

An education and training programme for livestock transporters in Canada

Karen S. Schwartzkopf-Genswein⁽¹⁾, Derek B. Haley⁽²⁾, Susan Church⁽³⁾, Jennifer Woods⁽⁴⁾ & Tim O'Byrne⁽⁵⁾

Summary

The transport of live animals is known to be stressful and therefore can have a direct impact on animal welfare and on food safety and quality. The livestock production and transport industries are increasingly interested in improving animal well-being. This can be accomplished through the use of careful animal handling and good driving practices before, during and after transport. The recently developed Certified Livestock Transporter (CLT) training programme in Canada is aimed at ensuring livestock transporters are educated and have access to up-to-date information regarding the humane handling of animals. An overview of the CLT includes examples from the main training manual and species-specific modules. The relationship between education and improved animal welfare is discussed and possible future directions proposed. The examples provided may be modified by other users to develop new education and training programmes relevant to their geographic locations and livestock industries.

Keywords

Animal, Canada, Certification, Education, Hauler, Humane, Livestock, Training, Transport, Welfare.

Programma di formazione e addestramento per i trasportatori di bestiame in Canada

Riassunto

E' noto che il trasporto di animali vivi è un'attività stressante e per questo motivo può avere un impatto diretto sul benessere degli animali e quindi sulla sicurezza e sulla qualità del cibo. Le aziende che si occupano dell'allevamento e del trasporto di bestiame sono sempre più interessate a migliorare il benessere degli animali. Ciò si può ottenere con l'addestramento ad una guida attenta e alla corretta movimentazione degli animali prima, durante e dopo il trasporto. La recente istituzione in Canada del programma di addestramento per l'Autotrasportatore di bestiame certificato (CLT) mira ad assicurare che i trasportatori di bestiame vengano formati ed abbiano costantemente accesso ad informazioni aggiornate in relazione a metodi che garantiscano il benessere degli animali. Nel complesso il CLT include modelli provenienti dal manuale base di addestramento e modelli specifici sulle singole specie. Viene discussa la relazione tra la formazione e il miglioramento del benessere animale e vengono proposte possibili soluzioni future. I modelli forniti possono essere adeguati dagli eventuali fruitori per sviluppare nuovi programmi di formazione e addestramento più confacenti alla loro zona geografica e agli allevamenti di bestiame locali.

(1) Agriculture and Agri-Food Canada, 5403-1 Ave South, Lethbridge, Alberta T1J 4P4, Canada
gensweink@agr.gc.ca

(2) 3-10J A/F, University of Alberta, Edmonton, Alberta T6G 2P5, Canada

(3) Alberta Farm Animal Care Association, Cambrian PO Box 75028, Calgary, Alberta T2K 6J8, Canada

(4) J. Woods Livestock Services, RR #1, Blackie, Alberta T0L 0J0, Canada

(5) Calico Beef Consulting, PO Box 12805, Las Vegas, Nevada 89112, United States of America

Parole chiave

Addestramento, Animale, Autotrasportatore, Benessere, Bestiame, Canada, Certificazione, Istruzione, Trasporto.

Introduction

A high proportion of the tasks performed by livestock transporters involve the basics of stockmanship and animal husbandry. It has been suggested that the best ways to improve stockmanship are to either select personnel carefully, based on specific and strict criteria, or to provide specialised training to improve their technical knowledge (6). Most approaches to training are based on a combination of both scientific and practical knowledge of animal biology and animal perception and some involve hands-on training with animals (6).

At present, livestock transporters in North America are not subject to any laws that require specific training in livestock or animal handling. A driver who repeatedly violates guidelines and regulations regarding animal care might only receive a small monetary fine which may be regarded simply as a cost of doing business. In the interest of producing high-quality products for domestic and export markets, the various sectors involved in livestock production recognise their responsibility and opportunity to improve the well-being of farm animals, whether on farm, in transport or in pre-harvest processing. A major impetus for the development and implementation of training for livestock haulers is that animals are sentient beings and consumers expect that specific and special care be taken when transporting them, regardless of their economic value. The Canadian livestock transport industry has encouraged such training programmes not only as a means to train new drivers, but as a way for all drivers to better understand the role they play in ensuring that unfit animals are not loaded.

In Canada, national and provincial organisations dedicated to animal care are playing a vital role in encouraging the development of guidelines for the care of

animals, both on farms and during transportation. The transportation of livestock within North America is a large and vital industry with a substantial international export component (27). Within North America, the vast majority of food animal transportation occurs by road (17, 27). Within Canada, it is not uncommon for some livestock to travel distances of 4 000 km.

