Prevalence of *Mycobacterium avium* subsp. *paratuberculosis* infection in adult Danish non-dairy cattle sampled at slaughter

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A voluntary, risk-based control program for paratuberculosis in dairy herds was started in 2006 in Denmark. The program does not include non-dairy herds, and the occurrence of *Mycobacterium avium* subsp. *paratuberculosis* (MAP) in these herds is unknown. The objective of this study was to establish the prevalence of MAP infected adult non-dairy cattle in Denmark.

Serum samples were collected between October, 2008 and January, 2009 from every 6th animal over 24 months of age, sent to slaughter to Danish slaughterhouses from non-dairy herds. The sample included 2,368 cattle, the largest breed was crossbred (of unknown breeds) (30%) and the three dairy breeds (Holstein, Jersey and Danish Red Cattle) comprised 27% of the cattle. The serum samples were tested using an antibody ELISA (IDScreen® kit from ID-Vet) and positives were defined as the sample-to-positive ratio greater than 0.60. Information about test sensitivity (Se) and specificity (Sp) were based on literature data. Se was set for each year-age-group from 0.2 (95th percentile: 0.30) to 0.5 (95th percentile: 0.60) for 2-3 year-age-group and older than 5 year-age-group, respectively. Sp was set to 0.995 (5th percentile: 0.90) regardless of the year-age-group.

Using the test information, estimation of the true prevalence (TP) (stratified by breed) was done in a Bayesian analysis (with a random effect of breed) using WinBugs software. Overall, the estimated TP was 0.01 (95% CPI: 2.7E-6 - 0.06), with large differences between breeds. The dairy breeds Jersey, Holstein and Danish Red Cattle had highest ranked TP (mean: 0.13, 0.10, and 0.06, respectively). The former two were the only breeds significantly different from the population mean. The results needs to be further scrutinized, but the indication of dairy-breeds having a higher prevalence might provide a starting point for further analyses into the potential causes of this difference.