



Livestock drivers' knowledge about dairy cow fitness for transport – A Danish questionnaire survey



M.S. Herskin*, A. Hels, I. Anneberg, P.T. Thomsen

Department of Animal Science, AU-Foulum, Aarhus University, DK-8830 Tjele, Denmark

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ABSTRACT

Dairy cows are transported by road to slaughter after their productive life. Cull cows are vulnerable to transport stress, and can only be transported when fit for the intended journey. However, the decision, as to whether a cow is fit is rather subjective and relies on the farmer and the livestock driver. Using a questionnaire survey, we aimed to describe knowledge about, and experiences with, dairy cow fitness for transport among Danish livestock drivers. During nine days of data collection at the three largest Danish cattle slaughterhouses, 66 drivers (55% of the national population of cattle drivers) answered a questionnaire (response rate: 97%). They were Danish males (mean age: 49 years), of which 94% stated that they knew the rules regarding fitness for transport. More than half of the respondents said that physical conditions (light, space) before loading animals allowed proper assessment of fitness for transport, and 85% answered that time constraints were not a challenge for this. Thirty-five percent reported to be in doubt regarding fitness for transport of specific cows at least frequently, and given two specific questions on legislation concerning fitness for transport, only 52% of the respondents answered both correctly. The results add new knowledge about livestock drivers' approach to animal welfare. As drivers are held partly responsible for fitness for transport of animals sent to slaughter, and descriptions of fit/unfit are rather vague, livestock drivers seem to need additional education, training, assessment tools or feedback in order to optimize the welfare of animals to be transported.

1. Introduction

In modern dairy production, cows are typically transported by road to slaughterhouses after their productive life. Road transport of cattle is recognized as a multifactorial stressor (Palme et al., 2000) with potential negative impact on animal welfare (González et al., 2012a). To date almost all reports on cattle transport have focused on beef cattle, and typically younger animals such as heifers or bull calves (as reviewed by Grandin and Gallo, 2007), whereas only few studies have covered dairy cows (Yagi et al., 2004; Thomsen and Sørensen, 2013), or transport of cull dairy cows to slaughter (González et al., 2012a, 2012b). This lack of knowledge is remarkable, as the decision to cull a dairy cow has large consequences for the farmer as well as the cow, and has been subject to considerable research (e.g., Beaudeau et al., 2000; Fetrow et al., 2006), showing that dairy cows are typically sent to slaughter after repeated production cycles and may be characterized by injuries or weaknesses (Booth et al., 2004), which may increase the severity of transport as a stressor. In accordance with this, Nielsen et al. (2011) suggested that cull cows are more vulnerable to transport stress than younger livestock, and González et al. (2012a,b) found that cull

cows lost more weight during long distance transport than other cattle categories and had a higher risk of dying or becoming non-ambulatory.

In the EU, animal transport is regulated by Council Regulation 1/2005, where it is specified that “No animal shall be transported unless it is fit for the intended journey, and all animals shall be transported in conditions guaranteed not to cause them injury or unnecessary suffering. Animals that are injured or that present physiological weaknesses or pathological processes shall not be considered fit for transport, but sick or injured animals may be considered fit for transport if they are slightly injured or ill and transport would not cause additional suffering”. Thus, the delineation between fit and unfit for transport is not clear-cut. Interestingly, at present the term animal suffering holds no clear scientific definition (Weary, 2014; Robertson, 2015). Despite this lack of clarity, international guidelines have been developed by groups of stakeholders (such as the voluntary European guidelines from Animal Transport Guides (Animal Transport Guides Project, 2016) or the OIE guidelines for transport of animals by land (OIE, 2016), but no scientific studies have sought to clarify what constitutes a dairy cow fit for transport.

According to the European regulation (Council Regulation 1/2005)

* Corresponding author.

E-mail address: Mettes.Herskin@anis.au.dk (M.S. Herskin).

not only the farmer, but also the livestock driver and his haulier can be held legally responsible for the fitness for transport of livestock. Before loading animals, the livestock driver has to decide whether an animal is fit for an intended journey and can be loaded onto the truck. According to the European regulation (Council Regulation 1/2005), livestock drivers must have a certificate of competence, which in Denmark can be acquired after attending a 1 week course involving different aspects of animal transport including 1 day focusing on animal behaviour and fitness for transport.

In Denmark, livestock trucks may be controlled by the authorities on the road, and all animals to be slaughtered are inspected by a veterinarian upon arrival at a slaughterhouse. The newest accessible data show that during 2012–2014, between 2 and 17% of the controlled livestock trucks were non-complying with the legislation and that cases of non-compliance were observed regularly at the slaughterhouses as well (Anonymous, 2013, 2014, 2015). Non-compliance can have serious consequences for the livestock drivers in terms of financial penalties and potential suspension of the certificate of competence, and for the dairy cows in terms of unnecessary suffering.