At present, quality assurance programmes with guidelines have been developed (e.g. United Kingdom), as a means of educating livestock transporters in humane hauling techniques and as a means of protecting their livestock markets by ensuring animal transportation standards. According to the current World Organisation for Animal Health (*Office International des Épizooties*: OIE) guidelines for transporting animals by land 'Competent authorities' are responsible for 'ensuring appropriate awareness and training of "animal handlers", drivers and managers of facilities in relevant issues in animal welfare' and that 'All individuals, including "veterinarians", involved in transporting animals and the associated handling procedures should receive appropriate training and be competent to meet their responsibilities'. Additionally, the OIE recognises that 'competence may be gained through formal training and/or practical experience'.

The goal of this paper is to provide an overview of the recently developed Certified Livestock Transporter (CLT) training programme in Canada, originating in the province of Alberta. The programme is designed to ensure that livestock transporters have training and access to up-to-date information regarding the humane handling of livestock. The overview will include examples from the CLT training manual and species-specific modules. In addition, the relationship between education and improved animal welfare will be discussed and possible future directions proposed. Ultimately, these examples may be modified by other users or provide a basis from which education and training programmes may be developed.

The birth of a training programme

Development of the CLT training programme was initiated by the Alberta Farm Animal Care Association (AFAC), with the assistance of private livestock industry consultants and an industry advisory group that consisted of representatives from private livestock transport companies, primary livestock industries and government. AFAC is an organisation lead and funded by primary livestock organisations (beef, dairy, elk, horses, poultry, sheep and swine) with additional funding from the provincial government of Alberta.

The CLT programme is a comprehensive multi-species course aimed at training Canadian-based livestock shippers, trucking companies and receivers who operate within North America. The CLT programme was not only developed for commercial transporters but also for training individual producers, employees at meat plants, assembly yards and trucking firm personnel, as well as independent and industry organisations. The programme was developed to accommodate the growing needs of livestock industry partners to provide consistent, accountable and up-to-date guidelines to ensure that all individuals involved in the transportation of animals are aware of their responsibilities regarding animal care.

Prior to the development of the CLT programme, most commercial trucking companies in Canada did not have official in-house training and education programmes for their new drivers, or any formalised means of regularly passing on new information to their experienced drivers. Furthermore, there are no comprehensive national or provincial associations of livestock transporters in Canada which might serve as natural coordinators for driver training efforts.

Livestock transporter training programmes are important generally, but they can be even more invaluable when trucking companies are unable to hire experienced drivers. This problem recently affected the Canadian cattle

hauling industry as a consequence of border closures following a case of bovine spongiform encephalopathy (BSE) in May 2003 which crippled Canada's beef export market, to the United States in particular. As a result, the need for cattle transporters was greatly reduced; forcing some experienced hauling companies out of business and their drivers to seek other employment opportunities, in particular the booming oil industry in Alberta.

The first CLT session to qualify programme trainers was offered in May 2007, with plans to deliver courses at least biannually, or as need dictates, to groups of individuals that can then train their own staff. Farm animal care groups in other provinces (Manitoba, Ontario and Saskatchewan) are starting similar training programmes using CLT materials, with the goal of making this a nationally coordinated programme.

The Certified Livestock Transporter programme

The main training manual is complemented by separate species-specific modules which provide information, skills certification and support for the cattle, horse, poultry, sheep and swine industries. The species-specific modules reflect the most commonly transported livestock. However, the core manual applies to all livestock. Each module has information regarding Canadian federal regulations related to animal transportation and the Canadian Codes of Practice for farm animals, as well as the United States federal livestock transport regulations. Knowledge of the United States regulations is required because much of the Canadian and United States livestock production systems are highly integrated, resulting in significant cross-border transport of live animals. In addition, the modules incorporate relevant sections based on species-specific operating guidelines related to bio-security, risk factors and planning, as well as information on animal behaviour and handling, including handler safety.

