

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-

age pregnancy rate for an even number of cycles. Pregnancy rate is defined as the average proportion of cows open and eligible for insemination that become pregnant per 21-day estrus cycle. Covariates include week of enrollment, retained placenta (RP), metritis, milk fever, displaced abomasum, foot disease and parity. In addition, projected ME305 and peak milk were compared between groups. A calculated sample size of 400 cows per treatment group allows for detection of a meaning-

ful difference in the proportion of cows pregnant between the two treatment groups.

Results and Conclusions

Results of this study will help organize labor on dairies and should be generally applicable to similar dairies. The final results will be presented at the September 2003 conference.

Milking Procedures and Udder Health Management on US Dairy Operations: Results from NAHMS Dairy 2002 Study

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Introduction

Many recommendations relating to proper milking procedures and udder health management have been published, but adoption of these recommended practices on US dairy farms has not been determined. The National Animal Health Monitoring System's (NAHMS) Dairy 2002 Study included survey questions regarding these practices on dairy farms. The objective of this report is to describe current milking procedures and other management practices associated with udder health on U.S. dairy operations.

Materials and Methods

The NAHMS Dairy 2002 study surveyed operations in 21 states representing 82.8% of US dairy operations and 85.5% of US dairy cows. Data was collected during the first six months of 2002. A stratified random sample of 1104 farms was included in this report on milking procedures and udder health management. Data was weighted so that inferences could be generalized to the population. Survey questions included milking personnel's use of gloves, pre-milking teat preparation, automation used in milking, post-milking teat protocol, milking frequency, use of vaccines related to udder health and the use of dry cow therapy.

Results and Conclusions

Only 32.9% of operations represented by the Dairy 2002 study reported that workers wore gloves to milk

all cows. Forestripping was practiced on all or some cows on 86.9% of operations. Overall, 59.1% of operations used a predrip teat preparation in both summer and winter. The two most commonly used disinfectants in predrips were iodophore and chlorhexadine (70.3% and 10.4% of operations using a predrip, respectively). Teat wash preparation methods were used on 35.6% of operations. Teat wash preparation was most frequently done using a single use cloth/paper towel on 53.4% of operations using teat wash preparation methods. Neither a predrip nor a teat wash method was used on 5.3% of operations. Drying of teats following wet prep method was most frequently accomplished using a single-use cloth/paper towel. Removal of milking machines by mechanical methods was reported on 36% of all operations, with increasing use as herd size increased. More than 94% of operations used a post-milking teat disinfectant, with iodophores and chlorhexadine being the most common. Most operations reported milking cows twice daily (93.6% of operations representing 78.6% of cows). Coliform mastitis vaccines were administered to the majority of cows on 35.8% of operations representing 57.1% of all cows. Intramammary dry cow therapy was administered to all cows at dry off on 75.2% of operations. The majority of cows was treated with a dry cow product containing cephalosporin, followed by the combination of penicillin G/dihydrostreptomycin. Although results suggest that many recommended procedures are used frequently on a majority of US dairy operations, continued education regarding how to improve milking procedures could help reduce the incidence of mastitis.