Production and Financial Losses Associated with Preweaning Disease in Beef Cattle

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Abstract

Year 2000 production and herd health records of 1470 crossbred beef calves at the USDA's Meat Animal Research Center were examined to determine long-term effects of calfhood morbidity. Disease incidence was low in this herd with four cases of neo-natal diarrhea, five septicemias, eight umbilical infections, nine cases of pinkeye, 21 cases of footrot, and 83 cases of pneumonia. Only pneumonia had sufficient power to derive significant differences. Medium-weight calves had 44 occurrences of pneumonia with an average loss of 20.69 lb (9.4 kg) (p = 0.023) per affected calf at weaning. The heavy weaning-weight group developed 36 cases of pneumonia with an average loss of 24.28 lb (11 kg) (p = 0.016) per calf at weaning.

Cost of preweaning pneumonia was calculated from the treatment cost ($6.02), calf price ($0.83/lb), morbidity rate (5.6 %), case fatality rate (6.0 %), and medium-weight calf loss (20.69 lbs-9.4 kg). Cost per case was $6.02 (treatment), $17.17 (weight loss) and $27.27 (percentage death loss) for a total of $50.46, not including labor. More importantly, this equates to a $2.83 per-calf cost for pneumonia, which can be used to determine the value of a preventive health program.

A Productive Evaluation Program For Dairy Cattle

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Introduction

A two-year study of the entire reproductive cycle of the cow, heat detection to calving, in well-managed Pennsylvania dairy herds was just completed. Objectives of the study were to collect and store significant individual animal and herd information in order to evaluate and problem-solve the management, nutritional, genetic, and infectious influences on reproductive performance. Stored data was used to (1) define expected reproductive performance standards and goals for Pennsylvania dairy operations and (2) develop a multidisciplinary approach to reproductive problem solving where performance does not measure up to these standards.

Materials and Methods

Data and information for the program was collected from two university-operated dairy herds, totaling about 500 lactating cows, because of their accessibility to the individuals conducting the study. A wide range of observations and test results, many of which are not routinely available, were gathered and stored on individual animal and herd-based computer records to permit in-depth analysis. Examples of information gathered by category include:

1. Nutrition – body condition scores at critical times between dry-off and first service; serum non-esterified fatty acid (NEFA) pre- and post-calving; serum selenium and vitamin E at first service.
2. Infectious disease – serum collection and storage at all services, positive pregnancy checks, and pregnancy loss to permit serial infectious disease serology; complete diagnostic analysis of available aborted fetuses and placenta.
3. Management – milk progesterone at all services and 20 days post-service; a sampling of serum progesterones to evaluate milk results; feed and other significant changes.
4. Stress – weather related; observable health events such as periparturient problems, mastitis, and feed refusal.

An important aspect of the study was generation of visual displays of the results for use by veterinary practitioners to identify and solve reproductive problems with dairy producers.

Results and Conclusions

Individual cow records by lactation were developed in order to focus on individual reproductive problems. A visual display of a calendar or time line of reproductive events, along with other significant animal and herd events, was generated for this purpose. Herd data records were used to generate reproductive standards, using statistical procedures, for the two-year study period. This program demonstrates a procedure that permits the practitioner to evaluate suspected reproductive inefficiencies; determine if the problem exists and at what stage of the reproductive cycle; and maximize the opportunity to identify specific causes. It is impractical for the practitioner to use all aspects of the program at all times, but selection of specific portions based on experience and observations should provide an opportunity to improve success at bovine reproductive problem solving.

Relationship between *Neospora caninum* Seropositivity and Udder Health in Lactating Dairy Cows

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Introduction

Neospora caninum is the most common infectious cause of abortion in Ontario dairy cattle. Most studies to assess the economic impact of *N. caninum* have identified losses associated with reproduction, milk production or culling. Few studies have investigated any potential influence of *N. caninum* serological status on udder health parameters. One European study reported an association between cows having moderate (200,000 to 400,000 cells/ml) somatic cell counts and *N. caninum* infection. The objective of this study was to determine if *N. caninum* serological status was associated with linear score or risk of elevated linear score in Ontario Holstein dairy cows.

Materials and Methods

Sera collected in summer 1998 from the 59 herds that participated in the Sentinel Herd Project were analysed for *N. caninum* antibodies using a kinetic enzyme-linked immunosorbent assay (ELISA). Production data for each animal at the time of bleeding and time of removal was collected from Ontario Dairy Herd Improvement (DHI) records and merged with the serological data. A sample-to-positive ratio of 0.45 was used as the cut-off to classify animals as positive (≥ 0.45) or negative (<0.45) to *N. caninum*. Impact of serological status on linear score was assessed both in linear and logistic regression models using the GENMOD procedure in SAS within herds having at least one *N.*