Research Summaries

DAIRY I

Moderator: Greg Goodell

Influences on Early Fetal Loss in Dairy Cattle

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Introduction

Early fetal loss in dairy cattle is a major factor contributing to repeat breeding. If the average fertilization rate in cattle is 85-95% and the incidence of repeat breeders is 56-72% of the herd, then embryonic or early fetal loss (EFL) accounts for 15-25% wastage. It was the purpose of this project to evaluate the effects that changes in body condition score (BCS) and breeding a potentially pregnant cow have on EFL during two periods: between 24-28 days after artificial insemination (AI), and between 28-42 days after AI.

Materials and Methods

Healthy cows from one commercial 3000-cow Holstein dairy herd were enrolled at the time of AI three mornings per week for one month. From computerized breeding records, average heat detection (service) rate was about 66% and conception rate for the AI technician was 24%. Blood for progesterone concentration was sampled at days 0, 21, and 24 post-AI to determine actual estrus and early pregnancy. Ultrasounds (US) for pregnancy were conducted at 28 days post-AI and cows were palpated per rectum at 36-42 days post-AI if they did not return to estrus or were found open at US. Cases of EFL in two different time periods were evaluated for conditions affecting cows during those times, specifically AI breedings while the cow was in an early stage pf pregnancy, and changes in BCS. Data analysis included univariate and bivariate analysis for the outcome of EFL (lost pregnancy in the two-week period).

Results and Conclusions

The study enrolled 385 cows at AI. Over 90% had progesterone concentrations <1.0. Fifty-one percent of cows with low progesterone at AI were considered pregnant at 24 days post-AI. Thirteen percent of the 178 diagnosed pregnant at 24 days were open on US 28 days later. There was no significant difference in pregnancy loss between 24-28 days after AI between cows that lost body condition between AI and 28 days and those that did not (p=0.16), nor for pregnancy loss between 28 and 36-42 days after breeding (p=0.58). However, cows diagnosed pregnant at 24 days post-AI that were bred between 21-28 or between 24-28 days after AI were two times more likely to be open at US (28 d) (p=0.001; p=0.01, respectively). Cows diagnosed pregnant at 28 days and bred between 21-28 days or between 28 days and rectal palpation (36-42 days), were three times more likely to be open at rectal diagnosis (p=0.005; p=0.03, respectively). Although pregnancy loss can occur for a number of reasons, there is some indication that breeding pregnant cows before the 42nd day of gestation is associated with early fetal loss.