

August: Livestock safety at the fair

Still Brooks, K. M., Stensland, W. R., Harmon, K. M., O'Connor, A. M., & Plummer, P. J. (2018). Risk of exposure to *Coxiella burnetii* from ruminant livestock exhibited at Iowa agricultural fairs. *Zoonoses and public health*, 65(3), 334–338. <https://doi.org/10.1111/zph.12439>

Coxiella burnetii is a zoonotic pathogen typically associated with clinical and asymptomatic infection in ruminant livestock. A re-emerging pathogen of significant public health importance, *C. burnetii* has caused recent epidemics in the United States and Europe, and public livestock exhibitions are increasingly scrutinized as a potential source of *C. burnetii* exposure. Although *C. burnetii* prevalence data among North American domestic ruminants are extremely limited, contemporary studies suggest that this pathogen is both geographically widespread and highly prevalent on a herd basis, especially in dairy cattle and goat populations. We utilized a real-time PCR assay to detect *C. burnetii* faecal shedding by clinically normal, non-periparturient beef cattle, meat goats and sheep exhibited at Iowa agricultural fairs. Individual faecal samples were collected from beef cattle, meat goats and sheep exhibited at twelve Iowa county fairs during the summer of 2009. The sample pool was blocked by species and fair, and ten samples from each block were randomly selected for the diagnostic assay; this test pool is considered sufficient to identify with 95% confidence a shedding animal in a population prevalence of 2.85% (cattle and sheep) and 6.25% (goats). Detection of *C. burnetii* DNA was determined through use of a real-time PCR assay validated for use in bovine, ovine and caprine faeces; threshold of detection is one DNA copy per PCR (sensitivity 95.8%, specificity 100%). All tested samples were negative for *C. burnetii* DNA. We conclude that non-dairy, non-periparturient ruminants exhibited at Iowa fairs are unlikely to shed *C. burnetii* in their faeces and that this population should not be considered to be a significant exposure risk to other livestock or fair attendees.

Moore, D. A., Kohrs, P., Baszler, T., Faux, C., Sathre, P., Wenz, J. R., Eldridge, L., & Li, H. (2010). Outbreak of malignant catarrhal fever among cattle associated with a state livestock exhibition. *Journal of the American Veterinary Medical Association*, 237(1), 87–92. <https://doi.org/10.2460/javma.237.1.87>

Case description: Severe disease and death were identified in cattle exhibited at a state fair that were naturally infected with ovine herpesvirus type 2 (OvHV-2).

Clinical findings: Most affected cattle had anorexia, signs of depression, diarrhea, fever, and respiratory distress ultimately leading to death. Mean duration of clinical signs prior to death was 6 days (range, 1 to 26 days). Mean number of days between apparent exposure and death was 71 days (range, 46 to 139 days).

Treatment and outcomes: 19 of 132 cattle cohoused in 1 barn died of malignant catarrhal fever (MCF). The diagnosis of sheep-associated MCF was confirmed on the basis of results of an OvHV-2-specific PCR assay performed on tissue samples obtained from affected cattle. The disease was associated but not significantly with distance from the center of the barn and was not associated with distance from the center of the sheep pens.

Clinical relevance: Outbreaks of MCF in cattle are unusual, particularly in association with livestock exhibitions. Because the clinical signs may be similar to those of some transboundary diseases, cases of MCF should be reported and investigated. Findings for this outbreak provided evidence to suggest that fair boards and veterinarians should reexamine biosecurity recommendations for livestock exhibitions.

Perttu, R. K., Ventura, B. A., & Endres, M. I. (2020). Youth and adult public views of dairy calf housing options. *Journal of dairy science*, 103(9), 8507–8517. <https://doi.org/10.3168/jds.2019-17727>

The objective of this study was to explore views on dairy calf housing options among American youth and adults. Youth views were of interest because they are future consumers, yet their influence on livestock production practices is often overlooked. Participants 5 to 17 yr of age (n = 463) and 18 yr or older (n = 1,310) completed an in-person survey at the Minnesota State Fair (St. Paul, MN) in summer 2018. The survey was administered via Qualtrics survey software (Qualtrics, Provo, UT) using iPads (Apple, Cupertino, CA) and, in addition to collecting demographics, presented 3 images of calf housing options (individual, pair, or group) and asked participants to select their preferred option and indicate their reasoning for selection (youth), or acceptance for each option and reasoning for selection (adult). The PROC SURVEYFREQ of SAS (9.4; SAS Institute Inc., Cary, NC) was used for descriptive analysis. Rao-Scott chi-square tests (PROC SURVEYFREQ, SAS 9.4) were used to investigate relationships between demographics and housing preference or acceptance. Content analysis identified recurring themes to describe qualitative reasoning underlying dairy calf housing preference or acceptance. The median age of youth participants was 11 yr, 61% were female, 82% were urban residents, and 63% did not have prior experience handling agricultural animals, but 83% had visited a farm in the past. Median age range of adult participants was 45 to 54 yr, 65% were female, 82% urban residents, 41% completed a bachelor's degree, and 81% did not have prior experience handling agricultural animals, but 63% had visited a farm in the past. Overall, group housing was overwhelmingly preferred by youth participants (80.1%), followed by pair (14.3%) and individual housing (5.6%). Youth who chose group housing most commonly cited reasons related to increased socialization (71.4%) and space allowance (58.5%). Housing preference of youth was not associated with age, gender, or prior visits to a farm. However, rural youth more frequently preferred individual housing compared with urban youth ($13.6 \pm 4.5\%$ SE vs. $5.1 \pm 1.3\%$, respectively). Similarly, adult participants were most accepting of group housing for dairy calves (75.8% of participants), with reasons focused on calves' ability to socialize and access to increased space allowance. Adult males, rural residents, and individuals with previous livestock handling experience more frequently accepted individual calf housing compared with females, urban residents, and individuals without previous livestock handling experience. These findings suggest that housing systems that enable greater degrees of behavioral freedom for calves may be more socially sustainable for the dairy sector.