Despite the fact that livestock drivers are central for the maintenance of animal welfare in the pre-slaughter logistic chain, and can be held legally responsible, little knowledge about this group of professionals exist (Miranda-de la Lama et al., 2010). González et al. (2012a,b) suggested that driver experience influenced the weight loss and proportion of compromised cattle upon arrival to the slaughterhouse. Other professional groups within animal production - farmers, veterinarians and slaughterhouse workers - have received recent scientific attention (Coleman et al., 2012; Becker et al., 2013; Thomsen et al., 2016). The lack of knowledge about the attitudes of livestock drivers towards animals and animal welfare may therefore be surprising.

By use of a questionnaire survey, the aim of the present study was to describe the knowledge about, and experiences with, fitness for transport in dairy cows among Danish livestock drivers. We hypothesised that the drivers thought they knew the rules regarding fitness for transport, but that they did not consider the knowledge obtained from the certificate courses as central. Based on reports of the effect of time pressure in animal production (Lensink et al., 2000; Miranda-de la Lama et al., 2011), the drivers were expected to have experienced that the physical conditions (including time constraints) on-farm, where the decision to load an animal has to be made, could be a challenge for the assessment of fitness for transport.

2. Materials and methods

2.1. Recruitment of participants and collection of data

The study population was livestock drivers working in Denmark, and currently involved in the transport of dairy cows to slaughter. According to recent numbers from DTL (Danish Transport and Logistics, the national trade association), at present this professional group comprises a total of 119 persons (pers. comm. Lisbet Hagelund, DTL, Copenhagen, Denmark). The study targeted drivers while waiting to wash their trucks at the three largest (chosen in order to meet as many drivers as possible) national cattle slaughterhouses: Skare Beef Aarhus (Skare Food A/S, Christiansfeld, Denmark) and the two Danish Crown (Danish Crown A/S, Randers, Denmark) slaughterhouses in Holsted and Aalborg, together slaughtering 63% of all Danish cattle in 2014 (SEGES, 2015).

As agreed with the slaughterhouses, all drivers were informed about the survey by a standard letter sent by email before initiation of data collection. The data were collected by use of an oral questionnaire presented to the drivers during three (conveniently sampled) days at each slaughterhouse in the period between February 16 and March 14, 2016. The interviewer (A. Hels) approached the drivers while they were waiting at the slaughterhouse and asked whether they were willing to

Table 1

List of 15 questions and answer categories presented in a questionnaire survey used to describe knowledge about, and experiences with, fitness for transport of dairy cows among Danish livestock drivers.

	Question	Answer categories
1	Are you a haulier (owning the driving company) or employed as a driver?	A) Haulier B) Employed
2	How old are you?	
3	How experienced are you as a livestock driver?	A) < 1 year B) 1–5 years C) 6–10 years D) 11–20 years E) 21 + years
4	When did you get the required certificate of competence for livestock driving?	< 1 year ago 1–5 years ago > 5 years ago
5	Did you get the certificate in Denmark or abroad?	A) Denmark B) Abroad
6	How much do you use the knowledge from the certificate teaching regarding fitness for transport on a scale from 1 to 5?	A) Never B) Seldom C) Sometimes D) Often E) Almost all the time
7	How familiar are you with the legislation regarding dairy cow fitness for transport on a scale from 1 to 5?	A) Not at all B) A little C) I feel familiar D) I know most of it E) Completely
8	On a typical day – do you think the physical conditions (light and space) allows you to determine fitness for transport of dairy cows, use a scale from 1 to 5?	A) Always B) Often C) Sometimes D) Seldom E) Never
9	On a typical day – do you think there is time enough for you to determine fitness for transport of dairy cows, use a scale from 1 to 5?	A) Always B) Often C) Sometimes D) Seldom E) Never
10	How often are you in doubt regarding the fitness for transport of a dairy cow sent to slaughter, on a scale from 1 to 5?	A) Never B) Seldom C) Sometimes D) Often E) Very often
11	May a dairy cow be transported 10 days after calving?	(Correct: no)
12	What are the requirements for transport of cows under special care?	(correct answer: separated from other animals and extra bedding)
13	Have you ever experienced loading an unfit cow onto your truck?	A) Never B) < 1/year C) 1/year D) More often
14	If yes, why did you load it?	
15	Are there any relevant issues regarding dairy cow transport, which have not been covered by the above questions? If yes, which ones?	

participate. All respondents were asked exactly the same questions, and all other topics of conversation were kept to a minimum. All answers were written down during the questioning.

2.2. The questionnaire

The questionnaire (Table 1) consisted of 15 questions of which the first seven were demographic focusing on age, experience and education. The remaining questions focused on knowledge about and experience with fitness for transport of dairy cows and were a mixture of closed and open questions allowing the respondents to add qualitative information. The drivers were asked two open questions to test their knowledge about the legislation regarding fitness for transport. As a last question, the drivers were allowed to add comments. It took < 10 min to finish the questionnaire.

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