The CLT programme offers three levels of certification: one for commercially licensed drivers with over two years of experience

(Level 1), one for licensed entry-level drivers (Level 2), and a third level for non-commercial drivers and others involved with the livestock industry (Level 3). For Level 1 certification, participants must successfully complete a one-day classroom training session and pass a written exam. Level 1 participants must also provide an affidavit of experience from an employer stating that they can and have consistently performed to an acceptable level with more than two years of experience driving a livestock transport vehicle. Level 2 certification requires the same classroom instruction as Level 1, with the additional requirement of the successful completion of an on-site practical evaluation. Level 2 training is for novice drivers with less than two years of experience. Level 3 certification requires that individuals participate in the classroom training session and practical evaluation; they are not required to have any driving experience. All participants are provided with a manual and instructional DVD, a copy of the species-specific Guidelines for the Handling of Unfit Livestock (2) as well as national Codes of Practice for the care and handling of livestock (1), regulations, key research papers and emergency contact information. Practical evaluation includes requirements for Levels 2 and 3 participants to demonstrate their skills in loading, transporting and unloading live animals in a controlled environment.

Laws, codes and guidelines

It is essential that all transporters are familiar with the specific laws dealing with the treatment of animals and the codes of practice which outline commodity-specific guidelines on how each species should be cared for.

Where they exist, provincial laws are primarily responsible for protecting animals although federally, animals are also protected under the Criminal Code of Canada (5). Two laws specifically govern the treatment of farm animals during transport in Canada; the Meat Inspection Act and the Health of Animals Act (9). These acts dictate that food animals should be handled in a way that avoids distress or pain. They specify rules regarding the segregation of incompatible animals, the

provision of feed and water, mandatory rest intervals during transport and special rules pertaining to the transport of unfit (e.g. downer animals), young or pregnant animals.

The Codes of Practice for the Care and Handling of Farm Animals – Transportation (7) are promoted in the CLT manual and modules. These codes were developed by livestock industry representatives, animal welfare groups, veterinarians, animal scientists, Agriculture and Agri-Food Canada and, although they are principally voluntary, it is expected that all haulers use these guidelines as a reference tool. In addition, some livestock commodity groups within the province of Alberta have taken the initiative to develop specific guidelines to determine which animals are unfit to be transported. These guidelines assist drivers in making the right decision regarding which animals are not fit for transport and provide alternatives for those animals. The difference between the laws, codes and guidelines is that the codes and guidelines are considered voluntary. Lack of compliance with the regulations or codes can result in federal or provincial legal action against the hauler and the owner of the animals, not to mention the potential harm in terms of animal welfare.

Understanding rules for national and international transport by land

The CLT programme begins with a detailed description of how the livestock transport sector currently operates. Transporters need to be aware of the appropriate national and international documentation requirements which can differ according to species and which must accompany each load of livestock they haul.

National requirements include having the paperwork for any government-mandated identification programmes. In addition, provincial documentation requirements may differ from province to province and may include the need for a livestock manifest, shipping permit, bill of lading, registration certificate or brand inspection. Regulations govern the transport of live animals out of

Alberta and also out of some other provinces. These regulations require the hauler to provide detailed information on the kind and number of animals being transported, owner and financing information, herd health certificates, as well as declarations that animals have not been fed materials prohibited by the Health and Drug Act and the Health of Animals Act in Canada (e.g. biologicals and veterinary drugs within the appropriate withdrawal times).

Issues unique to international transportation of livestock to the United States or Mexico require an awareness of proper protocol which includes giving prior notice to the importing country's border agents, as well as having the proper paperwork in place to comply with current export legislation. Proper protocol is extremely important in minimising the time required for animals to reach their final destination. Lack of compliance, be it incomplete paper work, or broken, tampered or removed seals on vehicles (an identifying device authorised by the regulations) can result in animal quarantine or the return of the animals to their place of origin, which can substantially increase the time animals are in transit, in addition to any traffic delays experienced at border crossings while awaiting inspection.

Studies have shown that the time a journey takes is generally more important than the distance covered (32) with regard to animal welfare. Cockram (12) states that as there are many risk factors associated with transport that have the potential to adversely affect welfare; the longer the journey the greater the risk. Within each CLT module, drivers are also provided with a list of contacts and contingency planning templates for use in the event of a border closure. This plan identifies which types of loads (species and type, i.e. slaughter horses) can be returned to their place of origin and which cannot. For loads that cannot be returned, appropriate feed, water and rest locations are provided.

Biosecurity

Livestock haulers play a critical role in the preservation of biosecurity and it is for this

reason that education on this issue is included in the CLT programme. Preventing the spread of disease between facilities is particularly important for the swine and poultry industries that rank among the most economically important factors in their production process (28, 29, 30). When working with these species in particular, transporters must be vigilant about biosecurity protocols; this includes permission to enter a barn, the use of plastic disposable boot covers that must be changed between facilities and ensuring that trailers are completely sanitised and disinfected (including the exterior of the trailer as well as the tyres) between visits to different farms (3). Drivers must be aware of the closest clean-out facilities and ensure that dead animals are disposed of properly. Lack of compliance with biosecurity protocol can result in the spread of disease and the potential depopulation of a herd or flock, resulting in the loss of thousands of dollars.

