Johne's Disease Control in Ontario and Western Canada

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Introduction

Risk assessment (RA) based Johne's disease (JD) control programs are used in many countries. A RA is an on-farm questionnaire that probes management practices in the calving area for different age groups of heifers and cows. The higher the assigned score, the higher the risk of spreading JD on farm. Based on the score, veterinarians make recommendations for management changes to reduce the risk of JD spread on that farm. The success of RA based programs is not only dependent on the correct identification of high risk areas but also the compliance of producers with suggested management changes. The objectives of this study were to evaluate a voluntary JD RA control program in Ontario and western Canada and to assess the producers' perceptions of the program.

Materials and Methods

The program was implemented from 2005 to 2007 in Ontario and western Canada, with participating herds completing a RA and having their milking herd tested with a JD milk ELISA test. A subset of dairy producers (n = 499) was contacted and 240 producers agreed to participate in this study. A telephone survey was conducted in 2008 asking about their perception of the program and the suggested management changes. Beginning in late 2008, these herds were retested with the same milk ELISA test. As of April 2009, 154 milking herds had been retested. The 2+ year lag period was deemed necessary since the goal was to test milking cows born under the management practices documented during the original RA. The data were described and analyzed using non-parametric statistics.

Results

The producers generally liked the program and found the suggested changes reasonable. Most recommendations focused on improving the hygiene in the calving area. However, on average, only two of six farm-specific recommendations were implemented. Herds with JD test positive cows on the original test were more likely to implement at least one recommendation. The recommendation with the highest compliance was culling of test positive cows. Although the overall within-herd test prevalence dropped between the two tests (2.4 ± 4.9% to 1.5 ± 3.0%), culling did not affect the prevalence at the second herd test. The higher the initial prevalence, the more the prevalence dropped ($P < 0.0001$). Furthermore, herds were just as likely to change their JD herd status from negative to positive as from positive to negative (with a positive herd being a herd with one or more test positive or suspect cows). The RA scores from 2005-07 indicate that if one management area on a farm is dirty, the other areas are also dirty. The hygiene score of the cows and environment from 2005-07 was associated with the current apparent prevalence of JD on the farm. The use of individual boxstalls versus group calving pens was associated with a cleaner calving environment ($P = 0.04$) and with lower current prevalence of JD ($P = 0.000$). Also, the number of scouring calves ($P = 0.086$) and dead calves (age one to six months, $P < 0.04$) in the six months prior to the RA was associated with the current prevalence. It has to be noted that approximately half of the producers that implemented at least one recommendation reported less calf diseases and generally improved herd health after implementing the change. Another management concern was the introduction of cows to the herd. Herds that had purchased cows in the last five years prior to the RA had an increased JD apparent prevalence today ($P < 0.044$). However, herds that asked about the seller's herd JD history tended to have a lower JD prevalence compared to herds that did not ask about the JD status ($P = 0.067$).

Significance

In conclusion, the RA program did identify high risk areas for the spread of JD on farm. Producers generally liked the program and reported improvement in herd health beyond a reduction in JD after implementing the recommendations.