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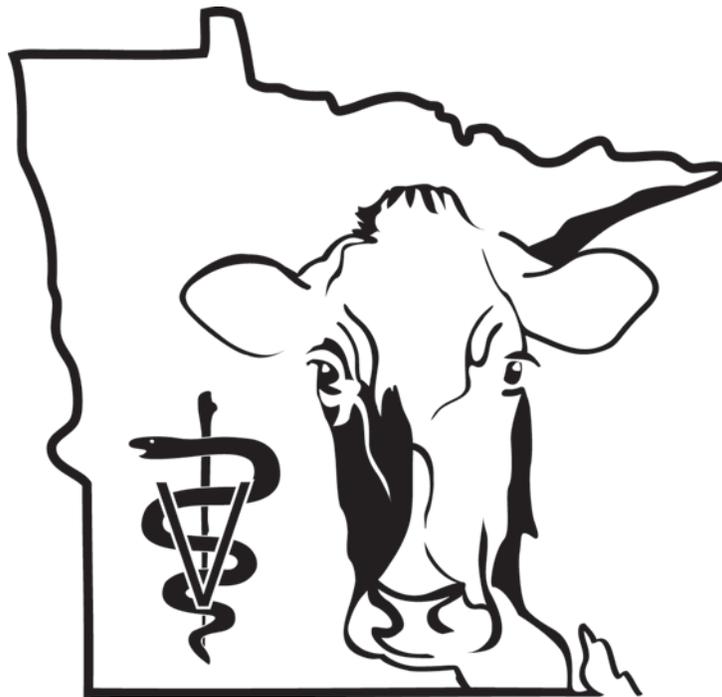


UNIVERSITY OF MINNESOTA

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College of Veterinary Medicine

VETERINARY CONTINUING EDUCATION



ST. PAUL, MINNESOTA  
UNITED STATES OF MINNESOTA

## **Field Study of Neospora caninum Vaccine in a Herd Endemically Infected with Neospora**

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Last year I had the opportunity to present to the Minnesota Dairy Herd Health Conference a case study of a herd that was endemically infected with Neospora caninum. The herd had experienced repeated abortions which usually occurred from 60 days to eight months gestation. Neospora lesions were diagnosed histologically on five calves in 1997-98. Several other fetuses had lesions "suggestive of Neospora infection." There was a tremendous amount of lab work done on this herd, and the only diagnoses ever made were Neospora lesions. Therefore, I feel very confident that this herd is indeed endemically infected with Neospora.

In early 1999, the entire herd was started on a vaccination protocol used a product produced by Bayer Animal Health which had just received a conditional use permit. The vaccine was initially administered to all cattle fresh at least 30 days, and all pregnant cattle up to eight months gestation. A second dose was given about a month later. Cattle were then given a third dose at about 120 days of gestation because most of the abortions seemed to occur at about 120-150 days. Youngstock on the farm were also included in the vaccination program. There were naturally some lapses in the timing of the vaccinations, but we tried to adhere to the aforementioned regimen.

I would like to emphasize that no other management changes took place on this farm besides the vaccination program with Neospora vaccine.

The following pages are a summary of the slides which will be presented. Dr. Choromanski, of Bayer Animal Health, is planning on attending the meeting and will be available to answer any questions about the vaccine.

I would like to express my appreciation to Dr. Choromanski and to Bayer Animal Health for their assistance to me over the past two years. I am sure most of you have felt the same frustrations that I experienced when I was working with this herd. Even after making the diagnosis, the frustrations of trying to solve the problem without a vaccine being available were overwhelming. The willingness of Bayer Animal Health to provide the vaccine and to cover the costs for the lab work and serology were certainly appreciated by me and by the dairyman.

## **Results of a field study using *Neospora caninum* vaccine in a herd endemically infected with *Neospora***

### ***Neosporosis* – cattle disease**

Vaccine supplied by: Bayer Corporation – Animal Health

### **Neosporosis**

#### ***Neospora caninum* vaccine**

- *Neospora caninum* was described and named in 1988.
- Disease causes the California dairy industry \$35 million loss annually.
- Conditional license for *Neospora* vaccine was issued by USDA on December 29, 1998.
- Predicted economic loss was \$13.75 per head in beef herds with a 20% *Neospora* prevalence in Texas.

#### ***Neospora* Vaccine Field Trial in Minnesota**

- Abortion problem at 4-7 months of pregnancy in 120-cow dairy herd.
- Four aborted and submitted fetuses in 1997 had *Neospora* lesions on necropsy.
- Total of 27 abortions were recorded in 1997.
- 48% of cattle are positive for *Neospora* tested in ELISA on August 8, 1998.
- Total of 27 abortions were recorded in 1998.
- *Neospora* vaccine injected on February 27, 1999.

#### ***Neospora* Vaccine Field Trial in Minnesota**

- SIP Ratios by Dose Regimes – All Cattle
- ELISA SIP Ratios by Dose Regimes – Negative only
- ELISA SIP Ratios by Dose Regimes – Positive Only
- ELISA SIP Ratios All Doses – Negative vs. Positive

#### ***Neospora* Vaccine Field Trial in Minnesota**

- The 1<sup>st</sup> dose of *Neospora* vaccine was injected into 105 cattle on February 27, 1999.
- The 2<sup>nd</sup> dose of *Neospora* vaccine was injected on March 28, 1999 into 101 cattle as well as 1<sup>st</sup> dose to additional 8 cattle.
- On June 7, 1999 – 3<sup>rd</sup> dose of *Neospora* vaccine was injected into 22 cattle – 2<sup>nd</sup> dose into 12 cattle – 1<sup>st</sup> dose into 1 cow.
- ELISA test for *Neospora* specific antibody based on sera samples collected June 21, 1999.

### *Neospora* Vaccine Field Trial in Minnesota

- Total of 4 abortions in 1999.
- One abortion from cow not injected with *Neospora* vaccine.
- Three abortions from cows injected with *Neospora* vaccine.
  - One – bacterial infection as per Diagnostic Lab.
  - Second – no BVD, no *Neospora* as per Diagnostic lab.
  - Third – fetus macerated was not sent to Diagnostic lab.

### *Neospora* Serology on Youngstock

- Serology on purchased and homebred six month old calves.