Likelihood Ratios for Multiple Levels of ELISA S/P Ratios in Dairy Herds Infected with *Mycobacterium avium* subsp. *paratuberculosis* (MAP)

Larew Naugle[1]; W. Saville[1]; W. Shulaw[1]; T. Wittum[1]; I. Brownlee[2]; B. Love[3]; B. Byrum[4]
[1]Department of Veterinary Preventive Medicine, College of Veterinary Medicine, The Ohio State University, Columbus, OH 43201
[2]10730 Carolina Trace, Harrison, OH
[3]Animal Diagnostic Laboratory, Department of Veterinary Sciences, Penn State University
[4]Animal Disease Diagnostic Laboratory, Division of Animal Industry, Ohio Department of Agriculture

Several researchers have advocated the quantitative evaluation of ELISA S/P ratios rather than relying on a single cutoff value to classify test results. Here, we present likelihood ratios that evaluate the risk of MAP infection for multiple levels of ELISA S/P ratios for cows originating from MAP-infected dairy herds. Test records were obtained for nine southwestern Ohio dairy farms that completed whole-herd screening tests for Johne's disease approximately every six months (1994-1999) using both fecal culture and ELISA (IDEXX) concurrently. A total of 1323 S/P ratios, representing 567 cows, were included in the likelihood ratio calculations. Cows with a positive fecal culture at any time in their test history were classified as MAP-infected. Cows with three or more negative fecal cultures in their test history were considered non-infected. ELISA S/P ratios were assigned to one of 17 strata. The likelihood ratio representing the odds that cows were identified as infected relative to classification as non-infected was calculated for each stratum of ELISA S/P ratios. As ELISA S/P ratios increased, cows were more likely to have MAP-infection confirmed during the observation period. Cows with ELISA S/P ratios ≥ 0.800 were 55 times more likely to be identified as infected rather than classified as non-infected. Although the potential for misclassification still exists with S/P ratios ≥ 0.800, these likelihood ratios represent strong statistical evidence that these cows are likely to be truly infected. ELISA S/P ratios <0.800 were of limited value in predicting the true infection status of cows in this study.

Comparison of Management Practices Between Ohio Dairy Herds Involved in Johne's Disease Testing Programs Versus Herds Not Involved in a Testing Program

Larew Naugle[1]; W. Saville[1]; W. Shulaw[1]; T. Wittum[1]; B. Love[2]; S. Dodaro[3]; I. McPhail[3]
[1]Department of Veterinary Preventive Medicine, College of Veterinary Medicine, The Ohio State University, Columbus, OH 43201
[2]Animal Diagnostic Laboratory, Department of Veterinary Sciences, Penn State University
[3]Animal Disease Diagnostic Laboratory, Division of Animal Industry, Ohio Department of Agriculture

The purpose of this survey was to compare the adoption of management practices recommended for Johne's disease control between herds involved in whole-herd testing programs versus those that do not routinely test for Johne's disease. Eight hundred-ten Ohio dairy herds were selected to participate in a mail survey, and a total of 266 questionnaires were returned (32.8% response rate). Because it is conceivable that only pro-