

Herd-level prevalence of Johne's disease and BVD, management practices and farm characteristics for positive dairy herds in Utah and Idaho

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Introduction

Johne's disease (JD) and bovine viral diarrhoea (BVD) are expensive dairy cattle diseases causing production, infertility, and death losses. Herd-level prevalence estimates are 68% for JD and 15% for BVD. The objectives of this study were to estimate regional dairy herd-level prevalence of JD and BVD and evaluate farm characteristics, management, and control practices on farms with either disease detected.

Materials and Methods

Milk samples were collected in Utah and southern Idaho on 5 dates from each bulk tank on farms participating in a prevalence study. Samples were tested for *Mycobacterium avium* subsp *paratuberculosis* (JD) with ELISA and qPCR (sensitivity 54%), and for BVD with real-time, RT-PCR (sensitivity 35%). Positive herd status for each disease was defined by finding at least 1 tank sample test-positive, because all tests are reported with specificity near 100%. Detection probability with the 5 tests was 98% for JD and 88% for BVD. Owners of JD or BVD-positive herds were offered a farm visit and interview using a questionnaire designed to evaluate farm characteristics and practices associated with JD and BVD.

Results

Most (151/209, 72%) dairies in the study area agreed to bulk-milk testing. Of the 38% of herds with JD detected and 14% with BVD detected, 22 producers agreed to a farm visit and interview to complete the questionnaire. Twenty herds were JD-positive, 1 was BVD-positive, and 1 had both detected. Median herd size was 420 milking cows (mean 778 cows). Median milk sold/305 d was 20,311 lb (9213 kg; mean 20,052 lb or 9186 kg), median and mean bulk milk SCC were 178,000/mL, 175,545/mL. Main breeds were Holsteins 95%, Jerseys 5%, and 68% of farms had > 1 breed. A mean of 37% of stalls were visibly soiled in the back one-third. Milking cow housing was outdoor freestalls (73%), covered freestalls

(18%), and dry lot (9%). Dry cow housing was dry lot (55%), freestalls (32%), loose housing (9%), and pasture (5%). Measurement-based score of freestall maintenance: 75% of farms good (31% mean soiled stalls), and 25% of farms poor (58% mean soiled stalls). Most herds (59%) were closed > 1 yr, while 41% had introduced animals during the previous yr. Biosecurity when last purchased replacements included: none 64%, vaccinations including BVD 27%, segregation of new additions 14%, plastic boots for visitors 9%, BVD ELISA 9%, TB test 5%, and mycoplasma culture 5%. No farms had done whole herd or regular JD testing, but 50% had tested for JD before, and 82% of them had at least 1 previous JD-positive cow. None had tested for BVD before. No BVD-positive farm vaccinated for BVD, but all BVD-negative farms did. Asked if they would segregate JD or BVD-positive cows, 24% answered no, 76% not sure. Most (67%) would ID JD-positive cows, but most (57%) would allow JD-positive cows to calve again, 29% would not, and 14% were not sure. None would ID BVD-positive cows, or designate a separate calving area for either disease. Only 27% of farms fed individual cow colostrum and pasteurized milk to all calves; 73% fed pooled colostrum, raw milk or both. Of the 27% of farms using machinery to move both manure and feed, half did not wash between handling manure and feed. On JD-positive farms, 81% had observed thin cows eating well, and 52% had observed cows with diarrhoea progressing to death. Both BVD-positive farms reported abortions, and 1 had 30 sheep (unvaccinated vs BVD) mixed with cattle and calves.

Significance

Herd size, milk production, and control of (low) SCC in bulk milk were above regional average in the JD and BVD-positive herds. Clinical signs of JD or BVD were seen on most farms where they were detected. However, biosecurity measures, individual animal testing for JD or BVD, and adoption of many prevention or control measures including segregation, calving area management, manure handling, and feeding for calves or cows were underutilized.