Does short-term road transport affect the locomotion score of dairy cows?

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Abstract

The effects of short-term road transport on dairy cow welfare have been the focus of very few studies. This study is the first to evaluate whether short-term transport of dairy cows under conditions similar to a typical journey from farm to slaughterhouse can cause non-lame cows to become lame. In total, 203 Danish Holstein cows from 18 different commercial Danish dairy herds were included in the study. In each herd, a large number of cows were locomotion scored and 8–12 non-lame cows were selected for transport. After the initial locomotion scoring, the selected cows were loaded onto a truck and transported on average 84 km (1 h 55 min) using a route simulating a typical transportation of cows to slaughter under Danish conditions. Returning to the herd of origin, the cows were immediately unloaded and locomotion scored by the same observer as prior to transport. Results showed that locomotion score did not change significantly and that no cows became lame as a consequence of the transport.

Keywords: animal welfare, dairy cow, lameness, locomotion score, slaughter, transport

Introduction

The vast majority of dairy cows end their lives at a slaughterhouse. Each year, approximately eleven million cows are slaughtered in the EU, approximately two-thirds of which are dairy cows (Flach 2011; Anonymous 2013). The number of dairy cows slaughtered each year in Denmark is approximately 200,000. In Denmark, 86% of all dairy cows leaving the herds are slaughtered; 14% die on-farm or are euthanised (Houe et al 2011). The cows destined for slaughter are typically transported from the herd to the slaughterhouse by road in a truck. In Denmark, the duration of transport to slaughter is typically relatively short (less than 3 h). Nevertheless, the transport of cows destined for slaughter may constitute an animal welfare problem. Most of the earlier studies on the animal welfare implications of road transport for cattle have focused on calves or young cattle (beef bulls, steers and heifers) and the duration of the journeys studied have typically been relatively long (Nielsen et al 2010). The effects of short-term road transport on dairy cow welfare have been the focus of very few studies. Yagi et al (2004) found that dairy cows transported 100 km had a significant increase in plasma cortisol and milk somatic cell count and concluded that even short-term transport may be stressful for cows.

Lameness is a major welfare problem in dairy cows causing significant pain and discomfort (Whay 2002). Previous studies have demonstrated that cattle are subjected to potentially harmful stimuli (acceleration, braking, cornering, vibration etc) during road transport by truck (Gebresenbet et al 2011; Cockram & Spence 2012). Such stimuli require the animals to make postural adjustments to maintain stability during transport. Some animals may fail to maintain stability and fall (Cockram & Spence 2012), perhaps being trampled by other animals. Cows may become fatigued resulting in damage to muscles, tendons or ligaments. Finally, existing lesions (typically hoof lesions) may become aggravated by the physical movements during transport. As a consequence of such events cows may become lame. This seems more likely to happen in dull dairy cows compared to, for example, young beef cattle. If cows can get injured and become lame as a direct consequence of road transport, this is obviously an important animal welfare issue.

According to Danish and EU legislation, both the farmer and the person transporting an animal may be held legally responsible and prosecuted if a lame cow is transported to slaughter. This means that legal protection of the farmer and driver is also an issue here, besides the obvious animal welfare problems associated with the possibility of cows becoming lame during transport. It can be questioned whether or not it is fair to hold the farmer (or the driver) legally responsible for transporting a lame cow in a situation where a cow was observed lame after unloading at the slaughterhouse due to lesions acquired during transport, even though the cow walked normally when loaded in the original herd.

To our knowledge, no work has been done on whether non-lame dairy cows can become lame as a consequence of short-term road transport. The objective of our study was to evaluate whether short-term transport of dairy cows under conditions similar to that of a typical journey from farm to slaughterhouse can cause non-lame cows to become lame.