

## Management of Cull Dairy Cows: culling decisions, duration of transport, and effect on cow condition

J. Stojkov<sup>1</sup>, M.A.G. von Keyserlingk<sup>1</sup>, T. Duffield<sup>2</sup>, and D. Fraser<sup>1</sup>

<sup>1</sup>University of British Columbia; <sup>2</sup>Ontario Veterinary College, University of Guelph,

### Why is this important?

Farmers have different management styles and consider many individual cow factors, such as milk production, fertility, SCC, foot problems, and others before making culling decisions. The 5 most common reasons for removing cows from the herd were reproductive problems (17%), mastitis (11%), foot and leg problems (7%), low milk production (8%), and sickness (4%). This data suggests that many of the removed animals are ill and/or experiencing pain (i.e. lameness or mastitis), and these conditions reduce the cow's ability to withstand transport.

Cull cows often encounter delays from farm to slaughter. Recent studies have observed many compromised cows at livestock markets and abattoirs in Canada. Cull cows are a particularly vulnerable category of animal that can develop lameness, become non-ambulatory, or die when subjected to long-duration transport (>400 km). Even with shorter transport (~3 hours), cull cows can become injured, develop engorged udders, and experience increased lameness.

This study was designed to gather information about the duration of travel from farm to abattoir and to evaluate changes in the cull cow condition. The study also tested whether providing information to farmers about common delays to slaughter would influence their decisions to ship.

### What did we do?

The study monitored the condition of cull cows at 3 locations: 1) on 20 commercial dairy farms in BC, 2) at 2 livestock markets in BC, and 3) at 6 abattoirs in BC, Alberta, and Washington state. Cows included in the study were assessed for locomotion, body condition, and udder condition. A composite measure of fitness for transport was created for each cow. At the farms, 2 groups of cows were identified: those designated to be removed (culling list) and those designated for immediate shipping (shipping list).

Participating farms were assigned to an "informed" treatment or an "uninformed" control group. The informed treatment group was provided with information on the findings of the study, including duration of transport, conditions of cull cows at auctions and abattoirs, prices paid at auctions, plus a simplified decision-tree tool for deciding whether to load a cow for transport. The goal was to test whether providing such information would influence a farmer's culling decisions.

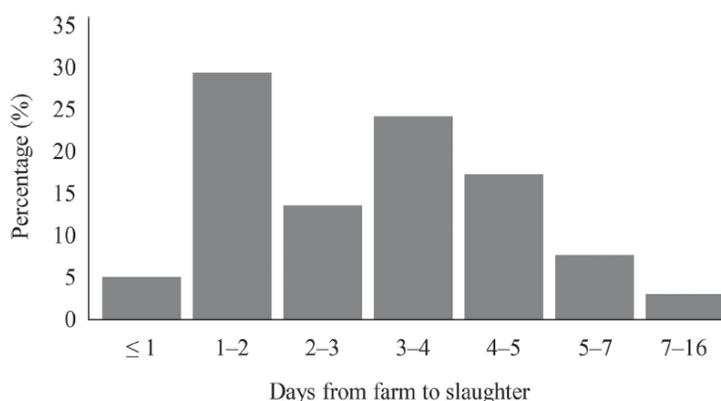


<https://www.progressivedairyCanada.com/>

## What did we find?

Cows were removed from the herd at an average lactation of 2.9 and BCS of 3.1. On average, cows were placed on the culling list at 209 DIM, were removed from the farm at 273 DIM, and spent 127 days on the culling list before being shipped. After leaving the farms, cows spent an average of 82 ± 46 hours in the marketing system. When they reached the slaughter plant, BCS was reduced to 2.7. See Figure 1 for a summary of the number of days from farm to slaughter.

Compared with the time of shipping, when cows were first placed on the culling list they had lower odds of being thin, but the odds of being thin increased when arriving at the abattoir. Cows in early lactation had higher odds of losing body condition than those in late lactation. Older cows had higher odds of having reduced body condition at abattoirs than did cows in parity 1 or 2. Severe lameness did not change while cows were on the culling list, at shipping, or on arrival at the abattoir. Udder condition did not deteriorate between the time of shipping to auction, but cows arriving at abattoirs had greater odds of acute milk accumulation or inflammation. Cows in earlier stages of lactation and older cows had higher odds of developing signs of udder engorgement and inflammation.



**Figure 1.** Percentage of cows that underwent different delays from farm to slaughter, including the time cows spent at livestock markets, assembly yards, and abattoir yards. Data were gathered for 538 cull dairy cows.

The provision of information to half the participants (informed treatment) did not improve the condition of cows removed.

## What does it mean?

This study found that just over half the cows were in the marketing system for more than 3 days. Primary reasons for delays to slaughter are lack of infrastructure and low slaughter capacity of available plants. Notably, during this time the cow's body condition deteriorated and many animals developed signs of udder engorgement or inflammation and reduced fitness for transport. This represents a significant concern with respect to the animal's welfare and could have additional consequences related to consumer perception or public trust.

Unfortunately, providing information to producers had no clear effect on their subsequent culling decisions. However, it should be noted that there was an increased demand for milk during the time period of the study, which led to delayed culling. This resulted in more on-farm deaths and euthanasia and a higher percentage of cows shipped with poor fitness for transport.

There is an opportunity for industry to develop extension and training resources to enhance producer understanding of fitness for transport (for cull dairy cows), with specific consideration of body condition and udder health (i.e. drying off), recognizing the long delays to slaughter that may occur.

### Summary Points

- Over half of cull dairy cows spend more than 3 days between leaving the farm and being slaughtered.
- Deterioration in body condition and udder engorgement/inflammation are the primary issues observed in cull dairy cows.
- Providing information and data to producers about slaughter delays and cow condition at auctions and abattoirs did not influence subsequent culling decisions.