Implementation and follow-up of selective dry cow therapy (SDCT) programs in New York dairy herds

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Introduction

Selective dry cow therapy (SDCT) is a practical method to reduce both costs and antimicrobial use on the dairy without compromising udder health in the following lactation when implemented well in the correct herds. The objective of the project was to implement SDCT programs in commercial dairy farms in New York State and monitor response. Selected farms were enrolled in a formal program that included protocol development, implementation of automation in on-farm software (DairyComp 305), employee training on proper dry-off techniques, and data evaluation to track the milk quality and udder health response to the new protocol.

Materials and methods

Eligible farms were selected from the client base of both veterinary practice and Quality Milk Production Services (QMPS) herds. Convenience farm visits were conducted to introduce and discuss the available herd performance and economic data available from previously conducted trials. Included herds had an average of 750 lactating cows (60-2,000 cows).

If a farm was determined to be an acceptable site based on current milk quality and udder health standards (e.g. bulk tank SCC < 250,000, limited contagious mastitis), facility design, herd data availability (routine DHI SCC testing and clinical mastitis event records) and likely protocol compliance, they were formally enrolled in the program. Herds were enrolled from December 2019 until December 2020.

SDCT algorithm automation was set up in DairyComp 305, protocols were developed, and on-site multi-lingual training was provided to review proper dry-off and hygiene procedures for each individual dairy farm. The base algorithm identifies low risk cows (i.e. not likely to need intramammary antibiotic treatment) as: all monthly test somatic cell counts (SCC) less than 200,000, less than 2 cases of recorded clinical mastitis, and no mastitis case in 30 days prior to dry-off. DairyComp 305 data backup or transfer was initiated to allow monthly reporting to assess the udder health trends following implementation. Follow-up retraining was provided as needed for individual dairy farms.

Results

There were 23 herds initially enrolled. Currently, there are 21 herds in the program representing over 15,000 lactating cows. Represented herds have been enrolled from 5 to 15 months. One herd was lost due to sale of the farm and another due to perception of more mastitis in fresh cows. On average, 56% of individual cows among herds were designated as low risk by the algorithm and thus candidates for not being treated with intramammary antibiotics. Compliance to the algorithm in the herds ranged from 70-100%. Ninety-five percent enrolled herds have realized a decrease in bulk tank somatic cell count, a decrease in new infection risk, and an increase in percentage of cows with an SCC less than 200,000 while on the program.

Significance

Based on the available published literature of randomized-controlled trials for SDCT, an algorithm-based program for identifying low risk cows and not treating them with intramammary antibiotics at dry-off was expanded to commercial herds of various sizes across New York State. The results of this implementation program demonstrated that SDCT is a viable tool to reduce antimicrobial use and dry-cow antimicrobial costs without detrimental effects on milk quality or udder health parameters.