

**Faecal shedding probabilities in cattle with different *Salmonella dublin* antibody profiles**

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*Salmonella Dublin* carriers contribute to the bacterial load in infected cattle herds by intermittent shedding of bacteria in faeces, and might be detected based on persistently high antibody levels in serum or milk. The objective was to estimate the probability of faecal *S. Dublin* shedding in individual cattle in risk groups (R1, R2, R3 and R4) based on repeated antibody measurements over a period of 1½ years in cattle in 14 infected Danish dairy herds. A total of 2,669 animals had paired faecal cultures and antibody measurements performed between 1 and 5 times each. R1 had persistently high antibody levels (>80 ODC%), R2 had moderately high antibody levels once or several times (50-80 ODC%), R3 had low to medium antibody levels (25-50 ODC%) and R4 had continuously low antibody levels (<25 ODC%). The overall shedding probability was 1.7%. In R1 it was 3.4%, in R2 2.7%, in R3 1.0% and in R4 0.6%. A logistic regression model taking into account clustering at herd level was used to estimate the probability of shedding at a given age for each antibody profile. The resulting probabilities of faecal shedding were up to 10 times higher in young stock than in cattle above approximately 4 years old, which had probabilities of shedding *S. Dublin* <2%. Younger cattle in the two high risk antibody profile groups (R1 and R2) had significantly higher risk of shedding *S. Dublin* than animals with R3 and R4 antibody profiles. The highest shedding probability predicted by the logistic regression model was 11%. The true probability is very likely 4-5 times higher, because the diagnostic sensitivity of faecal culture is poor. Hence, carrier detection by repeated antibody testing could be relevant, at least in young stock and 1<sup>st</sup> parity cows, in herds attempting to control or eradicate *S. Dublin* from the cattle population, but cost-benefit analyses are necessary to determine the value of such procedures.