Risk factors and planning

Other critical training issues covered in the CLT programme include educating transporters in practices that can mitigate risk factors during the transport process, as well as promoting routine and emergency preparedness. Common transportation risks relate specifically to animals, equipment, weather and road condition factors. Knowing the fitness of individual animals on each truck, and their transport history, may help to reduce downer animals or mortality. It is possible that recently-loaded animals may have already been transported for a significant amount of time and may not be able to withstand another long journey, such as in the case of a thin, cull animal. With this in mind, the distance of the planned journey and the environmental conditions must be considered.

Pre-transport preparation

Pre-transport preparation must include obtaining current road information, such as detours or possible delays due to road construction or long waiting periods at border crossings or road closures due to inclement weather. Protocol in the event of a mechanical

breakdown and the length of time to wait with the animals until the arrival of a replacement vehicle are also addressed.

Weather

The CLT promotes the goal that a livestock transporter must deliver animals in a dry, healthy condition and therefore haulers must always be aware, to the best of their ability, of weather en route as conditions in North America can differ enormously on a single journey. For example, animals transported from southern Alberta to northern California could experience temperature changes ranging from -30°C to $+30^{\circ}\text{C}$. In extreme weather conditions, drivers need to be aware of the particular needs of the species and of class of animal they are hauling. Too much or too little ventilation during cold weather can increase the incidence of post-transport morbidity and or in-transit injuries, such as frostbite (10, 14). The use of straw bedding is encouraged for most species to improve comfort, footing and warmth, particularly during the cold weather. However, the use of bedding is still at the discretion of the hauler. Conditions of high humidity should be avoided during cold or hot weather since humidity has negative effects on the thermoregulatory ability in both extremes (18, 31, 33). Monitoring of internal trailer temperature is recommended, particularly during hot weather when ventilation is critical and watering intervals are lengthy. Drivers are also informed of techniques used to modulate extreme conditions, such as the proper use of side boards and misters for swine, or the use of bedding for hogs and cattle and optimal ventilation strategies for poultry. Other techniques advised include altering driving practices, such as reducing the time a truck remains stationary in direct sunlight and changing the time of day animals are transported to avoid extreme weather conditions. Not only does weather affect the trailer environment, but it can also affect road conditions, so drivers must be vigilant about weather reports, such as storm warnings or other adverse conditions and alter their itineraries accordingly.

Accidents

Accidents are an unfortunate but inevitable part of livestock transport. Approximately 10 accidents are documented annually in Alberta alone which may only represent about 25% of the actual number of accidents in a given year (Jennifer Woods, personal communication). As the potential for animal injury and suffering can be substantial, the CLT programme provides a step-by-step approach to follow in these rare circumstances. These include understanding the behaviour of distressed livestock, knowing the chain of command and who to contact (911, dispatcher, insurance company, accident report), having the proper paperwork readily available and having a detailed rescue and recovery plan. Information on providing comfort to the animals and being aware of the type and number of animals that might have broken loose, as well as where to dispose of any dead stock resulting from the accident are discussed in the training sessions.

The transport vehicle

Truck condition and driver skills

Obviously, avoiding malfunction of vehicles by ensuring good maintenance is a critical aspect in preventing avoidable breakdowns during transit. Drivers should be aware of the inspection report made by the previous driver and take appropriate action to fix problems before starting a new haul. Driver skill training includes proper braking and starting techniques so animals do not lose footing. Studies have shown that driver skill and experience plays a significant role in reducing animal injuries during transport (13). Other driving factors include adherence to the posted speed limits, reducing speed around corners, limiting the time the trucks remain stationary with animals on board and avoiding rough routes to minimise truck vibration (34). Maintaining a level trailer is also important so that animals do not 'bunch', causing heat stress and considerable energy expenditure associated with trying to maintain traction. Drivers should check animals frequently en

route to ensure none have fallen and are unable to get up.

