

Feedback From Feeders

March 2013

Bovine Respiratory Disease Complex Series



FAST FACTS

- The BRD complex is the most important cause of economic loss in the feedlot.
- Pneumonia is the most common cause of death in feedlot calves within the first 60 days of arrival .

The cow-calf producer doesn't just sell calves. They are the first link in the chain of supplying beef to the consumer. What is sometimes forgotten is that what happens on the ranch doesn't stay on the ranch but can continue through to the feedlot or slaughterhouse and onto the consumer's plate, whether it is a calf, cow or bull. When the national beef quality audits were first conducted, the major defects noted were from injection site lesions. Through BQA certification programs across the country, producers took the message to heart and did the simple things that mattered – inject in the neck and avoid damaging muscles used for whole meat cuts as much as possible. Now there is another quality measure on the horizon that not only affects the feedlot, but could have direct impact on the ranch – Bovine Respiratory Disease Complex (BRD).

The BRD complex is the most important cause of economic loss in the feedlot. Death, the cost of preventive and treatment uses of antibiotics, and losses in average daily gain are the major consequences of this disease. Pneumonia is the most common cause of death in feedlot calves within the first 60 days of arrival (Gagea et al., 2006). Although there is current controversy about what preventive measures will actually reduce the risk of BRD in the feedlot (Taylor et al., 2010), a couple of factors seem to hold true. Preconditioning has benefit to the feedlot, with weaning prior to sale the most important aspect. In addition, vaccination prior to arrival to the feedlot has some value. Mass medication through preventive (or metaphylactic) use of antibiotics is of great benefit (Gonzales-Martin et al., 2011) but is costly and a practice questioned by public health because of antibiotic resistance issues.



FAST FACTS

- In one study, calves that were retained on the ranch for 45 days after weaning were less likely to get sick and require treatment during the receiving period .



In a recent survey of feedlot veterinarians, Terrell et al. (2011) found that the most important factors for predicting feedlot mortality considered by the veterinarians included cattle health risk on arrival. Other factors contributing to BRD risk in the feedlot have been evaluated. The number of new cases of respiratory disease was monitored in feedlot pens in nine states (Sanderson et al., 2008). Calves commingled from mixed sources, mixed sex groups, and those arriving from longer distances were at higher risk for developing BRD in the feedlot. Cattle within the first three weeks on feed were at the highest risk for BRD and heavier entry weight was associated with lower illness risk. Compared to cattle with entry weights below 550 lb, cattle with entry weights between 550 and 700 lb tended to have less initial respiratory disease risk and cattle with entry weights over 700 lb were even less likely to experience initial respiratory disease. Thus, calf weight appears to be an important factor in disease development.

Effects on Entry Weight

Diseases on the cow/calf operation, such as BRD, can affect calf growth and sell-weight. In one study, respiratory conditions during the pre-weaning period resulted in a 36 lb reduction in weaning weight, even when controlling for other important weaning weight factors (Wittum et al., 1994).

In an investigation of calf arrival characteristics on feedlot outcomes, Reinhardt et al. (2009) found that more excitable cattle (disposition score > 2; where disposition score was estimated with a 6-point scoring system (1 = calm, slowly walks out of chute and down exit alley; 6 = extremely excitable, agitated, jumps when exiting chute, runs away from chute) had lower arrival body weight, final body weight, ADG, hot carcass weight, yield grade, quality grade, marbling score and mortality. This research indicates that temperament can affect feedlot performance. Temperament can be affected by handling but also has a genetic component.

Calves challenged with acute exposure to BRD pathogens had lower ADG, lower hot carcass weights and less retained nitrogen (Burciaga-Robles, et al., 2010). These effects were seen in calves exposed to BVDV (lower ADG and lower nitrogen retention) or *Mannheimia hemolytica* (lower hot carcass weight). This research indicates that even short-term exposure to these disease agents can have long-term effects.

Weaning procedures may also influence health after arrival to the feedyard. In one study, calves that were retained on the ranch for 45 days after weaning were less likely to get sick and require treatment during the receiving period (Step et al., 2008). Weaning in a smaller area and training calves to the bunk significantly improved weight gain after arrival compared to large-size paddock, abrupt weaning in one Australian study (Walker, et al., 2007).



The genetics of the calves can also influence their BRD risks as well as ADG. Although recognized as a relatively modest contribution to BRD risk, the role that genetics plays is significant enough because of the large role that BRD plays in influencing disease and death (Schneider, et al., 2010).

Producing quality calves

To provide quality beef to the consumer, the first months in the life of ranch calves can have an effect on what reaches the plate. In addition to the genetics of the calves on the ranch, reducing disease risks through early vaccination and preventing exposure through biosecurity measures, providing for optimal growth for the breed, and low-stress handling and training to improve temperament could go a long way to producing even higher quality calves entering the beef supply.

FAST FACTS

- The first months in the life of ranch calves can have an effect on what reaches the plate.



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