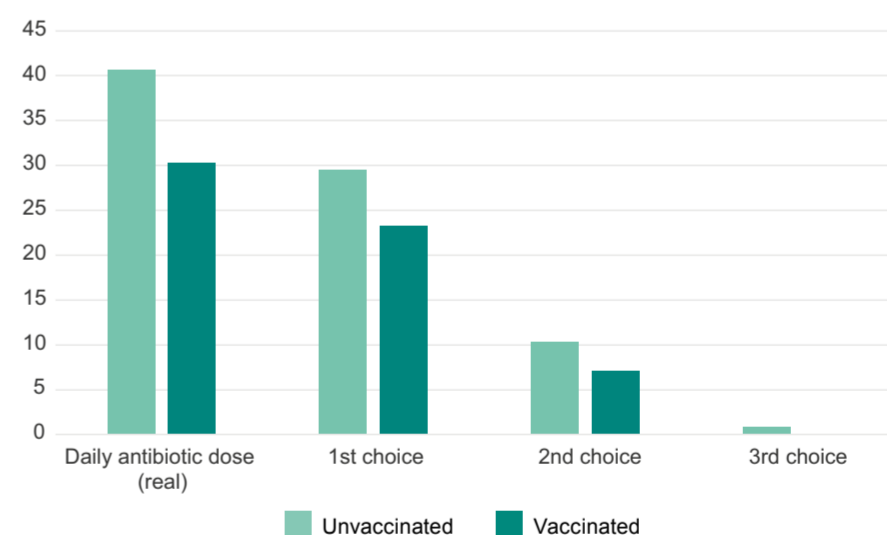
Parameter	Vaccinated groups	Unvaccinated groups	Significance
Mortality	2.54%	3.54%	P<0.001
Daily antibiotic dose (real)	30.56 daily dosages	40.20 daily dosages	P=0.001
Daily antibiotic dose (SDa)	13.06 daily dosages	18.20 daily dosages	P=0.009
Veterinary costs*	17.64 €	17.21 €	P=0.79
Veterinary costs excl vaccination*	12.49 €	17.21 €	P=0.012

*Based on prices in the Netherlands in 2020/2021.

TABLE 2. Cost benefit veterinary costs per calf. (Based on prices in the Netherlands in 2020/2021).

	Vaccinated groups	Unvaccinated groups	Difference
Curative costs	12.49 €	17.21 €	4.72 €
Vaccination costs	5.15 €	–	-5.15 €
Extra mortality costs	–	5.00 €	5.00 €
Financial advantage vaccination			4.57 €

FIGURE 1. Effect of vaccination on use of 1st, 2nd and 3rd choice antibiotics.



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