

tional barn groups than the loose housing groups. Similarly, the lowest cost for weight gain was in the high level of feeding group as compared to low feeding level.

### Significance

Results of the present study clearly indicate that buffalo calves housed in a conventional barn with standard feeding as per ICAR recommendation during winter had better growth and feed conversion as compared to calves kept in loose housing under the same feeding

standards. The cost of gain of body weight was also less in a conventional barn. Though cost of raising a calf in a conventional barn was slightly higher, it was compensated by higher body weight gain. Within the limit of the present experiment, it can be concluded that conventional barn housing with standard feeding as per ICAR recommendation was better for young growing calves in the winter season. This speeds early maturity of the animal and reduces the age at first calving for more economical dairy farming.

## Use of Bulk Tank Milk to Determine the Herd-level Prevalence of *N. caninum* in Dairy Herds on Prince Edward Island

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### Introduction

The apicomplexan protozoan parasite *Neospora caninum* is one of the most frequently diagnosed causes of bovine abortion. Transmission of the parasite occurs vertically from cow to calf with great efficiency, sustaining the infection within cattle herds for many generations. The herd-level prevalence of *N. caninum* on PEI is estimated to be 20.3%. This is relatively high compared to other Canadian provinces and research is needed to aid in the control of this infection on dairy farms. Serology is the only method available to diagnose *N. caninum* infection in live animals, but herd surveillance, using serology, is expensive and time consuming, especially in large dairy herds. The use of milk as a diagnostic tool could be very beneficial to the dairy industry, as it would allow for a fast and inexpensive way to test herds for *N. caninum* exposure. Furthermore, because the majority of dairy herds in PEI collect milk samples monthly (DHI; Dairy Herd Improvement), *Neospora* surveillance using milk would result in less stress on the lactating cow, and no special visits would be required to collect samples.

### Materials and Methods

The laboratory sensitivity and specificity of a *Neospora* indirect ELISA (IDEXX, Westbrook, Maine, USA) was evaluated in a Dutch study by the Animal Health Service, and on PEI using 30 bulk milk samples of herds with a known serostatus that we received from the Dutch Animal Health Service. Bulk tank milk samples from all PEI dairy farms that participate in DHI herd testing on a regular basis were used. These samples were tested using the indirect ELISA. After validation of this indirect ELISA using initial bulk milk samples, the variability in results over a six-month period is being assessed by analyzing additional bulk milk samples from the study farms at three-month intervals.

### Results

The ELISA that we used had a herd sensitivity of 61% (95% CI: 49-73%) at a cut-off value of 0.6. Herd specificity at this cut-off value was 92% (95% CI: 87-98%). Based on previous studies in The Netherlands, a within-herd *N. caninum* seroprevalence of 15% was as-

sociated with increased risk for reproductive losses, and as such taken as seroprevalence cut-off value. Validation of this ELISA in Canada with 30 bulk milk samples from herds with a known serostatus showed similar results. When using this ELISA on 358 bulk milk samples from PEI dairy farms, a herd-prevalence of 8% was found. This is lower than the earlier mentioned 20.3%. We are presently validating this ELISA in a similar way as in The Netherlands with individual milk and serum samples to confirm our results.

### Significance

*N. caninum* has emerged as a major cause of abortion and reproductive failure in cattle. Identification of

infected herds is necessary to implement control strategies to minimize the impact of this parasite on the dairy industry. Thus, research into the development of cost-effective surveillance techniques is required to determine the herd- and cow-level risk factors for *N. caninum* infections in Canada. The validation of the bulk milk ELISA will provide a significant step forward in the design of future studies examining the epidemiology and control of bovine neosporosis.

## Comparison of the Ovsynch Protocol and Exogenous Progesterone with Insemination at an Induced Estrus as Therapeutic Strategies for Ovarian Cysts in Lactating Dairy Cows

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### Introduction

It has been suggested that an underlying mechanism in the development of bovine ovarian cysts involves a hypothalamic lesion which causes follicular estrogen to be ineffective in inducing a GnRH/LH surge at the time of estrus. This lesion involves the estrogen receptor alpha (ER $\alpha$ ). Furthermore, it has been speculated that treatment with progesterone may induce the ER $\alpha$  in the mediobasal hypothalamus which will foster a GnRH/LH surge in response to follicular estrogen. Collectively, this information suggests that therapeutic strategies for bovine ovarian cysts could involve either the use of GnRH or exogenous progesterone. An intravaginal progesterone insert (EAZI-BREED<sup>TM</sup> CIDR<sup>®</sup>) has been approved for use in lactating dairy cows. The use of a CIDR to synchronize estrus detection is relatively simple and less labor intensive than the OvSynch protocol. Therefore, it could be a more acceptable treatment for ovarian cysts in lactating dairy cows. However, there

is no information available concerning the comparative efficacy of these two treatment strategies. The hypothesis of this study was that lactating dairy cows with ovarian cysts treated with exogenous progesterone, a luteolytic dose of PGF2 $\alpha$ , and inseminated at an induced-estrus, will have a higher pregnancy rate compared to cows with ovarian cysts subjected to the OvSynch protocol. The purpose of this study was to compare the effectiveness of these two protocols.

### Materials and Methods

This study was conducted in a single herd with 1,500 milking cows in northeast Florida. A total of 401 lactating dairy cows with ovarian cysts were enrolled in the study during weekly farm visits from October 13, 2003 to September 20, 2004. All cows beyond the voluntary waiting period (60 days) and diagnosed with ovarian cysts were randomly allocated to two treatment groups on the day of diagnosis (Day 0). The diagnosis of