new positive cows per month. The majority of new cases currently being identified are cows that have not previously spent time in the hospital parlor.

Conclusions

This herd experienced significant economic losses as a result of purchasing Myco cows without first designing a program for detection and prevention of new Myco mastitis cases. A single bulk tank milk culture was not sensitive enough to identify Myco-infected herds at purchase. Culture of fresh and mastitis cows was implemented, but no single test is capable of detecting every infected animal. In the absence of a program for preventing the spread of Myco, cows that were culture-negative upon entering the hospital may have become infected via poor hospital milking procedures. Culture of samples from mastitis and fresh cows, tanks, or testing cattle at arrival is probably not adequate for preventing an epidemic of Myco mastitis. Biosecurity programs for any infectious disease must include multi-level testing of cows, pens and tanks (where applicable), but more importantly, they absolutely must include an action plan for preventing the spread of disease and for handling infected cattle as they are identified.

The cost of culturing cow samples so far in this herd, as a result of the epidemic and intensive culturing upon entry and exit of the hospital pen, has approximated $100,000. This does not include losses incurred from culling of Myco-positive cattle, extra labor required to milk hospital cows during the epidemic, or discarded milk. Any herd undergoing expansion by purchase of lactating cattle should consult with their veterinarian and do everything possible to establish biosecurity practices at multiple checkpoints, plus a plan for handling problems that occur.

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Growth of female dairy calves fed neomycin and oxytetracycline in milk replacer

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Introduction

Public concern about antimicrobial resistance of foodborne pathogens has led to a re-evaluation of the costs and benefits of feeding antimicrobial agents to livestock. The potential benefits of restricting antimicrobial feeding should be evaluated in light of effects on animal health, growth and economic efficiency of production. Previous experiments in research herds showed that feeding milk replacer containing antibiotics increased growth rates of calves, but data are lacking from commercial dairy farms. The purpose of our study was to evaluate the effect of feeding oxytetracycline and neomycin in milk replacer on growth in dairy heifers from birth to four months of age.

Materials and Methods

Four privately-owned Holstein herds milking from 70 to 350 cows near Ithaca, New York were enrolled in the project. Female calves born from July 1 to December 31, 2002 were assigned at birth to one of two treatment groups. Calves in the first group received a commercial milk replacer (20% fat, 20% protein) containing 200 grams/ton oxytetracyline and 400 grams/ton neomycin base. Calves in the second group received an identical milk replacer except without antibiotics. Within each herd, treatments were assigned sequentially to groups of calves born in alternating two-week periods after selecting the initial treatment at random. Girth and withers height measurements were taken during the first week after birth and then 2, 4, 8 and 16 weeks later. The individuals caring for and measuring the calves were blinded to treatment group assignment. Body weight was estimated from girth measurements. The daily change in girth circumference, withers height and body weight was estimated for each calf using linear regression. The effect of treatment group on daily gain and final weight was tested using mixed linear models.

Results and Conclusions

Results from 133 calves were included in this preliminary analysis. Feeding oxytetracycline and neomycin in milk replacer significantly increased growth from birth to 2 months of age as measured by withers height (0.03 cm/day; 95% CI 0.001, 0.05), girth (0.05 cm/day; 95% CI 0.02, 0.08), and body weight (0.1 kg/day; 95% CI 0.03, 0.17). When considering the period from birth to 4 months, the effect of treatment on growth rate was not significant (P > 0.1). However, heifers in the antibiotic group weighed on average 5 kg (95% CI _1.0, 11.3) more than heifers in the control group at 4 months of age. The results of this study in commercial dairy herds were consistent with previous experiments using purchased bull calves or heifer calves born in research herds.

Performance of a Timed Artificial Insemination Program for First Service Followed by TAI Combined with Natural Heat Detection versus TAI with Natural Heat Detection for First Service and Subsequent Breedings in a Commercial Dairy

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Introduction

Designing effective reproductive programs is an important role for dairy veterinarians on dairies today. Given a wide variety of ovulation synchronization and estrus detection aids, it is unknown if timed artificial insemination (TAI) programs and natural heat detection should be blended or used separately. Therefore, it would be very useful to veterinarians and producers to evaluate how natural heat detection and timed insemination programs work in concert, in contrast to timed insemination programs in the absence of heat detection. The goal of this study was to evaluate the potential effects of breeding dairy cattle with a 100% TAI program on first service, followed by natural heat detection and TAI if diagnosed open at pregnancy examination. This was compared with the current reproductive program of natural heat detection after a Presynch program and TAI on all cows not bred after an observed natural heat, followed by natural heat detection and TAI if diagnosed open at pregnancy examination.

Materials and Methods

A commercial dairy, milking 1,900 cows, three times/day, was selected for the study. The herd's rolling herd average (RHA) was 24,500 lbs (11,136kg), their average heat detection rate was 67% for the previous year, and their yearly Pregnancy Rate was 20 % with a range of 11 to 25%. The breeding program for the past two years involved prostaglandin injections at 30-36 days in milk (DIM) and 44-50 DIM (Pre-Synch). The voluntary wait period was set at 46 DIM. All cows not bred by natural heat detection were given GnRH at 57-63 DIM, prostaglandin at 64-70 DIM, GnRH at 66-72 DIM and time-bred automatically at 67-73 DIM, 12-16 hours after the previous injection of GnRH (Ov-Synch).

Cows were randomized using a computer program (EpiInfo) into two treatment groups. Farm personnel and veterinarians were blinded to treatment and control cows to minimize bias, and potential confounding factors were taken into consideration in the study design. The control group cows were exposed to the same breeding program that the herd had been using for the previous two years. The treatment program was as follows: prostaglandin injection at 9-15 DIM and 23-29 DIM, GnRH injection at 36-42 DIM, prostaglandin injection at 43-49 DIM and GnRH injection at 45-51 DIM. The voluntary wait period in the treatment group was 46 days as well, and all of the cows in the treatment group were bred automatically at 46-52 DIM (Pre-Synch, Ov-Synch with no natural heat detection on first service). Inclusion criteria for randomization included ambulatory cows still present on the farm at 9-15 DIM. Pregnancy was evaluated by rectal palpation at 35-41 days post-breeding. For both groups, cows open at pregnancy examination were placed on the Ov-Synch program, either the same day if a corpus luteum was detected by rectal palpation, or in one week if one was not detected.

The main outcome of interest is the overall aver-