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Shrink: How does it affect your bottom line?

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For the most of us, transportation is an inevitable part of life. We transport ourselves to and from pastures to check cows, to and from work, to and from children's activities. For our cattle, transportation is also an inevitable part of life. Cattle are often transported as they move through each sector of the beef industry, from your farm to the sale, from the sale to their new owner. It's important to realize that transportation can be a very stressful event in a calf's life. Not only are they exposed to new conditions and diseases along the way, but there will also be periods of time where feed and water deprivation during transport results in weight loss, better known as shrink.

There are 2 basic types of liveweight shrink in cattle. Excretory shrink is lost from urine and feces, and is the easiest form of shrink to replace. Indeed it has been shown that excretory shrink accounts for the bulk of weight loss. Fecal loss has been shown to account for approximately 65% of total lost weight, and 28% of the total weight lost has been shown to come from urinary excretions. However, this still leave a portion of weight loss from another source. The second type of shrink comes from tissue loss, and is much harder to replace. Tissue loss comes from the loss of fluid from actual muscle and fat cells.

Shrink is affected by many factors including: transit time, transit distance, weather conditions, cattle handling methods, cattle type (frame size, age, sex, and body condition), previous nutrition, and overall management. Previous studies have shown that combined effects of shipping and handling have a greater impact on weight lost than fasting (holding cattle off feed and water) alone. The majority of shrink occurs during the initial part of the trip. In fact, cattle may lose half as much weight in 25 miles as compared to 200 mile trip. Another way to think of this is that cattle will lose weight at a slower rate in the latter part of a trip compared to the beginning part of the journey.

Fill and diet can also affect the degree of shrink. Cattle that are a diet that produces more gut fill, such as lush gray or baleage, are typically expected to undergo a greater percent shrink as compare to cattle on hay or a high-concentrate diet. A preconditioning program designed to reduce stress by having cattle weaned and started on feed for a certain period of time may also decrease shrink as well as weight recovery after transport. Calves that are weaned on the truck typically experience a greater amount of shrink than preconditioned calves.

Several management factors can have an impact on shrink. Low stress handling is an important part of minimizing shrink. As shrink has been shown to be linked to stress, any practice that decreases stress is helpful. Implement practices such as avoidance of rough handling, moving slowly and quietly when handling cattle, and not overcrowding trailers. Cattle with poorer temperaments may also experience higher levels of stress when handled and transported, and thus higher levels of shrink. Cattle type will also impact shrink, with heifers generally experiencing more shrink than steers.

Getting back to the title of this article, how does shrink affect your bottom line? Quite simply, the majority of cattle in the U.S. sell by the pound, and less pounds equals less money in your pocket. Taking advantage of some of the practices reflected above will help to reduce shrink in calves. Let's look through an example: If we have a 600 lb steer, and he was worth

approximately $1.50/lb, we expect a check of $900. However, if he weighed 600 lbs before we took him to the sale, we'd expect him to experience some shrink around 6%, which equals 36 lbs lost. Now he weighs 564 lbs. If we received the same price per pound, our check now sits at $846. That's $54 lost just due to shrink. Of course this doesn't take into account the increase in price per pound we'd expect for a slightly lighter animal. If we were able to cut the shrink in half to 3% through management practices, or by negotiating a set pencil shrink on farm fresh cattle, we're now selling a 582 lb animal, which gives an extra $27.

While shrink may be an inevitable part of handling and transporting cattle. Improvements in management practices and paying close attention to factors that have been shown to affect shrink can lessen the impact on your bottom line.

Make plans to join us August 3 and 4 in Starkville for the Stockmanship and Stewardship Event to be held at the Mississippi Horse Park. The program features discussion of best management practices, consumer perceptions, practical stockmanship sessions, practical stewardship, as well as an opportunity for BQA certification. This event is held in conjunction with the Deep South Stocker Conference, and also features an industry trade show and a tour of the MSU Beef Unit facilities. Visit deepsouthstocker.org for more information and to register.

For more information about beef cattle production, contact an office of the Mississippi State University Extension Service, and visit extension.msstate.edu/beef.

References

Parish, J.A. and J.D. Rhinehart. 2009. Understanding and Managing Cattle Shrink. Mississippi State University Extension Publication 2577