ducers who believed their herds were infected would be motivated to adopt recommended management practices, the relationships between testing status and various management practices and changes in management practices during the past five years were assessed using logistic regression modeling to control for producer-perceived infection status. Interestingly, even if a producer believed his/her herd was not infected, participation in a testing program was associated with certain management practices and the incorporation of specific changes to existing management practices. These results suggest that herds participating in the Ohio Johne's Disease Testing Program are more likely to comply with control recommendations than herds that are not involved. Although this study provides preliminary evidence confirming the value of Johne's disease testing programs with respect to compliance with control recommendations, several opportunities for improvement were identified. Given the unique nature of the Ohio Johne's Disease Testing Program and the possible biases that may exist with any mail survey, care should be taken when extrapolating these results.

Evaluation of Dry Cow Vaccination with a Killed Viral Vaccine on Post-colostral Antibody Titers in Calves

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Introduction

Respiratory disease in dairy calves remains a significant cause of morbidity and mortality in the first months of life. The effects of juvenile pneumonia are life-long and include decreased rate of gain, decreased milk production, and decreased survival in the herd. These effects are in addition to the cost of respiratory disease as a direct result of having to diagnose and treat pneumonia in calves. Maximizing passive transfer of antibodies from the dam is a significant management tool to reduce the effects of respiratory disease in dairy herds. Studies have shown that calves with low IgG have a two times greater risk of pneumonia when compared to calves with greater IgG. The duration of passive immunity appears to be approximately three-to-four months; however, statistically the risks of failure of passive transfer are evident as long as six months. Many Colorado dairies use an annual modified-live viral vaccine administered approximately 30 days after freshening to stimulate immunity to viral respiratory and reproductive disease in their cows and, subsequently, their calves. Killed viral vaccines offer the advantage of administration during pregnancy with a reduced risk of abortion due to abortogenic components of the vaccine. The administration of a vaccine shortly prior to parturition is believed to increase the titers of the cows at the time of calving, and potentially increase the amount of antibody available for passage to the calf via colostrum. The objective of this study was to evaluate the response of post-colostral agent specific titers in calves whose dams received a killed viral vaccine at dry-off.

Materials and Methods

Forty Holstein dairy cows were identified for enrollment in the study, selected from an 1100-head dry-lot dairy. All cows had previously been vaccinated with a modified live viral vaccine 30 days postpartum.[1] The cows were randomly assigned to four treatment groups and were processed as they were presented for pregnancy confirmation prior to dry-off. Group 1 cows received 5ml of 0.9% sterile NaCl, group 2 cows received 2ml of vaccine A,[2] group 3 cows received 5ml of vaccine B,[3] and group 4 cows received 5ml of vaccine C.[4] Blood samples were collected from each cow at the time of vaccination, approximately 30 days later during the dry period, at freshening, and from the calves between two and seven days of age. Serum samples were submitted for serum neutralization analysis for bovine herpesvirus-1, bovine viral diarrhea virus, bovine respiratory syncytial virus, and parainfluenza 3 virus. The resulting titers were converted to the Log_2 of the titer for statistical analysis.

Results

Geometric mean titers to the four viral respiratory agents examined were evaluated from the vaccination

sample, the mid-dry sample, the freshening sample and the calf samples. Geometric mean titers of the calves to BVDV were 337.8, 181.0, 272.7 and 256 for control, vaccine A, vaccine B and vaccine C, respectively; titers for BHV-1 were 84.4, 32, 38.7 and 58.7 for control, vaccine A, vaccine B and vaccine C, respectively; titers for BRSV were 5.6, 4.5, 4.8 and 4.4 for control, vaccine A, vaccine B and vaccine C, respectively; titers for PI3 were 955.4, 456.1, 701.6 and 608.8 for control, vaccine A, vaccine B and vaccine C, respectively. There were no statistically significant differences in geometric mean titers between the vaccine and control groups. Similarly, no statistically significant differences in geometric mean titers were noted among any of the other collected samples.

Conclusions

The results of the calf samples suggest that vaccination with a killed viral vaccine at the time of pregnancy confirmation in a herd that currently uses a modified-live vaccine after freshening offers no beneficial effects on post-colostral immune status in calves as measured by agent specific titers. Furthermore, the post-vaccination titers of the cows taken approximately 60 days after vaccination do not demonstrate a significant humoral immune response by the cows to the vaccine. This implies that the use of these killed vaccines does not stimulate a humoral immune response above that produced by annual vaccination with this modified-live viral vaccine.

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[1] *Bovi-Shield 4*, Pfizer Animal Health, Exton, PA
[2] *Cattlemaster*, Pfizer Animal Health, Exton, PA
[3] *Vira-Shield 4+L5*, Novartis Labs, Freeman, SD
[4] *Master Guard Preg 5*, Agri-Labs, St. Joseph, MO

Luteal Function and Conception in Lactating Cows and Some Factors Affecting Luteal Function after Insemination

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Introduction

Reduced steroidogenic capacity of the corpus luteum (CL) during early luteal phase has been reported to cause decreased fertility in cows. Higher concentrations of progesterone were observed in pregnant cows 5-10 days after artificial insemination (AI) compared to non-pregnant cows. However, the extent to which luteal sub-function affects fertility in high producing dairy cows is not clear. The present study, therefore, was undertaken to: 1) investigate the type and incidence of luteal sub-function after insemination; 2) to study the relationship between post-insemination luteal sub-function and conception rate; and 3) clarify the relationship of luteal function with parity, body condition score, milk yield and dietary intake.

Materials and Methods

Daily milk samples were collected in 19 lactating Holstein Friesian cows after AI, starting from the day of insemination up to confirmation of pregnancy. A total of 30 post-insemination progesterone profiles were obtained. Progesterone from defatted milk was extracted with petroleum ether and assayed by EIA. The peak progesterone concentrations, the progesterone area under the curve (AUC) and the days of CL formation (first rise of P4 to 1.0 ng/ml) were determined. The average dry matter intake (DMI), total digestible nutrient (TDN), digestible crude protein (DCP) and milk yield for the first 15 days after insemination were calculated and correlated with AUC. Body condition scores (BCS) were recorded for 10 representative cows from the day of parturition up to the day of first insemination at two-week intervals.

Results and Conclusions

Fifteen (50%) of the 30 progesterone profiles were normal, with the P4 concentration reaching 1.0 ng/ml within five days after insemination and ≥ 2.0 ng/ml thereafter. Six (20%) profiles were stunted (P4 concen-