

Improving the sensitivity of herd screens using targeted selection of high risk cows

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Introduction and objectives

A national engagement program in UK dairy herds used a targeted 30 cow milk ELISA screen in combination with a structured risk assessment (www.myhealthyherd.com) to estimate herd prevalence of Johne's Disease (JD). A methodology, based on results of a large retrospective study of herds undergoing quarterly testing for JD, has enhanced the process of selecting animals for screening.

Materials and Methods

385 herds from the NMR Herdwise quarterly milk testing program were identified. The probability of animals being test positive was analysed with reference to possible risk factors: lactation number, current somatic cell count (SCC), history of high SCC, milk yield compared to herd average. Relative risks were calculated to estimate the strength of association between the test status of individual animals and the possible risk factors. A scoring system was devised to select cows automatically for targeted testing based on significant risk factors.

Results and Discussion

84% of positive herds were detected using random 30 cow sampling: this increased to 95% of positive herds if a targeted screen was used based on the scoring system.

Conclusion

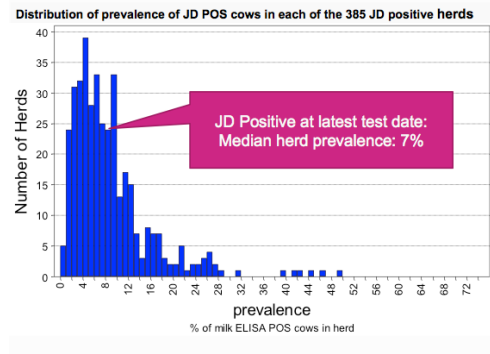
Automatic targeted selection of high risk animals for testing is a practical way of enhancing herd-level sensitivity for JD screening.

Reference

Is targeted milk sampling an effective method of diagnosing Johne's Disease in Dairy herds?

Hanks J.D, Taylor N.M, Kossaibati M.A. Cattle Practice Nov 2012 P1-8

Within-herd Prevalence



Probability and disease associations

Probability of being test positive increased

- x1.5 for cows in parity 3+
- x2 for cows with a SCC >200,000 cells/ml
- x1.8 for cows with >2 SCC >200,000 cells/ml
- and x2 for cows with milk yields more than 25% below their adjusted herd average

Probability of MAP Detection using disease associations

