Johne’s disease vaccine: a cohort study measuring long-term effectiveness of the whole cell killed bacterin

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In this prospective cohort study, three commercial dairy herds vaccinated every other heifer calf using a whole cell killed Johne’s vaccine until two cohorts were obtained. Other Johne’s disease management efforts on the farms were used, including annual risk assessments, but the management of vaccinates and controls was the same in the herd. Fecal samples from heifers from the cohort groups were collected at first calving and at 90 days of pregnancy at each subsequent lactation and tested using bacterial culture with liquid media. Fecal samples from the rest of the herd were also collected and cultured annually at 90 days of pregnancy. Herd production data was collected on a semiannual basis, and data regarding culling and reasons for culling was recorded. Baseline prevalence estimates indicated the herds were moderately to heavily infected with Johne’s disease at the start of the study. Five years after the initial cohort animals were vaccinated, significantly fewer vaccinates were culled due to clinical Johne’s disease, and vaccinates had a significantly lower level of fecal shedding. Survival analysis found vaccinates survived a significantly longer time until being culled for clinical disease, and had a longer time to first positive test result than controls. Vaccination however did not have an effect on the overall survival in the herd if culling for any reason was measured. Whole herd fecal shedding prevalence decreased on all three farms from the beginning of the study. The results of this study demonstrate that use of the commercially available Johne’s disease vaccine serves as a valuable tool in reduction of clinical signs and eventual disease eradication.