

Late-day BRD

More cattle are breaking with BRD after Day 42 on feed. Who's at risk?



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Bovine respiratory disease (BRD) is the most common and costly syndrome affecting beef cattle postweaning. This disease affects almost all fed-cattle operations and is one of the most-common targets for both preventative and therapeutic programs.

Risk for BRD is multifactorial, influenced by several bacterial and viral pathogens, animal immune status and time of year. The timing of BRD after arrival changes monitoring and control measures. Therefore, understanding when disease may occur is important.

Expected disease timing pattern

Most BRD outbreaks occur soon after arrival, with the majority of cattle treated for BRD occurring before Day 45 on feed. Several risk factors happen soon at or soon after feedyard arrival, coinciding with potential exposure to pathogens novel to that group of animals.

Individual cases of BRD early in the feeding phase can result in an outbreak affecting larger numbers of cattle due to simultaneous exposures to both risk factors and pathogens. Research has identified multiple risk factors contributing to early BRD, including long-distance transportation, commingling, lighter-weight cattle, castrating males, transitions to new rations and other sources of animal stress.

Research from more than 10 years ago (Babcock et al.) illustrated that only 5% of cohorts (pens of cattle) had BRD treatments that did not begin until after 42 days on feed (DOF). More recent research (Smith et al.) illustrates a slight increase in the number of cohorts (6.4%) with the predominant BRD timing pattern after Day 42.

While the number of cohorts affected by late-day BRD may not be greatly increased, the number of cattle treated after Day 42 is substantial, with treatments during this time period representing 25% of all BRD treatments (Smith et al.). Anecdotal evidence illustrates that, in several feeding operations, the average timing of BRD treatments is shifting to later in the feeding phase.

Risk factors for late-day BRD

Risk factors for BRD during the early feeding phase are relatively well-defined, but no singular risk factor for late-day BRD has been identified. Recent work identified potential differences between cattle at high risk for BRD and cattle expected to have high performance (Theurer et al.). Results illustrated that high-risk cattle had greater numbers of treated cattle (15.1%) compared to high-performing cattle (12.8%), but the high-performing cattle were treated later in the feeding phase.

Evidence suggests the average timing of BRD treatments is shifting to later in the feeding phase.

One hypothesis forwarded is the change in high-performing cattle based on genetic selections for higher carcass weights and improved carcass attributes may have influenced disease susceptibility. More research is needed to evaluate potential relationships among performance traits and the likelihood of late-day BRD.

Additional work (Smith et al.) illustrated gender and arrival time of year were risk factors associated with the likelihood of individual animal and cohort-level late-day BRD.

Heifers were at increased risk for BRD after 42 days on feed, and this effect was more evident when lot sizes were greater than 100 head. Cattle cohorts arriving in the second quarter (Q2) of the year were more likely to have late-day BRD (15.7%) compared to cattle arriving in Q1, Q3 or Q4 (7.2%, 3.6% and 3.7%, respectively). One theory on cattle arriving in Q2 is that, in many cases, the period after 42 DOF would occur during the summer months, and seasonality of disease may play a role.

The specific causes of late-day BRD have not been identified, but further research is progressing in this area. Current research

has illustrated that risk factors for late-day BRD are not the same as risk factors for BRD early in the feeding phase.

Managing late-day BRD

Without a clearly defined cause for late-day BRD, a single solution to prevent all cases is not possible. Understanding the expected frequency and risk factors can help allocate labor appropriately within the feedyard.

Higher-performing cattle, heifers and cattle arriving in Q2 have all contributed to risk of late-day BRD.

One of the key management components is not to become complacent on cattle after they have been through the typical period of high BRD risk. These cattle should be vigilantly monitored to identify potential problems early in the disease outbreak, allowing potential interventions early in the process. Identifying a single case should be an indicator to perform more detailed observations on the remainder of the pen.

Diagnostic information is also important in late-day BRD cases. Clinical diagnosis makes BRD challenging to differentiate from other pulmonary syndromes such as acute interstitial pneumonia (AIP). While the case presentation may be similar, necropsy can help distinguish the syndromes. Accurate diagnosis is important, as an AIP within a pen may be problematic. This would typically be one sporadic case, yet a BRD mortality may be indicative of further problems within the pen.

Conclusions

Bovine respiratory disease is an important syndrome in feedlot production. Feedyards and veterinarians have been observing this syndrome more frequently later in the feeding period. Heifers, cattle arriving in Q2, and higher-performing cattle may be at higher risk for late-day BRD. Continued observation beyond the typical high-risk period is indicated for some lots of cattle.

Consult your veterinarian if late-day BRD is an issue on your operation. **ABB**

Author Brad White is on faculty at Kansas State University College of Veterinary medicine and serves as director of the Beef Cattle Institute. To learn more on this and other beef herd health topics, tune in to the weekly *Cattle Chat* and *Bovine Science with BCI* podcasts available on iTunes, GooglePlay or directly from *KSUBCI.org*.

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