Loading densities

Loading animals at the appropriate recommended density is a key factor that drivers must know. Loading densities in Canada are not regulated but rather drivers are asked to follow loading density charts available in the codes of practice for each species. Appropriate loading densities are dependent upon the weight of the animals and the size of the space they occupy. Drivers must be aware of their particular trailer configuration characteristics and compartment sizes within the trailer to calculate the density correctly. In addition, drivers must be aware of the specific animal type (horned, cull, fat, dairy, boars, old sows, segregated early weaners, end of lay hens, etc.) and weather limitations that may alter recommended loading densities. The CLT modules provide a user-friendly flowchart to summarise the rules for each species. Figure 1 is an example of the loading density flow chart for cattle. Finally, drivers must be careful not to exceed the maximum allowable weight for the tractor-trailer unit combined or by axle. Lack of compliance with these rules may result in economic losses, legal action and potentially poor animal welfare. Little scientific information is currently available to support or refute optimal loading densities under Canadian conditions for optimal animal welfare.

Livestock handling and knowing the animal

Drivers need to be knowledgeable about the animals they are handling during loading and unloading procedures. A significant portion of the CLT programme is devoted to educating transporters on the behavioural repertoire unique to the species they will be working with. Understanding animal behaviour will reduce stress, avoid injury and offer efficient handling outcomes for both the animals and handlers (22). No matter what species is being transported, all loading and unloading

procedures should be performed gently and at an unhurried pace with as little shouting and noise as possible (22). Moving herd species in groups and not alone is especially important as lone animals can become very agitated and will want to rejoin their group at all costs (22). Handling aids, such as boards for hogs and flags for cattle, as well as the use of light so that the animals can see where they are going, are recommended (22). Following these handling procedures has been shown to improve meat quality, reduce the stress levels of animals and reduce carcass bruising, all of which are useful as animal welfare indicators (15, 20).

Another important aspect in animal handling covered in the CLT programme is understanding how the type of animal may modify common handling protocols. For example, cull dairy cows are extremely susceptible to bruising, bulls, boars and stallions can be very aggressive and dangerous. Dairy animals can sometimes be more difficult to move as they typically have no flight zone as a result of significant interaction with humans. Taller animals should never be loaded into a compartment that does not allow the animal to stand in a normal upright position. Transporters are encouraged to always have a planned escape route in the truck as well as in any loading alleys to ensure their own safety.

Effectiveness of training programmes

Several scientific studies have assessed the effectiveness of training strategies and education on farm animal husbandry and improvements for animal welfare. The most well-known North American programmes have been developed by Temple Grandin for use in slaughter facilities. Her studies clearly show that offering training in proper handling techniques to slaughter plant personnel has improved animal welfare during lairage and slaughter (21). A key finding of this work was that regular reinforcement of training and skills must be ensured to maintain consistently high standards as employees often fall back

