

## Materials and Methods

The study compared 180 twinnings and eight twin abortions with normal single pregnancies from 4,052 calvings and 77 abortions during a three-year study (1997- 2000) in a Holstein dairy farm (1,350 milking cows). Postpartum conditions, such as retained placenta, reproductive indices (days to first service, days open, first-service pregnancy rate and services per pregnancy) and average 305-day milk production were compared, using chi-square and student t tests.

## Results

Length of pregnancy period (272 vs 279 days), abortion rate (4.45% vs 1.86%), retained placenta (49.3% vs 12.7%), calf mortality due to dystocia (9.2% vs 3.8%), and immature calves (3.8% vs 1.1%) were significantly different between twinnings and single pregnancies, respectively ( $P < 0.001$ ). First-service pregnancy rate (17% vs 28%), average days open (130 days vs 113 days) and culling rate (32.9% vs 16.4%) were also significantly different between the two groups,

respectively ( $P < 0.001$ ). However, there was no significant difference in services per pregnancy (2.5 vs 2.25), respectively. Average milk production was 7,134 kg (15,695 lb) and 8,124 kg (17,873 lb) per lactation, respectively ( $P < 0.05$ ). Total cost for each twinning was estimated at \$120/cow in a lactation period.

## Discussion

A deficit of 13.75% was shown in twin pregnancies, compared to singles. Postpartum conditions, dystocia and retained placenta due to twinning significantly affected reproductive indices and milk production, reducing reproductive and productive potentials of such animals. Freemartins are also of concern and should not be overlooked. The dairy industry needs to work on reducing incidence of twin pregnancies to decrease these losses.

## Reference

1. Eddy RG, Davies O, David C: An economic assessment of twin births in British dairy herds. *Vet Rec* 129: 24, 526- 529, 1991.

# Titer Response in Cows Vaccinated with a *Neospora caninum* Vaccine

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## Introduction

In a 65-cow herd located north of Ithaca, 12 abortions had occurred during 1999; four between mid-January and mid-February, one in March and one more in July. The remaining six abortions had occurred between the beginning of September and mid-October, three of them within one week during mid-October. Submission of a blood sample from the last aborting cow revealed a positive *Neospora caninum* titer. Upon screening 15 cows including most of the cows that had previously aborted, nine animals were found positive to *Neospora caninum*. It was decided to try and controlling the problem by vaccinating with a *Neospora caninum* vaccine.

## Materials and Methods

A total of 28 cows were randomly chosen to receive either 5cc of a *Neospora caninum* vaccine, or 5cc of sterile saline, four weeks apart. Serum samples were taken at time of the first vaccination and one month after the second dose.

The number of animals that seroconverted between the first and second vaccination was compared using Fisher's exact test. The difference in pre- and postvaccination titers between the vaccinated and control groups was evaluated with the Rank-Sum test.

## Results

Of the 28 animals enrolled in the trial, 11 tested positive at the time of first vaccination. The number of animals with positive titers after second vaccination was significantly higher in the vaccinated than in the control group ( $p=0.0008$ ). Also, the difference between pre- and postvaccination titers was significantly larger ( $p=0.0002$ ) in the vaccinated animals than in the control group.

## Conclusions

The *Neospora caninum* vaccine used in this study proved its efficacy to significantly raise serum antibody titers against *N. caninum*. However, to this day there is no conclusive evidence that a high antibody titer prevents vertical transmission of the organism.

# Use of Daily Postpartum Temperatures to select Dairy Cows for Treatment with Systemic Antibiotics

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## Introduction

Prevention, and early detection and treatment, of postpartum disease are of economic benefit because of the potential to restore the cow to productivity sooner. Recording rectal temperatures has been widely adapted in protocols to monitor postpartum dairy cows because it is inexpensive and easy to implement. The objective of the following study was to obtain descriptive statistics on daily postpartum temperatures on 1,042 dairy cows.

## Materials and Methods

Daily temperatures and postpartum disease events were recorded for 10 days postpartum on 1,042 cows from May 1998 to February 2000, on one farm in southeastern Pennsylvania. Multiparous cows with temperatures greater than 103.5°F (39.7°C) and primiparous cows with temperatures greater than 103.0°F (39.4°C) for two consecutive days were treated with Naxcel® (Pharmacia and Upjohn Animal Health) for five days unless they were determined to be sick, in which case they were treated on Day 1. Cows were classified as

normal (NOR) if they did not have a recorded disease in the first 10 days postpartum and did not receive systemic antibiotics. Cows were classified as abnormal (ABNOR) if they had either a retained placenta, dystocia, metritis or mastitis event recorded during the first 10 days postpartum.

## Results and Conclusions

NOR cows' average daily temperatures were consistently below 102°F (39°C) for the first 10 days postpartum. ABNOR cows' average daily temperatures were above 102°F for Days 2 through 8 postpartum. Cows requiring systemic antibiotic therapy had their highest temperatures on Days 3 through 6 postpartum. Of cows receiving systemic antibiotic therapy 59% were classified as ABNOR. Cows with temperatures greater than 103°F for two consecutive days or—according to the farm protocol, sick cows treated on Day 1—responded to systemic antibiotic therapy by a significant decrease in temperature one day after treatment. There were no differences in daily postpartum temperatures of NOR cows by lactation number.