

Research Summaries

DAIRY II

Moderators: *Mike Bolton and Phil Sears*

Pregnancy Diagnosis by Rectal Palpation in Dairy Cows: an Economic Comparison of Four Palpation Schedules

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Introduction

Pregnancy diagnosis by rectal palpation is one of the most frequent procedures performed by dairy veterinarians, but very little is known about the economically optimal schedule for palpation. In a practitioner survey, 34 days was the median response for how soon after breeding veterinarians reported routinely palpating cows (see companion abstract). Previous research showed that cows checked later in gestation were more likely to stay in the herd and calve again, but those studies did not address the optimal herd-level schedule. The purpose of this study was to estimate the effect of palpation schedule on days open and culling for four pregnancy diagnosis schedules in herds using only artificial insemination for breeding.

Materials and Methods

We programmed a discrete event simulation model of the reproductive events of dairy cows using MatLab software. In this preliminary analysis, the model was run for a herd size of 200 cows using four scenarios: 1) palpate every seven days, minimum interval from breeding to palpation of 35 days, 2) palpate every 14 days, 35-day minimum, 3) palpate every seven days, 42-day minimum, and 4) palpate every 14 days, 42-day mini-

num. For all scenarios, cows diagnosed open were treated with prostaglandin, rechecks were not performed on pregnant cows and cows culled were replaced. Output data included number of palpations, number of herd visits, days open and reproductive culling events.

Results

Average days open (including results for cows that never conceived) for scenarios one through four were 262, 255, 252 and 250, respectively. Considering the costs of pregnancy examinations, call fees, days open and culling, the most economical strategy was to visit the herd every 14 days and check cows 42 or more days since insemination, and the worst schedule was to visit the herd every seven days and check cows at a minimum of 35 days post-breeding. The annual difference in costs for these two programs was about \$6000.

Significance

These results suggest that in some circumstances it may be less cost-effective to perform pregnancy diagnosis at 35 days after insemination compared with using 42 days as a lower cut-off. These findings and further sensitivity analyses of model assumptions will be discussed.