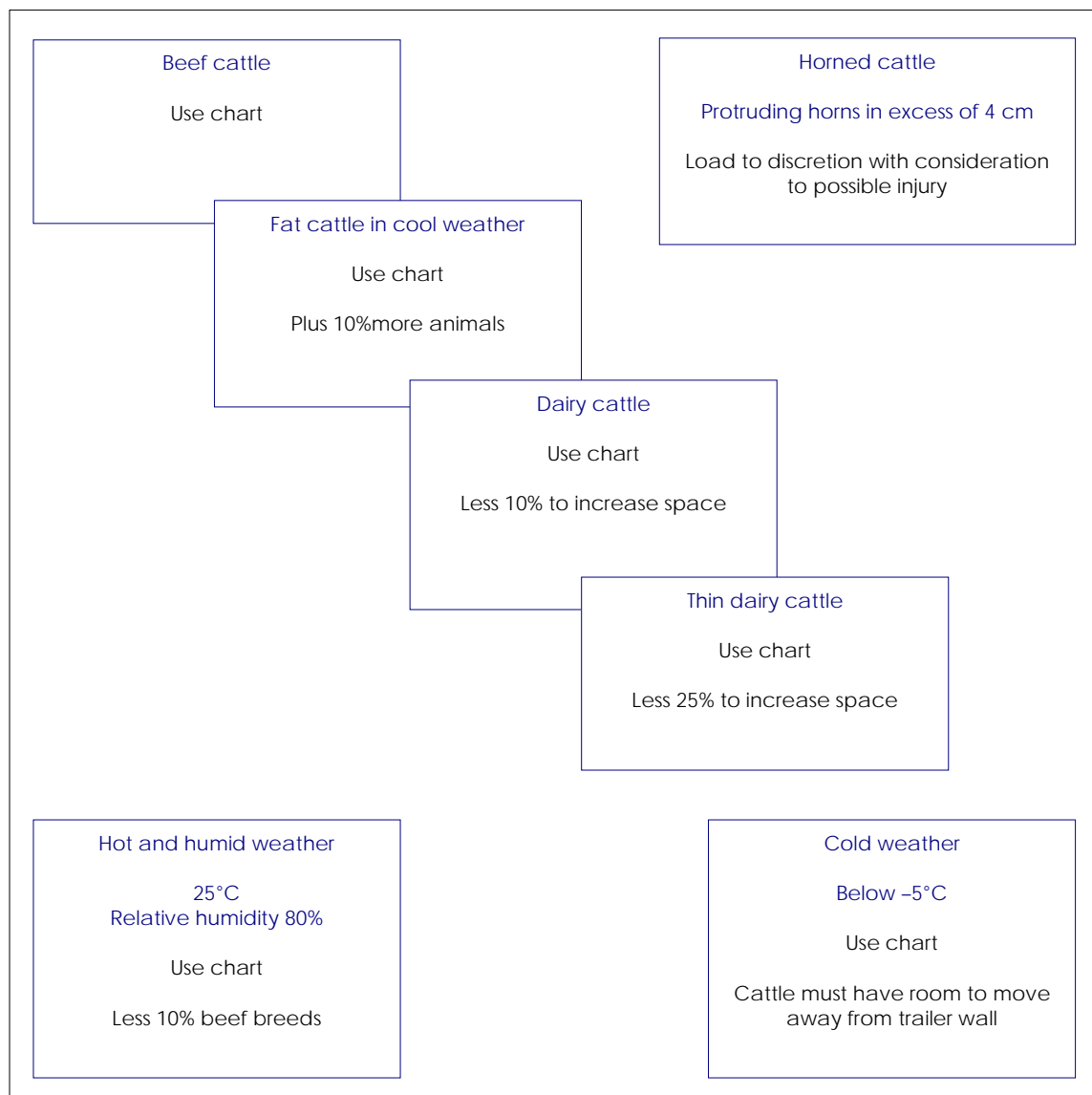


Figure 1
An example of a loading density decision chart provided in the cattle module of the Certified Livestock Transporter training manual
'Use chart' refers to the loading density charts in the 'Recommended codes of practice for transportation'

into old habits. Training programmes have been commonplace for many years at universities and research institutions that are obligated to train personnel engaged in animal research in various aspects of scientific, practical and ethical aspects of animal care and use (4, 8). Existing training programmes in stockmanship have been received with acclaim by people requiring these skills and the companies who hire them (11, 16). A substantial body of research has been conducted on stockmanship, human/animal interactions and their relationship to

production and welfare (23, 24, 25, 26). These studies have shown that, beyond providing information, an important component of improving animal handling is understanding and addressing people's attitudes about animals. Although training programmes are a positive step towards optimal animal health and well-being, the omission of assessing their effectiveness may lead to training that is ineffective, inefficient or unnecessary (19) and, therefore, should be incorporated into company or organisation policy. In addition, programmes need to be adapted and

continually improved upon for adult learners. For example, depending on the demographics, future programmes can expect to be teaching a much more computer-literate clientele. To date, no studies were available assessing the effectiveness of transporter training on animal welfare during transit. This is most likely due to the lack of existing programmes.

Future directions

Use of training and education programmes within the animal transport sector are essential if animal welfare standards are to be consistent and of high quality. An obvious solution to reducing some of the adverse effects of transporting live animals is to either ensure they are harvested close to their source of production or that their carcasses are transported instead (12). However, as slaughter facilities become larger and reduced in number, fewer facilities are located close to production centres. In addition, sellers often opt to sell animals for maximum profit to the highest bidder even if this means the animals need to be transported twice as far; if that is more profitable. The practice of long distance transportation of live animals is most likely to continue well into the future.

Future considerations regarding education and training programmes should include assessing the effectiveness of the programme, as well as

identifying areas that should be added to those summarised as part of the CLT programme in this paper. Training programmes should be developed for the specific needs of the clientele using the programmes and should be detailed with regard to specific requirements of species, region, national and international laws and guidelines. Continued programme up-dates should incorporate science-based information that identifies optimal practices. In addition, technological advances will make it easier for transporters to ensure optimal welfare during travel and could include such things as modified trailer designs, automated driver alert systems of the trailer environment and alternatives to the current feed, water and rest intervals. It is possible that long distance transport of live animals is entirely acceptable as animal welfare may not depend on the length of the journey but instead on the quality of travel.

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