Field trial to compare efficacy of two commercially available *Escherichia coli* J-5 vaccines against clinical coliform mastitis.

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INTRODUCTION

The first 100 days of lactation, a period of physiological transition for dairy cows, is critical to the health and production for animals during the current and future lactations.

Clinical coliform mastitis during this period has potentially negative impact on cow's performance and longevity.

The use of *Escherichia coli* J-5 bacterins before parturition and in early lactation has been shown to reduce the severity and duration of clinical coliform mastitis.

OBJECTIVE

The purpose of the current trial was to compare the efficacies of two commercially available *Escherichia coli* J-5 vaccines for reducing the incidence of clinical coliform mastitis during the first 100 days of lactation.

MATERIALS AND METHODS

Cows and heifers in a commercial Holstein herd randomly assigned to one of the two treatment groups:

Vaccine 1 group:
- Enviracor™ J-5; Zoetis Inc.

Vaccine 2 group:
- Bovilis® J-5; Merck Animal Health, Madison, NJ, USA.

VACCINATION SCHEDULE FOR BOTH VACCINES:
- 1 dose (5ml; s.c.) at 60d prior to exp. calving (drying off day).
- 1 dose (5ml; s.c.) at 30d post 1st dose.
- 1 dose (5ml; s.c.) at 14d post calving.

Number of clinical mastitis cases determined retrospectively based on cases diagnosed by personnel and culture results on foremilk samples prior to antibiotic therapy.

Dairy-Comp 305 recorded: milk production in lactation post vaccination, 1st service preg. rates, % pregnancies lost, mortality and culling.

Cows receiving a Bovilis® J-5 vaccination regimen were 2.4 times less likely to have clinical coliform mastitis than cows receiving another commercially available vaccine.

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RESULTS

Health and production data analyzed for 506 animals in Vaccine group 1 and 479 animals in Vaccine group 2.

RATE OF CLINICAL MASTITIS FOR THE FIRST 100D IN LACTATION (TABLE 1)

Total cases:

Vaccine 1 group - 0.1138 cases/100 cow-days

Vaccine 2 group - 0.0690 cases/100 cow-days

- **P<0.05**

Coliform bacteria cases:

Vaccine 1 group - 0.0444 cases/100 cow-days

Vaccine 2 group - 0.0183 cases/100 cow-days

- **P<0.05**

No difference in rates of cases caused by other pathogens and bacteriologically- negative cases.

No difference between the two vaccines groups in all other recorded parameters **(Table 2)**.

TABLE 1. Rate of total clinical mastitis cases and cases caused by coliform bacteria recorded in the first 100d in milk in two vaccination groups.

Causative pathogens	Vaccine 1 group (cases/100 cow-days)	Vaccine 2 group (cases/100 cow-days)	P -value
Total cases	0.1138	0.0690	P<0.05
Coliform bacteria	0.0444	0.0183	P<0.05

TABLE 2. Rate of selected health and production parameters recorded in the two vaccination groups.

Recorded parameter	Vaccine 1 group (cases/100 cow-days)	Vaccine 2 group (cases/100 cow-days)	P -value
Animals died/culled in first 100 days in milk	4.4%	3.8	P>0.05
Cows pregnant to 1st AI	33.9%	35.8%	P>0.05
Pregnancy loss	7.1%	5.8%	P>0.05

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