Recommendations to improve welfare of cattle during long distance transport

Summary

Every year millions of cattle are transported across, from and to Europe. Most of these animals are going to slaughter houses in the respective countries or in another community state or coming or going abroad (extra-EU). Long distance transport of cattle give cause for concern for at least three reasons: First, it can cause severe stress in animals entailing poor welfare. Second, stressful transport may have a negative effect on meat quality. Third, there is the risk of spread of infectious diseases over large distances. Existing legislation does not provide adequate protection to transported animals especially over long distances largely because considerable parts of the regulations are not sufficiently based on scientific evidence. This paper summarises some recent research results and tries to give some recommendations for improvement of future legislation. The welfare of the animals is limited by their needs not by a fixed maximum transport time, if vehicle and transport conditions are appropriate. Bulls, steers and heifers are reacting differently on transport. It is necessary to adapt transport schemes to the needs of the animals. Meat quality is only affected in extreme stressful situations. Some animals develop an energy deficit after 6 to 8 h of transport. Appropriate feeding regimes should be developed for long transport. Stressful loading and unloading in staging posts (injuries, infectious diseases) should be avoided. Staging posts are in particular stressful for bulls. There is a strong need to educate handlers and drivers more intensively. Pay drivers for careful driving not speeding. Develop monitor systems for long and short distance transport (e.g. records, GPS). Improve vehicle design, e.g. reduce vibration.

Introduction

There are three major concerns related to animal transport: (1) transport can cause severe stress in animals entailing poor welfare and higher mortality. (2) stressful transport may have a negative effect on meat quality. (3) there is a risk of spread of infectious diseases among the animals on a transport vehicle or in a market place and the transmission of diseases over large distances.

Consequently, road transport of farm animals is not only a welfare issue, but has also an economic impact through quality losses and mortality. Consumers increasingly are putting emphasis on food quality, which also includes food safety and animal welfare aspects related to production methods, transport and conditions at stunning and slaughter. Meat quality losses
caused by DFD meat (dark, firm, dry) can happen in cattle after fatiguing transports without sufficient and adequate feeding.

Whilst transport stress and its impact on meat quality is recognised, the mechanisms of transmission of diseases through transport are not yet well understood (SCAHAW report on: The Welfare of Animals during Transport, 2002). The same is true for the emission of gases (e.g. ammonia), bioaerosols (bacteria, dust) and other airborne compounds arising from transport vehicles.

The recent SCAHAW report (2002) shows that the scientific basis for several of the EU regulations (e.g. EC 91/628; EC 98/411) is rather small, and when there are research results, there are different opinions regarding the conclusions that can be drawn from them. A clear disadvantage is that often the recommendations are based on the results of one group, which may not be representative of Europe as a whole, and it is clear that most of the work on transport has been carried out in Northern European countries, which will not include the extremes of climate possible within Europe. The genetic background of the animals may also be different. One of the surprising things that became apparent was how little knowledge really exists regarding the needs of the animals during transports of different lengths or how transport vehicle design interacts with e.g. stocking rates to attain the optimal welfare.

Conclusions and Recommendations

1. Loading and unloading (ramp) is one of the most stressful situations for untrained animals and should be reduced to a minimum (e.g. multiple market transports). Loading and unloading in staging posts on longer journeys should be avoided because of risks of injuries, bruises and spread of infectious diseases.

2. Preparation of the animals for the transport. The animals should be familiar with the feed and drinking water system on the lorry. Careful inspection on fitness for travel.

3. After six to eight hours of transport some animals (heifers) start to develop an energy deficit (glucose consumption). On longer journeys special diets should be fed.

4. Adapt transport time to the needs of the animals. The welfare of the animals during transport is limited by their needs not by a fixed maximum transport time, if vehicle and transport conditions are appropriate. Thresholds of stress indicators such as heart frequency, catecholamines are rarely exceeded in heifers and steers. Cortisol concentrations are elevated during transport. Very high levels of creatine kinase are found in bulls after resting periods in staging posts.
The presently allowed transport times with 14 h plus 1 h plus 14 h on special vehicles are not adequate for all animals. The 24 h resting period can be detrimental for bulls in particular.

There are considerable differences in the reactions to transport between sexes (bulls, steers, heifers). Bulls are most difficult. If bulls have to be transported over long distances this should happen as fast as possible, avoiding long resting periods where they can exhaust themselves by unrest and jumping. Jumping and mounting prevention is crucial. More detailed research is needed to optimise transport conditions for bulls.

For heifers, steers and also bulls a travel scheme more closely related to the prescriptions for the drivers seem appropriate. A schedule of about 8 to 9 h driving with subsequent 3 to 4 h rest on the lorry provides sufficient time for the animals for resting, feeding and watering before the next 8 h driving period etc. This scheme prevents the risky 24 h break period and shortens in most cases the length of the journey.

The resting periods on the lorry should be held in licensed staging posts where water and feed is supplied.

5. Loading densities. The loading densities for cattle in the present regulation are sufficient for the animals when driving. Larger space allowance in pens increases risk of injuries in case of emergency. There should be spare space between pens. When resting on the vehicle this space is added to the pen by moving pen bars.

Lower total loading densities will improve air quality and facilitate ventilation. On special vehicles forced ventilation should be provided to be able to react in cases of very high temperatures. A proper ventilation system makes the transport more independent of climatic variances.

6. Meat quality is only affected in extreme situations by transport. Loading and unloading, inadequate feeding, handling and driving can cause bruises, injuries and DFD meat qualities.

7. Knowledge of personal is important: Careful handling of animals, not inducing fear. Careful driving. Personal should be paid for smooth handling, careful inspection and driving, not for speeding. Education of the personal is crucial for improving welfare of the animals.

8. The organisation (transport plan) of transports is important, observing time of the day, traffic problems, road quality (index), index of weather zones. Avoid mixing of groups. A computer programme should be developed which is available for all veterinary offices taking into account all relevant aspects of transport planning including the final report after the journey.

9. Veterinary health inspection, careful handling and driving and reduced travel times by resting on the lorry will reduce the risk of spread of diseases.

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