

Timing is everything – Choosing the right time to screen the herd for neosporosis

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ABSTRACT

Neosporosis is a major cause of abortions in cattle, leading to economic losses. As no effective treatment or vaccine is currently available, the only strategy to reduce the impact of neosporosis in endemic herds is implementation of control programs, based on serological surveillance. This study aimed to determine the optimal timing for serological testing. Sera were collected from 132 heifers at three farms at three months intervals, between the ages 5 and 28 months. Neospora serological status and antibody titers were evaluated by IFAT, and by ELISA on the first sampling. The agreement between ELISA and IFAT results was 89.9 % (Kappa=0.798). Overall Neospora seroprevalence ranged between 36 % and 66 % on different dates. The antibody titers of almost all heifers fluctuated over time. Of 91 heifers that were sampled on 5 occasions, 67 % maintained their serological status throughout the study. Most cases of negative heifers that become positive in one or more tests (19 of 21 heifers) were transient, while only three remained persistently infected in all further tests. Seropositivity was significantly lower in lactating cows than in pregnant cows or heifers. The results of the first sampling date were representative of the overall status on all dates, with an agreement of 94.5 % (Kappa=0.889). The results demonstrate how fluctuations in antibody titers may affect the sensitivity of serological surveillance. Sampling young heifers, prior to their first insemination may be advisable, allowing future discrimination between what appear to be new infection, which is mostly transient, and congenital or chronic infections, which are usually life-long. This information may assist in the implementation of effective control measures in the herd.