Supporting the implementation and monitoring of selective dry cow therapy (SDCT) on NY State dairy farms

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Introduction

Selective dry cow therapy (SDCT) is both a cost-saving and antimicrobially conscientious approach to the critical time of dry off in a dairy cow's lactation. Guidance regarding proper implementation is crucial to the success of a SDCT program, and farm and cow-level selection parameters should be carefully followed. The objective of this project was to create a formal program in which eligible dairy farms in New York State would receive guidance in the form of SDCT protocol development, software use, dry-off procedure training and data monitoring regarding udder health and milk quality parameters through the entire enrollment period. Here we describe the program and farm performance after implementation thus far.

Materials and methods

Eligible farms were enrolled in the program by their respective veterinarian of record or other farm management staff. After enrollment, a mandatory webinar was attended by farm management in which SDCT selection criteria, program logistics, data availability on farm and the importance of meeting certain milk quality and udder health standards (e. g. bulk talk SCC < 250,00, limited contagious mastitis) was discussed. NY State CE credit was also available to the veterinarian through involvement in the program.

An in-person farm visit was conducted in which individualized SDCT protocols were developed, and training was provided for these protocols. Dry-off procedure training materials were developed, and farm employees attended formal refresher trainings as requested by the veterinarian of record, with a bilingual element when necessary.

If the farm had records based in DairyComp 305, the SDCT algorithm was set up and parameters for cows at low risk of a subclinical mastitis infection at dry off were discussed and inputted. The DairyComp SDCT algorithm is a research-based module that considers the entire lactation of the cow and identifies low risk cows as the following: monthly test SCC less than 200,000 at every test day, fewer than 2 cases of recorded clinical mastitis, and no recorded mastitis within 30 days of dry off.

Farms who did not have records based in DairyComp or monthly DHI SCC testing were still eligible for enrollment, and individualized decision trees were created in order to identify low risk cows. Data from all enrolled farms was analyzed on a monthly basis, and reports assessing udder health and milk quality trends were generated and sent to farm management.

Results

Data from 24 dairies was compiled and summarized in this study. Two enrolled farms dropped out of the program due to an increase in negative udder health events that was perceived by farm management to be related to SDCT. Farms enrolled ranged in size from 65 to 3,774 mature cows; with an average size of 985 mature cows. Of the 24 farms that started SDCT, 21 of them used DairyComp software. Four of the farms were robot dairies. On average, herds decreased their dry cow antibiotic use by 53%. Metrics used to monitor herd infection dynamics before and after implementing SDCT included average monthly somatic cell count, fresh cow mastitis incidence, average herd prevalence of high first test, average herd prevalence of subclinical infection, average new infection risk, and cure risk. For all but a few herds, 95% confidence intervals overlapped for all herd health outcomes before and after starting SDCT.

Significance

A program to support the implementation and monitoring of SDCT was created and implemented at dairy farms across New York State. Results demonstrate that not all cows need antibiotic administration at dry off, and that a conscientious use of dry cow therapy can be successfully initiated on eligible farms without significant detriment to udder health and milk quality parameters. Despite negative reactions on some farms, this program confirms that SDCT is a valuable tool that can be used not only to reduce antimicrobial costs on farm, but also to fulfill an industry goal of judicious antimicrobial use.

