Prevalence of '*Mycoplasma wenyonii*' and Candidatus Mycoplasma haemobos in Wisconsin and Michigan dairy cattle herds

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Introduction

Mycoplasma wenyonii (fmr. Eperythrozoon wenyonii) is a hemotrophic, epicellular bacterial parasite of cattle and is associated with clinical disorders including hemolytic anemia, decreased milk yield, and scrotal, teat, and hindlimb edema. *M. wenyonii* and related organism, Candidatus Mycoplasma haemobos have been found in apparently healthy cattle in other countries, but little is known about their prevalence in the U.S. The objective of this prospective, cross-sectional study was to determine herd-level prevalence of *M. wenyonii* and C.M. haemobos in dairy cattle located in WI and MI.

Materials and Methods

Researchers visited randomly recruited farms and collected blood samples from 30 lactating cows. PCR tests were used for *M. wenyonii*, C.M. haemobos, and ELISA was used to test for bovine leukosis virus (BLV). Blood samples were collected from cows located in 64 WI herds (n = 1929 samples) and 18 MI herds (n = 591 samples).

Results

At least 1 BLV positive sample was found in 83% (95% CI: 71.3%-91.1%) of WI herds and 100% (one-sided 97.5% CI: 81.5%-100%) of MI herds. At least 1 blood sample from all herds in both MI and WI, tested positive for *M. wenyonii* and CM Haemobos. Within herd prevalence did not vary among states and were 77.3% (95% CI: 75.6%-78.9%), 71.6% (95% CI: 69.8%-73.4%) and 39.8%% (95% CI: 37.9%-1.8%) for C.M. haemobos, *M. wenyonii* and BLV, respectively. Across states, 22.1% (95% CI: 20.5%-23.8%) of cows were positive for all 3 organisms. Parity was recorded for 546 cows. The prevalence of positive cows by parity (1,2, 3, 4+) were 89.8% (84.6-93.8), 76.8% (69.3-83.2), 78.4% (68.8-86.1) and 73.8% (64.4-81.9) for C.M. haemobos; 70.6% (63.5-77.0) , 57.4% (49.2-65.3), 53.6% (43.2-63.8) and 43.9% (34.3-53.9) for *M. wenyonii* and 26.2% (20.1-33.1) , 32.3% (25.0-40.2) , 58.8 (48.3-68.7) and 44.9% (35.2-54.8) for BLV.

Significance

This is the first report of prevalence of these hemotropic mycoplasmas in Wisconsin and Michigan, both of which appear to be high. The extent of their effect on cattle health and productivity remains unknown and warrants further study.