

## Transporting Cull Cows – What You Need to Know

Karen Schwartzkopf-Genswein. Agriculture and Agri-Food Canada, Email: karen.genswein@canada.ca

### Why is this important?

An important economic component of the dairy industry is the marketing of cows for meat. Cull cows are usually sold directly to a slaughter plant or through an auction market where sufficient numbers of cows are assembled to make full truck loads which are then sent for slaughter. In both cases, cull cows may be transported significant distances increasing the risk of reduced welfare as they are by nature older, thinner, and may be in poor health. Over the past 10 years our research group has conducted several research studies with the goal of determining transport impact on cattle including cull cows (dairy and beef). The following summary provides the most relevant findings regarding the relationship between transport conditions (distance, loading density and environmental conditions) and cull cow welfare. It should be noted that cull cows are not identified by breed in the studies cited below but indicate a cow that is no longer economically viable on farm.

### Transport Duration and Distance

We conducted a survey of 6152 loads of cattle (only 1 % of which were cull cows) that were transported > 400 km and found several negative welfare outcomes associated with increased transport duration. For example, body weight shrink increased faster in cattle transported for longer periods at higher temperatures, up to 10% for cull cows transported for 30h at 20°C (Figure 2). We also found that a higher incidence of mortality, becoming non-ambulatory and lame were observed when shipping times exceeded 30 hours (Figure 1A). Results of the same study found that only 5% of the loads tracked exceeded 30 hours. This suggests that recommendations to reduce maximum transport durations to 30 hours would not limit marketing for the majority of producers while improving the welfare of the cows.

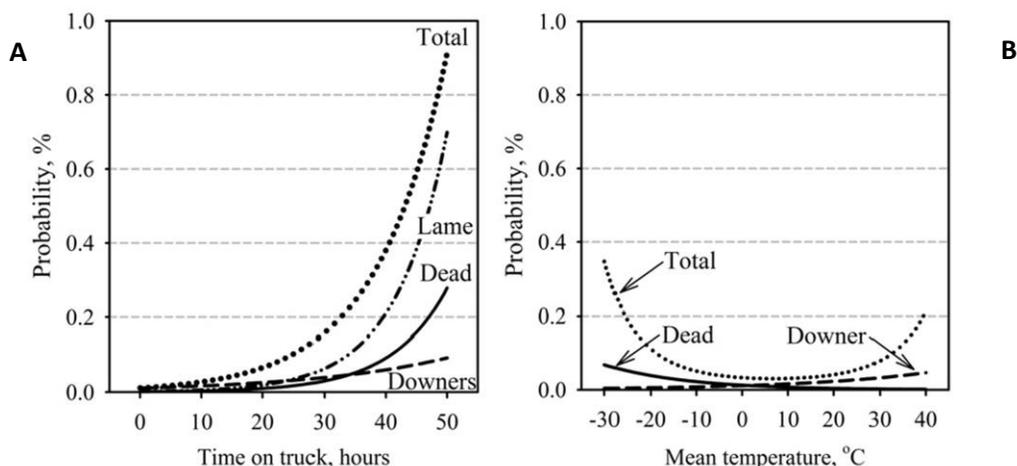


Figure 1. Effect of time cattle spent on truck (A) and mean environmental temperature (B) on the likelihood of becoming lame, non-ambulatory (downer) and dead during long haul transport (> 400 km). Total was the sum of lame, non-ambulatory (Downer) and dead animals during the journeys.

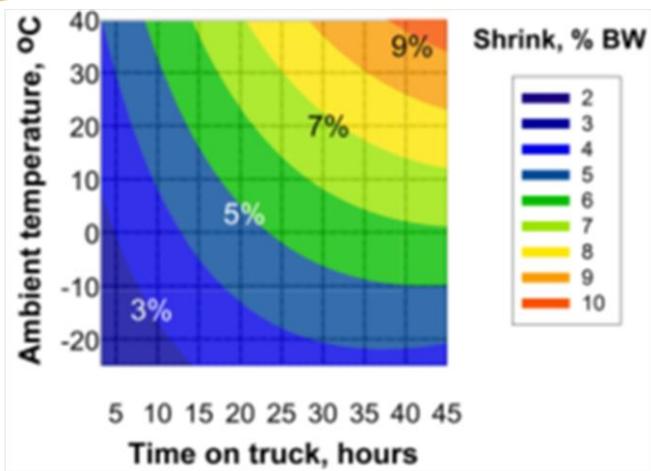


Figure 2. Effect of time spent on truck and average ambient temperature during the journey on body weight shrink of cattle during transport distances > 400 km. Add 1.56% of body weight (BW) for feeder cattle, 2.60% for calves, and 3.56% for cull cattle to the value from any point in the figure.

### Loading Density

There is economic incentive for producers to load animals more densely because of the high cost of hauling cattle. Our studies found that cull cows are generally loaded less densely than calves and feeder cattle. Regardless of the type of animal transported, loading density was found to be variable between trailer compartments with the middle loaded more densely than the front or back compartments. The number of truck axles (e.g. quad-axle vs tri-axle trailers) used for hauling can also affect loading density. For example, the greater the number of axles, the more weight can be loaded increasing the chance that cull cows (heavier) could be under loaded, especially in the doghouse and nose compartments. Cattle shipped at loading densities lower than 0.015 (0.55 m<sup>2</sup>/cow) or greater than 0.035 k-value (1.55 m<sup>2</sup>/cow) were more likely to die, become non-ambulatory, or lame, especially in the deck and belly. In addition, risk of bruising was higher in cows transported in the doghouse compared to other compartments likely caused by too much rather than too little space, reminding us that either situation has the potential to reduce cow welfare.

### Weather and Trailer Environment

The environment within a cattle liner can be affected by a variety of factors such as air temperature and humidity, loading density, use of bedding and airflow. Although not assessed for cull cows, one of our studies looked at the effects loading densities on trailer environment during the summer transport of feeder cattle and found that the outside temperature had more effect on the trailer environment than loading density. We have also found that death in commercial cattle transported long distances (> 400 km) increases sharply when air temperatures fall below -15 °C and the likelihood of becoming non-ambulatory increases when temperatures rise above 30 °C (Figure 1B). This means that producers and drivers should pay more attention when shipping cull cows under those conditions and implement the use of bedding and or boarding. Although bedding is recommended for comfort and insulation during cold weather we found bedding use to be less frequent with cull cows (41.9%) than feeders (56.3%), calves (67.4%) and breeding stock (75.0%). These data suggest that decisions to bed cattle are based on their economic value instead of need.

#### Summary Points

- Cull cows have the greatest probability of becoming lame, non-ambulatory and dying at the end of a long haul (> 400 km) journey compared to other cattle
- Longer journey durations (> 30 hours) at higher air temperature increase shrink and poor welfare outcomes
- Cows shipped at loading densities lower than 0.55 m<sup>2</sup>/cow or greater than 1.55 m<sup>2</sup>/cow were more likely to die, become non-ambulatory, or lame
- Even the best transport personnel and conditions cannot compensate for bad loading decisions.