Testing of bulk tank milk for Salmonella Dublin infection in Danish dairy herds

The usefulness of enzyme-linked immunosorbent assay (ELISA) was investigated as a simple method to screen for Salmonella Dublin infection in dairy herds, examining bulk tank milk samples for lipopolysaccharide (O:1,9,12) antibodies. The cut-off value for the ELISA on bulk tank milk was established based on individual milk samples (n = 2887) and bulk tank milk from 52 herds. Bulk tank milk samples (n = 5108) were collected from 1464 dairy herds located in 19 different areas. About 10% of the dairy herds in Denmark participated in the study. The percentage of herds changing from test-negative to test-positive in each area was correlated with the incidence of S. Dublin outbreaks in the corresponding county (r = 0.48, n = 19; P < 0.025). The mean level of the OD values obtained in the first and third test rounds was not constant (Pr < 0.0001). The study demonstrated that the probability of being test-negative in the third test round was 0.926 for a herd with 2 previous test-negative results. It was concluded that the investigated ELISA method was in general accordance with the cases of clinical S. Dublin infection recorded, and that the method has a potential for national screening purposes.

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